Establishing *Kaizen* in small- and medium-sized German enterprises: A concept to drive innovation

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Abstract

The ability to innovate is crucial, not just for national economies but also for all kinds of companies. Kaizen is the Japanese concept of management based on a philosophy of eternal change, which is to keep a continuous improvement process going. The Kaien concept has been widely applied, specifically in industries that are dominated by large and multinational players, such as the automotive sector. In most European countries, small- and medium-sized enterprises play a major role, specifically in Germany. It is all the more surprising that the Kaizen approach has thus far been de facto irrelevant in the literature dealing with small- and medium-sized companies. This article shows that the Kaizen philosophy provides an appropriate strategic basis for establishing a continuous innovation process in small- and medium-sized companies. The first part of this article explains the basic characteristics of the concept of innovation and the importance of small- and medium-sized companies and their ability to innovate. The second part outlines the Kaizen approach and its fundamental paradigms. The third part describes how a Kaizen-based, continuous innovation process can be implemented in small- and medium-sized German companies.

Keywords*:* Kaizen; innovation; continuous improvement; medium-sized companies.

Introduction

From an economic perspective, the innovative strength of companies is of crucial importance. Without innovation, any economy runs the risk of losing its potential to generate growth. In this context, the so-called "pioneer companies" play a special role: on the one hand, they are the engine and driver for new growth impulses, while on the other hand, the innovative entrepreneur has the chance of a (temporary) monopoly and can thus realize the pioneering profits (Kampmann/Walter 2010: 156). A country's ability to innovate forms the basis for long-term growth and employment. One important indicator of the ability of a country to innovate is that of the number of its patent applications. In 2018, approximately 174,000 new patents were registered with the European Patent Office. Of this, 25% were from the U.S., approximately 15% from Germany, and 13% from Japan (EPO 2019). After that, Germany is in third place. However, if we consider the global innovation index of the 130 most innovative countries, Germany only comes in ninth place (GII 2019). Switzerland is at the top, followed by Sweden and then the U.S. The Global Innovation Index is published once a year and is based on extensive innovation criteria. The following is intended to show how the Kaizen approach can be used to increase the ability to innovate, especially in the sector for small- and medium-sized companies, which is a particularly important sector for Germany's economy.

In the context of the organization of innovation, i.e., innovation management, it is

necessary to specify the term innovation. For reasons of measurability and active management of innovation, it is essential in practice that everyone involved in the process of innovation management de-velops a uniform understanding of the term. This is an important prerequisite to generate inno-vation in a targeted manner. It should be borne in mind that the development and implementation of highly innovative ideas in the operational production process require special treatment and attention, otherwise the company runs the risk of neglecting fundamental aspects of risk management. In the literature on innovation theory, the term innovation is systematized according to various criteria (Hauschild et.al. 2014: 5ff.). A common and relevant differentiation here is the distinction between product and process innovation.

Product innovations are innovations in goods and services that - from the perspective of the consumer - result in new, qualitative (consumption) experiences. Product innovation is therefore an innovation on an existing product or an entirely new product. This demand-oriented perspective can be contrasted with the supply-oriented concept of innovation defined by Schumpeter (Schumpeter 1961: 100 ff.). Thereafter, a distinction can be made between "Invention" (i.e., a completely new product through technical invention), "Imitation" (i.e., imitation and modification of an innovation), and an innovation in the narrower sense (i.e., implementation of an innovation by the entrepreneur). In contrast to product innovations, which primarily aim for an exogenous effect (i.e., consumer behavior), process innovations are typically directed inwards. These are improvements to operational, mostly internal processes in the company. However, process innovations are not limited to processes in the narrower sense. In principle, process innovations can target the entire operational eco-system, from the organizational structure, the process flows, the interfaces, the internal flow of information and materials, etc. A well-known example of a process innovation is the assembly line production that was introduced at the beginning of the 20th century. In the context of the establishment of a Kaizen-based continuous innovation process for medium-sized companies, the introduction of such a concept is, in itself, an innovation for the individual company. In practice, however, it can regularly be ascertained that process innovations are usually triggered when a certain event relevant to results (e.g., an accident or the incorrect handling of a process) has occurred. This then usually leads to ad hoc measures to eliminate identified procedural weaknesses. The establishment of a Kaizen-based, continuous innovation process includes both product innovation and process innovation.

Small- and medium-sized enterprises in Germany

Before the importance of small- and medium-sized enterprises for the German economy is dis-cussed, the demarcation criteria for medium-sized companies should be briefly presented. Ac-cording to a European Union (EU) recommendation, small and medium enterprises (SMEs) include companies with fewer than 250 employees, either with sales of less than 50 million euros or total assets of less than 43 million euros (EU Commission 2003). Another definition of the Institute for SME Research uses the citerias shown in Table 1(IfM Bonn 2020):

Type of Enterprise	Employees		Sales
Micro-Enterprises	≤10		≤2
Small Enterprises	≤49	and	≤10
Medium Enterprises	≤499		≤50

Table 1

In the following, the definition of the IfM should serve as the basis for the classification of small- and medium-sized companies. In addition to these quantitative criteria for classifying SMEs, several qualitative characteristics can also be used. The following table summarizes the characteristics that are important for a Kaizen-based innovation process (Dömötör 2012: 16)

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Opportunities	Challenges
Increased flexibility _ Flat hierarchies _ Short and quick decision making _ Low communication complexity _ Little bureaucracy Dominance of the entrepreneur _ Can provide impulses for innovations - Can implement top-down innovations _ Can allocate resources flexibly to the innovation process	Resource deficit - Limited access to debt and equity - Limited human resources Strategy deficit - Underdeveloped strategic planning - Limited method know-how Dominance of the entrepreneur - Can prevent impulses for innovations - Can use resources hostile to innovation

Table 2

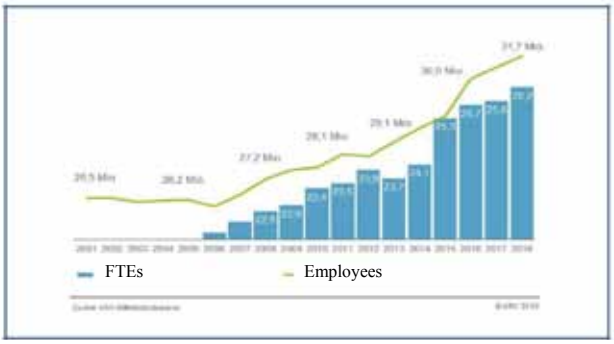
As shown in Table 2, the entrepreneur, due to his mostly dominant position in the company, can initiate and accelerate innovations by promoting and demanding the skills of his employees and, especially, their creativity. On the other hand, there is also the challenge that the entrepreneur may hinder innovation, and that the lack of corrective action in the company may limit the ability to innovate. As will be shown later, the specific qualitative characteristics of SMEs play an important role in the implementation of a Kaizen-based innovation process.

The economic importance of medium-sized companies is enormous: in Europe, SMEs are by far the largest group of companies. Approximately 99% of all companies are SMEs and employ more than 65 million people. Furthermore, SMEs also play a very important role in Germany (IfM Bonn 2020):

- In 2017, the proportion of SMEs in Germany was 99.5%. This means that more than 3.5 million companies belonged to the SME sector.

- Almost 58% of all employees were employed by SMEs.
- SMEs contributed around 60% of the total net value added.

The importance of small- and medium-sized businesses for the German economy becomes even clearer if one looks at the development of employees (see Figure 1): Based on KfW statistics, the number of employees in medium-sized industries has increased by over 15% in the past 15 years (KfW 2020).



FTEs Employees
Figure 1

Kaizen

The Japanese word Kaizen can be divided into two parts: the sub-word "kai," which means "improve" or "bring forward," and the sub-word "zen," which means "change" or "improvement." This means that Kaizen can be translated as "forward-looking improvement" or "change for the better" (Learnblog 2020). In the Japanese philosophy of values, however, the term Kai-zen is not limited to economic processes. Rather, this expression stands for a philosophy of life that is widespread in Japan and contains two essential elements. First, this approach is based on the conviction that all employees and managers of a company or organization (i.e., profit/non-profit) are individually responsible for permanently improving their personal living conditions. This approach is therefore fundamentally opposed to many Western approaches, which assume that a concept for improvement should be “institutionalized.” If the individual person or employee actively reflects on what can be improved in the daily business process, there is no need for an additional function in the company that is responsible for process improvement.

The second element of the Kaizen approach is based on a generally positive assessment of reality: there is a belief that a change for the better can be achieved through gradual (incremental) steps. Accordingly, the path to success in a Kaizen-based approach is the gradual and continuous improvement of existing products, structures, and processes. Anyone who has taken a closer look at Japanese structures and has immersed themselves in Japanese culture will recognize this philosophical approach in many areas of life in Japanese society. The disruptive approach often used in Western countries to optimize business processes and procedures is difficult to

imagine in most Japanese companies. On the other hand, large Japanese corporations are highly innovative and have successfully launched several notable innovations in the electronic entertainment industry.
The Kaizen approach goes hand in hand with another important aspect: Many of the improvements made in operational practice are not necessarily visible to outsiders. This means there are incremental improvements that initially have no immediate external value (e.g., profits or in-creased prices). This is closely related to the fact that the original version of the Kaizen approach is a so-called "low-cost" approach (Imai 2012: 2). Due to the principle of small steps, there are no disruptive leaps in innovation and the approach can be easily adapted by all employees and managers. However, this also shows that this approach can be a sensible strategic approach for establishing a systematic innovation process, especially for small- and medium-sized companies, which often only have limited resources. In the following, the basic features of the original Kaizen philosophy are presented before an adaptation approach suitable for a medium-sized company is presented in Chapter 3.

The paradigms of Kaizen

The basic prerequisite for the implementation of the Kaizen approach is the establishment of the Kaizen paradigms and systems (Imai 2012: 3 ff.). In the following, the seven Kaizen principles are briefly presented. The six Kaizen paradigms include

- Maintenance and improvement;
- Process versus results;
- Following plan–do–check–act;
- Putting quality first;
- Speak with data;
- The next process is the customer.

Maintenance and Improvement
In the Kaizen philosophy, management takes on two important tasks: First, it must ensure that day-to-day business runs as error-free as possible. This is primarily ensured through the formulation of so-called standard operating procedures (SOPs). Such SOPs have now been implemented in many industries and ensure that production processes are implemented according to the given industry standards. Improvement describes the second core task of management: To continuously improve the existing standards. As Figure 2 shows, an improvement process based on the Kaizen approach begins at the lowest level of the hierarchy and then continues to top management.

Figure 2

While the share of improvement at the worker level is still relatively small, the Kaizen philosophy teaches that the responsibility for continuous improvement lies largely with top management. Here, too, Western management concepts differ significantly from the Kaizen approach. While the continuous improvement process is delegated to lower levels in most companies in Western industrialized nations, the Kaizen approach teaches that the top manager is also responsible for improvement management in the day-to-day operations. In the original Kaizen philosophy, a distinction is again made between Kaizen improvement and innovation in the narrower sense. While Kaizen represents the process of continuous improvement of processes and products, innovation in the narrower sense describes the disruptive approach in which traditional processes and procedures are completely changed by appropriate investments. In the Kaizen philosophy, however, the latter should only make up a small part of all improvements, due to their negative consequences for the overall organization.

Process versus Results

Another fundamental principle of the Kaizen approach is the focus on processes. A main cause of unsatisfactory results is seen in suboptimal processes: In Kaizen teaching, the cause analysis usually begins with analysis of the underlying processes. Accordingly, the Kaizen philosophy is much less focused on results than the traditional optimization approaches in Western industrialized countries. Bad results are primarily the consequences of breaks in the value chain. Conversely, Kaizen leads to a different management understanding. The manager in the Kaizen approach focuses primarily on the efforts of the employees to achieve optimal processes. Fail-ure to meet plan data is then an indication of further procedural optimization potential. This also highlights why the Japanese culture contrasts with the "hire and fire" culture observed in Anglo-Saxon countries. The focus is on the individual employee and his/her activities on the whole. In addition, the role of the manager in Kaizen teaching is a special one: "The most crucial element in the Kaizen process is the commitment and involvement of top management" (Imai 2012: 4). The responsibility of top management for continuous improvement describes an essential part of the Kaizen teaching.

Following the Plan–Do–Check–Act (PDCA)/SDCA Cycles

One of the first steps towards establishing the Kaizen approach is to introduce a conceptual framework for continuous improvement. The Kaizen teaching speaks here of the Plan-Do-Check-Act cycle (PDCA). Basically, it is about establishing a recommendation for action in operational practice, which aims to systematically question one's own actions and to look for opportunities for improvement.

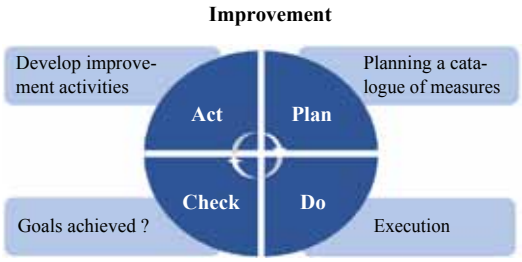


Figure 3

The plan first relates to an existing actual situation and can be specifically determined by a certain process, an interface, a standard, etc. The prerequisite is that the current situation has been recognized and assessed, and based on this, it has been concluded that there is room for improvement. The implementation (i.e., do) is then based on the plan agreed between all participants. The question of whether the goal has been achieved (i.e., check) comprises two levels: On the one hand, one must ask whether the plan has been implemented. In most cases, this will be more of a formal exercise. The second step relates more to the content component, i.e., to check if the previously defined goals were achieved. Finally, the act refers to the newly defined standard after the improvement and involves employees actively applying the new standard. As soon as the new standard is fully implemented, the PDCA cycle starts again (see Figure 3). This means that the object for the next improvement is the newly defined standard.

In its basic version, the Kaizen approach certainly states that employees are not always in a constant situation to question the existing and to always look for improvements. In this case, the concept assigns management the roles of innovator and motivator, with the aim of keeping this process of permanent improvement going. From this management understanding, the enormous sense of duty of Japanese management levels can be understood, which is considered as the basic belief to put the big picture (e.g., the company) before individual concerns at any time.

In the original Kaizen approach, the PDCA cycle is expanded by one component. Whenever there is an unplanned deviation in the production process, three questions can be formulated:

- Did the deviation come about because there were no standards?
- Was there a standard but it was not implemented?
- Was there a standard that was not adequate?

The standard therefore plays an important role: it stabilizes the system after an improvement has been made. In other words, a further PDCA cycle can only occur if a new standard has been fully implemented and integrated into the existing process flows. As a result, this leads to the SDCA cycle, where the plan phase is replaced by the standardization phase.

Putting Quality First

The quality paradigm is a crucial factor in understanding the Kaizen approach. With the three attributes of quality, cost, and delivery, that of quality is of crucial importance. From the point of view of the Kaizen approach, this paradigm is primarily relevant for the management of a company: Despite—or precisely because of—existing constraints that arise when running a company, the quality aspect should always be in the foreground. Behind the quality aspect is the deep conviction that quality as an attribute has a direct influence on the lifecycle of the company. The occasional bowing of Japanese top managers in public after extraordinary (negative) corporate events can ultimately be traced back to this Kaizen principle. Ensuring quality is one of the most important tasks of management.

Speak with Data

The Kaizen approach is basically a problem-solving approach. However, this also

presupposes that the problem has first been comprehensively analyzed based on solid and comprehensible data. The data orientation runs through the entire Kaizen approach and means that the measurement and the permanent comparison of target/actual states are of importance. Collecting and evaluating data as the basis for suggestions for improvement has ultimately found its way into all Kaizen-based management systems.

The next Process is the Customer

The Kaizen approach teaches a special perspective on the customer: each process leads to an-other process. In process 1, intermediate product A is processed and then passed on as part of the value chain to the next process, i.e., process 2, where the product is transformed to interme-diate product B. From there, B reaches process 3 and so on. The expression that the next process is the next customer develops a specific understanding of the term customer: the next customer can be an internal customer (i.e., within the company) or an external customer (i.e., market customer). Both types of customers stand side-by-side in the Kaizen apprenticeship. This is also based on the knowledge that most employees in a company mainly deal with internal customers. If, however, internal customers are treated similarly to external customers in the course of the internal production process and there is also the primacy of quality orientation (see above), this perspective leads to the establishment of a comprehensive and consistent quality standard for the entire company.

A concept to adopt Kaizen in SMEs

As outlined in detail, the Kaizen approach is primarily a management philosophy and, only secondly, a concept for optimizing companies. However, this also means that cultural aspects play a decisive role in the introduction of the Kaizen approach. Before the cultural aspects are dealt with in detail in the next chapter, this chapter is intended to develop a model of how the innovation process can be established in SMEs, considering the Kaizen-specific school of thought.

The first step is to develop the innovation strategy. This is usually done either directly by the entrepreneur or by employees who have a direct reporting obligation to the entrepreneur. The starting point is usually the determination of the type of innovation strategy. The types of inno-vations include market-oriented innovations, process-oriented innovations, technological-ori-ented innovations, or time- and competitive-oriented innovations (Müller 2009: 9). The inno-vation strategy also includes the cycle of innovation (continuous, at fixed intervals, etc.) and several organizational aspects such as the availability of resources for the innovation process. When it comes to the organizational design, the entrepreneur will regularly face the dilemma of explicitly freeing employees up for the innovation process or integrating the innovation process as far as possible into the existing production process. The latter should be given priority:

The Kaizen teaching is based on, among other things, not only promoting the creativity of the employees involved in the production process, but also on using it in everyday work.

In the literature, innovation processes are generally described using a multi-stage approach.

- Three-tier model: Hughes defined the innovation process as a three-stage process and differentiates between the concept phase (phase 0), the definition phase (phase 1), the implementation phase (phase 3), and, finally, the going concern phase (Hughes 1996: 92).
- Cooper developed a five-stage model using a stage-gate model: Preliminary Assessment (Stage 1), Definition (Stage 2), Development (Stage 3), Validation (Stage 4), and Commercialization (Stage 5) (Cooper 1990: 43-47). The stage-gate model from Cooper is set up in such a way that all operational functions, such as marketing and production, can be included in the model. At the so-called gates, go/no-go decisions are made, which serve, on the one hand, as quality assurance and, on the other hand, to ensure that all the functions involved support the process.

The Kaizen approach is basically a phase-oriented concept in which the paradigms defined in previous chapter should be considered. The first step is to create a clear framework for innovation. Many of the innovation processes that can be observed in SMEs are rather spontaneously initiated processes based on concrete needs for action (e.g., sub-optimal processes or quality defects in the product); this depends on, among other things also, the peculiarities of SMEs. The advantages of SMEs (e.g., flat hierarchies, short and quick decision-making processes, low communication complexity, and low bureaucracy) are offset by a few challenges that should not be underestimated. In the context of establishing a structural, Kaizen-based innovation process, these include:

- Limited access to additional required resources.
- Restricted sources to fund innovation measures.
- Limited methodological know-how for the efficient and effective structuring and scaling of the Kaizen-based innovation process.

This makes it even more important to have a careful planning process to implement and establish the innovation process in order to comprehensively realize the potential for improvement in a medium-sized company. In the following, a Kaizen-based innovation process for process innovation is shown as an example. Here, the PDCA cycle described in Chapter 2 is used explicitly. The use of the PDCA cycle in the business literature has been primarily treated in the context of large, industrialized production processes (Tague 2005). The industrial context was particularly developed by the American physicist William Edward Deming (Deming 1982). In principle, however, this approach can also be applied to SMEs. The PDCA cycle, formally introduced into SMEs, can also serve to promote critical thinking that in turn promotes innovation. The following figure illustrates how the innovation process (here: process innovation) can also be designed for SMEs.

As the Figure 4 shows, the Kaizen-based innovation process in an SME consists of a multi-stage structure, whereby the innovation process itself is divided into two parts. The upper part is primarily about innovation, i.e., a process is optimized as part of the PDCA approach. Essentially, three dimensions of process improvement can be identified:

- Time: Accelerating process execution.
- Resources: Optimizing the use of resources (includes all types of resources such as employees, resources, and raw materials).
- Quality: Improving process reliability or the quality of the product.

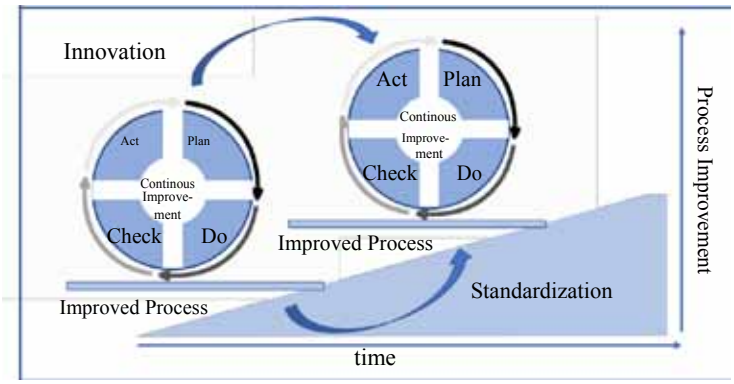


Figure 4

As soon as the previously defined level is reached, the lower part of the innovation process becomes more important. The aim here is to establish the improved process as a new standard. The innovation process in the actual sense proceeds as follows:
The planning process is primarily about identifying concrete potential for improvement. First, the current status must be analysed in detail. The sub-process step to be optimized should then be determined as precisely as possible.
Contrary to popular belief, the sub-process step "Do" does not mean implementing the improvement. Rather, it is about testing and trying out individual optimization sequences. According to the Kaizen philosophy, an innovation process that is based on an approach of small (but continuous) steps is preferable to an approach that has a disruptive effect on the overall process. Especially in the context of the special characteristics of SMEs, this aspect should be of major importance.
After extensive examination of the optimized sub-process, the results are carefully checked and, if they are successful, finally released for implementation. Here, too, the special characteristics of SMEs must be considered. While in large corporations this test function regularly represents an independent function within the company, in SMEs, this function is, in most cases, carried out by the process owner with the support of other experts.
Finally, the optimized specification is introduced in the "Act" phase. In individual cases, this can also result in organizational changes. In any case, it is important that all employees of the SMEs are trained in the new standard and that it is fully accepted and implemented throughout the company. After the new standard has been implemented, the new cycle begins with the "Plan" phase.

Establishing a Kaizen-based corporate culture

Cultural aspects play a crucial role in the implementation of a Kaizen-based innovation process. The American organizational psychologist *Schein* defines culture as *"…a pattern of basic assumptions – invented, discovered, or developed by a given group as it learns to cope with its problems of external adaption and internal integration – that has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems"* (Schein 1 1985: 9).
The topic of corporate culture has been analysed comprehensively and multidimensionally in the business literature. In the context of this article, these research papers are important as they compare the different cultures (Japanese against Western). The two McKinsey consultants Peters and Waterman dealt intensively with this topic in the 1980s and developed the so-called 7-S model. This includes four soft and three hard factors as guardrails of a company (Peter/Waterman 1982: 15 ff.).
The 7-S model is now widely established as a standard tool in business consulting. In addition to the hard values (i.e., strategy, structure, and systems), the model places particular emphasis on the soft factors (i.e., skills, staff, and style). Both the hard and the soft factors are held together by the corporate culture, that is, the shared values. By placing the shared values in the middle of the model, their central importance for the company's success is emphasized. The corporate strategy, the structures, and all of the entrepreneurial eco-subsystems, as well as the style, the employees, and their skills, are all based on the shared values and the shared vision of the company. In the context of establishing a Kaizen approach in SMEs, the shared values of the company would be the seven Kaizen paradigms presented in Chapter 2. In this respect, the 7-S model is converted into a 7-S Kaizen model as shown in Figure 5.

Figure 5

The entrepreneur ac-tively positions the Kaizen paradigms as shared values for the SME

In this context, another aspect is important. In the early 1980s, American management professor William G. Ouchi examined the relationship between willingness to cooperate and work discipline on the one hand, and a leadership style based on trust on the other. The results are clear: the higher the trust of the management team in the skills and commitment of the employees, the greater the effort and discipline of the employees (Ouchi 1981: 58). In business behavior re-search, it is now certain that corporate culture can make a decisive contribution to the success of a company (Deal/ Kenney 1984: 47 ff.)

In the context of the establishment of a Kaizen-based innovation process, the question related to the extent to which the entrepreneur can influence the corporate culture directly in the sense of the Kaizen paradigms. For this purpose, it is first necessary to deal with the different levels of corporate culture (Figure 6) and to identify those levels that the entrepreneur can influence

relatively easy or only to a limited extent. For this purpose, the widespread stage model of

Schein should be used. This model distinguishes between three levels (Schein 2 1985: 42-52):

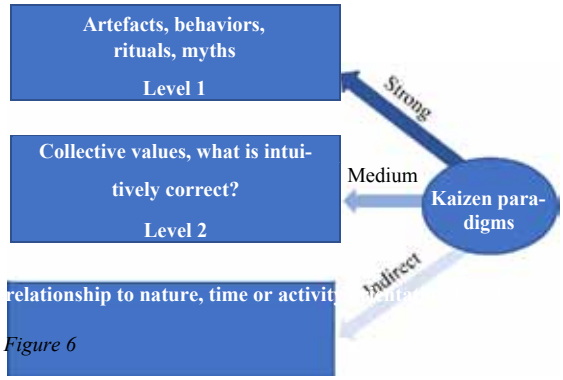


Figure 6

In the context of establishing a Kaizen-based innovation process, the second level is important first. Here, the entrepreneur would have to develop a concept that aligns the collective (com-pany) values with the Kaizen-based values. Building on this, the visible artefacts (level 1), such as the PDCA cycle, are established. It is important and decisive that the entrepreneur not only expresses these values in the form of a lip service but lets the Kaizen paradigms flow into his daily actions. Ultimately, the corporate culture is always shaped and influenced by top manage-ment. Since the different levels of the corporate culture are mutually dependent on and sometimes also influence each other, the basic assumptions of employees (level 3) can be influenced in the long-term by the changing of processes (level 1, e.g., continuous innovation process) and the changing of the rules of the game (level 2).

Roles and responsibilities in the implementation process

When establishing a Kaizen-based innovation process in SMEs, the responsibilities should be defined as clearly as possible. Several interactions between different departments occur regularly during the innovation process. Even if the structures in SMEs are usually less formalized and more flexible, it should be clear who is performing which task in the overall process. In this respect, those involved in the innovation process perform certain tasks and duties, which means that these employees—in addition to their other operational functions —have an innovation-specific role (Vahs/Brem 2013: 176-178).

The role of the entrepreneur

As already explained in detail in Chapter 2, the Kaizen approach assigns a very special role to the top management of a company: The management of a company is ultimately responsible for the innovation in the company and for the establishment of a continuous improvement pro-cess. The role of management in the innovation process can also be derived from this. The management is a role model when it comes to improving products and processes. In addition, management is also a driving force and, with an innovation-promoting corporate culture, also establishes the basis for innovation (Jaberg/Stern 2010: 23-24). Considering the corporateculture, this also ensures that employees are involved in the innovation process and, at the same time, encourages their creativity (Disselkamp 2012: 90).

The innovation manager

In the context of SMEs, the innovation manager should be referred to as the person who is personally responsible for initiating the specific innovation process (i.e., the PDCA cycle). In large companies, this will regularly become an independent function (e.g., as part of the quality management function), with the most direct connection possible to management (Jaberg/Stern 2010: 111). In SMEs, such a function will often be performed by those responsible for the process. It is important that these people can communicate directly with the entrepreneur or report directly to them. The tasks of the innovation manager are, in part, quite complex. There-fore, this person should have the necessary mandate and empowerment in the company to exe-cute innovations. Access to innovation-specific resources is also important to ensure that, from the start, the innovation process can be implemented as intended (Hauschildt/ Solomon 2007: 97). A crucial function of the innovation manager is also the role of moderator: he is the link between the specialist departments, the cross-sectional functions (such as sales and personnel management), and the innovation specialists (e.g., the skilled workers directly involved in the process).

Quality circles

Kaizen emphasizes the individual employee and his/her creativity. In this respect, it is only logical that "small groups" should be given special importance in the context of the design of the innovation process. As the SME usually has limited resources, it makes sense to establish so-called quality circles. The tasks of these interdisciplinary groups are to evaluate possible improvement potentials and to develop new process

ideas or to review process innovations that have already been carried out as a neutral body. It has also proven useful in SMEs that such groups come together as regularly as possible, and that an institutional framework for these groups is created.

The role of cross-sectional functions

Several cross-sectional functions should also be involved in the innovation process of SMEs, in particular, the HR function, the marketing function, and sales. The HR department's first task is to ensure that enough employees are available. In addition, the HR department performs an-other function in the context of a Kaizen-based approach: It ensures that all employees are adequately trained regarding the use of Kaizen tools. In this respect, personnel development plays a crucial role in the innovation process (Jung 2011: 252).

The second important cross-sectional function is sales. On the one hand, it represents the "opin-ion of the market." In this context, it must be ensured that the new processes and products are in line with the market, i.e., that the intended changes favor the company's market presence. Since the sales function represents the company's interface to customers, it makes sense that sales staff are also represented in quality circles. Ultimately, the market decides on the success of an optimized process or an optimized product (Seeger 2007: 118).

Finally, representatives of the marketing function should also work in quality circles. The marketing function has the role of communicating the optimized products, processes, and work-flows to a selected clientele in line with marketing requirements (Loock 2010: 10ff.).

Phase model for the implementation of a Kaizen-based innovation process

After the various elements of the implementation of a Kaizen-based innovation process have been discussed, it should finally be shown how the implementation process can be structured. The tried and tested change approach of Kotter, shown in Figure 7, can be used here (Kotter 1996 and 1997).

Figure 7

The basic prerequisite for the successful establishment of a Kaizen-based innovation process is that both employees and managers stand behind this concept and actively support it. In this respect, the first step in implementation is to create a sense of urgency for a paradigm shift. Experience has shown that such a change is easier to communicate if the company faces a crisis than in a situation in which the company is successfully operating in the market. Kotter recommends showing employees

the potential opportunities and risks arising from the current or future business environment. It is crucial that the entrepreneur also manages to appeal to the emotions of their employees and managers. In particular, the specific perspective of the Kaizen teaching on the role and importance of employees should help here.
For SMEs, phase 2 should be relatively easy to implement, as the entrepreneur can initiate the change process himself. The effects of trench warfare and departmental egoism often observed in large companies are likely to be of minor importance in the area of small- and medium-sized enterprises.
Phase 3 is a decisive phase: Here, the basic features of a Kaizen-based innovation process are developed and worked out in detail. According to Kotter, this clearly formulated (Kaizen) vision takes on three important functions:

- Decision function: The vision is a basis for decision-making within the company.
- Motivation function: The vision motivates the employees to go in the right direction, even if there are hurdles during the implementation.
- Coordination function: Based on the vision, the individual functions of SMEs can work together in a targeted manner.

In phase 4, the next step is to communicate the vision of a Kaizen-based innovation process to the entire workforce. Managers regularly underestimate the effort that goes into a convincing communication strategy. Kotter advises to use all of the company's communication channels.
If the entrepreneur himself is involved in the development and implementation of a Kaizen-based strategy, phase 5 should be rather short.
In phase 6, particularly in the case of large and long-term change processes, it can often be observed that such projects lose momentum right from the start. In this respect, it is important to set short-term goals when implementing a Kaizen-based innovation strategy. This could be, e.g., the exemplary implementation of the first PDCA cycle. As soon as tangible results are available, they can be communicated comprehensively.
In phase 7, the momentum created must be used in a targeted manner to establish a Kaizen-based innovation process comprehensively in the company.
Phase 8 is all about the corporate culture. It has been outlined how the corporate culture can be further developed in line with the Kaizen approach. It is crucial that the Kaizen paradigms, as the basis of a new corporate culture, are actively practiced daily by all managers, as well as the company owner.

Conclusions

The Kaizen approach, as a management philosophy, offers several starting points for the operational improvement process. In the past, this approach has been deployed and implemented primarily by large industrial companies. This article has shown that it is also possible for SMEs to implement a Kaizen-based approach. In order to be successful, it is crucial that this transformation process is holistic, i.e., that it is implemented overall for all aspects of the company. On the one hand, this includes the development of a Kaizen-based corporate culture. On the other hand, it is also

crucial that the comprehensive range of Kaizen tools and techniques are adapted in the SMEs and then implemented in a solution-oriented manner. The advantages of a Kaizen-based innovation process are likely to be considerable, especially for small- and medium-sized enterprises.

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