IMPLEMENTATION OF QUALITY MANAGEMENT IN SMALL AND MEDIUM ENTERPRISES: PROBLEMS AND SOLUTIONS

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Abstract. The benefits of Quality Management are widely recognized following reports of its successful implementation in many large companies. It has led to these companies becoming highly competitive both locally and internationally through the production of quality products that meet customer requirements at the lowest cost, significantly increasing their market share and profitability. Quality standards make life safer, they create a level playing field on which to compete, they allow access to state-of-the-art technology, strengthen innovation capacity, and help achieve the most effective allocation of resources. For SMEs, they are particularly vital as they remove many of the obstacles that would otherwise hinder their entry into and expansion within a market. Small and medium sized enterprises (SMEs) are a very important part of the European economy, accounting for 99.8 % of all businesses, 675 % of all jobs and 58.4 % of value added. Their central role has been recognized by the European Commission and the Member States through various policy pronouncements. Quality management at small business companies is one of major factors affecting entrepreneurship success. The product quality is one of the indispensable preconditions of a company´s success on the market. SMEs have a central role to play in growth and job creation, but their use of standards and their involvement with standardization is typically low. Both SMEs and the economy more widely could benefit from SMEs being more involved in the standardization process. The aim of this research is to investigate problems antecedents for Implementation of Quality Management in Small and Medium Enterprises, thereby contributing to the knowledge on how to adopt Quality Management in SMEs.

Keywords: SMEs, Quality Management, ISO 9001, quality standards, small enterprises.

Introduction

Small and medium-sized enterprises (SMEs) are a focal point in shaping enterprise policy in the European Union (EU). The European Commission considers SMEs and entrepreneurship as a key to ensuring economic growth, innovation, job creation, and social integration in the EU. The usual definition of small and medium sized enterprises is any business with fewer than 250 employees [1].

SMEs are a very important part of the economy, as they represent around 99 % of all enterprises and employ an increasing number of persons. Most enterprises are independent and do not belong to an enterprise group, but within the SMEs medium-sized enterprises are very often part of a group. This is most common in manufacturing and to a less degree in knowledge-intensive business services [1].

Dependent SMEs are important in terms of employment and gross value added (GVA), especially in smaller countries such as Denmark, Norway and Finland. However, they are also significant in Germany, where they account for 43 % of GVA created by SMEs in total and employ 34 % of the total number of persons employed by SMEs. Therefore, a large proportion of total growth created by SMEs can be attributed to dependent SMEs. Large enterprises create a higher proportion of value added in the 'high and medium/low tech manufacturing' sector, while SMEs create a higher proportion of value added in the services sector [1].

There were 5.7 million SMEs in the UK in 2017, which was over 99 % of all businesses. Micro-businesses have 0-9 employees. There were 5.4 million microbusinesses in the UK in 2016, accounting for 96 % of all businesses. Although the vast majority of businesses in the UK employ fewer than 10 people, this sort of business only accounts for 33 % of employment and 22 % of turnover [2].

Small business is the world's biggest business. Therefore, International Standards need to assist SMEs just as much as they do global enterprises, government and society at large. In particular, SMEs should be able to share in the gains in efficiency and effectiveness offered by ISO 9001.

ISO 9001, which gives requirements for quality management systems, is among ISO's most well-known and widely implemented International Standards. It is used in some 183 countries by enterprises both large and small, in public and private sectors, by manufacturers and service providers, in all sectors of activity, to achieve objectives such as establishing a framework for continual improvement and customer satisfaction, encouraging the rise of services and etc. [3].

Most organizations face challenges when developing a quality management system. In a small enterprise, these challenges are potentially greater due to:

- minimal available resources;
- costs involved in setting up and maintaining a quality management system;
- difficulty in understanding and applying a quality management system.

Typical examples of SMEs in Latvia might include a single proprietor, two or three people in a partnership, a family organization, or a company with three or four executives and administrative staff; they encompass organizations that produce products or that provide a service, and they can be either for-profit or not-for-profit organizations [3].

The aim of this research is to investigate problems antecedents for implementation of Quality Management in Small and Medium Enterprises (case of Latvia), thereby contributing to the knowledge on how to adopt Quality Management in SMEs. The objectives of this research are:

- To identify the benefits of implementing ISO 9001 Quality Management System in the small companies.
- To identify the problems faced by companies in implementing ISO 9001 Quality Management System.
- To identify the strategies in overcoming or minimizing the implementation problems of implementing ISO 9001 Quality Management System in the small companies.

Materials and methods

In order to conduct the study, a mixed methodology was used. The data for the study were collected from both the secondary and primary sources.

The study encompasses qualitative as well as quantitative research. In the first phase literature was obtained from the available secondary sources, newsletters, journal, research papers and the reports of foreign and Latvian researchers, and institutions, as well as the data from the database of the Eurostat and so forth. In the second phase a quantitative statistical survey is conducted in the governmental and private sectors in order to collect their opinions and experiences regarding the implementation of the ISO 9000 Quality Management System (QMS) in their enterprises. The research tool was a questionnaire survey sent to management representatives (20 respondents). Surveys were enriched with direct interviews with employees of the companies.

Both of these methods are utilized to find the answer of the research question and pursue the research objectives. The research was conducted in Latvia, where the researchers have accessed the targeted segment of respondents. The research was attended by specialists in the quality management systems of companies working in the industrial and service sectors, who have a lot of experience in implementing this process in different companies in Latvia.

Results and discussion

From 1995 to 2016, 9893 companies have obtained ISO 9001 certificates in Latvia, while 13906 companies in Lithuania and 11149 companies in Estonia at the same time period. The number of companies certified in Latvia grows year by year, but in comparison with neighbouring countries, Latvia is the lowest in terms of the number of certified ISO 9001 companies, which is almost 29 % lower than in Lithuania and about 11 % less than in Estonia. Since 1995 Lithuania has certified 4013 companies more than 1256 companies in Latvia and Estonia [4].

In 2016, 866 companies are certified in Latvia, while the largest number of ISO 9001 certified companies in Latvia was in 2015, when 1115 ISO 9001 certificates were issued, which is more than 249 certified companies in 2016. It should be emphasized that in 2007 there was a sharp fall, the number of certified companies in Latvia was only 342 enterprises, which is a 45 % decrease compared to the previous year (see Table 1). By contrast, in Lithuania and Estonia, according to the data provided by the ISO 2016 survey, the number of certified enterprises is increasing almost every year [4].

The results of the research show that the reasons that induce enterprises to initiate the certification process in accordance with the requirements of the ISO 9000 standard are quite diverse. Since the

introduction of the ISO 9000 series in 1987, a great number of research papers on the topic "motivational factors for obtaining of ISO certification" have been published, yet the predominant research approach has looked at these factors from the so-called dual point of view, or in other words from the internal/external motivations perspective. Based on this research approach, the internal factors include desire for improved productivity and profitability, decrease in cost, improved quality, etc., and the external ones include pressure from clients or suppliers, enhanced company image, and so on [5-7].

Table 1

Number of issued ISO certificates in the Baltic States in 2005 - 2016

Year	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Latvia	561	625	*342*	500	708	809	787	791	923	1001	*1115*	866
Estonia	489	577	625	691	746	773	835	880	936	1028	1131	973
Lithuania	591	697	809	815	1111	1207	1168	1165	1110	1218	1238	1150

The analysis of the Latvian enterprises that participated in the survey and have already introduced a quality system, made it possible to classify the enterprises into different groups depending on the purpose of its implementation:

- Enterprises implementing QMS series 9000 standards to promote their products or services abroad;
- Enterprises that are aimed at improving their image in the domestic market;
- Enterprises, whose management wants to restore order in management, to master its modern methods and thus increase the efficiency of its activities;
- Enterprises implementing QMS and passing the certification of these systems are pursuing the goal of improving the quality of their products and services;
- Enterprises that are branches of foreign companies that have been instructed or recommended to receive an ISO 9000 series certificate.

Each of the motives listed is inherent in organizations of a certain type and brings its own effect.

The presence of an international QMS certificate is crucial in obtaining work orders, as it increases the level of reliability and trust in the enterprise from potential customers, significantly reduces the risks of poor performance. Working with an enterprise that has an international certificate of the ISO 9000 series is considered less risky due to the two most significant factors:

- The internal structuring and orderliness of the enterprise, greater transparency of the management system;
- The presence of periodic external control by an independent auditor.

But, in addition to the positive aspects revealed in the activities of enterprises with certified QMS, the survey participants also note a number of problems that they encountered in the introduction and certification of quality management systems.

At the initial stage of implementing the quality system, both the management of the enterprise and its employees are very enthusiastic about this project. But after the first internal audit, the enthusiasm is noticeably reduced, as a large number of inconsistencies, weaknesses and problems of the enterprise are ascertained, and its employees, not understanding the methodology embedded in the quality system, do not understand how they can apply to the matter obtained as a result of the audit data.

After a while, since the introduction of the quality system, the employees of the small enterprise no longer focus on the problems of the enterprise, since the certification period is getting closer, and the readiness of the quality system for certification audit is estimated as low. At the document development stage, all employees have a large number of urgent cases, which leads to constant interruptions in the process of implementing the requirements of ISO 9001.

SMEs employees can only master the methodology of the quality system by applying it only in practice, and under the scenario described above they cannot fully understand the meaning of the quality system. The duration of the implementation of the quality system at a small enterprise can be

(as in a large enterprise) for a year and a half, but the longer this period, the less likely that the existing problems of a small enterprise will have time to be reflected in processes and documents.

The long duration of implementation of the quality system in small enterprises leads to the fact that many employees even before the certification audit have time to forget about the goals for improving QMS. It is also characteristic that during such a long preparation for the implementation of the quality system, the leaders of a small enterprise often lose interest in the project, do not see any more sense or results in it, since the activities of a small enterprise are almost impossible to change from outside.

The main problem with this scenario: a long project to improve QMS in a small enterprise leads to a decrease in the motivation of the company's management and staff. An even more important problem is that a small enterprise often does not have the budget for the project to implement the requirements of ISO 9001.

The study identified the main factors that created the greatest problems when introducing a quality system in small and medium-sized enterprises in Latvia (see Table 2)

Table 2

Problems associated with the implementation of QMS

Name of the problem	Number of respondents who noted the importance of the factor
Significant financial costs associated with the training of personnel, the development and implementation of QMS.	47
Significant financial costs for certification.	33
Long time implementation of QMS.	31
The need to train the requirements of the ISO 9001 standard for managers and specialists of production units.	24
Significant financial costs associated with maintaining QMS.	28
Decrease in the motivation of the company's management and staff.	17

Small and medium-sized enterprises are always focused on the search for innovative methods and therefore this motivation must be maintained for continuous improvement of activities even when implementing a project for implementing a quality system.

To achieve this goal, it is necessary to solve the following tasks:

1. The timeframe for the implementation of the project to implement the requirements of ISO 9001 can and should be compressed to a minimum size, since usually all the work on the implementation of QMS in a small enterprise is carried out in recent months before the certification of QMS. For example, in a small enterprise, setting up a working group to implement the requirements of ISO 9001 does not make sense, since practically all employees are involved in this process and this group will not speed up the pace of work.
2. At a small enterprise, a meeting of key employees on QMS issues is desirable to be held at their usual places. It is impractical to specifically collect employees to discuss quality issues separately from production issues. The same training as in large enterprises is difficult to carry out because of the large employment of workers in small enterprises. At small firms, employees work more intensively than at large enterprises. A smaller scale of activity of a small enterprise should have a different sequence and duration of the stages of the project to improve QMS. Usually, the project to implement the requirements of ISO 9001 begins with a diagnosis, which reflects the practice of all consultants in all areas of management. But this is more suitable when working with large enterprises. At a small enterprise, first of all, it is necessary to set the goal to implement the project in the shortest possible time so that the staff can quickly understand how to solve the arising problems.
3. Diagnostics of the enterprise is to be carried out at the beginning of the project in the form of the first internal audit. In a small enterprise, you can begin with such a diagnosis to demonstrate to the

entire staff, how the principles embodied in the quality system help solve the problems existing in their company that were identified during the internal audit. This type of training helps staff and management look at old problems from a new angle. Carrying out the audit at the beginning of the project together with the employees of the enterprise, teaching them during this audit while simultaneously diagnosing the quality system, will help the staff get interested, establish contacts, identify suitable assistants, and, most importantly, the consultant or invited quality manager will better understand the activity of the small enterprise.

4. As little as possible to tell the staff of the small enterprise about the history of the science of quality management. For example, interesting general lectures, on how much benefit Toyota has received from quality management, will expand the knowledge of staff and managers of the small enterprise, but they will give them not enough information about why their small enterprise needs such a system. Toyota is a large company, and QMS is to be implemented on the small enterprise. The start of the project to improve the QMS of the small enterprise with internal audit will help the staff understand the meaning of what is happening, prepare for a certification audit, discover and eliminate some of the enterprise's problems before QMS certification. The transparency of the QMS of the small enterprise for its staff, which cannot stand aside, will be immediately involved in the quality system. It is possible to give examples from the practice of other enterprises during a project at the small enterprise, but it is best to consider examples of the activity of the enterprise itself, obtained by a consultant or a quality manager at the beginning of the project.

Reduction in the duration of the project implementation of the requirements of ISO 9001 will also reduce the cost of the entire project and will allow allocating resources to solve real problems.

Thus, in order to maintain and constantly increase the motivation of the company's management to implement QMS, the project technology in the small enterprise can look like this:

1. Conducting an internal (or diagnostic) audit by a consultant in conjunction with key employees of the small enterprise, who have some preliminary training, while simultaneously teaching the employees to conduct an audit and reporting on their specific requirements.
2. Determination of the required level of detail in describing the business processes of the enterprise. Identification of business processes and their relationship to the overall strategy of the enterprise.
3. Monitoring the motivation of management and planning its support throughout the project.
4. Systematic analysis and adjustment of each stage of work, depending on the results achieved in the previous stage.
5. Training of employees and management in the workplace based on the results of activities already implemented to improve QMS, using real examples from the activities of this enterprise. Conducting meetings of employees of the small enterprise in the usual places and during their traditional gatherings, for example, in the dining room or in operational meetings.
6. Consideration and accounting of all opportunities to reduce the amount of work to document QMS.
7. Carrying out a second internal audit and assessing management motivation.
8. Analysis by the top management of the QMS implementation process and evaluation of the implemented improvements.

Conclusions

With ever increasing demands on small businesses on quality, price and service, the most effective way to enhance the confidence of customers is through a structured certificated Quality Manage*m*ent System (QMS). For a small business, this is not as daunting as it might appear, as it should always be based on how your business systems currently operate. From the standpoint of the manager of a small enterprise, the time and money you spend implementing a quality management system should be looked at in the same way as any other investments you make. For it to be viable, you have to be able to achieve a return for your time and effort, through improvements in your organization's processes and the marketability of your products and services. The decisions you take in the early stages of introducing and developing your quality management system will have a major influence in these areas.

It is possible to implement a quality management system in conformity with ISO 9001 without seeking third party certification/registration. There is no obligation to be certified to ISO 9001, so a good first step is evaluating whether certification makes sense for your organization. Although certification might reassure customers that your products and services are in line with their expectations – and might in some cases be a prerequisite to working with certain clients – many organizations benefit from using the standard without seeking certification.

Currently, it becomes almost impossible to successfully compete with the price. Therefore, all world-class companies are characterized by the quality of products. Firstly, the modern buyer will overpay the competitor whose product will be better. Secondly, the more effectively the quality system works, the cheaper it produces goods. It is often said: the only correct way to conquer the consumer (and hence the market) is to compete not with companies, but with their quality systems.

A functioning quality management system can become a real tool for continuous improvement of the activities of small and medium-sized enterprises and a source of economic benefits. Due to documenting, monitoring, analysis and periodic review of key production and management processes in accordance with the requirements of the international standard, transparency, better manageability and continuous improvement of the company's activities are ensured.

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References

[1] Statistics on small and medium-sized enterprises. [online] [31.01.2018]. Available at: http://ec.europa.eu/eurostat/statistics-explained/index.php/Statistics_on_small_and_medium-sized_enterprises.
[2] Rhodes Ch. Business statistics. Briefing paper. Number 06152, 28 December 2017. [online] [01.03.2018]. Available at: http://researchbriefings.files.parliament.uk./documents/SN06152.pdf
[3] ISO 9001:2015 for Small Enterprises. What to do? [online] [15.02.2018]. Available at: https://www.iso.org/files/live/sites/isoorg/en/ iso_9001_2015_for_small_enterprises-preview.pdf
[4] ISO Survey 2016. [online] [24.01.2018]. Available at: https://isotc.iso.org/livelink/livelink?func=ll&objId=18808772&objAction=browse&viewType=1
[5] Ebrahimpour M., Withers B. N Impacts of ISO 9000 registration on European firms: a case analysis. Integrated Manufacturing Systems, 2001/4/1, 12(2), pp. 139-151.
[6] Neumayer E., Perkins R. Uneven Geographies of Organizational Practice: Explaining the Cross-National Transfer and Diffusion of ISO 9000. Economic Geography, 2005, 81(3), pp. 237-259.
[7] Sampaio, P., Saraiva, P., & Guimaraes Rodrigues, A. ISO 9001 certification research: Questions, answers and approaches. International Journal of Quality & Reliability Management, 2009, 26(1), pp. 38-58.