

# The adoption of globally unified process standards via a multilingual management system

## The case of Marabu, a worldwide manufacturer of printing inks and creative colours of the highest quality

Klaus Cee<sup>1</sup>, Iris Bruns<sup>2</sup>, Andreas Schachermeier<sup>3</sup> and Lena Franziska Kaiser<sup>4</sup>

<sup>1</sup> Marabu GmbH & Co. KG, Germany  
cee@marabu.com

<sup>2</sup> ConSense GmbH, Germany  
i.brunns@consense-gmbh.de

<sup>3</sup> ConSense Management Systems GmbH, Austria  
a.schachermeier@consense-gmbh.at

<sup>4</sup> University of Liechtenstein, Principality of Liechtenstein  
lena.kaiser@uni.li

### Abstract.

- (a) **Situation faced:** Marabu GmbH & Co. KG develops, produces and distributes high-quality special printing inks and creative colours for international markets. In 2013, Marabu, with 17 subsidiaries and sales partners in over 100 countries, planned to implement a global quality and environmental management system according to ISO 9001 and ISO 14001. Marabu searched for software that was capable of multilingualism and that would permit local deviations in processes and multi-site certification.
- (b) **Action taken:** Marabu opted for the ConSense Integrated Management System (IMS), a management software that works with an innovative multilingual concept and enables the harmonisation of company-wide standards. The implementation of the software-based IMS took place within a tight schedule. A uniform handbook structure was developed for all sites including a unified numbering system and a binding style guide for the modelling of processes.
- (c) **Results achieved:** Just a few months after the rollout, the first sites were successfully certified, successively followed by further sites. The transparent modelling of globally uniform processes, including local variants, is now increasingly carried out in a decentralised manner. Only the final testing and approval are performed centrally. The new system contains more than 300 processes and co-applicable documents.
- (d) **Lessons learned:** The use of the software relieves responsibilities at the headquarters since part of the process responsibility can be transferred to the international sites. With the introduction of the multilingual IMS, Marabu has set uniform worldwide standards. Overall, more employee responsibility has led to more acceptance, and thus to a lived management system that drives continuous process improvement.

**Keywords:** unified processes, multilingualism, multi-site capacity, quality and environmental management system, qm system, continuous improvement process.

## 1 Introduction

For more than 150 years, Marabu GmbH & Co. KG has been an innovator and a reliable partner for businesses and users of screen-printing inks, pad-printing inks, digital-printing inks and creative colours. More than 500 qualified employees in the Marabu Group provide customers all over the world with a wide range of different inks, with annual sales of more than 100 million euros.

Founded in Stuttgart (Germany) in 1859, the family business has a worldwide presence with 17 subsidiaries and distribution partners in more than 100 countries. In addition to German production sites in Tamm and Bietigheim-Bissingen, production also takes place in plants in the United States and Paraguay. Additional Marabu Group sites are located in Norway, Sweden, Denmark, Finland, Great Britain, France, Spain, Italy, the Netherlands, Russia, Brazil, Paraguay, China and, since 2019, also Canada.

The Group develops, produces and sells a wide portfolio of printing inks (screen-printing inks, pad-printing inks, digital-printing inks, liquid coatings and water-based spray paints) as well as creative colours for international markets. The total production volume amounts to 4000 tonnes annually. On average, about five new ink series are brought to market per year. Furthermore, the company produces limited edition inks to meet with customer requirements. Moreover, it provides onsite technical customer services that input parameters settings at the customers' locations. The in-house Print Centre carries out more than 1000 customer tests per year.

Marabu manufactures high-quality special inks with the "Made in Germany" seal of quality at two sites in Stuttgart's technology region. Top-class technical services, practical customer training courses and a focus on environmental awareness are central components of Marabu's company philosophy. Marabu has also established sustainable business practices as an important part of its operations and has proven itself in this regard with numerous actions and solid results.

However, Marabu has faced some challenges. As a result of corporate restructuring, its subsidiaries are now more closely aligned with the parent company in Germany. This alignment requires the standardisation of processes in line with the quality requirements of the parent company. Also, Marabu's customers called for certified processes in the subsidiaries. These requirements were to be satisfied by introducing a unified, certified quality management (QM) system (ISO 9001) and an environmental management system (ISO 14001). The ISO, the International Organization for Standardization (<http://www.iso.org>), provides common standards between nations and thus facilitates world trade.

The case of Marabu contributes to the broader discussion on adopting unified process standards, especially in terms of quality and environmental management systems, QM itself and process improvement. QM encompasses all activities and objectives aimed at fostering continuous improvement and organisational change [1]. Scholars have found that QM can lead to improved performance in terms of business results,

innovation, operations and quality [1; 2]. This paper describes the implementation case of Marabu's quality and environmental management system, the actions that were taken, the results achieved and the lessons learned.

## 2 Situation faced

Better business performance is required for businesses to succeed. Sustainable quality plays an important role here. Increasingly, customers, business partners and even company employees were demanding a QM standard based on ISO 9001 [3; 4]. There are many points in favour of introducing globally unified processes with the help of a QM system. The introduction of a QM system has been shown to improve, for example, customer satisfaction, documentation availability, internal communication, compliance, risk management, efficient working practices, performance measuring and control of business processes [5]. Overall, it has been shown that the correct implementation and use of a QM system can lead to significant advantages for a company [4]. In the case of Marabu, there were several reasons behind the decision to implement a management system.

Firstly, the new organisational structure required global standardisation. As a result of a strategic reorientation, the subsidiary companies were becoming successively more closely linked to the parent company over the previous few years. The parent company sets the standards for quality and environmental management, and occupational health and safety, which are applicable to all subsidiary companies. The original plants in Tamm (the head office) and Bietigheim-Bissingen (since 2004 the site has been a new/separate plant for creative colours) have been certified according to ISO 9001 since 1995, and according to ISO 14001 since 2003. They have now embedded occupational health and safety within the company standards with the OHSAS18001 certification (since 2012) and the associated "Systematic Safety" seal of approval. These standards now also needed to be guaranteed in the other sites.

Secondly, key international customers expected that Marabu would implement a global quality and environmental management system to ensure that the product quality could meet and even exceed their expectations.

Thirdly, Marabu's own quality demands and the desire to receive TÜV SÜD multi-site certification for the Marabu Group required the introduction of such a system. This multi-site certification is available for companies with multiple sites and is only available if the different branches operate with a common quality and environmental management system. Additionally, the management systems must be planned and controlled centrally, and the different sites then become subject to a common annual audit programme.

Fourthly, the subsidiaries aimed to grow to better business locations and gain more responsibility. To achieve this goal, unified and certified processes were key.

Prior to tool implementation, the overarching challenge was that the German sites were already using a computer-supported system which was not capable of operating over multiple sites and did not include a tool for process modelling. This way of working not only made global cooperation more difficult but it was also very inefficient. For

example, process flow charts had to be prepared separately in a complex process with a different programme and then transferred to the then-current management system via a “copy-and-paste” procedure if any revisions were required.

The aim was to satisfy the above-mentioned requirements and to prepare the company for the future. To achieve this aim, it was decided that a new integrated quality and environmental management system would be rolled out, initially among the foreign plants and later among the whole Marabu Group.

The schedule for the entire project was very tight because the first certifications were scheduled for 2013. Therefore, a software provider that could provide a QM system that would work equivalently well at the different sites was urgently sought.

### **3 Actions taken**

Several actions were taken to achieve the overall goal of unified process standards and continuous improvement. Firstly, the top management as well as the entire workforce had to be convinced of the plan. Secondly, a suitable software had to be found. Thirdly, software settings had to be worked out and everything had to be prepared in advance for the software implementation. Fourthly, the implementation took place. Finally, after the implementation the processes were and still are continuously revisited to allow for improvements in the system.

#### **3.1 Commitment from the top management and the workforce**

The adoption of a QM system should be a strategic decision made by the company’s top management [6; 7] that consciously demonstrates the top management’s commitment to the development, implementation and maintenance of the new system. This level of commitment is a vital factor in QM so that the vision is communicated, quality policies are developed and the company culture is changed. Studies have repeatedly shown that top management commitment is associated with the successful implementation of ISO 9001 [8]. However, a mutual relationship between the management and the employees is important to manage quality. Therefore, the management team must know how to motivate and involve the workforce to enable smooth implementation [9].

At Marabu, the entire top management team was convinced of the enrichment that would arise from a QM system. Responsibilities were allocated so that employees were also involved in the project. With these responsibilities having been distributed, the top management team was always informed about the current state of affairs.

The Corporate Management Representative (CMR) and the Quality, Environment and Safety (QES) ISO team held the lead in the project. They monitored the management documentation and the modifications to the core processes in the joint management system. The team also controlled and carried out the implementation of ISO 9001 and 14001 in various subsidiaries. The CMR was the key person involved in the transition and had an overview of the whole project. The CMR is responsible for the guidance and supervision of local QM representatives (QMRs) and environmental management representatives (EMRs), alongside managing the annual internal audit programme

of the Marabu Group and is involved steering activities regarding the continuous improvement process.

All employees who were to work with the system received training. Employees who were to work with the system but not to make any changes to it received comprehension training. Employees who were responsible for processes received a process-owner training. The QMRs and EMRs received intensive training at the company's headquarters since they also have to report directly to the headquarters.

### 3.2 Software selection

People from the QM and IT department compared different software providers based on the predefined selection criteria. Only one software provider met Marabu's most important requirements: multilingualism and a multi-site capability. ConSense GmbH from Aachen is a specialist in user-friendly and intuitive software for processes and QM and has been developing innovative solutions for the complete electronic support of ISO 9001 since 2003. The special features of ConSense software include a practical multilingual concept and the display of site-specific deviations, which support the cautious harmonisation of company-wide standards.

Since the selection of the right software provider is important and should be carefully thought through, a "Hands-on Workshop" was held to test the software products under live conditions. During the workshop, potential users received detailed information about the functions and different modules and used the software immediately based on a sample project. The setting also enabled the exchange of experiences with other prospective customers about the various QM systems available on the market.

### 3.3 Definition of system properties

The selection criteria were elaborated into extensive system properties. These functions contributed to the fact that the employees quickly adopted the new system.

**Multilingualism.** One important selection criterion was software multilingualism. The ConSense software not only covers a series of interface languages but also enables the use of two different types of language concepts for documents and processes: Identical content is used in different languages or varying content is used in different languages. The variation concept is required if – as with Marabu – a simple translation of processes is not sufficient because local, regional, or national characteristics require variations in the content. In this case, the software ensures that when a change is made to a central specification, all associated variants are modified. This function is especially important for the annual audits as they are executed in two different languages.

**System operation.** The system has an appealing interface and is easy to operate. Based on a search function, employees can find processes, since processes worldwide are named after the same scheme. One key aspect of the system is its process visualisation feature whereby the process managers are able to create and manage processes themselves. However, the head office still retains central control. Overall, the interface is designed intuitively so that employees enjoy working with the system and do not refuse to use it.

**Visualisation.** The unified visualisation of processes facilitates, for example, global collaboration, reduces knowledge loss when employees leave the company and builds a solid foundation for audits. The new system includes internal specifications for the visualisation of processes through flowcharts that are applicable worldwide (e.g., concerning symbols, sizes, distances and more). These style guides prevent the uncontrolled growth of process illustrations, as it was the case with the previous system. However, the subsidiaries are granted certain freedoms within the framework.

### 3.4 Rapid adoption of globally unified process standards

Marabu adopted the new unified process standards within two years. The project started, among other things, with the development of the QES guidelines, the preparation of the most important documents and the selection of the appropriate ConSense IMS software. After the preparation phase, the process documentation was created and adapted, including local process variations and work instructions for each site. The process documentation was translated, if necessary, into the respective languages. In June 2013, Marabu France, with a total of four sites, at that time, was certified. In October 2013, the new management system supported the successful certification of the Chinese site to ISO 9001 and 14001. A team of employees from the central QES section assisted their French and Chinese colleagues with the implementation for about six months. The process landscape was developed in workshops and configured with ConSense. The integrated flow chart manager was particularly useful due to its capacity for modelling processes quickly and simply. After China, the US plant was certified in November 2013. In July 2014, the sites in Tamm (Marabu HQ) and Bietigheim-Bissingen were audited based on ISO 9001 and 14001, followed by Brazil and Sweden in October 2014, Italy in 2015 and, finally, Marabu UK. All certifications were completed successfully.

### 3.5 Continuous improvement

Once the new system was implemented, the project was far from over because the system formed the basis for continuous improvement. With the new system in place, adherence to processes can be checked, the continuous improvement of workflows can be ensured and thus the goal of operational excellence can be achieved [10]. Deming's plan-do-check-act (PDCA) cycle (Figure 1) is a widespread iterative four-stage method that can be used when working towards continuous improvement [11]. Marabu applies Deming's PDCA cycle to ensure that all quality and environmental standards are met and are continuously improved.

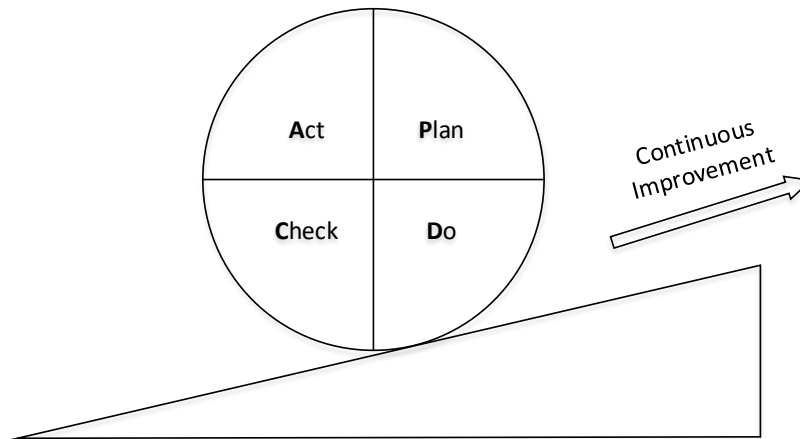
**Plan:** In this stage, quality and environmental aspects are worked out, which need to be improved or changed to conform with legal and other requirements. Furthermore, objectives, targets and also the procedure is defined.

**Do:** In this stage, processes are executed. The goal and the benefits of the changes are communicated, awareness is created and employees are trained as needed. Changes are documented so that they can be monitored later.

**Check:** In this stage, processes are measured and subsequent results are analysed in contrast to expected process performance. In the case of variations between results and

expectations, potential root causes are assessed to identify possible options to improve the processes.

**Act:** In this stage, the improvement options are implemented in the processes. In the next *Do* phase, the implemented improvement options should have solved the previously identified issue. If not, the improvement options were not effective.



**Fig. 1.** Adapted from Deming's plan-do-check-act (PDCA) cycle for continuous improvement [11]

#### 4 Results achieved

Such a complex implementation is unique for a medium-sized company. Together with ConSense, Marabu implemented a unified quality and environmental management system that ensures that there are no accidental local deviations in processes. The new system provides more transparency since all employees have access to all relevant processes. This fosters collaboration and support between the different subsidiaries. The new management system has also simplified the work of the QES team with its improved transparency. The team can now access all sites anywhere in the world. Orientation is simple because the same interface is used everywhere.

The headquarters was relieved since processes are modelled according to predefined standards that were defined by local quality and environmental representatives at the different sites after they had participated in the appropriate training and workshops. Only the final test and its approval are still centralised.

Moreover, processes do not always have to be reinvented, as employees can learn from already-established processes even when they are at different sites. This saves time and resources. Another valuable feature of the system is the translation function for processes and documents. This enables documents that are written in a local language to be re-translated quickly, for example, during audits. Audits are usually carried

out bilingually. This allows for the quick recognition of whether a deviation from the specified standards has occurred and thus for immediate action to be taken.

Marabu believes that a worldwide standardised management system is not only to be used for standard-compliant documentation but that such system helps in pursuing a much greater future-oriented goal: the continuous improvement process.

## 5 Lessons learned

Marabu was able to learn valuable lessons through the rapid introduction of its QM system.

**Selection of the right QM system provider.** The selection of the QM system provider should not be made in a hurry, as the system will remain in the company for many years. Besides a suitable system that meets all the requirements, reliable cooperation with the software provider is equally important. As all, the company's know-how is stored in the QM system, having a strong partner in tow while recording processes, migrating data from one system to another, or training employees on how to use the new software facilitates the whole project.

**Involving the whole team.** Besides the commitment of the top management, the whole team needs to be on board when adopting a new management system. If a management system is not accepted and lived in the company, it cannot be optimally used for continuous improvement and organisational control. Since continuous improvement is the goal, the system is not static, but is subject to constant testing and change processes. The corresponding changes must be communicated to the employees and presented transparently so that the necessary measures are implemented in the company. Overall, more responsibility for the employees did lead to more acceptance of the management system – and thus to a lived management system that drives the continuous improvement process.

**Constantly raising awareness of the QM system in the minds of the workforce.** The system should not only be in the minds of employees shortly before and during audits but should be part of their daily routines. Training and regular refresher sessions are important to remind employees of the benefits of using the system. However, especially at sites that did not yet have a management system in place, there was initially strong scepticism. After a few runs, however, a routine was established and the benefits were quickly noticed. For example, the changeover resulted in higher customer satisfaction and more orders.

**Not underestimating culture.** Cultural conditions are very different in a globally operating company. It is important to be aware of these cultural differences and to prepare intensively for those aspects. Intercultural communication workshops can be helpful. It also makes sense to integrate time buffers into the project plan as, for instance, time management is different in Brazil, and there are higher fluctuations of employees in China. The key functions of the system – multilingualism and its multi-site capability – had a great impact on culture. Employees could work in their own language, but there was still transparency given. Employees tend to feel more comfortable when they can move within their own cultural environment. This aspect should not be underestimated.



**It is all about the attitude.** From the outset, Marabu communicated to its employees about how the company wanted to support them during the change and that the company was not going to monitor them. In retrospect, this attitude made a big difference. Overall, the employees reacted positively to the implementation of the new system, although for some employees it was a big change. Now the various subsidiaries in different countries support each other and the head office can let go of the reins to some degree.

**Change that has paid off.** The unified system ensures that there are no local variations in the quality and environmental management system. At the same time, re-certifications have been simplified by the new system. Marabu has not only satisfied its customers and its own quality requirements but has also created the basis for a learning and continuously improving organisation. The newly established QM system has provided a framework for measuring and improving Marabu's performance for many years to come.

## References

1. Kaynak, H., Hartley, J. L.: Exploring quality management practices and high tech firm performance. *The Journal of High Technology Management Research*, 16(2), 255–272. (2005).
2. Ravichandran, T., Rai, A.: Quality management in systems development: An organizational system perspective. *MIS Quarterly* 24(3), 381–415 (2000).
3. Zhang, Z.: Developing a model of quality management methods and evaluating their effects on business performance. *Total Quality Management* 11(1), 129–137 (2000).
4. Najmi, M., Kehoe, D. F.: The role of performance measurement systems in promoting quality development beyond ISO 9000. *International Journal of Operations & Production Management* 21(1&2), 159–172 (2001).
5. Noe, R. A., Hollenbeck, J. R., Gerhart, B., Wright, P. M.: *Human resource management: Gaining a competitive advantage*. McGraw-Hill Education, New York, NY (2017).
6. Juran, J. M.: *Quality control handbook*. McGraw Hill, New York, NY (1986).
7. Deming, W. E.: *Out of crisis, centre for advanced engineering study*. Massachusetts Institute of Technology, Cambridge, MA (1986).
8. Demirbag, M., Sahadev, S.: Exploring the antecedents of quality commitment among employees: An empirical study. *International Journal of Quality & Reliability Management* 25(5), 494–507 (2008).
9. Zelnik, M., Maletič, M., Maletič, D., Gomišček, B.: Quality management systems as a link between management and employees. *Total Quality Management & Business Excellence* 23(1), 45–62 (2012).
10. Schmiedel, T., vom Brocke, J.: Business process management: Potentials and challenges of driving innovation. In: *BPM-Driving Innovation in a Digital World*, 3–15. Springer, Cham (2015).
11. Kiran, D. R.: *Total quality management: Key concepts and case studies*. Butterworth-Heinemann, Oxford (2016).