Quality Engineering
Publication details, including instructions for authors and subscription information:
http://www.tandfonline.com/loi/lqen20

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Published online: 06 Jun 2013.

To cite this article: Jeroen de Mast, Benjamin P. H. Kemper, Astrid Wiltjer & Ronald J. M. M. Does (2013): Quality Quandaries: Deploying Operational Excellence at a Financial Service Provider, Quality Engineering, 25:3, 298-306

To link to this article: http://dx.doi.org/10.1080/08982112.2013.783599

Quality Engineering, 25:298–306, 2013

ISSN: 0898-2112 print/1532-4222 online
DOI: 10.1080/08982112.2013.783599

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INTRODUCTION

The 20th century saw an incredible development of professional organizations. The impact of technological advances is obvious; in addition, innovations in management structures and methods have resulted in the highly productive organizations of today. When the race for outperforming competitors on operational effectiveness gained momentum, companies started to copy each other's best practices. Consultants and management gurus quickly jumped in and started giving names to these best practices: total quality management, just-in-time, business process reengineering, statistical process control (SPC), quality circles, lean manufacturing, continuous improvement, etc. Out of these methods, principles, and approaches, time has singled out the ones that really have added value. And though most approaches have been presented as panaceas at one time or another, time has shown that they are in fact complementary. One of the last best practices is called Lean Six Sigma (cf. De Mast et al. 2012; Schroeder et al. 2008).

Lean Six Sigma is not revolutionary. It is built on principles and methods that have proven themselves over the 20th century. It has incorporated the most effective approaches and integrated them into a full program. It offers a management structure for organizing continuous improvement of routine tasks, such as manufacturing, service delivery, accounting, nursing, sales, and other work that is done routinely. Further, it offers a method and tools for carrying out improvement projects effectively. In an economy that is determined more and more by dynamics than by static advantages, continuous improvement of routine tasks is a crucial driver of competitiveness.

In this column, we analyze the transformation of a financial service provider in The Netherlands toward operational excellence and driven by a Lean Six Sigma program. In the next section, we describe the background, structure, governance, and methodology of the program. In subsequent sections we relate these components to the transformation and we assess the overall transformation in terms of speed and business results.

Edited by Ronald J. M. M. Does

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LEAN SIX SIGMA

An organization, whether a business enterprise or a not-for-profit organization, could be conceived as a collection of routine operations. These can be manufacturing processes, service delivery processes, processes in health care, a back office process, accounting processes, or sales—all work that is done routinely constitutes a process. A process consists of a number of operations that turn input into output. Manufacturing, sales, back office processes, marketing, and nursing are functions performed in a routine manner. Lean Six Sigma projects are about the improvement of these routine operations, seeking to make them more effective and more efficient, striving for processes that run like clockwork. Many of the routine operations suffer from recurring problems and crises. Line management and personnel are usually occupied with keeping things running. Dealing with problems typically takes the form of firefighting, and quick and dirty solutions are applied before rushing off to the next crisis. Recurring problems make good Lean Six Sigma projects. Lean Six Sigma brings an understanding of the root causes of the problem and provides a definitive and optimal solution. Even if a process does not suffer from severe problems, there is much to gain from periodical process overhaul. Processes evolve over time, and typically they grow in the direction of more complexity, more malfunctions plus makeshift solutions, and more obsolete or redundant work. Moreover, the staffing is usually not based on calculation but has historically grown. Lean Six Sigma projects optimize processes, eliminate waste, and provide a quantitative basis for staffing and line balancing.

In addition to tackling internal problems, Lean Six Sigma projects are deployed to attack issues perceived by customers as problematic. Customer feedback shows which aspects of a business are perceived as substandard, but they can also point to new potential business. Projects tackle dissatisfiers for the customers but can also develop or enhance latent opportunities for growth. The improvement of routine operations is what Lean Six Sigma projects do and, in fact, Lean Six Sigma provides a management structure and methodology that turn systematic improvement of routine operations into a routine operation itself. The direct benefits of Lean Six Sigma projects consist of benefits derived from customer satisfaction and cost advantages. Cost advantages can take the form of efficiency improvement (reduced workforce, enhanced equipment utilization), cost and capital expenditure avoidance, or reductions of cash that is tied up in inventory or elsewhere. By addressing product and service quality, making delivery more reliable, and better focusing marketing and sales processes, superior customer satisfaction can result in growth of revenue or market share or in reduced price sensitivity.

There are many activities in organizations relating to quality and efficiency, and they should not all be organized in the same way. Joseph Juran, in his book *Juran on Leadership for Quality: An Executive Handbook* (Juran, 1989), proposed a generally accepted distinction of activities related to quality into planning, control, and improvement. Quality planning consists of the determination of what customers want and the development of the products and processes that are required to comply with these needs. This work is typically organized in specialized staff departments such as marketing and product and process development. Design for Six Sigma (DfSS) is an approach for quality planning (cf. De Mast et al. 2011). Quality control consists of the on-line and real-time monitoring of production or service delivery, the detection of irregularities, and the reaction to these irregularities. A typical control system encompasses elements such as a control plan (or quality control handbook), control points and loops (SPC control loops, feedback and feed-forward controllers), and inspections. Quality control is reactive in nature and deals particularly with what Juran (1989) calls *sporadic problems*. Its organization should be integrated with the regular (production, back office, service delivery, or other) process, and nowadays its execution is typically the responsibility of the people who execute the process. Quality improvement, finally, is the organized and systematically pursued improvement to increase quality and efficiency to unprecedented levels (Juran calls this *breakthroughs*). Unlike quality control, quality improvement is not an on-line affair but should be executed in the form of projects (what Juran calls the *project-by-project nature* of quality improvement). Such improvement projects typically tackle what Juran calls *chronic problems*, eliminating them once and for all: recurring stagnations or constant levels of waste, poor service, or scrap. The

distinction between control and improvement, sometimes described as on-line vs. off-line quality management, is important. Quality control's main intent is to defend the status quo by reacting to problems (firefighting). If, in the course of this operation, an opportunity is encountered to improve the process, then it is, of course, seized, but the reactive and opportunistic approach of control is completely different from improvement, which searches for improvement opportunities systematically.

Designing a proper organizational structure for improvement projects is a matter of crucial importance. It is quite common that despite having all of the pieces of information and expertise available in the organization and sufficient goodwill and commitment, real breakthroughs are not achieved. The point is that information, expertise, and goodwill are ineffective unless coupled with authority and responsibility. The first problem that an organizational structure should solve is to couple information with responsibility. In too many organizations one sees that employees who execute the processes (service desk workers, nurses, front desk personnel, operators in a factory) know the problems and peculiarities of customers, as well as the everyday problems in the process, but it is not their job to run improvement projects. The people actually responsible for solving problems (line managers, staff departments, external consultants) have a sterile perception of the process, unaware of many of the crucial details. They know how the process should run in theory but are typically unaware of the majority of problems that the shop floor encounters and solves on a daily basis. The knowledge base for improvement projects is what economists call *specific knowledge* (cf. Jensen 2001). Think of front office personnel who see how processes are running and how customers behave and what they want. Think of salesmen who know the idiosyncrasies of certain customers, and of operators in a factory knowing the peculiarities of material and machines; foremen knowing the particulars of their planning; and designers having highly specialized knowledge of certain components of a product. Due to its high level of detail, this sort of knowledge is very difficult to transfer. Moreover, a lot of the know-how that people working with the process have is tacit; that is, known unconsciously. Acknowledging that improvement projects are driven by specific and tacit knowledge, they should be executed by people who are immersed in its detail—enter the project leaders (who are called black belts [BBs] or green belts [GBs] in the Lean Six Sigma terminology) selected from line personnel.

This sort of delegation creates a new problem: the problem of poor integration. People have a tendency to work on their pet projects and to select problems to work on based on the values of their profession and to shy away from stubborn problems. Even if people make an effort to choose a project in the interest of the company, they still do not work in the interest of the company; they work on what they think is in the interest of the company. This problem, that improvement actions are based on criteria such as people's own interests, the values of people's professions, or misconceived ideas of the organization's interests, is called the *agency problem* by economists (see also Jensen 2001). It is solved in Lean Six Sigma by separating project execution (BBs and GBs) from project control by management (who are called *champions* in the Lean Six Sigma terminology). Projects are typically proposed by people who have context knowledge, but they should be ratified by a champion who can assess their merits against the larger corporate objectives. Likewise, projects are executed by BBs and GBs who know the specifics but are monitored by the champion in the form of regularly scheduled reviews.

The third problem that improvement projects will encounter is that the company's hierarchy impedes improvement initiatives. Lean Six Sigma projects will partly conflict with other initiatives that people in the organization are running, they will hamper people's personal agendas, and they will break into people's "personal kingdoms." To ensure an environment that is open to Lean Six Sigma improvement projects, it is important that senior management and Lean Six Sigma's program management create a sense of urgency that is shared across the organization as well as a vision of the objectives to be pursued. To deal with conflicts and resistance based on personal interests, it is important that Lean Six Sigma BBs and GBs have political backup of sufficient weight. To ensure that projects are not inconsistent with other initiatives in the organization, Lean Six Sigma should be aligned and integrated with the company's strategy (and this should be carefully planned before the Lean Six Sigma initiative starts, but in the course of the program senior management should continuously adjust

and reconsider). Thus, we see the vital roles that the program director and program management play.

Building an organizational structure in which Lean Six Sigma projects can be run effectively across the organization will take time. If an organization succeeds in building such a structure, it will have a substantial impact on the company's resilience, innovativeness, and capacity to learn and continuously improve. It will be a resource for a company's competitiveness. Lean Six Sigma prescribes that improvements be run by people with intimate and detailed understanding of the process and problem at hand. That implies that mostly projects are executed by people from the line organization and not by staff personnel (let alone external consultants). The motivation is, of course, that line persons are aware of the treacherous details that are part of the problem, its solution, and limitations on improvement directions. Moreover, because improvement actions ultimately are handed over to the line (to the employees, operators, and process engineers), it is important that the solution is such that they can work with it and that they accept it. Typically, a Lean Six Sigma project is run by a team consisting of one or more BBs and/or GBs, who are typically selected from middle management. They are thoroughly trained in becoming effective project leaders, and they work either full time or at least a considerable part of their time on the project. Several yellow belts (YBs) can be added to the project team—persons that the BB or GB calls in as advisors, typically operators or employees who execute the process, but YBs could as well be technical specialists, marketing specialists, or whoever the BB or GB thinks could bring in relevant knowledge. On a limited number of occasions, input from the YBs is requested, and they may be called upon to collect data. The difference between a BB and a GB is interpreted differently in various organizations, and the precise role of a BB and a GB should be adapted to the situation in one's own organization. In some companies, a BB refers to project leaders who work full time on their project, whereas GBs work 2 or 3 days per week on their project. BBs then run the tougher projects. But a different approach is to have projects executed by a full-time BB from a staff department, assisted by one or two part-time GBs from the line. In addition to BBs, GBs, and YBs, orange belts (OBs) may be active in the Lean Six Sigma approach. These are persons from all over the company who execute a process and who want to improve this. Typically, the Lean tools are used and it turns out that this group works on short-cycle improvement projects and is responsible for continuous improvement initiatives and bottom-up approach. The size of this group of belts may be substantial.

The above implies that improvement projects are not run from a central staff department (such as quality assurance or troubleshooting). Rather, the idea is that the belts are dispersed throughout the organization. The danger of such a decentralized approach to improvement is that there is no integration of activities, and efforts are wasted on issues that are not of strategic importance. For this reason, projects are selected and monitored by so-called Lean Six Sigma champions. The champion is the project owner, in the sense that he is responsible for the process that the project aims to improve. Preferably, the champion is also the hierarchical superior of the BB or GB. Loosely said, the champion owns the problem and hires the BB and GBs to solve it. Given his position in the company, the champion should be able to relate the project to the bigger picture of the company's strategy and other initiatives. During its execution, a project is reviewed several times by the champion, thus allowing him to adjust the direction that the BB or GB chooses. This control mechanism is intended to assure that the project remains focused on issues of critical importance to the company. Thus, we have the champion as project owner, the BBs and GBs as project leaders, and the YBs as team members. In addition, OBs may be active for continuous improvement activities. These persons form the project organization. The whole Lean Six Sigma initiative is managed by program management, which consists of one or more master black belts (MBBs), one or more program managers, and a program director. The program director should be part of the business's senior management (that is, member of the board of directors or one echelon below). The program director is ultimately accountable for the Lean Six Sigma initiative, and he should map out the strategic direction. Further, the program director is ultimately responsible for resolving conflicts where Lean Six Sigma impedes and is impeded by other interests in the organization (for example, where various initiatives make demands on the same group of people). Lean Six Sigma without leadership

from top management may deliver successful projects but is unlikely to sustain and result in strategic advantages or truly economically relevant benefits. The program managers do the day-to-day administration of Lean Six Sigma. They do planning and resource management, which involves arranging training and information meetings, controlling the budget for Lean Six Sigma, and acquiring software for Lean Six Sigma.

The project selection process is managed by the program managers, as is the selection of BBs and GBs. Moreover, program managers are typically involved in periodic project reviews, monitoring the project's progress and watching over the project's compliance with the Lean Six Sigma way of working. The program managers are also responsible for benefit tracking; that is, monitoring whether claimed benefits are actually realized and reporting the results to the program director. A final responsibility of the program managers is the adjustment of the program's course, reacting to problems and complications. The MBB are experienced BBs. They are selected to act as Lean Six Sigma experts and thus are the company's resource concerning Lean Six Sigma's method and techniques. Moreover, they deliver the BB, GB, and OB training and they support projects. A Lean Six Sigma transformation is often a long-term journey for an organization that aims to improve its product or service quality and its corresponding cost structure. Hence, it supports or facilitates an organization in executing a strategy that often includes goals related to improving its brands or its profits.

Lean Six Sigma elevates problem solving and quality improvement to a more professional level by training BBs and GBs in an attitude that can be described as scientific. Improvement actions are not based on perception and anecdotal evidence. However, neither are they based on the notion of the omniscient specialist who, sitting behind his desk, derives a remedy by making clever deductions from his expert knowledge. Central to a scientific attitude toward process improvement is the idea that to control a system we have to understand how it works. Without understanding of the mechanics of a problem, we are likely just fighting symptoms and applying makeshift solutions. To understand a system means to have a theory that relates the system's behavior to its causal factors. Lean Six Sigma's approach is similar to that of good medical practice: first, relevant information is collected followed by careful diagnosis. A treatment is proposed and implemented, but checks are applied to see whether the treatment is effective. The principles outlined above were put in an operational form in the form of the DMAIC roadmap (De Mast and Lokkerbol 2012). It employs five phases: Define (D), Measure (M), Analyze (A), Improve (I), and Control (C). The roadmap guides BBs and GBs through their projects, helps them ask the right questions, shows them when certain tools and techniques can be used, and forces them to organize their findings in a structured manner. The five phases are briefly characterized as follows:

Define: Select project and BB or GB.
Measure: Make the problem quantifiable and measurable.
Analyze: Analyze the current situation and make a diagnosis.
Improve: Develop and implement improvement actions.
Control: Adjust the quality control system and close the project.

A MODEL FOR A LEAN SIX SIGMA TRANSFORMATION

In this column, we offer a case study of a successful Lean Six Sigma transformation that illustrates the use of theories from the Introduction and serves as an exemplar for other service providers in the financial sector, rather than providing a theory or proving the use of a specific tool or technique. The financial provider is mainly an insurance company that offers retirement income products to both individuals as well as to organizations. Most of such income products are linked to pension funds, possibly through a financial service provider, and the group of pension funds worldwide is the largest (in assets) for any category of investors. This makes the provided services an interesting business.

One of the maturity or deployment models that are available through various sources that we find very useful is a model that contains five phases as described in Figure 1. Multiple versions of a maturity model are available. Some of them are even claimed

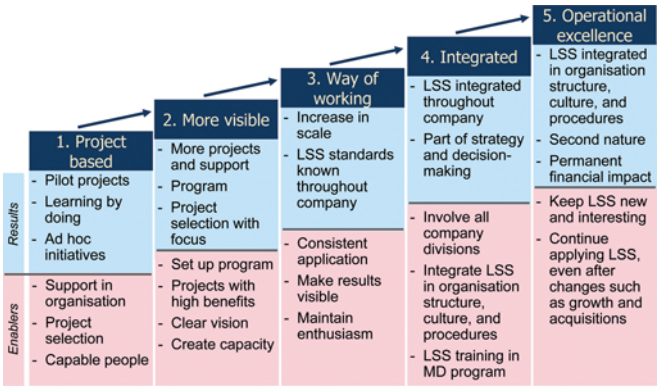

FIGURE 1 **A five-phase model in a transformation cycle. (Color figure available online.)**

to be part of a copyright product in the process improvement business. We use the model described in Raje (2007) and illustrated in Figure 1 (see also Hilton and Sohal [2012] for a theoretical basis).

The model in Figure 1 contains five phases. We describe each of the five phases below:

1. Project based: Several pilot projects are started that are expected to yield significant impacts with relatively little effort. The project leaders (green or black belts) are trained on the job, and senior management is taught their new roles and responsibilities.
2. More visible: More projects in core processes or product/service segments are started (of which some fail). More yellow, green, and black belts are trained for these projects, and significant time should be invested in these projects. Senior management monitors results and presents a clear vision.
3. Way of working: A further increase in the number of projects but also of various impact levels. For example yellow, orange, green, black, and master black belt levels that range from 5,000 euro impact up to multiple million euro projects. Lean Six Sigma becomes the standard improvement method for project leaders, and senior management makes results visible.
4. Integrated: The Lean Six Sigma method is integrated throughout the organization and links to the overall strategy. Senior project leaders (green and black belts) define projects that fulfill subgoals of the strategy and support small improvement initiatives. Senior management integrates Lean Six Sigma in the organization's structures, such as management development programs and employee reward programs.
5. Operational excellence: Lean Six Sigma becomes the organization's second nature. For each employee, operational excellence is concretely defined in his or her function profile. Senior management is continuously signaling new challenges for the program and, when needed, it updates the program.

Five Phases of a Lean Six Sigma Transformation in Practice

In our case study we follow a financial service provider that has been a client of the Institute for Business and Industrial Statistics since 2007. During the years of transformation, the client went through the phases of the model as described in previous section, and currently one can argue that this particular provider is in phase 4 and is attempting to reach the final phase.

Phase 1: Pilot Projects

In 2007, the organization started 10 pilot projects at the green belt level; that is, with an impact of about 25,000 euros per project per year. The training was facilitated by an external institute, because there was no knowledge of Lean Six Sigma on a professional level yet available. The first green belts were internal consultants who had extensive knowledge of the business processes. The pilot projects mainly focused on cost and quality of processes in the back office. The focus was to streamline these processes. Note that these projects are in line with the results of Lokkerbol et al. (2012), wherein it is concluded that 80% of the improvement projects in the financial sector take place in the back office, customer service, sales, or financial administration departments.

One of the projects dealt with the process of transferring a pension from one provider to another provider and aimed to reduce the throughput time and its components: waiting time, processing time, and rework. After studying these components, it was found that some of the computer systems could be simplified and standardized, and the number of internal checks in the process could be reduced without harming the quality or reliability. In addition,

it was found that some of the costs were (unintentionally) not charged to clients. In total, through this project the organization was able to save 70,000 euros in costs and to reduce the throughput time by about 50%.

Employees who participated in the first pilot projects were enthusiastic. Green belts and champions realized that there was great potential for improvement. At that time, the organization discovered that it was not just a matter of executing projects but that it needed more structure; for example, with the structured steps in the DMAIC framework and lean awareness.

Phase 2: More Projects and Support

In 2008, the first black belt of the organization went to training and started a large project on productivity. The project had a great impact, both financially and politically. The project was an enabler for the visibility of the Lean Six Sigma transformation in the sense that it included a time and motion study among employees. As with the pilot projects, the black belt project took place in a back office environment. The project objective and corresponding critical to quality (CTQ) flowdown (cf. De Mast et al. 2012) can be categorized as one of the eight generic project definition templates as constructed in Lokkerbol et al. (2012, 992), namely, "reduce cost by increasing efficiency of human resources." As shown in Figure 2, in the downward direction the project mainly focused on the improvement of the productivity per full-time equivalent (FTE) to reduce the personnel cost and left the factors "Cost per FTE" and "Work volume" as given. The CTQ productivity is decomposed in the constituents availability, processing time, and rework. The personnel cost, in its turn, is linked in upward direction to the operational cost, in this case of the back office.

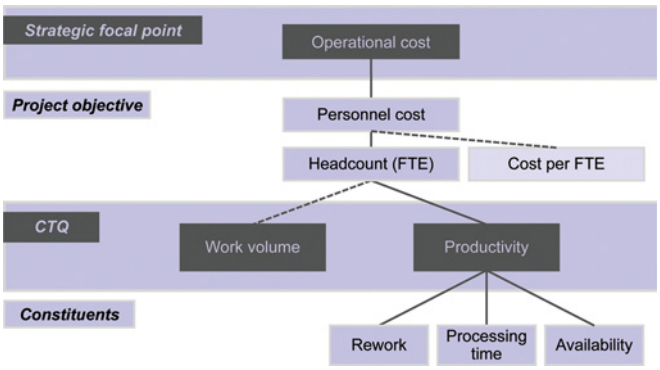

FIGURE 2 **The CTQ flowdown of the project that aimed to reduce the cost of the back office. (Color figure available online.)**

After measuring the CTQs, it was revealed that the productivity differed among the teams in the back office. The two most important factors that explained the differences were believed to be that (1) teams had no insight in their productivity measures and (2) teams differed in the ratio of standardized work versus customized work. It was argued that because teams have no insight into their productivity level, they are not aware of any underperformance. In addition, it was shown that there could be a positive effect of the amount of standardized work on the productivity per team. With the introduction of a visual management system and the introduction of a team devoted to customized work only, the project resulted in a savings of about 700,000 euros in yearly personnel cost.

At the end of 2008 and 2009, the financial provider also suffered from the worldwide financial crisis. The next two black belts started in 2010. Their projects were executed in the customer services department dealing with mid-size clients. The reason for executing one project was the heavy workload experienced by customer service employees in the administrative department. In addition, the project aimed at improving the effectiveness of the employees. It was found that employees in the administrative department were spending more time on meetings than the 2 hours a week targeted and that meetings were planned in multiples of 1 hour. The project was able to reduce the time spent on meetings and to rationalize and centralize a time-consuming secondary task, which altogether yielded a 350,000 euro reduction of ineffective use of human resources per year.

The other black belt project focused on the effectiveness of the staff in the customer contact center. It was found that they were spending quite some time on phone calls and e-mails, and on searching for information. A set of improvements proposed in the project enabled the organization to reduce the amount of time that account managers spent on these tasks by more than 10%, which equals about 450,000 euros per year.

Management got more involved in the process improvement projects and it took an important role in the control stage. Furthermore, top management of the company had a strong belief in Lean Six Sigma

and followed an executive training in Lean Six Sigma. Furthermore, the Lean Six Sigma project's employees could attend a workshop that included subjects such as Lean inspiration and customer value focus. In total, about 50% of the organization's employees attended the workshop.

Phase 3: Increase Scale of Program

Since 2011, more than 30 Lean Six Sigma projects that relate to various processes in the organization have been started. There was a widely felt sense of urgency regarding cost reductions in the organization. The total potential impact of these projects was expected to be about 2 million euros, and it turned out that an even greater impact was realized (more than 2.5 million euros). Lean Six Sigma projects are now also executed outside the customer services division and the back office. The first black belt project at the sales department aimed at increasing selling time by the sales manager. It was found that almost 40% of the time of the sales managers was spent on internal meetings, traveling, and training. About 173,000 euros could be saved through focus on acquisition of required knowledge and efficient scheduling of meetings. In addition to considerable savings, this project was a good example of the application of Lean Six Sigma in a non–back office environment.

Some of the black belt projects related to fixed costs of the organization, such as office facilities. The project on office facilities focused on reducing the cost of these facilities. During the project, the black belt revealed that overall the organization was charged more for the facilities than it was actually using, which resulted in a quick win of about 650,000 euros and, furthermore, that the desktops and (cell) phones available were underused. Through the reduction of the number of desktops and (cell) phones, the black belt was able to save another 600,000 euros in fixed costs. Furthermore, this type of project turned out to be an excellent vehicle for the further increase in the visibility and the popularity of the program.

Another example for which Lean Six Sigma could be applied in other divisions of the organization is a project executed by a green belt. This project resulted in a savings of 560,000 euros by reducing the process time of a payment process.

Since 2011, the black belts have been training employees throughout the organization in Lean Six Sigma by providing yellow belt training. During the workshop, the participants are taught the principles of Lean Six Sigma and are asked to propose improvements in their own working environments. Examples are: an improvement of the debit interest and the reduction of administrative tasks to create time for customer contact. Each of the participants' proposals were verified within 1 month after the workshop.

Phase 4: Lean Six Sigma Program Integration

In 2012, the Lean Six Sigma program was integrated throughout the organization with the introduction of the following elements: a monthly report to senior management about the progress of all projects, regular feedback sessions on project issues with the various management teams throughout the organization, and the availability of Kaizen events with support of green or black belts (following a short DMAIC cycle of about 2 weeks) for any department or process. In addition, more than 40 so-called orange belts were trained by the organization's black belts with a 3-day Lean Management training in which each participant had to lead her or his own process improvement initiative.

Finally, about 150 yellow belts were trained in a one-day workshop on Lean Six Sigma, and the workshop will continue to run every 2 months for the coming years. Figure 3 shows the cumulative number of trained belts.

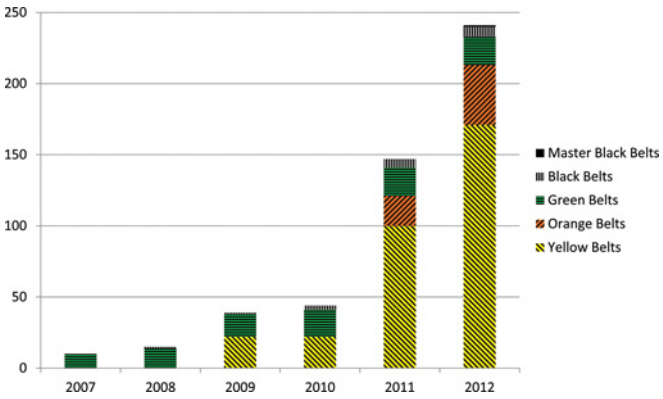

FIGURE 3 **Number of belts trained in the company. (Color figure available online.)**

Phase 5: Operational Excellence

The organization will continue to train management and employees in Lean Six Sigma by providing training for orange belts and yellow belts. Furthermore, new projects are scheduled for green belts and black belts, and there is a high demand for Kaizen projects from different departments. It is important for the organization to monitor and respond to new developments, find new inspiration and drive for the program, and use strong aspects of their corporate culture in its improvement programs. Certain departments and employees communicate departmental or personal goals in the field of efficiency and customer satisfaction. In the coming years (2013–2015), it is expected that this trend will expand, and therefore the Lean Six Sigma program strives to adjust to these developments.

CONCLUDING REMARKS

The lessons learned relate to issues known from literature, as well as issues that, to the best of our knowledge, are unique for this case study and therefore worth sharing:

- Start with small projects and involve persons who are enthusiastic. The power of successful projects could be found in cooperation with different departments or units. This lesson relates to findings in Amabile and Kramer (2011). An implementation is both bottom-up through the execution and evaluation of small projects and top-down through clear goals directly related to the program and involvement in project reviews.
- Black belts should not only execute projects but should invest in transferring knowledge throughout the organization. Black belts should support management and the employees in achieving their goals, because great involvement in the program of both managers and employes is essential for the success of the program. These leading black belts should adopt training and coaching skills not only in the field of Lean Six Sigma but also in the field of operations management and organizational change.

In this column, we discuss a Lean Six Sigma transformation of a financial service provider through the five phases of a maturity model. We elaborate the interesting features of each of the phases and conclude that the five-phase model is a useful structure for an organizational Lean Six Sigma transformation. This may help to inspire or guide leading black belts or Lean Six Sigma program managers in the implementation of their own Lean Six Sigma program.

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