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## Digital Kaizen: An Approach for Conducting Large-Scale Digital Transformation Projects

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# Digital Kaizen: An Approach for Conducting Large-Scale Digital Transformation Projects

Completed research paper

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## Abstract:

While digital transformation creates opportunities across all industries, many businesses still do not know how to embark on this journey and hesitate to commit resources to such an unclear initiative. By using the interpretive case study method, this paper investigates how Digital Kaizen—a philosophy that focuses on making continuous digital improvements—could guide large-scale digital transformation activities in incremental steps. Our findings show that the adoption of Digital Kaizen has urged the investigated organization to continuously address cross-functional issues that are aligned with their strategic business goals, through implementing incremental digital changes that improve business processes and people engagement. Subsequently, these activities lead to sustainable and scalable digital transformation success that re-defines the organization's value creation processes and identity. This research suggests a new strategy for conducting large-scale digital transformation, by integrating Kaizen philosophy into digital transformation practices.

**Keywords:** digital transformation, digital transformation strategy, digital transformation approach, kaizen, digital kaizen

## 1 Introduction

Along with the development of new technologies such as cloud computing, big data analytics or artificial intelligence, the ways businesses operate have been transformed significantly (Perkin and Abraham 2017). The digital technologies have been integrated into all areas of a business, changing the way organizations operate and deliver value to its customers. The concept of digital transformation refers to technology-induced change necessary for digital business, in which organizations experience a fundamental and sociotechnical transformation (Legner et al. 2017). The current wave of digitalization is not only enabled by the convergence of new information technology (IT) megatrends (e.g., social, mobile, big data, cloud computing) but also advances the topics of automation, integration and people-driven technologies forward (Legner et al. 2017). The Internet is considered as a global communication infrastructure, which changes the firm's value creation logic and creates new types of businesses (Legner et al. 2017). Thus, the new concept of digital transformation refers to the manifold socio-technical phenomena and processes of adopting and using digital technologies in broader individual, organizational and societal contexts (Legner et al. 2017). Despite the new opportunities that digital transformation has brought to organizations, it has also created new pressures for organizations to develop adequate capabilities and capacities, to carry out such transformation (Horlach et al. 2016). According to Wessel et al. (2020), both IS scholars and practitioners are struggling to grasp what digital transformation really is; most of them have no clear direction of what to do and how digital transformation differs from the concept of IT-enabled organizational transformation.

In this paper, we provide a case study of FPT Software, or FPT in short, to illustrate how digital transformation has been addressed with a continuous transformation strategy (FPT 2020). FPT was established in 1999 with the mission to bring technological innovations to international customers, while contributing to the country's prosperity and developing the skills of Vietnamese employees. In 2020, FPT has achieved nearly \$1.2 billion in revenue and has become one of Vietnam's largest and fastest-growing IT companies that provides digital solutions to clients globally. With more than 28,000 employees, the success of FPT relies on their ability to adapt to changes. The company's business model is to proactively investigate its internal business problems and solve these problems through an array of organizational and technological initiatives. Then, these accomplished initiatives are to be commercialized and offered to clients. In line with this business model, FPT's digital transformation strategy is set to transform the company itself into a huge test bed where digital transformation solutions are speedily tested within short time frames of three to six months. This strategy allows FPT to improve internal capabilities while affirming the effectiveness of solutions that can be commercialized. However, it is challenging to move such a large organization in unison.

On this background, FPT created its own digital transformation philosophy and framework called 'Digital Kaizen,' which involves conducting series of small yet effective digital transformation initiatives within the stated short time frames. The company's digital transformation principle is simple: 'driving business and technological transformation through people engagement.' To achieve that, FPT has identified the 'pain points' or cross-functional problems that are encountered by employees at the operational level in their daily work. By adopting Digital Kaizen, FPT's digital transformation solution delivers continuous improvements in a manner that maximizes the adoption of digital technologies, optimizes work procedures, and minimizes waste.

This paper reports how FPT has applied its Digital Kaizen philosophy to progress to successful digital transformation. Our research objectives are twofold. First, we were motivated to determine the usefulness of the Digital Kaizen approach in conducting a large-scale digital transformation within a large multi-national company such as FPT. Second, we investigated the methods which the company used to integrate the Kaizen philosophy, which has been mainly applied in the manufacturing context to optimize production lines, into digital transformation practices that lead to dynamic improvements based on digital technologies.

Out of five digital transformation initiatives that have to date been implemented in FPT, we analyzed two, MyFPT and AkaLink, for this paper. These two initiatives highlight how the company enacts its digital transformation strategy by relating to the alignment between employees' needs and organizational goals. Our findings show that the two helped FPT to increase revenues and decrease operational costs, while reducing their staff turnover rate. In addition, the focus on continuous improvements through delivering small digital transformation initiatives offered a spill over effect that nurtured a high level of digital maturity (Kane et al. 2019) within the company.

## 2 Literature review

### 2.1 Digital transformation

Previous studies on digital transformation apply two distinct but interrelated theoretical approaches. The first approach is in line with previous findings about IT-enabled organizational transformation, which emphasizes the importance of technology in an organization's competitiveness in a digital world (Bharadwaj et al. 2013). From this perspective, digital transformation refers to the use of digital technologies to significantly improve the performance or reach of a company (Westerman et al. 2014), through facilitating the changes in organizational structures, processes, and culture (Bharadwaj et al. 2013). IT strategy is no longer restricted to the operational level, and it is integrated into the organization's business strategy. As such, digital transformation reflects a fusion of IT strategy and digital business strategy (Bharadwaj et al. 2013).

In the second approach, researchers discuss that digital transformation goes beyond IT implementation and highlight the integration of digital technologies and structural modification to generate new paths for value creation (Hess et al. 2016). Wessel et al. (2020), for example, argue that digital transformation activities aim to redefine an organization's value proposition rather than solely leveraging digital technology to reinforce the existing value proposition. While IT-enabled organizational transformation indicates a firm's vision of developing digital business models, digital transformation provides a comprehensive guideline for the organizational utilization of digital technologies to alter their value creation processes (Vial 2019). For our work, we rely on a definition of digital transformation as the changes that digital technologies bring about with regard to an organization's business models, value proposition, processes, organizational identity and structures; such transformation also encapsulates the changes in the company's interactions with clients, competitors, and suppliers (Hess et al. 2016; Wessel et al. 2020).

Despite the prominence of digital transformation, several challenges prevent organizations from effectively executing their transformation. First, digital transformation is a complex concept (Hess et al. 2016; Wessel et al. 2020). Vial (2019) argues that the circularity, unclear terminology, and the conflation of the concept and of its impacts hinder its conceptual clarity. As a result, businesses are unsure of what digital transformation is and do not know how to embark on their transformation journey (Wessel et al. 2020). Furthermore, many enterprises are hesitant to commit resources to major digital transformation projects, especially when they are large in both scope and scale, as well as contain uncertain outcomes (Kane et al. 2019). Hence, they might disregard solutions that are favorable to the firm's specific situation, which in turn leads to unintended negative consequences to any of its transformation activities (Hess et al. 2016).

Second, in some organizations, data is still utilized in organizational silos, thereby hindering the strategic and digital transformation activities (Rogers 2016). Such silos exist within different departments, which each demand ownership over their data (Rogers 2016). A lack of a team mentality and collaboration poses as a challenge for digital transformation, as digital transformation requires a unity of efforts (Maedche 2016). Therefore, companies need to break down organizational barriers and foster cooperation between departments during and as a result of digital transformation (Maedche 2016). Digital transformation is not simply about changing technology but about changing the way how a business operates; new digital technologies should be leveraged to promote such changes and lead to more creativity and productivity through e.g. information and computing capabilities that enable new forms of collaboration among networks of organizational actors (Vial 2019; Westerman et al. 2014).

### 2.2 The Kaizen philosophy

Kaizen is a Japanese business philosophy originally developed by Toyota that refers to the "continuous improvement" approach. Kaizen involves the concept of change (kai) to become good (zen) (Newitt 1996). Therefore, organizations adopting a Kaizen philosophy continuously identify and develop new or improved processes to achieve outcomes that contribute to their organizational goals (Brunet and New 2003). The Kaizen philosophy and methodology focuses on three aspects: process, standards, and people (Masaaki 1986; Suárez-Barraza and Lingham 2008).

First, Kaizen emphasizes the idea that processes need to be improved before good results can be obtained (Masaaki 1986). Due to the rapid transition of business landscapes, organizations are in a constant state of flux (Perkin and Abraham 2017). The Kaizen philosophy emphasizes the key idea that there is no end to the continuous improvement process that leverages good teamwork and flexibility in performing work (Suzaki 1987; Wickens 1990). In this sense, Kaizen promotes process-oriented thinking rather than result-oriented thinking (Wittenberg 1994).

Second, standardization is an essential feature of the Kaizen philosophy (Wittenberg 1994). Kaizen focuses on establishing and maintaining standards, then making small and continuous improvements while following such standards. There can be no improvements if standards do not exist (Masaaki 1986). Standards refer to policies, guidelines, rules, and procedures. These standards are to be reviewed and revised whenever people are unable to adhere to them, so that their effectiveness is reinforced and remain the practical guidelines for the employees (Wittenberg 1994).

Thirds, Kaizen is people-centric and involves everyone within an organization. From this perspective, Kaizen introduces a force of making improvements that draws on a spirit of team cooperation (Malloch 1997). Kaizen assumes that positive changes in people's attitudes and efforts are more likely to produce improvements in the long run (Wittenberg 1994). Accordingly, researchers suggested group-oriented Kaizen as a mechanism to improve work methods, routines, and procedures (Masaaki 1986). Kaizen not only starts with the people's needs and focuses on their efforts, but also concerns the collaborations between employees during work processes.

While Kaizen is widely applied as a management philosophy and methodology, previous studies discussed whether Kaizen hinders innovation. Research suggests that innovation is implemented through abrupt changes or disruptions, whereas Kaizen refers to a gradual process to introduce improvements (Kim and Mauborgne 1999; Wittenberg 1994). Thus, it has been reasoned that the Kaizen philosophy is better suited for slow growing and moving business contexts and economies, while innovative capability is needed for fast growing and moving business contexts and economies (Wittenberg 1994). However, Imai (2007) argues that management in organizations has three major functions: maintenance, innovation, as well as Kaizen. With respect to the maintenance function, management focuses on the activities directed towards maintaining current technologies and operating standards, based on which the creation of continuous improvements, Kaizen, takes place. The innovation then describes the activities directed towards elevating current standards, which involves far-reaching improvements as a result of large investments in new technology or equipment. A highly competitive and changing environment—as currently experienced—brings significant managerial opportunities and challenges, in which the Kaizen philosophy can be adopted by companies to stay ahead of competitions (Deming 1994).

As improvement has long been considered as an integral part of theories and models of change (Van de Ven and Poole 1995), the Kaizen philosophy covers many management techniques including quality circles, total productive maintenance, suggestion systems, just-in-time, productivity improvement, robotic process automation (Wittenberg 1994). Previous empirical evidence showed that the Kaizen philosophy has been adopted successfully in a wide range of management activities. For example, Masaaki (1986) highlighted that Kaizen was an overarching concept for Total Quality Management, which is a system of management where every employee continuously improve their standards of work in every aspect of a company's operation. Likewise, Mizuno (1988) emphasized that Company Wide Quality Control—a Japanese-rooted system for integrating quality technology in various functional departments such as production, logistic, marketing to achieve customer satisfaction—is also based on the Kaizen approach. The Kaizen philosophy has affected organizations' productivity and supported businesses to produce high-quality organizational outcomes with their best efforts (Newitt 1996).

The literature review suggests that Kaizen and digital transformation share several similar characteristics. First, Kaizen focuses on the management process that prioritizes making continuous improvements, while the notion of 'digital' also demands continual changes and innovative technology deployment (Newitt 1996; Vial 2019). Second, Kaizen aims to influence organizations' productivity in every single process to achieve better customer satisfaction, and similarly, changes from digital technologies focus on bringing about the value creation processes that benefit both organizational activities and its stakeholders (Hess et al. 2016; Wessel et al. 2020). Third, both Kaizen and digital transformation draw on the aspects of process and people to encapsulate the changes (Masaaki 1986; Suárez-Barraza and Lingham 2008; Hess et al. 2016; Wessel et al. 2020). These similarities and connections between Kaizen and digital transformation support the conceptualization of the Digital Kaizen concept as developed and applied in our case organization. The following sections present our research approach and demonstrate the application of Digital Kaizen in the context of digital transformation.

### **3 Research approach**

The objectives of this research are to investigate the usefulness of the Digital Kaizen approach to conduct large-scale digital transformation, and to identify and assess the methods that can be applied to integrate Kaizen philosophy into digital transformation practices. Initially, we announced our

research objective to investigate strategies for conducting large-scale digital innovation on LinkedIn for a month. Due to the pandemic situation that limited travels, we prioritized companies that have engaged with large-scale digital transformation in Vietnam for accessibility reasons. Among the received acceptances from three different companies to participate in the research project, we selected to conduct this research with FPT for three reasons. First, it is an internationally recognized and established technology and digital transformation enterprise. Second, it offers the opportunity to investigate the Digital Kaizen philosophy, which we considered as a potential for generating findings that could contribute to both theory and practice. Third, the company was highly committed to the project and promised access to key executive members for data collection.

Given the nature of our research inquiries and the uniqueness of the Digital Kaizen approach, we decided to follow a qualitative approach to explore the phenomenon (Creswell and Creswell 2018). Specifically, we opted for an interpretive case study approach (Walsham 1995), which involved conducting in-depth interviews with three key informants who would be reasonably expected to have the best knowledge about the research topic: (1) the Chief Executive Officer (CEO), (2) the Chief Digital & Technology Officer (CD&TO) cum Executive Vice President, and (3) the Head of Digital Innovation (HDI). These informants were working in Ho Chi Minh City, Ha Noi, and Japan, respectively.

Interpretive case studies aim to understand both the context and processes related to the use of information systems, and how these two elements influence each other (Walsham 1995). The research took place in a single organization rather than several cases. Besides the reason concerning the uniqueness of the Digital Kaizen philosophy that—to our knowledge of the software industry—is employed exclusively by FPT, investigating a representative case introduces ideal types—as opposed to multiple cases—that are considered to be prototypical of a phenomenon (Kautz and Bjerknes 2015). While the generalisability of the findings drawn from this approach may be limited, the interpretive case study provides a detailed account of empirical findings that contribute to the existing literature.

We conducted our first interview with the HDI and were then introduced to the CD&TO and CEO through the snowballing method. The open-ended interviews were conducted online via Skype and audio-recorded, each of which lasted one hour on average. After each interview, we reviewed the findings and revised the questions to follow up with the next informant. The HDI and CD&TO were interviewed twice, where the second interviews aimed to clarify some findings and probed for more information, which resulted in a total of five interviews. The interview data was coded openly and thematically analysed for similarities and patterns, as well as for disparities. The findings were sent back to the informants for feedback to ensure external validity (Dubé and Paré 2003). Direct quotes are provided in this paper to ensure research rigor (Dubé and Paré 2003).

## 4 Findings

To manage its digital business transformation, FPT created its own approach which they named Digital Kaizen. It is an adaptation of the Kaizen philosophy. In the context of digital transformation, Digital Kaizen prioritizes making series of quick wins that build towards long-term success rather than creating a 'big-bang' disruption. FPT's Digital Kaizen aims to continuously tackle cross-functional issues that are aligned with their strategic business goals, through implementing digital technologies that improve business processes and people engagement. These small, when successful, transformations in turn lead to sustainable and scalable digital transformation solutions.

Cross-functional pain points are the starting point of FPT's stepwise digital transformation strategy. These pain points represent the issues that exist in the company's operations that have direct impacts on the employees. To identify these cross-functional pain points, the company conducts regular and mandatory workshops throughout the four quarters of a year, in which managers from different departments participate and provide feedback about the operational issues encountered during the daily work interactions between departments. For example, the pain points include a long and complicated process that is caused by excessive work steps, as well a specific error that frequently occurs during a work procedure.

“The process of generating cross-function pain points addresses the concerns of employees who are directly involved in daily business operations. Every few months, FPT Software organizes a workshop that aims to understand these cross-functional pain points. After the annual core missions of the entire company are identified, managers of all departments, who are related to those missions, gather and perform brainstorming activity to produce a list of pain points. These pain points are then ranked and prioritized based on some metrics. Digital transformation projects are created to address the important pain points,

and specific tasks are assigned to the relevant teams. The objectives and key performance indices of these projects are also discussed so that they can be reviewed thoroughly in the next workshop.” – CD&TO of FPT Software

The joint activity of identifying the cross-functional pain points by managers of different organizational functions addresses two issues of digital transformation. First, while it may be easier for each department to recognize and address its own pain points, i.e., those that fall within the department’s scope of operation, it is of greater importance to FPT to define the cross-functional pain points that affect multiple departments and hinder shared work processes. Second, the CD&TO understood well that digital transformation at FPT would be more effective when motivated by the common needs of different organizational functions, as compared to by the needs of each company’s separate department (Sidhu 2019). The CD&TO further commented on the cross-functional pain points as follows:

“When it comes to identifying organizational problems, people often think that the problem is caused by other departments and not by themselves; department A may tend to attribute the pain point to department B and vice versa. As a result, nobody tackles the pain points since they think those pain points are not their responsibility. It should be noted that these pain points do not refer to the conflicts between departments but to the issues and inefficiencies that happen during their daily collaboration. Solving these problems will improve the work engagement between departments and thus benefit the whole business process. As such, it is effective when cross-functional teams work together in the workshops to identify the pain points.” – CD&TO of FPT Software

After the pain points are identified in the workshops, digital transformation initiatives or project proposals are developed to address the pain points, and these proposals are evaluated by a steering committee to determine their priority. Among the evaluation criteria used to assess the initiatives’ priority, the key criteria are feasibility, urgency, and potential values. Feasibility refers to the speed of the project completion and the evaluation of return on investment (ROI) that is typically anticipated to be achieved within three or six months. Consequently, a project that requires twelve months or more to complete and provide ROI will not be assigned a high priority. Urgency is determined by the critical level of the pain points that the proposed projects aim to tackle. For example, a project that focuses on a new business process that is needed for complying with a new regulation has a higher priority than others. A project is deemed to have high potential value if it contributes to the key annual missions of FPT, which often aim at providing value to the human and the technological resources of the company.

“The rule of thumb is that no project can take more than 6 months to complete. After six months, we should be able to evaluate the project’s ROI. Not only the project must support the company’s business strategy in the next three to five years, but ideally it should also yield enough revenue to sustain itself, or this revenue can be re-invested in other projects. Apart from solving the critical pain points, the project is considered as valuable when it benefits the personal development of the employees or increases technological capital, which then contribute to other digital transformation projects.” – CEO of FPT Software

After completion successful digital transformation projects are therefore then refined and packaged together with the Digital Kaizen approach as digital transformation solutions, which are sold to FPT clients afterwards. From its database of clients, FPT identifies and approaches clients, who may have the issues or pain points that were addressed by such digital transformation solutions. FPT does not offer off-the-shelf software packages but bespoke digital transformation solutions that are tailored to their clients’ specific business context and needs.

“When selling digital transformation solutions to our clients, we sell the methodology rather than the software package. While digital technologies are just tools, Digital Kaizen is a methodological framework that guides the whole transformation process. When working with the clients, FPT Software serves as a consultant or advisor and not as a one-time seller. Through conducting workshops with the clients, which are similar to what we do in FPT Software, we identify clients’ pain points and come up with the solutions based on their context and needs. This approach therefore encourages the clients to adopt the Digital Kaizen spirit and to embrace continuous improvements rather than sticking to one fixed solution.” – CEO of FPT Software

In the next section, we present two notable digital transformation projects that successfully addressed two of FPT’s pain points, namely MyFPT and AkaLink. We chose these two cases for two reasons. First, they were considered by the informants as key digital transformation initiatives of FPT, which contributed significantly to the business-critical operations of the company in 2020. While MyFPT

aimed to tackle pain points that were related to retention, AkaLink focused on solving problems related to both resource fulfilment and retention. As these cases focused on achieving human resources-related objectives, they illustrate the process from identifying pain points to developing digital transformation initiatives that were aligned with FPT's strategic objectives. Second, these cases had already gone through several milestones and achieved some accomplishments, thus they provided more complete accounts of the digital transformation process.

#### **4.1 MyFPT: a mobile app for people engagement**

From 2017 to 2018, employee engagement was one of the key challenges of FPT. Due to its fast-growing development, the number of employees increased significantly which made it difficult for managers to provide personalized engagement with their employees and retain them. A closer investigation revealed that a manager at that time had about 200 employees who reported directly to them. In addition, there was a lack of processes and systems to evaluate the performance of these employees effectively and efficiently, thereby leading to poor performance review experiences and employees felt unacknowledged for their efforts.

As a result, this one-year period witnessed a high turnover rate of 30 percent, where approximately 1,500 of 5,000 new employees left the company. At the same time, the interviews with informants from FPT revealed that they considered the time spent on getting each new hire to familiarize themselves with the work processes was of sizeable length and a possible waste. In general, it took every new employees 14 days to understand the procedures and systems and get along with key supporters before they could perform their tasks. This perceived time-consuming onboarding process was not a challenge to any single department but a cross-functional problem for all involved departments. The lack of adequate employee engagement methods and the onboarding process that could be further optimized were identified as cross-functional pain points between multiple departments, including human resources and finance, and across organizational levels.

These identified pain points were addressed through developing and introducing an all-in-one mobile application called MyFPT. This application aims to reinforce and digitally transform the engagement between FPT and its employees, as well as the company's onboarding process. The mobile app contains a wide range of functionalities of both an enterprise social network and an online marketplace. For example, with the embedded database of frequently asked questions (FAQs), new employees have easy access to and the opportunity to familiarize themselves with the work procedures and systems in FPT. In addition, personalized feedback about performance from managers to employees can be sent via this mobile app, and the employees can send each other appreciations and congratulations on special occasions as well. The app also provides multiple features to improve the employees' work experience at FPT. For example, they can give ratings and reviews for the meals served at the company's cafeteria, and a recommending function is implemented on the app to suggest new or matching dishes based on each employee's unique dining patterns and needs. By interacting with the app, employees can earn and receive reward points, which the company calls 'company golds' and use these to buy lunches at work or other goods.

A series of engagement programs were promoted on the mobile app to increase the employees' adoption of the app. For example, FPT incorporated MyFPT into its social event "Run for Green," in which the company pledged to plant a tree for every 10-kilometer run by each employee as recorded on the app. Other, work-related daily activities are also integrated into the app. For instance, the employees get extra points when they commute to work by company buses. The tangible benefits (e.g., bus tickets, redeemable points) are presented as an incentive for the employees' trial of the application, and the app's features (e.g., food reviews, feedback, appreciation) are used to maintain their engagement with the app in the long run. The COO of FPT explained the approach to persuade employees to adopt MyFPT as part of this digital transformation project:

"While the Digital Kaizen as a framework instructs us on what and how to implement digital transformations, top management needs to be creative in designing every implementation step. On one hand, MyFPT is created to serve the essential need of the employees to engage with the company; therefore, the initial adoption of some employees can be anticipated and understandable. On the other hand, when the app as part of the digital transformation needs to be adopted at a larger scale, it needs to be flexibly changed to promote its adoption." – HDI of FPT Software

After six months of implementing the MyFPT project, several achievements were recorded. First, new employees no longer had to spend too much time to get familiarized with the company's procedures and systems, as they actively sought and found the necessary information on MyFPT. As a result, the time



required for the onboarding process at FPT was reduced from 14 days to five days, which amounted to a large saving in terms of monetary value. Second, the human resources department and top management were now able to engage better with the employees and retain new hires more effectively, which led to a significant decrease in the company's high turnover rate. Currently, 15,000 employees use MyFPT daily for various purposes, from booking transport and ordering food, to reviewing their evaluations and communicating with colleagues. The large number of active daily users indicate a high level of engagement between FPT and their employees. In total, 22 strategic pain points were resolved through the digitally transformed onboarding and engagement processes.

## 4.2 AkaLink: a digital platform for skill inventory management

During the 2018–2019 period, FPT faced an issue related to the management of the company's skill inventory. Traditionally, human resources management activities involve updating and assessing the current skill inventory, forecasting the availability for core skills and sourcing talents to meet business needs in a timely manner. As the company was growing rapidly, there was an increasing demand for increasing the speed of these activities and continuous monitoring of the organizational skill inventory. These requirements were identified as the cross-functional pain points of multiple departments that needed to be addressed.

FPT developed AkaLink to improve the skill inventory management processes. AkaLink is an online digital platform that provides project management and enterprise social networking functionalities. Employees register and update their skills after every project, and colleagues can endorse each other's skills. AkaLink also allows employees to volunteer for tasks in other departments, and the system recommends new projects to the employees which match their nominated skills and career development plans. As such, AkaLink empowers employees to make decisions on their career development. The platform also provides top management with more accurate and timely information about the employees' participation in projects, and an overview of the skills that are currently available in the company. This information in turn enables the top management to plan for training programs and hiring strategies more effectively. It was estimated that this digital transformation project had yielded a total revenue of about USD 700,000 until June 2020 through deploying employees with the right skills in client projects.

## 4.3 Effects of Digital Kaizen driven digital transformation initiatives

The two projects are instances of FPT's digital transformation initiatives that resulted in not only monetary values but also spillover effects that impacted the whole organization. First, when employees engaged in these digital transformation projects, they further increased their readiness to adapt to the organizational changes related to using new technologies. Second, the digital transformation projects addressed and resolved cross-functional pain points that directly impacted operational staff in their daily work, which in turn increased their job satisfaction. Third, as the pain points were successfully addressed in a short time frame of three to six months, the employees' morale increased and top management gained trust from the employees, which again motivated their participation in other, following digital transformation activities, according to the CEO.

“It should be noted that digital transformation projects must benefit employees at the operational level first. Digital transformation projects should not be about creating new tasks for them but offer new solutions to increase their productivity and performance. This will make the employees find the digital transformations more relevant to them and feel willing to get involved in transformation activities.” – CEO of FPT Software

## 5 Discussion

The Digital Kaizen philosophy of FPT was built on the principles of the original Kaizen philosophy for the context of implementing digital transformation. In line with the original version, Digital Kaizen puts emphasis on the three areas of focus: (1) process, (2) standards, and (3) people (Masaaki 1986; Suárez-Barraza and Lingham 2008). For instance, rather than making a big-bang style disruption, incremental digital changes are conducted within the organization. This approach encourages digital transformation as a continuous process with no end. In Digital Kaizen, people are recognized as the main driver of digital transformation activity, and increased people engagement leads to improved organizational change management capability and higher digital maturity.

The Digital Kaizen philosophy adds a new perspective to the current Kaizen literature. While Kaizen has been applied widely in management practices of various industries (Wittenberg 1994), Digital Kaizen was created specifically for digital transformation practices. The original Kaizen is primarily

applied in production to reduce costs, minimize waste, and to increase productivity, whereas Digital Kaizen aims at facilitating the effective and efficient implementation of digital innovations that transform employee-related, people and business processes. The focus on solving cross-functional pain points and implementing digital innovations to achieve quick and small improvements in the organization expands beyond eliminating waste and improving efficiency in the production line.

The application of Kaizen philosophy for digital transformation evidence Kaizen’s capability to support the creation of organizational innovations. In contrast to some prior studies that argued Kaizen is more suitable for slowly growing business environments and economies (Wittenberg 1994), our case study e shows that organizations can practice Kaizen and generate innovations at the same time (Imai 2007). With the support of digital technologies, organizational initiatives can be created that bring about new business models, products, and value creation processes. Table 1 shows the comparison between the original Kaizen framework and its six basic steps (Smalley & Kato 2010), and the implementation of the Digital Kaizen approach that was performed within FPT.

<b>Kaizen framework</b>	<b>Digital Kaizen</b>	<b>Case study (MyFPT &amp; AkaLink)</b>
<i>Step 1: Discover improvement potential</i>		
<ul style="list-style-type: none"> <li>Organizations maintain awareness—through experience and training—of the opportunities or challenges that can bring changes to improve processes</li> </ul>	<ul style="list-style-type: none"> <li>Cross-functional pain points are identified by conducting regular and mandatory workshops which are attended by department managers</li> </ul>	<ul style="list-style-type: none"> <li>Top management sets strategic objectives and department managers discuss pain points in workshops to generate relevant digital transformation initiatives</li> </ul>
<i>Step 2: Analysis the current method</i>		
<ul style="list-style-type: none"> <li>Understand the process inside the improvement area through various techniques</li> </ul>	<ul style="list-style-type: none"> <li>Department managers provide feedback about operational issues which are encountered during daily work and collaboration</li> </ul>	<ul style="list-style-type: none"> <li>Identification of inadequate employee engagement and inefficient onboarding process as cross-functional pain points</li> </ul>
<i>Step 3: Generate original ideas</i>		
<ul style="list-style-type: none"> <li>Brainstorm the problems using creative and analytical thinking of each participants</li> </ul>	<ul style="list-style-type: none"> <li>Department managers discuss and come up with digital transformation initiatives to address cross-functional pain points</li> <li>A steering committee evaluates the proposed projects to determine their priority based on clear criteria</li> </ul>	<ul style="list-style-type: none"> <li>Digital transformation initiatives that aim at improving employee engagement are prioritized based on their feasibility, urgency, potential values, and alignment with strategic objectives</li> </ul>
<i>Steps 4 &amp; 5: Develop and implement the plan</i>		
<ul style="list-style-type: none"> <li>Decide who will do what, where, how, by when, and why</li> <li>Coordination between implementation teams is emphasized</li> </ul>	<ul style="list-style-type: none"> <li>Emphasize flexible change management techniques to increase user’s adoption</li> <li>Focus on small and quick wins to raise employees’ morale</li> <li>The goals of implementation are not only immediate results but also to nurture change capability and digital maturity</li> </ul>	<ul style="list-style-type: none"> <li>Programs and change management techniques are deployed to increase the employees’ adoption of the digital transformation solutions</li> </ul>
<i>Step 6: Evaluate the new method</i>		
<ul style="list-style-type: none"> <li>Compare results with conditions before the improvement and decide whether there is still room for further improvement</li> <li>If successful, standardize the solution</li> </ul>	<ul style="list-style-type: none"> <li>Digital transformation projects are evaluated based on specific criteria which are linked to strategic objectives</li> <li>Successful digital transformation projects are refined, packaged, and sold to clients</li> </ul>	<ul style="list-style-type: none"> <li>Several achievements are recorded in terms of monetary gain, time saved, and number of addressed pain points</li> <li>AkaLink as an employee engagement platform is advertised and sold to clients</li> </ul>

Table 1. Comparison between Kaizen, Digital Kaizen, and case study at FPT

Our case study supports the study of Wessel et al. (2020) which puts forward that digital transformation re-defines organization's value proposition and leads to the creation of a new organizational identity. Throughout its digital transformation endeavors, FPT not only continuously deploys digital technologies such as cloud computing and big data analytics but also experiences a constant shift of the company's business model, products, and processes (Wessel et al. 2020). FPT has changed from being a software development company to a digital transformation IT services and consultancy company (FPT 2019), which offers digital transformation services as a value proposition to its customers. The organization's change of business model and identity is a result of its digital transformation efforts. In doing so, the organization's structure has also been transformed, with task forces in charge of digital transformation initiatives, a committee responsible for evaluating digital transformation projects' priority, and mandatory workshops in place where managers in incubator teams identify cross-functional pain points and develop proposals for possible solutions.

## 6 Conclusion

Our case study presents Digital Kaizen as a new framework and practical approach for conducting digital transformation. Based on empirical data and a review of relevant literature, the case study was performed with input from a small number of key informants in a single case organization. While we acknowledge such limitation, the case study nevertheless contributes a detailed account of how digital transformation was conducted effectively and efficiently, to the existing theoretical and practical knowledge about digital transformation and the Kaizen philosophy.

Digital transformation programs are often large and complex and consist of multiple related undertakings with mutual dependencies. Consequently, it is useful to have a systematic approach to arrange such large programs in smaller and more manageable projects. In our case, a large digital transformation program aimed at addressing several human resource-related issues which were part of the company's strategic objectives. The approach with workshops to identify specific pain points and to define smaller digital transformation initiatives, i.e., MyFPT and AkaLink, has been effective to divide the large digital transformation program.

Our research suggests the integration of Kaizen philosophy into digital transformation practices, and we invite future studies to investigate this integration. For instance, further research may determine a more rigorous list of criteria and techniques for ranking and prioritizing digital transformation initiatives that are parts of a complex transformation program. It is also necessary and helpful to determine the practices, such as the workshops described in this case study, to organize complex digital transformation programs into meaningful and manageable transformation initiatives that can be carried out in the Digital Kaizen's fashion. Future studies may also consider examining the implementation of Digital Kaizen in different contexts, in which organizational factors including workplace cultures may have impacts on the implementation. In this regard, action research to empirically investigate the Digital Kaizen approach will be especially valuable.

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