

# SPARKING EMPLOYEES' INTEREST IN SIX SIGMA

## *Transferring a Paper-based Simulation to a Workflow Management Application*

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**Abstract:** In today's management approaches, quality improvement focused on a company's business processes plays an ever more important role. Methodologies like Six Sigma are used to improve quality, cut costs and save time by improving processes. Support and commitment of a company's employees are crucial success factors, so that training and motivation is essential. Role plays are a training method suitable for stimulating employee involvement. The article describes how the paper-based role play KreditSim has been transformed to a workflow management system. It shows how utilization of software can broaden the scope and sometimes shift the focus of trainings. By delivering impressive results in process performance the software inspires and motivates employees to learn Six Sigma tools and apply them to their daily business.

### 1 EMPLOYEE INVOLVEMENT IN BUSINESS PROCESS IMPROVEMENT PROJECTS

Organizational theory has seen a trend to business process orientation in the last couple of years. The improvement and management of a company's business processes form a competitive advantage and are fundamental to its success (Becker, Kugeler & Rosemann, 2004). On the one hand, there are radical approaches to business process management such as Business Reengineering (Hammer & Champy, 1993). They are implemented top-down by a company's management. On the other hand, evolutionary approaches follow a bottom-up procedure that stresses the importance of employee involvement. Six Sigma belongs to the latter methodologies accentuating the importance of employee commitment.

Service providers in particular face the challenge that factors which are difficult to control, such as human behaviour (e. g. friendliness and willingness to help), have a decisive impact on the quality of the final product, namely the actual service delivery (Antony, 2004). Hence, well-trained and motivated employees play an even more crucial role in the

execution of service providers' process flows.

In a study conducted by Heckl and Moormann in 2008, more than 70 percent of the respondents indicated that extensive and qualitatively excellent training initiatives were required to increase the chances of success for Six Sigma projects. The success of such projects does thus not depend solely on the Six Sigma methodology itself but on the motivation and the commitment of employees.

Since Six Sigma originated in the production sector, Six Sigma training often focuses on examples from manufacturing industries or the logistics sector. Subsequently, employees in the financial services industry have a hard time identifying with these processes. They find it very difficult to apply Six Sigma to the (from their perspective) highly individualized processes within the financial services industry (Börner, Heckl & Hilgert, 2009). In order to convince employees and senior managers of financial service providers of the importance of process management, ProcessLab at the Frankfurt School of Finance & Management developed the role play simulation KreditSim. In this role play, participants simulate processing a loan application and actively utilize Six Sigma tools to improve the overall process. Observations to date indicate that participants are highly receptive to the role play

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simulation, because the elements of active participation and first-hand experience serve to highlight the relevance and applicability of the Six Sigma tools for their day-to-day responsibilities.

Since a growing number of participants argued that – in reality – different kinds of information technology could be facilitated to improve the given process, the idea of using software to enhance KreditSim was born. In cooperation with jCOM1, a workflow management systems provider, software able to support the loan approval process has been developed.

The following section describes the use of role plays as a training methodology and their effect on employee motivation. Section 3 explains the underlying idea and the procedural implementation of the role play KreditSim. Section 4 describes how a workflow management system (WfMS) is used to support employee training. The final section consolidates observations and outlines particularities of computer supported trainings. This article demonstrates that software solutions, such as a WfMS, that actively involve employees are highly suited to supplementing methodological skills training.

## 2 A PEDAGOGIC PERSPECTIVE OF ROLE PLAYS AS TRAINING INSTRUMENTS

Employee training represents a key to success for Six Sigma. Simulations, including role plays, serve as one possible instrument for employee training. Typically, role plays are used as one of various different teaching methods within the course of a training seminar and are a widely used method for training employees. Role plays represent a specific type of simulation in which participants assume particular responsibilities, i.e. a “role.” The following discussion analyzes the suitability of role plays in support of achieving different learning objectives.

Whenever companies send employees to training courses or seminars, they are interested in having their employees learn something. The exact nature of this “something,” i.e. what is actually learnt, always depends on the particular context. Moreover, one specific training activity may actually aim at meeting multiple objectives. The training initiators may not have explicitly articulated these objectives and may not even be fully aware of them. For example, in order to convey information about and

know-how of new legislation, the head of a loan department could easily provide each employee with a book outlining regulatory changes in the financial services industry. But why would the manager send the employees to a training seminar instead? This question can be best answered by looking at the different types of learning. Learning is generally divided into four categories (Klippert, 2007):

- Content and factual learning: The acquisition of knowledge and facts, understanding explanations and phenomena, recognizing relationships and evaluating hypotheses provide together the basis for all other types of learning.
- Methodological and strategic learning: The focus is on structuring, organizing, and arranging the acquired knowledge. This entails the ability to independently apply, reflect, or further develop learnt lines of reasoning, working techniques, problem-solving or learning strategies within a subject-matter or cross-functional context (Hechenleitner & Schwarzkopf, 2006). Employers are increasingly expecting this type of methodological competence, in addition to subject-matter competence, from prospective employees.
- Social and communicative learning: Utilizing the learnt facts and knowledge as a basis for argumentation and discussion with other members in society, social competence can be developed. Central to this type of learning is a rational and responsible discourse, as such behaviour fosters teamwork, which in turn serves to enhance social-communicative abilities.
- Affective learning: The so-called self-competence encompasses the development of self-confidence, commitment, and motivation. Affective learning enables the individual to recognize and bring out his or her own talents and abilities and to develop reasoned ethical values and moral concepts (Hechenleitner & Schwarzkopf, 2006).

Referring back to the example above, handing a book to each employee would certainly suffice to enable content and factual learning. However, the other three types of learning usually occur automatically during any training seminar and thus positively influence employees’ willingness and ability to perform. Moreover, these four types of learning are typically highly interrelated.

Role plays support especially the three latter types of learning. Commonly articulated objectives of role plays include the ability to deal with difficult

situations, developing self-assurance, improving auto-perceptive and self-reflection skills, increasing motivation, and raising communicative effectiveness (Bliesener, 1994). However, it is important not to pursue too many objectives with a role play, as an overload of differing objectives may unsettle participant groups with little previous role play experience and thus inadvertently result in a defensive attitude towards the role play (Broich, 1994). Cognitive Load Theory (Sweller, 1988) provides one explanation for this phenomenon. Particularly the usage of software, as described in section 4, can lead to a cognitive overload on the participants' side (Brünken, Plass & Leutner, 2003).

The role play KreditSim which will be described in the following section originally targeted methodological and strategic learning. However, experience shows that it covers social and communicative as well as affective learning, too. Therefore, employee motivation has become another core aspect of trainings in which KreditSim is used.

### **3 IDEA AND IMPLEMENTATION OF KREDITSIM**

The Six Sigma simulation KreditSim has been developed in order to sensitize employees from the financial services industry to process problems and corresponding process improvements. KreditSim is a paper-based role play in which participants simulate the processing of a loan application from a new customer, i.e. the loan approval process. Simulation participants assume the roles of loan processing specialists, department head, controller, and managing director of the fictitious Home Loan Bank Ltd., and they have to process loan applications in accordance with their given job descriptions. Since each participant is responsible for handling only a small portion of the entire process, it becomes quickly apparent that while each participant fulfils his or her process tasks at their very best, the entire process nevertheless yields an unsatisfactory result. Eliminating errors on the loan applications as well as reducing the long overall processing time can only be accomplished through a holistic, cross-functional analysis. Six Sigma offers the methodological support for conducting such an analysis. The starting point and subsequent phases of the role play KreditSim are illustrated in the following.

#### **3.1 Initial Situation in the Role Play**

The role play KreditSim is typically conducted as a

part of a one-day or multiple-day training seminar. At the very beginning, the moderator introduces the current situation that serves as a starting point for the role play KreditSim, providing the following overview: "Home Loan Bank Ltd. is a regional bank that specializes in real estate financing. The bank maintains four branch offices. In these branch offices, sales specialists for real estate loans and financing advise potential customers. The decision whether or not to approve a loan application is made at headquarters. Sales specialists attach particular importance to timely and accurate processing of the applications they have submitted to headquarters. Their requirements are expressed with the following quality criteria:

- Processing of the loan application with an approval or rejection decision within four days (in the role play this equates to four minutes),
- Determination of the correct credit rating, and
- Consideration of customer requirements (e.g. interest rates or payment terms)."

The moderator prepared the process for the first simulation round and therefore knows that based on conducting and thus experiencing the loan approval process at Home Loan Bank Ltd. participants quickly realize that these requirements cannot be met. In most cases, the decision concerning a particular loan application will take nine or ten days (i.e. minutes). In addition, there will be frequent errors in the credit rating, resulting in incorrect decisions concerning the approval of loan applications. Finally, very often specific customer requirements will not have been sufficiently addressed during the processing of the loan application. Therefore, the moderator can easily convince participants of the necessity to analyze and optimize the loan approval process.

To support the first-hand experience of the loan approval process and its subsequent optimization, moderators often divide the seminar into three phases: The first phase consists of conducting the simulation of the pre-described loan approval process of Home Loan Bank Ltd., i.e. the current process. This phase is standardized and predetermined through the use of the game materials and adherence to the role play instructions. The second phase focuses on optimizing the existing process. The moderator guides the participants in the use of the tools within the DMAIC (Define, Measure, Analyze, Improve, Control) cycle, which is the central procedural method of Six Sigma (Pande, Neuman & Cavanagh, 2000). This approach serves as the foundation for developing a new and

optimized loan approval process. In phase three, participants simulate the optimized process design. Results from the new process are captured and compared with the results from the original process.

### 3.2 Phase I: Simulation of the Loan Approval Process

In phase I, the loan approval process of the Home Loan Bank is simulated. Prior to starting phase I, the moderator has to prepare the simulation room. He arranges the work stations in the predefined floor layout (Fig. 1) and distributes the job descriptions. Each participant chooses one of the prepared work stations randomly. The job descriptions help the participants to become familiar with their working tasks.

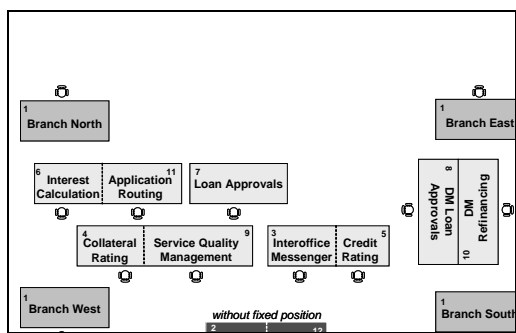


Figure 1: Floor plan.

In order to address potential start-up problems and to avoid any misunderstanding, a trial run of the simulation is conducted first. Then, the actual simulation of the loan approval process begins. The objective is to process as many error-free loan applications within 20 minutes as possible. This objective has to be achieved within the requirements of the quality criteria, namely time (a maximum of four minutes per application), correct credit rating, and consideration of additional customer requirements. Each minute the branch offices submit loan applications via a branch courier to headquarters. Within a short time, it becomes apparent that the given process results in significant problems.

Subsequent to the simulation run, the moderator leads participants in the analysis of the process. In a first step, the incorrect loan applications are analyzed and documented according to quantity and types of errors.

Generally, most applications will contain a time error, i.e. their processing required more than the allotted four minutes. An incorrect credit rating

occurs frequently as well. An analysis of “Work-in-Process” provides an indication of how many incomplete loan applications have accumulated at each step of the process, highlighting bottlenecks within the process. An analysis of the processing times provides insights concerning the individual processing times of each function within the overall loan approval process (e.g. Collateral Rating). An optional analysis can be conducted for the total processing time for each loan application, since such data has been captured on each loan document. The significant differences in the processing times echo participants’ perception that some colleagues were unable, in spite of greatest work efforts, to handle the volume of incoming loan applications while other colleagues spent a significant amount of time waiting for work to arrive.

In accordance with the moderator’s expectations, seminar participants easily recognize the need for process optimization when looking at the large number of processing errors and the long processing times. The moderator can then move on to phase II, the optimization of the loan approval process.

### 3.3 Phase II: Optimization of the Loan Approval Process

The moderator can freely decide how to conduct the optimization of the loan approval process. In principle, the optimization can utilize the entire spectrum of available Six Sigma tools. Especially those tools that are most frequently applied in the financial services industry (Heckl & Moormann, 2008) can be nicely illustrated through KreditSim. If seminar participants are already familiar with Six Sigma, they should be given their free choice concerning which of the tools to use.

Very often, participants use the Project Charter and SIPOC (Supplier, Input, Process, Output, Customer) from the Six Sigma toolbox to define the framework for the project. The CTQ/CTB (Critical to Quality/Critical to Business) matrix plays an important role in the exact determination of the requirements and subsequent calculation of the Sigma level. These three tools have proven to be especially useful during the Define-Phase. Process measurement and analysis can be conducted on the basis of the data that were collected during the first phase of the simulation (quantity and types of error analysis, Work-in-Process analysis, processing time analysis). Additional suitable tools are the Ishikawa-Diagram and the Value Stream Map (Lunau et al., 2007). After the analysis, participants should be given sufficient time for the Improve-Phase to



optimize the loan approval process. It is important to note that there is not "one correct" solution for the redesigned process, but that participants instead learn to identify causes for process deficiencies, such as duplicate tasks, redundant tasks, or unnecessary transportation and idle times, and that participants are in a position to accordingly adjust and thus improve the process. Besides designing a new process flow, participants also develop new job descriptions and a different floor plan.

### **3.4 Phase III: Simulation of the Optimized Loan Approval Process**

The newly developed loan approval process is validated by a new simulation. Now, the participants prepare the simulation room, arrange the floor layout of working places, and distribute the new job descriptions. The new simulation only needs to take 10 minutes this time. The participants are now able to measure to what extent they have been able to improve the process by counting the amount of correct loan approvals within the given time frame and comparing the results to the previous simulation.

Experience shows that in every case a significant improvement in process performance can be observed. Participants are usually extremely pleased with their results. Oftentimes, additional ideas for further improvement are generated during or after the second simulation run, resulting in lively and fruitful discussions among participants.

## **4 COMPUTER SUPPORT BY A WORKFLOW MANAGEMENT SYSTEM**

After successfully applying KreditSim in multiple scenarios of employee training, trainers and participants came up with the idea of enhancing the simulation by software. Thus, the authors of the role play decided to develop a tool that simulates the process and manages workflows electronically instead of paper-based. In cooperation with a workflow management systems provider, software able to support the loan approval process described in the above section has been developed. The application of the software impressively shows how automation of routing work items (which is only one possibility of process improvement) and providing work lists for the respective roles can radically improve processes.

### **4.1 Technical Infrastructure**

The software program is designed as a client-server application. Three elements of the program are installed on the server:

- The workflow engine controls the sequence of the single workflow items that are currently in the workflow.
- An administration tool is used to set e.g. the number of loan approvals that enter the process in a given time interval.
- A graphical user interface for modelling business processes enables the trainer to customize the loan approval process individually. Changes made to the process are automatically translated into executable code and enacted by the workflow engine.

The training participants can use either computers provided in the training room or their own laptops. Users can access the program by using internet browsers such as Internet Explorer or Mozilla Firefox, i.e. there is no need for the installation of any software on the client computer.

Access to the server can be realized through the Internet or a specially set up (wireless) local area network (LAN). In both cases the clients have to be connected to the network or the Internet respectively. If computers are provided in the training room these can be pre-configured so that users can open their internet browsers and continue with the log-in without configuring their network access. Usually, the use of laptops needs some more effort and time to enable all participants to access the network. Although establishing this connection should not pose a problem in most cases, difficulties might occur due to the configuration of firewalls.

Once the network connection is established, users can enter the IP address of the server hosting the workflow engine. Now, they have to enter their user name and password which are provided by the trainer in their role description. If default browser configurations are used (i.e. JavaScript activated, etc.) no problems concerning the log-in procedure are to be expected. The unlikely event of an interruption of the client-server connection can lead to a log-off from the system.

The server applications such as the administration tool can be hosted on a traditional server running at the training provider's premises. Alternatively, they can be run on the trainer's laptop serving as a host. The advantage of the latter is that the trainer can easily use the modelling and administration tool and solve technical problems directly at the laptop.

Table 1: Comparison of different implementation choices.

	<i>Advantage</i>	<i>Disadvantage</i>
<b>Desktops provided at training site</b>	<ul style="list-style-type: none"> <li>- Pre-configuration makes network/internet access easy</li> <li>- Same infrastructure makes usage more predictable</li> </ul>	<ul style="list-style-type: none"> <li>- Due to different floor plans from earlier simulations, a separate room with desktops has to be provided</li> </ul>
<b>Laptops</b>	<ul style="list-style-type: none"> <li>- The trainer’s effort is relatively small</li> </ul>	<ul style="list-style-type: none"> <li>- Configuration problems due to firewalls and different browsers</li> <li>- Usability problems due to different screen resolutions</li> <li>- All participants have to bring a laptop</li> </ul>
<b>(Wireless) LAN</b>	<ul style="list-style-type: none"> <li>- Enhanced controllability</li> <li>- Less security issues</li> <li>- Guaranteed performance</li> </ul>	<ul style="list-style-type: none"> <li>- Trainer has to provide hardware, i.e. hub or access point respectively</li> <li>- Trainer needs technical skills to set up a network</li> </ul>
<b>Internet</b>	<ul style="list-style-type: none"> <li>- No special hardware needed for training session</li> <li>- Most firewalls configured for internet access</li> </ul>	<ul style="list-style-type: none"> <li>- External factors can influence performance and overall functionality</li> <li>- Security related issues have to be considered</li> </ul>
<b>Host on server</b>	<ul style="list-style-type: none"> <li>- No performance problems arising from insufficient processing power</li> </ul>	<ul style="list-style-type: none"> <li>- Administration requires remote control procedures</li> </ul>
<b>Host on laptop</b>	<ul style="list-style-type: none"> <li>- Hosting of server applications on training site</li> </ul>	<ul style="list-style-type: none"> <li>- Performance problems may increase response time while running simulation</li> </ul>

The usage of the trainer’s laptop might, however, lead to performance problems while simulating the process when approximately 15 users access the server application simultaneously.

Table 1 compares three main types of implementation choices. Each of the implementation possibilities can be chosen independently from one another. However, there are typical combinations. For instance, when a server in a remote location is used for hosting the work-flow engine the Internet would typically be used to connect the users to the server. When desktops are provided at the training site there is usually a LAN in place that can be used.

#### 4.2 Roles and Workflows in the Automated Process

Once all clients are successfully connected to the network, all users can log on to the system with their individual user names and passwords. Job descriptions are provided to all participants as described in section 3 for phases I and III. The former entail the log-on information. Most likely, there will be a number of participants whose roles differ from those in phases I and III. Thus, the trainer will have to allow a couple of minutes for reading the job descriptions. Again, one loan application file should be used for a trial run so that all users are familiar with their screen form.

The workflow management system is responsible for routing each loan application (so called instances) in the correct sequence to each role in the process. Thus, the system replaces the interoffice messenger. Whenever one role has processed an application, the latter is automatically routed to the electronic inbox of the appropriate role that has to execute the next task (Figure 2). The system keeps track of every instance in the workflow until it is processed completely and returns it to the original “virtual” branch office.

Some tasks of the loan approval process take more time than others. Often, participants consider this by assigning two or more employees to one task in phase III. Taking this into account, there are some roles in the workflow management tool (e.g. staff member “collateral rating”) that have more than one user assigned to them. These users have a shared electronic inbox so that each of them who has finished one loan application can pick any one waiting for processing. That way, the system avoids both, employees waiting for work that is not transported to their private inbox and loan applications lying idle in inboxes of overstrained employees. The software can be modified in so far that items in the inbox cannot be picked by users but loan applications are automatically assigned to users once they finish the previous one (pull vs. push). This solves the problem of items being processed in

Pri	Title	State	From	Created	Actions
1	Loan Approval	Receive loan application	Branch West	2009-10-13 14:48:10	🔍
1	Loan Approval	Receive loan application	Branch North	2009-10-13 14:48:47	🔍
1	Loan Approval	Receive loan application	Branch North	2009-10-13 14:49:06	🔍
1	Loan Approval	Receive loan application	Branch East	2009-10-13 14:49:36	🔍
1	Loan Approval	Receive loan application	Branch South	2009-10-13 14:50:06	🔍
1	Loan Approval	Receive loan application	Branch South	2009-10-13 14:50:13	🔍
1	Loan Approval	Receive loan application	Branch South	2009-10-13 14:50:36	🔍
1	Loan Approval	Receive loan application	Branch West	2009-10-13 14:51:29	🔍
1	Loan Approval	Receive loan application	Branch West	2009-10-13 14:51:39	🔍
1	Loan Approval	Receive loan application	Branch West	2009-10-13 14:52:32	🔍
1	Loan Approval	Receive loan application	Branch East	2009-10-13 14:54:27	🔍

Figure 2: Electronic inbox of the role “Collateral Rating”.

the wrong order (First-in-First-out vs. Last-in-First-out). However, the feeling of choosing freely between different items in a pool might improve employees’ motivation to some degree.

The administration tool running on the server replaces the branches when it comes to issuing loan applications. Thus, applications are issued by and returned to “virtual” branches respectively. Whenever the sales manager decides to increase or decrease the frequency of applications issued this has to be entered into the administration tool.

Furthermore, the workflow management system logs all waiting and processing times of each loan application. Hence, the role of a controller is not needed any more. All kinds of analyses (e.g. Work-in-Process, quantity and errors, processing time, etc.) can be generated automatically, immediately after the simulation is stopped by the moderator.

### 4.3 Creating Additional Value for Participants through Software Application

So far, changes brought about by the application of software to the simulated process were described. But is it worth while the effort? Does it create any additional value for training participants and their employers?

The most obvious and probably most impressive feature of implementing software (i.e. a WfMS) to support an already improved process is automation. Independent from their role all participants experience a number of different advantages automation brings to the process. First and foremost, loan applications are routed to the respective inbox immediately and correctly. The chaos caused by an overburdened interoffice messenger ceases. Second, users have a perfect overview over all items in their (shared) electronic inbox. They could even alarm managers if waiting queues get too long so that

additional users can be assigned to certain roles to resolve bottlenecks. Since this is difficult to realize “real time” while simulating the process, capacity management is one of the improvements often proposed afterwards by participants. Third, a parallelization of two or more tasks can be realized by the application. This leads to an additional reduction of processing time. Fourth, the number of processed loan applications is further increased and the variance of processing time is reduced significantly. Particularly the latter is an important element of Six Sigma. Fifth, the quality of processed loan applications is improved although a larger number is processed in a shorter time. Sixth, a broad data analysis regarding throughput and processing time is immediately available. This leads to a real time reporting and enables a powerful and flexible capacity management by the management.

An important part of the optimization in phase II was the development of a new floor plan in order to improve the transportation of loan applications. Thus, the layout in which the participants’ tables and seats were organized played an important role. Interestingly, usage of software provokes the opposite, i.e. the location of users does not matter any more. Participants will therefore experience how information technology in general and WfMS in particular influence both the operational level (automation, capacity management, etc.) as well as the strategic level (e.g. offshoring) of business process management.

Another advantage of software application is that it can serve different purposes. Not only the methodology Six Sigma and its tools can be taught using KreditSim. A general understanding of business process management is also conveyed and further supported by software. Finally, demonstrating a WfMS joined with a well-known process that has been improved by the participants themselves proves how valuable such a system can be.

## 5 CONCLUSIONS

Role plays are a recognized methodology to support methodological and strategic learning. Hence, they are well-suited for trainings focused on Six Sigma and the application of its tools. Since role plays also encompass social and communicative learning as well as affective learning, they also foster involvement and motivation of employees participating in trainings.

As shown in section 4, software can support and enhance employee training. However, it might not be useful to replace the paper-based simulation in every case. For the purpose of teaching Six Sigma tools and a general understanding of business process management, use of the paper-based simulation is strongly recommended before moving on to the computer-based simulation. Participants are usually impressed how powerful simple tools and changes made to the process can be even without using information technology. The subsequent facilitation of the software entrenches this experience. If the purpose of the training is to show the value of automation through a WfMS, the software can replace phase III of the original simulation. After the analysis of the process experienced in phase I, participants can directly move on to simulate the computer-supported loan application process.

Thanks to its structure, the simulation KreditSim can be used to target management and staff members alike. For a successful implementation of Six Sigma it is indispensable to gain both management's support and employees' commitment. Usually, the former is easier to achieve than the latter. Most staff members overcome an early scepticism and feel enthusiastic about the improvements in time, costs and quality of the optimized process. However, some are afraid of falling victim of another cost cutting initiative. They are anxious of losing their job once the process is optimized. Both the original paper-based simulation and the computer-based simulation tackle this problem in prohibiting any layoffs so that all participants have a (new) role in the improved process. Still, using the software makes the abundance of certain activities (e.g. interoffice manager, controller) even more visible. Therefore, the trainer should be well-prepared to argue that process improvement does not lead to layoffs. A failure to convey this message convincingly could lead to a loss of employees' support and commitment to a Six Sigma project or a process improvement initiative in general.

The case of KreditSim shows that software can complement existing non-electronic training instruments such as paper-based role plays. Thus, it can support already pursued educational goals (like teaching Six Sigma tools) and add other aspects (like introducing WfMS). Alternatively, it can replace parts of the training and thus shift the focus from the former to the latter. Depending on the intention of a training, the moderator can deliberately choose how to utilise the software. If the software is used for a third run of the simulation it can be presented as an independent alternative to the previously simulated runs. If the training covers more than one day the moderator could incorporate the participants' ideas from day one into the workflow and thus build the third (computer-based) run of the simulation on the findings of the first day's improvement phase.

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