Chapter 5
Are We Ready for Disruptive Improvement?

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Abstract In the IT industry, the continuous improvement approach as an established way for process management is doomed to fail at critical points. In particular, we consider the aspect of dealing with disruptive business changes requiring a disruptive process improvement response. This chapter is based on the experience of a significant disruption in a large IT company. First, we consider how easy it is to continue on an improvement path that, in such a context, leads to failure. We then explore the alternative non-continuous responses required to avoid failure. We look at elements that can help an organization to be better prepared for disruptive improvements, including experiences with the introduction and impact of Design Thinking and Agile Development.

5.1 Introduction

The continuous improvement approach is a well-established way for process management in the IT industry. We discuss how disruptive change challenges us to leave this comfort zone or fail. We describe the defining attributes of disruptive changes where this failure is likely and explain how easy it is to go down that path. Then we focus on what differentiates an appropriate, disruptive process improvement response that is required to design, document, and establish the processes within the organizational units for their new context. In Sect. 5.2, we provide information about the context of observing disruptive process improvement in a large IT company. In Sect. 5.3, we consider the definition of disruptive innovation and then contrast our definition of disruptive process improvement with continuous process improvement. By means of an example of process improvement metrics, we illustrate the dramatic difference between a continuous and a disruptive improvement response. In Sect. 5.4, we give some negative examples in the form of tactics that help to avoid inappropriate disruptive improvement. In Sect. 5.5, we share experiences from a disruptive innovation in a large IT company and how non-continuous steps are required to avoid failure.

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In Sects. 5.6 and 5.7, we look at elements that can help an organization to be better prepared for disruptive improvements, and we share some experiences with the introduction and impact of Design Thinking and Agile Development in Sect. 5.8. In the conclusion in Sect. 5.9, we consider what we learned from reflecting on the experiences with disruptive process improvements and an outlook on readiness for disruptions. Finally, in Sect. 5.10, we include pointers to information on Design-Thinking and on the topic of Intrapreneurship, where companies are encouraging individuals and groups to adopt an entrepreneurial approach within their company to improve their readiness for disruption.

5.2 Background and Context

Improvement in a business context is a well-established approach and is necessary to manage complexity and to increase efficiency and improve performance overall. Further, there is no doubt that improvement is effective when it is aligned with the organization's strategy. When we look at improvement activities as a response to strategy, then the most dynamic situation will be the improvement response to a disruption in the strategy. Our consideration of appropriate "disruptive" improvement responses should be of interest to anyone working in or with a company where strategic disruptions occur.

In the following, we focus on the process improvement perspective in the context of disruptive improvements. Processes describe our way of working as a company, as a department, or as a team. Looking at process improvement in this generic view means that improving how we are working will or should involve improving our processes. The particular context of the main experience referred to here is a large IT company. The example is enhanced by the author's extensive experience working as Transformation and Process Consultant with companies developing software as a vital part of their core business.

5.3 Disruptive Versus Continuous Improvement

First, we consider the definition of disruptive innovation and then contrast our definition of disruptive process improvement with continuous process improvement.

A disruptive technology or innovation helps create a new market and value network, and thereby eventually disrupts an existing market and value network. The term is used in business and technology literature to describe innovations that improve a product or service in ways that the market does not expect [6]. Christensen expanded his earlier model of disruption, which is explained in the book *The Innovator's Dilemma* [5], an acclaimed bestseller, but also critically questioned, for example, by Dvorak [8] and Cohen [7].

Table 5.1 Characteristics of disruptive and continuous improvement

Disruptive	Continuous
Radical	Incremental
Breakthrough	Sustaining
Risky	Lower risk

In the context of this chapter, we use the term "disruptive improvement" to discuss aspects of process improvement that are not continuous. The differences are illustrated in Table 5.1 in terms of the contrasting attributes of disruptive versus continuous process improvement. Some quality practitioners distinguish between *continuous* and *continual* improvement as follows [9]. Continual improvement is a broader term to refer to the general processes of improvement and encompassing "discontinuous" improvements—that is, many different approaches, covering different areas. Continuous improvement is a subset of continual improvement, with a more specific focus on linear, incremental improvement within an existing process.

The introduction of disruptive innovation would be a trigger for such disruptive process improvement, and, applying the attributes listed above, we can state more generally that any radical breakthrough or risky change in a company's strategy would be a trigger. The difference between responding to a disruptive context change with either continuous or disruptive process improvement is illustrated in Fig. 5.1. Along the y-axis we see the amount of change. The strategy disruption curve shows how the defined IT strategy was disrupted with a very significant change in the middle of the year. The dotted curve shows the number of improvements released to implement the process aspects of the defined strategy for that year. Up to the middle of the year, the curve shows the accumulated actual improvements released; from then on, it shows the planned releases based on the improvement plan according to the original strategy. The solid response curve is in line with the dotted one up to the middle of the year, then it shows how the number of process improvements released changes dramatically in response to the disruptive change.

The curves illustrate the difference between a disruptive improvement response and a continuous improvement response. Although it is an illustration, we found these types of curves as a result of plotting the data of actual process improvement responses. Note that both improvement responses are continual in that the improvement does not stop. Yet, although the continuous improvement keeps the focus on linear incremental improvement, it is the disruptive process improvement response that shows a correlation to the disruptive trigger. Next, we focus on the disruptive end of the spectrum of change and the associated disruptive process improvement.
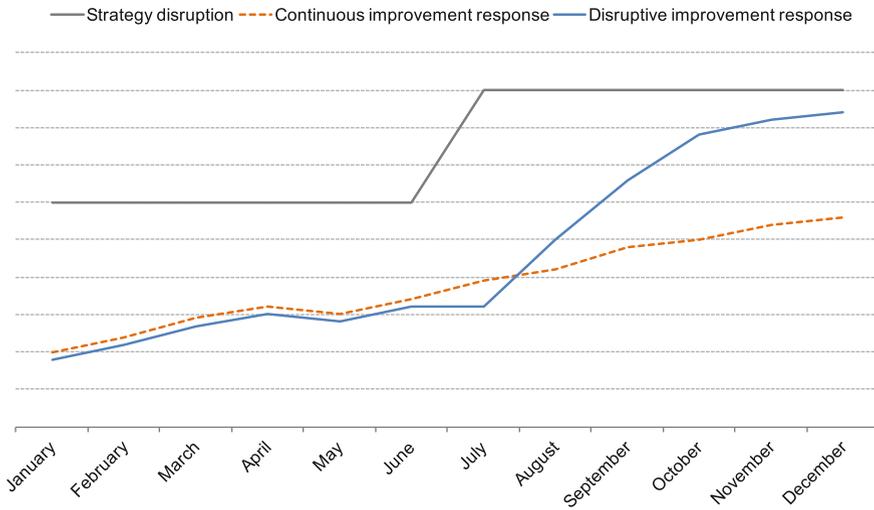
Fig. 5.1 Disruptive versus continuous process improvement response

5.4 How to Ignore Strategy Disruption and Ensure Continuous Improvement Failure

Here we play the devil's advocate in the scenario where a strategy disruption has occurred and the process improvement organization and process improvement experts continue the main work and efforts along the established continuous improvement path. Our approach is to give some negative guidelines as to how a valid strategy disruption may be ignored from a process improvement perspective. Indeed, this would avoid the appropriate disruptive improvement response and work against the company. For general examples of how and why change triggers are being ignored, see the literature on the topic of change and resistance to change, e.g., those by John P. Kotter relevant to urgent disruptive change [13, 14].

So let us take a reverse look. Table 5.2 summarizes some ways to ignore strategy disruption, based on my experiences as a process consultant with a number of organizations. Practitioners should be able to recognize one or the other tactic having been applied, whether consciously or unwittingly, in a company they know.

For the car manufacturer VW, the original Beetle was a winning model. It was produced in essentially the same shape for nearly three decades. Continuous improvement was a strong point of VW and appreciated by the buyers. In fact, the continuous improvement was so successful that none of the numerous prototypes for a new model to succeed the Beetle made it to production. Finally, the competition of new generation cars became so oppressive that the very existence of VW was threatened [4]. The strategy disruption of the Golf innovation saved the day, but it is an example where the switch away from continuous improvement came almost too late.

Table 5.2 Tactics to avoid appropriate disruptive improvement

Category	Tactics
Too slippery to be caught	Stick to your long-term continuous improvement plan:
	• Use silos and departmental firewalls to avoid direct involvement in changes of strategy and process.
	• Prove the value of continuing step-by-step improvements using your improvement metrics.
	• Don't change long-term continuous plans and process-release cycles. Use yearly plans with limited releases.
Too heavy to be moved	Cast your processes in concrete:
	• Aim for documentation of all process details and variants as you have always done.
	• Ensure you have a fine-grained structure with hundreds of roles.
	• Raise risks to standards and audits as reasons why your processes must remain as they are.
Too cushioned to be hurt	Built-in shock-absorbers:
	• Separate the process organization from operations to avoid or reduce the impact of operational issues and goals.
	• Empower people to stop progress if a resource or some input from a stakeholder is missing.
	• Slow down new processes by insisting on iterating the process flow with all involved to handcraft a fully consistent version before the first publication.

5.5 Accepting Strategy Disruption and Responding with Disruptive Process Improvement

Major technology trends in IT include Cloud, Mobile, and Big Data [10, 19]. Cloud, from an IT perspective, is about savings through virtualization, convenience through Infrastructure as a Service, and flexibility through a hybrid cloud model. Mobile includes Mobile Workspaces, Mobile Device Management, and integration of the mobile access into the core workflows. Big Data, where more and more companies are looking at volumes in terabytes and petabytes, requires new approaches regarding management, analysis, and distribution. The users and usage of big data are dramatically increasing and demand processing that is magnitudes faster.

In this context, the strategy disruption of our company was the decision to set up SAP HANA Enterprise Cloud with the objectives [20]:

- Accelerate the transition to the real-time enterprise through cloud computing.
- Analyze vast amounts of data instantaneously for critical business insights.
- Transform operations to enable real-time business.

In the middle of 2013, a new unit was established to deliver these benefits not only to external customers, but also, beginning with the early versions, to our own orga-

nization, true to the commitment SAP-runs-SAP. Here we are not looking at the technology innovation supporting this move (In-Memory Database, Mobile device integration technology, etc.), rather, we are focusing on the process improvement response—in particular, by the IT Process Office.

The members of the Global IT Process Office could have applied many of the tactics listed in Table 5.2 to avoid changing to a disruptive improvement mode. For example, the Process Office itself was not part of the new organization, so the tactics of the, category "Too cushioned to get hurt" were tempting. Similarly, the tactics from the category "Stick to your long-term continuous improvement plan" could have been employed as the process consulting resources were committed for the remainder of the year to agreed improvement plans and release cycles of process descriptions. Instead, the disruptive strategy trigger was answered with a disruptive improvement response. Examples of tactics and associated results are shown in the following list. The interested reader will find and recognize respective counter-tactics from Table 5.2.

Tactic 1 (Define an improvement plan and process-release cycles in line with the strategy disruption.) This tactic aims to produce the following results:

- Weekly process deliveries in the hot phase
- Defined and released a first version of the Process Value Chain for the new organization within six weeks

Tactic 2 (Utilize relevant standards and audits as reasons to drive process definition and adoption.) This tactic aims to produce the following results:

- Close collaboration with the security team and readiness for external audit within three months
- Passed the Service Organization Control compliance audits (SOC1 & SOC2 Type I) with no exceptions

Tactic 3 (Simplify) This tactic aims to produce the following results:

- A switch to a simpler process documentation was accelerated so it could be applied in this fitting context.
- Processes were published at "80 % readiness." This proved useful in early projects and provided valuable feedback.
- Process, operational, and audit issues were tracked in one tool.

Tactic 4 (Closely work as process consultants and team with the new organization.) This tactic aims to produce the following results:

- Ensured that clearly assigned process responsibilities were part of the set-up
- Process consultants worked in tandem with process managers and became recognized go-to people, for example, for integration aspects

The mind-set for change is surely one important factor influencing our readiness for disruptive improvement. It may be coincidental, but the members of the process office have been trained, and several have also been very active, in applying Design Thinking principles as well as Agile development methods. In the following, we consider why and how these approaches may foster disruptive improvement.

5.6 Design Thinking

Design Thinking is a method for innovation that brings together the creative aspects of the brain with the analytical aspects of the brain. There are typically six steps in a full design-thinking cycle:

1. Understand, where you define the problem by "finding the right question"
2. Observe, where you explore the problem space with a mind as value-free and neutral as possible and where you try to develop a sense of empathy for the user in order to understand the personal, organizational, and functional dimensions of the challenge
3. Define Point of View, where you make a first design decision by condensing all information down to one topic and one user to focus on
4. Ideate, where you explore the solution space and generate as many ideas as possible to serve the previously identified needs
5. Prototype, where you develop a prototypical implementation of the idea combining, expanding, and refining the most powerful ideas
6. Test, where you seek feedback from a diverse group of people, including your end users, to gain new insights

The process involves more than executing the steps in a linear manner. It requires an open culture that is focused on the end-user and the flexibility to loop through the steps as required. One significant contributor to making the connection from design thinking to IT product development is Hasso Plattner, one of the founders of SAP. He established a collaboration with the Institute of Design at Stanford and extended the work on Design Thinking with the HPI (Hasso Plattner Institute) in Potsdam [11]. He is a strong advocate of the application of Design Thinking in IT and, with this, had a large impact on the processes in SAP. In its application at this large IT company, it has been proposed as a unique engagement experience and mind-set of combining business thinking with design thinking, thus generating ideas that will lead to value for customers and their stakeholders by:

- Rethinking existing problems to unlock spaces for innovation and creative solutions
- Visualizing the impact of disruptive technology as it relates to the business in focus
- Leveraging a proven approach that has been used with other companies to help them create game-changing value for their customers

In the activities stated above, we can see the link to disruptive improvement already in the terms used, including game-changing, innovation space, and disruptive.

The steps of Design Thinking are typically applied in order to explore new angles and perspectives or tricky problems to unearth underlying desires and needs: prioritize new ideas, create road maps, and build persuasive business cases; create high-fidelity visualizations as a tangible artifact that represents the generated ideas, and how they may be implemented. Several tools can be used in the course of a

design-thinking exercise and include customer-journey mapping, graphical facilitation/sketching, art-of-the-possible visualizations, and rapid prototyping. For examples of using Design Thinking in the IT context, see customer success stories on an open community Web site [21]. Although SAP is helping their customers in applying Design Thinking, it is also fostering the Design Thinking culture and applying this approach in its own IT organization. There are workshops on Design Thinking, coaches to support design thinking in internal IT projects, and also rooms with equipment to facilitate these activities. How radical the shift away from a linear approach is may be illustrated by a provocative statement found on the wall of a Design Thinking room: "Fail early and often!" This goes far beyond the old, but nevertheless most useful, prototyping advice: "Build one to throw away" [3].

5.6.1   Fail Early

Individuals and teams are challenged to seek ways to fail as early as possible. According to the Design Thinking philosophy, the decision on success or failure comes from the end-customer. Getting feedback from customers on ideas and possible solution directions extremely early is a must. With such a mind shift, it is possible to get feedback in less than a day, even hours or minutes—rather than in weeks. So, an idea that may have looked like a good one could go, without Design Thinking, through a cycle of design, implement, test, and then, during validation, receive the feedback from the majority of end-users that it is not acceptable. In this case, significant effort and weeks, even months, may have been invested. With Design Thinking, the idea would have received the fail-feedback much earlier, thus avoiding wasting time and effort on a solution approach leading nowhere.

5.6.2   Fail Often

Individuals and teams are challenged to look for ways to fail multiple times, on purpose. Failing is good, and failing often is even better? This seems to contradict our striving for efficiency and the high quality of our work. It is success that we seek and strive for. This provocation to fail on purpose is about helping teams and individuals to break out of limiting frameworks that govern and constrict our thinking even without our being aware of it. Indeed, Design Thinking contributes to the successful end-result in that the end-customer receives an overall, very satisfying solution and, for this contribution, Design Thinking needs to open up the solution space to include more and, it is hoped, more satisfying solutions. This large solution space needs to be explored with end-user feedback to ensure that valuable opportunities for the customer are not missed. Having customer feedback that several or even many solution options have failed is an indicator that a large solution space is being explored with the end-user.

For an example of what "Fail early and fail often" means in practice, we consider some aspects of a recent Design Thinking activity of Global IT and business for improving the internal flow of financial information. The Design Thinking team included a variety of stakeholders with roles such as business end-user, process manager, user-interface expert, architect, developer, and coach. The focus was on providing a mobile dashboard solution. In Table 5.3, we look at activities during one of the cycles through the Design Thinking steps.

We consider where the "Fail early and fail often" advice is applied in this example. In the *Observe* step, the initial feedback on "what was expected as a solution" failed the validation check with another set of end-users. This showed that the preconceived solution space for this project was too limited. Additional feedback activities identified the highly ranked requirement for a broader and more mobile provision of key information. At the same time, the information needed to be presented in a more role-relevant manner. In the *Ideate* step, a number of options were explored using simple, user-interface prototyping and direct feedback in the design team. Several options were rejected in the discussion of the Design Thinking team including the members representing the end-users. In the *Test* step, where the early prototype

Table 5.3 Example of one cycle through the *Design Thinking* steps

Understand	Define the problem by "finding the right question"	What financial dashboard information helps me to get an overview of financial key figures in [area] for making decisions in my role as [role name]?
Observe	Explore the problem space Develop a sense of empathy for the user	Existing feedback was validated and an additional pain-point survey was conducted to get more reliable feedback from potential end-users
Define point of view	Make a preliminary design decision focus on one topic and one user	The team described a persona, Laura, representing a typical end-user including her work context, personal preferences, expectations, and so on
Ideate	Explore the solution space generate many ideas to serve the identified needs	Solution options for Laura's needs were developed using whiteboard and mini-sticky-notes to simulate key fields and interaction scenarios, as well as the look and feel of various mobile device sizes
Prototype	Develop a prototypical implementation of the idea	A cardboard and paper prototype of the financial dashboard was built showing variants of content fields and possible interactions by sliding in various paper "screens" in response to "clicks"
Test	Seek feedback from a diverse group of people, including your end-users to gain new insights	The Laura prototype was played through in two variants with end-users, as well as random colleagues by a pair of Design Thinking team members. The user interaction and reactions were observed regarding value of information provided, ease of use, and overall fit for purpose

was used to execute the proposed solution options with different types of end-users as well as other people, an additional need became apparent in that the application should also support direct initiation of key actions.

It is not unusual that during the phases and iteration cycles of an IT project the requirements and implementation diverge from the initial envisaged and requested solution. The contribution of Design Thinking in this case was to achieve a clarification in a dramatically shorter timeframe. Here, well-intended solution proposals were identified, as off-target and previously hidden requirements and unimagined solution options were identified, early on and very quickly. One can imagine the much higher impact when Design Thinking is applied to visualize the effects of a disruptive technology such as HANA and Big Data for a specific business context.

Design Thinking is a technique that can be applied to look systematically for solutions outside the linear, continuous-improvement approach. It can be used to identify disruptive ideas or to come up with ideas for applying a disruptive technology in a certain business context. In either case, it is a tool to address systematically a wider scope of possibilities, accelerate improvement, and reach a disruptive impact. These aspects of Design Thinking clearly fit with the requirements of an accelerated and disruptive response, as discussed for disruptive process improvement.

5.7   Agile Development

Now let us turn to Agile development, another major influencer. Agile Development refers here to Agile Software Development as the flexible and light-weight development approach in contrast to the more linear and heavy-weight waterfall methods. The movement for Agile Development has a long history, and its key elements are summarized in the Agile Manifesto, the 12 principles [2] and Practices [1]. For more details on the element of Agile Development, see also Chap. 2.

How might the exposure to Agile Development and an associated mind-set foster readiness for disruptive improvement? Let us look where change and disruption are considered in the fundamental elements of Agile Development. In the Agile Manifesto, one of the four statements is, "We have come to value responding to change over following a plan." In addition, two of the twelve agile principles refer to change and adaption: "Welcome changing requirements, even late in the project" and "Regular adaptation to changing circumstances." This emphasizes how Agile Development relies on a mind-set to accept and respond to change and, in particular, significant change. Another aspect of the mind-set for change is customer focus. Keeping the focus on the customer and customer needs during a disruption increases the likelihood of recognizing and reacting to changing requirements. Note that, with a disruptive change, it may mean that "the customer" is also changing to a different person or organization and the requirements then come from a different source.

In our context of a large IT company, the topic of Agile Development has been introduced and established over a period of more than 10 years. The development organization is now working largely in agile teams applying the Scrum approach.

Company-wide standard trainings include Agile development and Scrum topics, from introduction to advanced, and internal coaches in these areas to support ongoing training and practice. In addition, communities of practice have been established for topics including Lean and Agile Community and Scrum Master. In the internal IT department, where we observed the topic of disruptive process improvement, Agile Development is the standard approach for all Business Analytics projects, and for other IT projects, Agile Development is applied in accordance with the size and context of the project.

We established the link between Agile Development and disruptive improvements via the principles of readiness for change and customer focus. In the following chapter, we now look at overall readiness for disruptive improvement.

5.8   Readiness for Disruptive Improvement

A disruptive innovation is likely to require a disruptive process improvement response. How ready can we be? Here we consider how the Agile Methods and Design Thinking relate to our observed case of disruptive process improvement.

Members of the IT process team were trained in Agile Methods as well as in Design Thinking. In addition, they were exposed to the operational practice of Agile Development and Design Thinking in the projects of their organization. Design Thinking fosters a readiness for innovation, change in scope, and a focus on the customer that helps to let go of previous solution approaches when needed. Agile Development also fosters a readiness for change and radical change in alignment with changing requirements. Let us have a closer look at the tactics in the chapter "Accepting Strategy Disruption and Responding with Disruptive Process Improvement" (Sect. 5.5) to examine which of the Agile Principles [2] and Design Thinking aspects (Sect. 5.6) apply.

The tactic, "Define an improvement plan and process-release cycles in line with the strategy disruption," employed frequent deliveries, thus following Agile Principle 1 *customer satisfaction by rapid delivery* and Agile Principle 3 *deliver frequently*. The decision to adopt such a fast-paced delivery schedule in an environment where a transition is still in progress also fits with the Design Thinking advice to rather fail early and often, in that an approximate solution with imperfections is deemed acceptable, and in fact desirable, as its use provides early and repeated feedback on what is really required. The next tactic, "Utilize relevant standards and audits as reasons to drive process definition and adoption," focused on audit readiness as a high-impact requirement. The very tight engagement with security colleagues as key stakeholders for this business aspect followed Agile Principle 4 *close, daily cooperation between business people and developers*. One can also see a relation to the Design Thinking aspect of early and close engagement of relevant stakeholder groups. The tactic "Simplify", resulting in simplified process representation and tooling, clearly maps to the Agile Principle 10 *simplicity*. The final tactic in Sect. 5.5 is "Closely work as process consultants and team with the new organization;" this

again fits with Agile Principle 4 *close, daily cooperation between business people and developers*.

From this systematic examination of our sample case of process improvement, we can conclude that Agile Methods and Design Thinking have the right fit to support readiness for an appropriate disruptive improvement response to a disruptive change. This matches our experience that the training and exposure to these approaches helped to increase the overall readiness for a disruptive change response in the individual members and the IT process team as a whole.

Taking an active part in a disruptive process improvement response means taking higher risks (see Table 5.1). Fast changes, big changes, new stakeholders, and unstable requirements have to be dealt with as consequences of such a decision. Taking on higher risks potentially to achieve higher business value requires an entrepreneurial attitude. In the context of large organizations, there is a particular challenge to respond to disruptive change. The size and the number of departments and people affected can increase the inertia and therefore increase the likelihood of following a continuous path as a default response. Large organizations recognize the need to have more people act in an entrepreneurial way, so that the organization is able to respond appropriately to disruptive change. This is also relevant for SAP, where the concept of "Intrapreneurs" is fostered in the form of intrapreneur bootcamps and competitions. In addition, greenhouses for testing new business models are provided, as well as connections with ventures outside the organization. In the section Further Reading, we provide some links to additional information on this topic related to readiness for disruption.

We covered some aspects of readiness for disruptive improvement. We do not claim, however, that the aspects covered are the most vital ones. We considered Agile Methods and Design Thinking and touched on Intrapreneurship because, based on our observation and knowledge of the situation, they were deemed most relevant in the context of our main example. Let us briefly look at candidates for additional aspects that could be considered to increase readiness for disruptive improvement. One candidate could be Elements of Organizational Change Management that help prepare for disruptive change and how to introduce this preparation into the organization. Another candidate would be recognizing and managing manageable parts of disruptions earlier. For this last candidate, one example could be that, for a certain company, buying and merging with another company was a very significant strategy disruption requiring an appropriate disruptive improvement response. The buying company may recognize that this is a type of disruption that, although it was a first historic event for them, now has a higher likelihood for reoccurrence. So, it may make sense to build up competences specific to such disruptive triggers that will increase their readiness.

For our sample case, we found that Agile Methods and Design Thinking have the right fit to support readiness for an appropriate disruptive improvement response to a disruptive change. Further, we considered the relation of Intrapreneurship. We can recommend that readers consider if and how these approaches can help in the

context of their work to increase the readiness to respond to strategy disruptions with appropriate disruptive improvement responses. We finished with an outlook on additional approaches that could be helpful to manage readiness and disruption.

5.9 Conclusion

We conclude with some essential lessons learned and a view to readiness for disruptions. We presented an example of how an appropriate, disruptive process improvement response in a large IT company produced successful results where a continuous response would have surely led to failure. One lesson for us was not to take this for granted. To accept the radical change as a challenge and respond this way, required groups and individuals taking risks and not succumbing to the temptation of staying in the comfort zone of continuity. Although continually improving is a good thing, we must not get stuck in the "continuous" trap but must be ready for disruptive improvement. We also learned that we can foster such readiness individually, but that, at the company level, more is required. From the example of a large IT organization, we can see that elements such as Design Thinking and Agile Development can, and perhaps should, be fostered more consciously also with respect to process development, to increase the responsiveness to disruptions and the ability to adopt an appropriate disruptive improvement approach.

5.10 Further Reading

For some of the aspects discussed in this chapter, this section provides additional references and information.

The distinction between disruptive and continuous process improvement introduced at the beginning focused on the appropriate disruptive-innovative response required to match a disruptive innovative trigger. We referred to [6] for radical change and disruptive triggers. The aspect of the radicalness of the process-reengineering activity itself as a topic is discussed in [12]. In his publication, William J. Kettinger considers the radicalness of the process-change project and provides a framework for assessing and considering the radicalness. Although techniques and tools have changed somewhat over the years, this work on business process change provides guidelines for evaluating the radicalness of change and a framework that could provide valuable insights for the interested reader. As a further aspect [18] considers how the processes for software/IT have attributes of software and what should be learned from this regarding the way we (should) approach the activities of process definition, process documentation, and process management. It deals with the question: "What can we learn from the software process with respect to the process of (software) process improvement?" Continuing with this thought, the applicability of Agile Development (see also Sect. 5.7) for the process improvement and disruptive process improvement, in particular, are conclusions to consider.

To further gather insights on the topic of Design Thinking discussed in Section six, the interested reader will find in [15] information from original inspirations such as Bauhaus, the development of d.school at Stanford University, and applications in multiple contexts. The major part of the books is devoted to accounts and experiences of Design Thinking in research and education, industry, and across the globe.

Additional information on the topic of Intrapreneurship (see Sect. 5.8 Readiness for disruptive improvement) is found in [16]. Here, Howard W. Oden provides details on Intrapreneurship in the context of steering a corporate culture towards increased readiness for innovation. The currency of this topic is apparent in [17], which looks to answer the very direct question: "What the heck is an 'intrapreneur'?".

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