

How ISO based Quality Management System helps to monitor and ensure quality in statistics

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Abstract

Striving to ensure a systematic approach towards quality management and implement provisions laid down in the Quality Declaration of the European Statistical System (ESS) and European Statistics Code of Practice (CoP), Statistics Lithuania (SL) in 2007 introduced a quality management system, conforming to the ISO 9001 standard. The system of SL is based on process management, enabling effective organization of institution's activities and targeting all of them at the main objective. It implies continuous improvement of quality of statistics and meeting user needs via setting institutions' values, monitoring and increasing efficiency of related processes through engagement of all staff, simultaneously implementing measures for more efficient use of resources and cost reduction. With a view to analyze processes, to evaluate quality of statistics and ensure effective organization of activities, a system for measuring and monitoring of SL's performance indicators was introduced. The set of regularly monitored performance indicators covers ESS quality indicators in relation to the CoP, and indicators related to different stages of statistical processes. In pursuance of the ISO requirements, documented procedures and processes form a good basis to develop a performance measurement system. At the same time, the ISO based quality management system provides a good framework for the implementation of the CoP and monitoring changes in quality of statistical output in a systematic and effective way. The paper describes how the SL quality management system contributes to implementation of the CoP and through regular monitoring exercise, as well as involvement of more staff in quality issues, promotes high quality statistics as a key objective, both in the office and externally. Also, some results from the monitoring exercise and related improvement actions are presented.

Keywords: ISO 9001, process management, quality monitoring.

1. Introduction

Constantly growing user requirements for the quality of statistical output and their changing perception of quality statistics (when it has to be not only accurate, but also relevant, comparable and coherent, timely and punctual, accessible and clear) have encouraged statistical offices to pay more attention to the systematic quality management and implementation of quality assurance frameworks. In SL systematic quality work was started in 2002, shortly after the European Statistical Programme Committee had adopted the Quality Declaration of the ESS, as a first step towards Total Quality Management in the ESS. Creation and introduction of the quality management system were identified as one of the strategic priorities of SL.

In 2005, the essential requirements for the ESS were identified by the CoP, which, based on the ESS Quality Declaration as well as on the UN Fundamental Principles, builds upon a common ESS definition of quality in statistics and targets all relevant areas from the institutional environment, statistical production processes to the statistical output. The same year, striving to ensure a systematic approach towards quality management and implement provisions laid down in the Quality Declaration of the ESS and CoP, SL has started implementation of quality management system, conforming to the ISO 9001 (hereafter ISO) standard, which was awarded with certification in 2007. The quality management system of SL comprises the

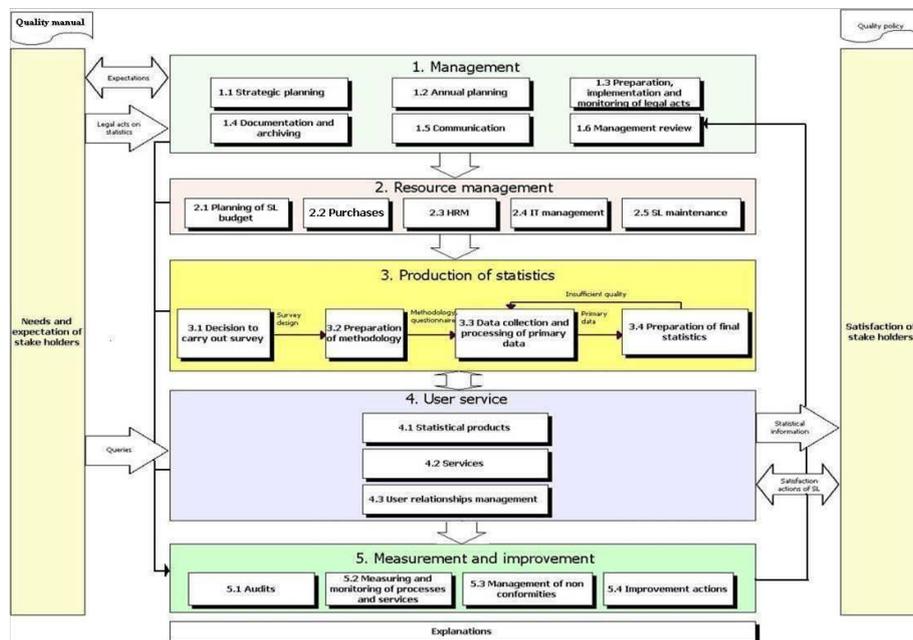
organization of statistical surveys, preparation and dissemination of statistics and is based on the following quality management principles:

- Customer focus;
- Leadership;
- Involvement of people;
- Process approach;
- System approach to management;
- Continual improvement;
- Factual approach to decision-making.

The core processes of production and dissemination of statistics are supported by appropriate performance and resource management. Process managers ensure effective operation of the processes they are responsible for. The main responsibilities of process managers consist of setting objectives, rules and procedures for a process, monitoring and analysis of improvement possibilities, management of refinements, and assessment of process effectiveness.

The system of SL, based on process management, enables effective organization of institution's activities and targets all of them at the main objective. It implies continuous improvement of quality of statistics and meeting user needs via setting institutions' values, monitoring and increasing efficiency of related processes through engagement of all staff, simultaneously implementing measures for more efficient use of resources and cost reduction. At the same time, the ISO based quality management system provides a good framework for the implementation of the CoP and monitoring changes in quality of statistical output in a systematic and effective way.

Figure1. Processes of Statistics Lithuania



The paper describes how the SL quality management system contributes to implementation of the CoP and through a regular monitoring exercise, as well as involvement of more staff in quality issues, promotes high quality statistics as a key objective, both in the office and externally. Also, some results from the monitoring exercise and related improvement actions are presented.

2. The ISO and CoP

The decision to use the ISO standard as a framework for quality management was taken in 2005. One of the reasons was the objective to facilitate the implementation of the CoP, and ISO standard seemed the most appropriate for that. In fact, the ISO standard provides a good framework for the implementation of the CoP: management rules, structure, processes and responsibilities are clearly defined and documented, performance results are planned and pursued purposefully, quality assessment and improvement methods and tools, such as audits, self-assessments, measurement of quality indicators, performance of user satisfaction surveys, etc., are implemented in a clear and systematic way. The ISO standard provides opportunity to confirm and demonstrate achievements of institution in the field of quality. Therefore, the implementation of ISO requirements helps to also implement the principles of CoP and thereby monitor the improvement process of statistical information and service. An important role here is played by the audits of the quality management system performed by an independent audit company. According to a certification procedure, independent auditors perform audits every nine months with the aim to assess conformity with the ISO standard. At the same time, they contribute to the monitoring of the implementation of the CoP. The main value of external audits is the possibility to share international experience in the field of quality management, receive practical recommendations on management, enabling quality management methods and tools to work more effectively, improvement of process monitoring and making decisions on improvement and thus to facilitate the implementation of the CoP. Appropriate actions for the CoP implementation are continuously incorporated into annual working plans of SL. The progress of their implementation is quarterly discussed in the Director General Advisory Committee meetings. The implementation of the CoP each year is also monitored by Eurostat and ESGAB.

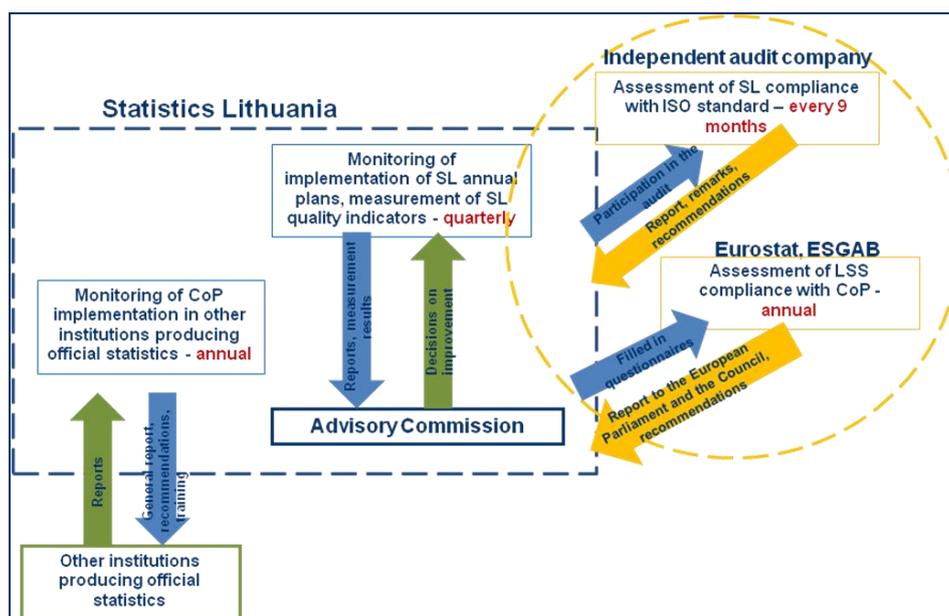
Introduction of the CoP provisions in other national institutions managing official statistics is also one of the main directions of the quality management system of SL. Sharing its experience gained in the field of quality management with other national producers of official statistics, SL aids them in implementation of the CoP and thereby envisages improvement of the quality of the statistics they produce.

3. Quality monitoring

One of the cornerstones of the quality management system based on ISO is quality monitoring and assurance, which have to lead to clear orientation towards user needs, measuring and monitoring process and statistical output quality. With such a view, a system for measuring and monitoring of performance indicators was introduced in SL. According to the ISO requirements documented procedures and processes formed a good basis to develop the system.

The set of regularly monitored performance indicators covers ESS quality indicators in relation to the CoP, and indicators related to different stages of statistical and other processes. Monitoring of CoP implementation and performance indicators is demonstrated in the scheme (See Figure 1).

Figure 1. Monitoring



The main attention is paid to monitoring of statistical processes and this exercise is performed from the outset of the statistical survey planning to the final results. For all performance indicators critical values have been defined, which allow managing risks, identifying and solving problems on time. The measures are implemented in accordance with appropriate documentation (measurement procedures, list of indicators). A regular analysis of performance indicators is made at the survey and institutional levels. One of the directions of performance indicators analysis is the examination of the impact on the quality of statistical output made by time allocated for different statistical processes. Another important aspect is the comparison of similar surveys and examination of possibilities for the optimization thereof.

In order not to overburden the staff and to have reliable information on processes and their results, the major part of performance indicators is calculated automatically, employing a time use system, providing detailed information on time used for different processes, and a specific system for recording quality characteristics of statistical surveys.

The monitoring results are widely discussed in the Director General Advisory Committee meetings and decisions for further improvements are made (e. g. to control implementation of rescheduled activities; monitor time used for individual statistical sub-processes; define reasons of standout values of time spent on filling in statistical questionnaires and suggest problem solution ways; use of administrative data for the calculation of separate indicators in business statistics; organize staff trainings on editing, sampling and other statistical issues; search for the ways how to simplify the time use recording system, etc.).

Information on performance indicators is also published in the intranet of SL and every staff member has an opportunity to access and use the information in his or her daily work. Based on this information, survey managers are able to get involved in routine statistical processes and make well-founded decisions on their organization.

The possibility to analyze and timely influence processes gave birth to a possibility to consistently improve the timeliness and accessibility of statistical output (see Figure 2 and Figure 3). For instance, in 2012, annual statistics reached users, on average, 15 days earlier, and the number of datasets published in the Database almost doubled, as compared to 2008.

Figure 2. Shortened time of statistical information release

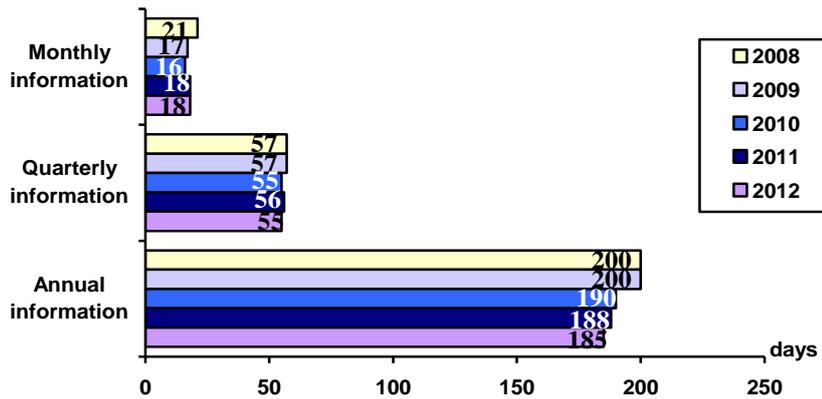
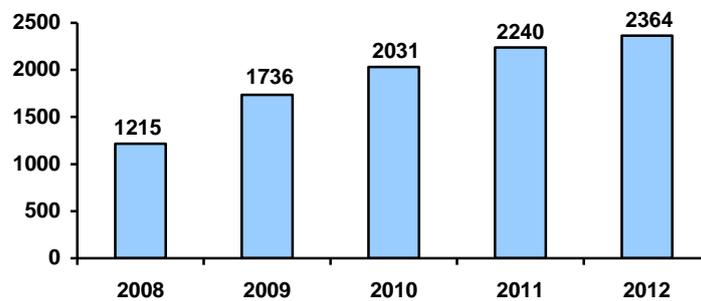
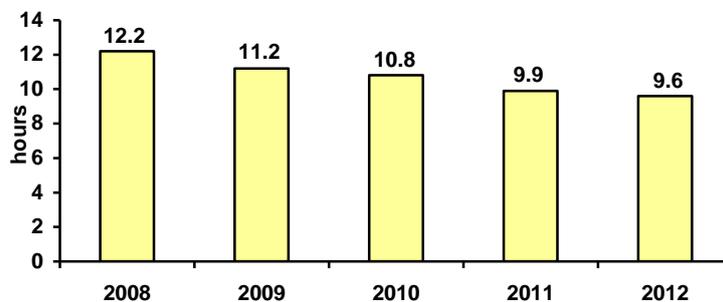


Figure 3. Increasing number of datasets in Database of Indicators



Significant attention is paid to the reduction of the response burden: the statistical response burden reduction policy has been defined and made public; the Task Force on the reduction of the response burden established; a work plan on the reduction of the response burden and use of administrative data has been prepared annually. In 2006, SL started to estimate the response burden indicator in terms of average time used for filling in statistical questionnaires. Efforts made by SL in managing the response burden have led to positive results: the response burden has been annually decreasing (see Figure 4). It is projected that in 2013 the average time spent by a company will be no more than 9.6 hours per year.

Figure 4. Response burden in terms of average time spent on filling in a statistical questionnaire



4. Staff involvement in the quality work

While implementing and developing quality management system, involvement and support of the staff is essential. Therefore, considerable attention in SL is paid for the development of quality culture. Regular performance appraisal of employees; training system based on staff competence surveys and assessment of training effectiveness;

system for the rotation of employees; staff satisfaction surveys and their involvement in decision-making process, etc. are an integral part of developing quality culture of SL.

Documentation of every area which requires improvements, involvement and encouragement of every staff member to improve his/her own performance and the performance of the whole institution are among the main principles of SL. In order to encourage the staff to be more active in defining drawbacks, an opportunity to register them online has been provided, which not only allows recording drawbacks in a user friendly way, but also warns other staff members against possible threats. Every staff member can inform process managers about the drawbacks identified in their process. Process managers analyze these problems, determine their causes and possible ways of their elimination, appoint staff responsible for improvements and monitor the effectiveness of improvement actions implemented. The improvements introduced and their effectiveness are assessed and discussed with Top Management.

Every staff member also has a possibility to contribute to the quality improvement by informing the Quality management unit about various drawbacks, posting proposals at a specially created email address. Suggestions for the improvement of the performance of SL (more effective organization of performance, methods and tools to rationalize the processes, improvement of working environment) can also be submitted via a "bank of ideas" – a special section on the intranet of SL. The authors of best suggestions are motivated respectively.

The effective tool for raising the overall awareness of statistical processes, stimulation of responsibility of survey managers is self-assessment based on the DESAP checklist. This exercise is carried out only on the initiative of a survey manager. It is the essential condition applied to survey managers by SL, otherwise self-assessment exercise is not effective.

It is very important to have an opportunity to express your own opinion and to participate in decision-making process. For this, general staff meetings are organized, during which various topical issues are discussed. Every staff member also has a possibility to discuss various working issues during personal meetings with the Top management.

SL pays great attention to cultivation of informal communication: traditional festivals, exhibitions, excursions and other social events are organized regularly.

5. Conclusions

The experience of SL proves the fact that quality management is effective only when it is systematic. The implementation of the quality management system, based on the ISO standard, enabled SL to set clear values, consolidate the staff towards the implementation of the challenges posted and strengthen organizational culture.

Regardless of which quality model is used, definition of main processes, identification of their interactions and sequence facilitate the quality work in many aspects. The desired result is achieved more efficiently when the activities and related resources are managed as processes and all processes are managed as a system.

Another important point is directly related to the staff attitude and feeling about the institution and quality of output they produce. Only committed and recognized staff is able to initiate and implement really effective and substantial improvements.

It should be also noted that in implementation of quality principles in statistics the Top management plays a particular role, because only with the initiative of the Top management and with support from the management side positive results can be achieved.