

## **Quality Assurance Framework at Statistics Lithuania**

Jonas Markelevičius, [jonas.markelevicius@stat.gov.lt](mailto:jonas.markelevicius@stat.gov.lt) and Daiva Jurelevičienė,  
[daiva.jureleviciene@stat.gov.lt](mailto:daiva.jureleviciene@stat.gov.lt)

Statistics Lithuania started activities on creation and introduction of quality management system in 2002. In 2007, striving to ensure a systematic approach towards quality management and implement provisions laid down in the Quality Declaration of the European Statistical System and European Statistics Code of Practice, Statistics Lithuania introduced a quality management system conforming to the requirements of the ISO 9001 standard. The essence of the quality management system, introduced at Statistics Lithuania, is a systematic approach towards quality management, based on process management, allowing effective organisation of the institution's activity, well-balanced distribution of resources, expeditious reaction to the needs and expectations of users, respondents and other institutions managing official statistics.

The aim of the paper is to present the experience of Statistics Lithuania in the field of quality management gained in the recent years.

Statistics Lithuania uses a whole set of quality assessment and improvement methods and tools (e.g. audits, self-assessment, quality indicators, user satisfaction surveys, etc). The paper presents how these methods and tools are integrated and used in practice, how they support and supplement each other. One of the key issues in quality management is the identification of activities which are the most risky for the process. The paper describes the experience of Statistics Lithuania in the field of managing these activities and ensuring their quality.

The quality of the statistical production process and statistics is closely related to staff competence and its development in the institution. Statistics Lithuania has recently introduced staff competence surveys, which are targeted at precise identification of staff training and development needs. The paper looks at the experience of Statistics Lithuania in the field of staff competence surveys and explores the expected impact on the statistical production process. The introduction of a training system based on staff competence surveys had a very positive impact on the internal culture of the institution: on consolidation of staff motivation and stimulation of staff initiative and responsibility. The improvement in staff satisfaction has been generously proven by recent results of a staff satisfaction survey. During the last two years, the growth in a staff satisfaction index exceeded even very optimistic expectations.

The experience of Statistics Lithuania strongly proves the fact that quality management is effective only when it is systematic. Another important point is directly related to the staff attitude and feeling about the institution and quality. Only committed and recognised staff is able to initiate and implement really effective and substantial improvements.

*Key words:* ISO 9001; quality assessment methods and tools; performance indicators; staff competence; improvement work.

## 1. Introduction

Statistics Lithuania started its way towards systematic quality approach in 2002. In the Strategy of Statistics Lithuania for the period of 2002–2004, the first steps were foreseen in creation and introduction of quality management system.

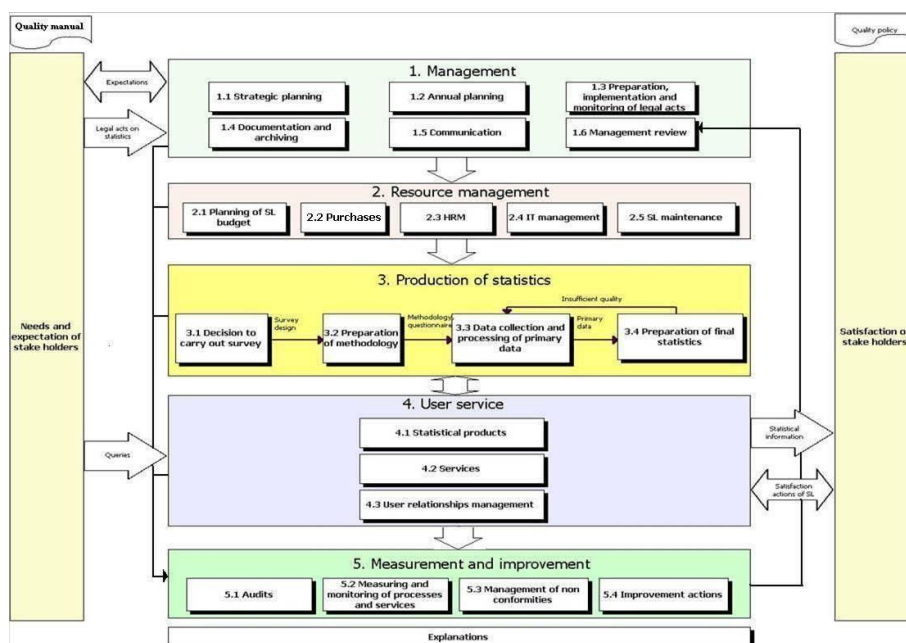
In 2007, in order to ensure a systematic approach towards quality management and implement provisions laid down in the Quality Declaration of the European Statistical System and European Statistics Code of Practice, Statistics Lithuania introduced a quality management system conforming to the requirements of the ISO 9001 standard. Statistics Lithuania based its management system 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 improvements, and assessment of their effectiveness.

The management system of Statistics Lithuania demonstrates a systematic approach towards quality management, allowing effective organisation of the institution's activity, well-balanced distribution of resources, expeditious reaction to the needs and expectations of users, respondents and other institutions managing official statistics.

**Figure1. Processes at Statistics Lithuania**



The paper presents a quality assurance framework set by Statistics Lithuania, starting with quality planning and ending with the analysis of quality monitoring results, decision making and defining the need for further improvements.

## **2. Strategic planning**

A particular role in quality management is played by strategic planning. A planning cycle of Statistics Lithuania coincides with the planning cycle of Eurostat. The current strategic period covers years 2008–2012. The institution makes considerable efforts to assure that strategic objectives are realistic, relevant and balanced. A strategy is incorporated in annual activity plans, which are cascaded starting with the institutional level and ending with the individual employee level.

Key commitments of Statistics Lithuania, set in the Strategy of Statistics Lithuania for 2008–2012, are reflected in the quality policy of Statistics Lithuania:

- To prepare and disseminate statistical information in compliance with national and EU legal acts, as well as in relation with continuous improvement of its quality characteristics.
- To improve services provided by implementing the customer relationships management system and using its capabilities to analyse and satisfy the needs of different user groups.
- To implement actions for the systematic reduction of the statistical response burden.
- To extend the implementation of the provisions of the European Statistics Code of Practice to other institutions producing European statistics.
- To take over the best practices of Lithuania and other countries and continually improve the quality management system.
- To stimulate the responsibility of the staff for final results and the quality of the product they deal with; to upgrade their qualifications and competence.
- To develop a systematic approach to the effective use of resources.

Statistics Lithuania promotes its quality commitments by defined quality objectives, which are part of the above-mentioned annual activity plans. The progress on the implementation of quality objectives is discussed quarterly in the Senior Management Committee meetings.

Effective communication is one of the preconditions for the successful implementation of improvement projects. Statistics Lithuania continuously works on the improvement of a communication system. It is clearly understood that only involved and empowered staff can bring expected benefits into the effective performance of the institution.

### **3. Resource management**

All resource management processes are based on clearly defined procedures for resource planning and allocation. This ensures effective management of the whole infrastructure and working conditions.

An Enterprise Resource Management System and Integrated Statistical Information System, which are in the implementation and integration process, will allow allocating resources more effectively, automating process management and monitoring, ensuring information security.

The professionalism and competence of the staff and developed quality culture are crucial factors for successful performance of an institution. With regard to the strategy of Statistics Lithuania, the focus is given to the creation of a career planning system, improvement of training and motivation systems, encouraging pro-activeness, responsibility, flexibility, loyalty of employees and allowing the development of versatile capacities, as well as transfer of good practice.

Following the provisions of the Law on Public Service and internal regulations, Statistics Lithuania performs a regular performance appraisal of employees. A newly established system for the rotation of employees allows developing a wider circle of employees with a wider view, able to use experience gained in different areas.

Recently Statistics Lithuania has introduced staff competence surveys, which are targeted at precise identification of staff training and development needs and enable to ensure a continuous improvement in staff competence. The decision to carry out a staff competence survey at Statistics Lithuania was imposed by the need to plan staff training and financing allocated for it more efficiently. Therefore, it was decided to identify the key competences in order to make a detailed analysis of competences held by the staff of Statistics Lithuania, as well as to identify gaps to be filled in. Taking into account the fact that activities of branch statistical and functional divisions are completely different and usually require different competences, while supervising staff needs specific management competences, it was decided to carry out a three-stage survey:

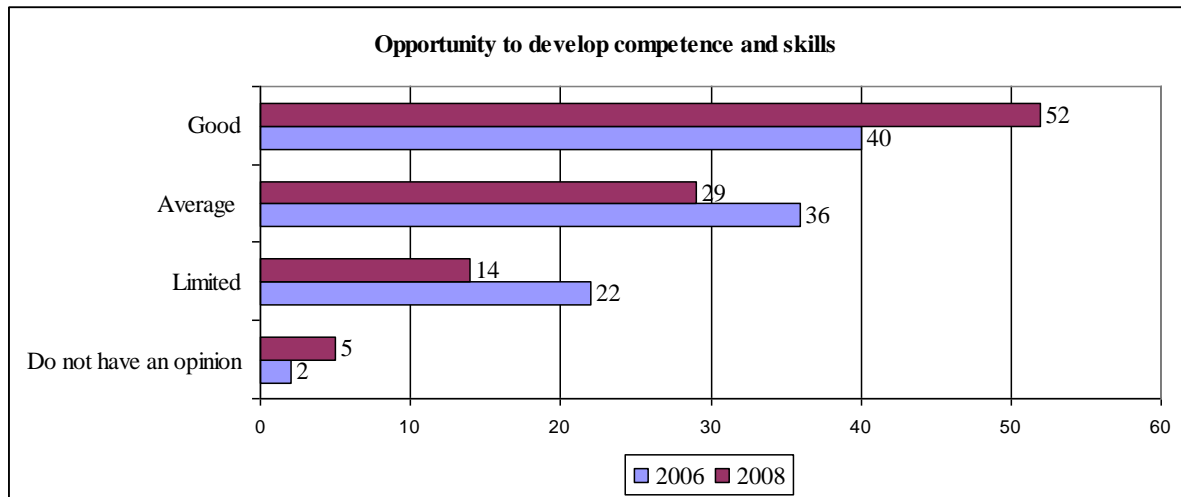
- Competence appraisal in branch statistical divisions;
- Competence appraisal in functional divisions;
- Competence appraisal of division heads.

As an outcome of the survey, a training plan was elaborated, including areas which were named as priority for development. Training plans compiled on the basis of the survey allow efficient planning of development of specialists' competences as they cover topics which are essential and are identified as requiring improvement. Continuous performance of the survey also contributes to the evaluation of training efficiency. The comparison of results of competence surveys shows whether certain training events were selected appropriately and gives valuable information for further organisation of training. In the future, the results of competence surveys will also be used for carrier planning. It is foreseen to introduce a carrier planning system at Statistics Lithuania in a few years.

The introduction of the training system based on staff competence surveys had a very positive impact on the internal culture of the institution: it strengthened staff motivation, stimulated staff initiative and responsibility. The improvement in staff satisfaction has been generously

proven by recent results of a staff satisfaction survey. In 2006–2008, the growth in a staff satisfaction index exceeded even the most optimistic expectations and comprised 77 per cent. One of the questions directly related to the training system, included in the staff satisfaction survey, was about the opportunity to develop competence and skills. In 2008, the share of positive answers to this question increased by 12 percentage points (see Figure 2). At the same time, the survey results clearly showed that criteria applied to define training needs became more transparent and familiar to the staff: positive answers were received from 68 per cent of respondents.

**Figure 2. Staff satisfaction survey: opportunity to develop competence and skills**



#### **4. Quality management tools implemented at Statistics Lithuania**

Statistics Lithuania uses a whole set of quality assessment and improvement methods and tools (e.g. audits, self-assessment, quality indicators, user satisfaction surveys, etc.). One of the key issues in quality management is the identification of activities which are the most risky for the process.

##### **4.1. System for measuring and monitoring of Statistics Lithuania performance indicators**

The system for measuring and monitoring of Statistics Lithuania performance indicators allows making expeditious decisions based on objective information, important for the improvement of performance and detecting and removing drawbacks. The set of regularly monitored performance indicators covers ESS quality indicators, the response burden and indicators related to time used for different statistical processes. For all performance indicators, critical values are defined, which allows managing risk, identifying and solving problems on time. A regular analysis of performance indicators is made at the survey and institutional levels. This allows managing processes more effectively and tackling problems on time. 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 optimisation thereof.

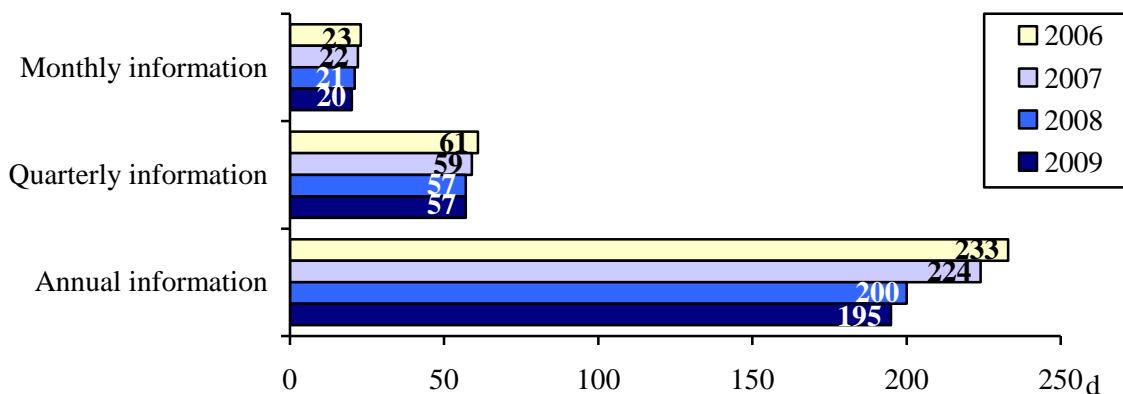
In 2003, in order not to overburden the staff and to have reliable information on processes and their results, Statistics Lithuania started the automated calculation of the major part of

performance indicators (e.g. non-response rate, number of edited questionnaires, number of edited items, length of different phases of statistical production, etc). At present, several information systems are employed in calculation of process variables: a time use system, providing detailed information on time used for different processes, and a system for recording quality characteristics of statistical surveys.

Every staff member has an opportunity to access and use information on performance indicators in his or her daily work. This information is published on the intranet of Statistics Lithuania.

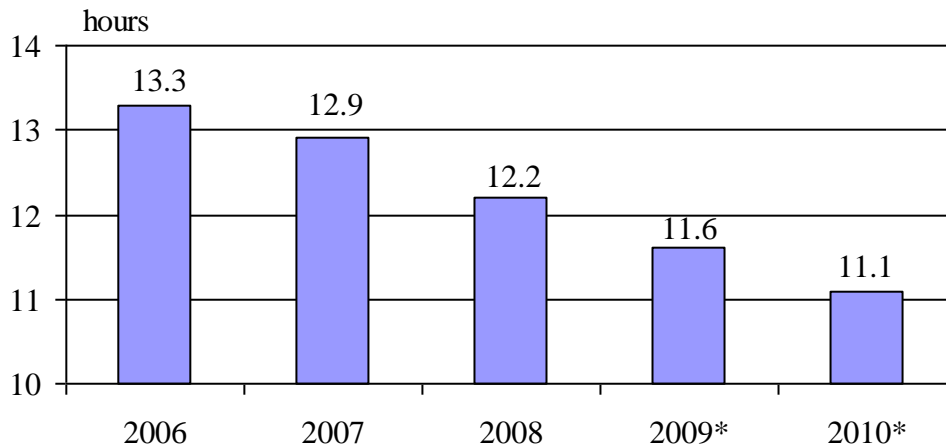
One of the outcomes of the system for measuring and monitoring of performance indicators is directly related to statistical process and product quality. Based on this information, survey managers are able to intervene in routine statistical processes and make well-founded decisions on their organisation. The possibility to analyse and timely influence processes gave birth to a possibility to consistently improve the timeliness of statistical output (see Figure 3). For instance, in 2009, annual statistics reach users, on average, 38 days earlier as compared to 2006.

**Figure 3. Shortened time of statistical information release**



Significant attention at Statistics Lithuania is paid to the management of the response burden. To this end, in 2006, Statistics Lithuania started to estimate the response burden in terms of average time used for filling in statistical questionnaires. Estimation of the response burden is essential to define and implement respective actions. Efforts made by Statistics Lithuania in managing the response burden give positive results: the response burden has been annually reducing.

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



\* Forecast.

Striving to reduce the response burden, Statistics Lithuania has been working in several directions:

- expansion of the use of administrative data for statistical purposes;
- improvement of questionnaires, reduction of their number. Since 2003, the number of questionnaires has been reduced by 46 (from 171 in 2003 to 125 in 2008);
- controlling that small enterprises (with 0–4 persons employed and income not exceeding LTL 0.5 million) participate in no more than 4 statistical surveys a year;
- development and promotion of an electronic data collection system. Data collection using electronic questionnaires has been annually growing: in 2007, 27 per cent of questionnaires were delivered through the electronic data collection system; in 2008, this percentage share grew to 39 per cent.

The efforts of Statistics Lithuania to reduce the statistical response burden were officially recognised in Lithuania and the European Union. In 2009, a project on the reduction of the statistical response burden, presented by Statistics Lithuania, was awarded a finalist diploma of the 2008–2009 European Enterprise Awards competition.

#### **4.2. Testing of previously approved questionnaires**

One of the preconditions for a gradual reduction in the response burden is the testing and improvement of previously approved questionnaires. A procedure obliging survey managers to use at least two questionnaire testing methods for every new questionnaire has been introduced at Statistics Lithuania; however, sometimes it is very important to have a look back and review those questionnaires which have been used for data collection for years. To this end, in 2007, several small questionnaire testing groups of internal experts were formed, which have to test questionnaires according to an annual plan. Statistics Lithuania committed itself to testing all questionnaires used in statistical surveys in 5 years. The task delegated to questionnaire testing groups is to explore questionnaires in terms of their clarity and consistency, usability of all variables used in the production of statistical output, possibilities to reduce the number of variables in questionnaires. Questionnaire testing groups work according to a standard procedure: discuss a questionnaire, send comments to a survey team, discuss the final findings with it and, finally, provide recommendations for improvement. One

of the results of this exercise is a significantly reduced number of questionnaires and variables in them. In 2009, as compared to 2007, the number of variables in questionnaires was reduced by 8 per cent. This result was reached through joint efforts of survey teams and questionnaire testing groups.

### **4.3. Self-assessment of statistical survey managers**

From 2004, a self-assessment exercise has been carried out by statistical survey managers once in 5 years. Self-assessment exercise is carried out only on the initiative of survey managers. It is the essential condition applied to survey managers by Statistics Lithuania; otherwise self-assessment exercise is not effective. Self-assessment is based on a European Self-Assessment Checklist for Survey Managers (DESAP). Self-assessment allows survey managers to review the survey process in a structured way and launch necessary improvements. An important indirect outcome of self-assessment is the fact that the filling in of self-assessment questionnaires raises the overall awareness of statistical processes, stimulates initiative and responsibility of survey managers.

The self-assessment exercise carried out allowed the institution to tighten contacts with direct users, broaden the scope of questionnaire testing, as well as to significantly improve the timeliness of statistics disseminated.

### **4.4. Inspections of statistical surveys**

From 2007, regular inspections of statistical surveys have been carried out, the purpose whereof – objective estimation of the quality of preparation of statistics, exchange of experience, indication of good examples. The methodology of the inspection of statistical surveys is mostly based on auditing principles, when independent internal experts examine the survey methodology and its organisation according to a questionnaire prepared in advance. During the inspection of a statistical survey, the following aspects are assessed: management and planning, methods used, staff qualification and competence, application of IT tools, dissemination of statistical information, user relations. From 4 to 5 inspections of statistical surveys are performed each year. The main criteria applied to the selection of statistical surveys to be inspected are as follows:

- Results of the analysis of quality indicators and process variables;
- Internal and external user complaints;
- Results of user satisfaction surveys.

The experts of Statistics Lithuania who assess a statistical survey prepare detailed recommendations for the improvement of the quality of statistical surveys. Some examples of recommendations are as follows: to revise and update the survey methodology, to reorganise a quarterly survey into an annual one, to improve staff competence in the application of modern methods, to provide a more comprehensive analysis of the latest trends to users.

## **5. Management of improvement work**

Statistics Lithuania makes considerable efforts to encourage its staff members to take full responsibility for and show initiative in improvements in the area they work in. In parallel, internal communication allowing solving problems effectively is extensively encouraged. In



order to find solutions to painful and urgent problems, cross-sectional working teams are formed.

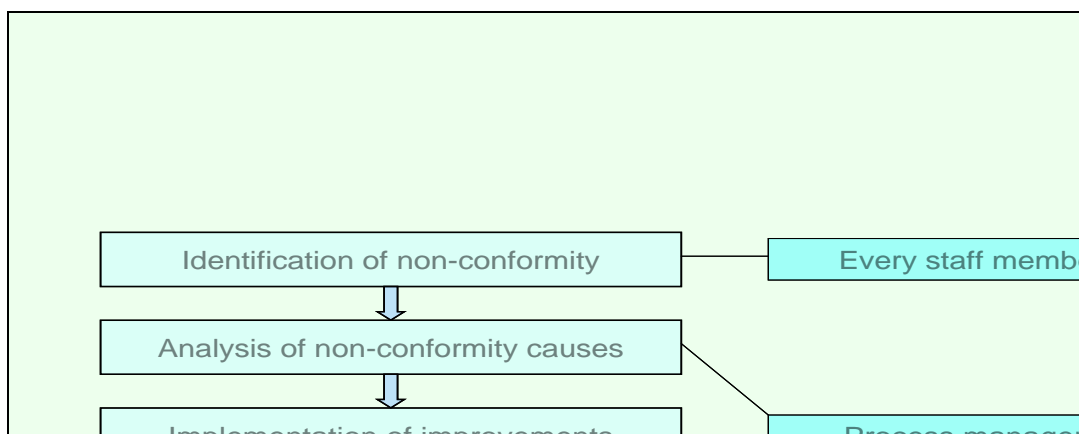
A significant role in improvement work is played by the Senior Management Committee. In regular monthly meetings, the Senior Management Committee discusses the latest trends and makes strategic decisions on the most problematic issues. The agenda of the Senior Management Committee meetings covers a great variety of topics: strategy implementation, the budget of Statistics Lithuania, preparation for censuses, response burden issues, analysis of performance indicators, time use, performance appraisal of employees, efficiency of training, etc.

Statistical Council, as an advisory body of Statistics Lithuania, discusses the strategy and other strategic documents of Statistics Lithuania, important issues related to organization of statistics; prepares conclusions and submits proposals on development of statistics.

The decisions and assignments made during the regular meetings of the top management of Statistics Lithuania help to take preventive actions in order to remove drawbacks, improve performance and achieve the results foreseen on time. Decisions and assignments made by the top management and Senior Management Committee are implemented through an Assignment Implementation Control System, which systematically reminds a responsible person and top management about an assignment. If the responsible person is late to carry out the assignment, the system daily sends him/her reminders until the assignment is carried out.

One of the important requirements of ISO 9001 is related to the control of nonconforming products and eliminating causes of nonconformities, as well as eliminating causes of potential nonconformities. This provision is not only extremely important for continuous improvement and risk control at Statistics Lithuania, but is also strongly related to the development of quality culture in the institution. It also goes along with strengthening the loyalty of the staff and the improvement of working climate.

**Figure 5: Management of improvements**



Documentation of every area requiring 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 Statistics Lithuania. In 2009, in order to encourage the staff to be more active in defining nonconformities and to facilitate the procedure of identification of nonconformities, an opportunity to record nonconformities

online has been provided, which not only allows recording drawbacks in a user friendly way, but also warns other staff members about possible threats.

Every staff member can inform process managers about the nonconformities in their process identified. Process managers analyse 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 in the Senior Management Committee meetings.

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

An important role in quality management is played by audits of the quality management system, performed by an international Bureau Veritas Group. Bureau Veritas is a world-known group of regional and local offices delivering a comprehensive range of services, including inspection, testing, auditing, certification, training, etc. The Bureau Veritas Group employs over 40,000 employees in 900 worldwide locations. According to a certification procedure, independent auditors perform audits every 9 months with the aim to assess conformity with the ISO 9001 standard. 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. During the last supervisory audit, the auditors of Bureau Veritas assessed the conformity with a new edition of ISO 9001:2008 and awarded to Statistics Lithuania a conformity with ISO 9001:2008 certificate.

## **6. Changes in user satisfaction during recent years**

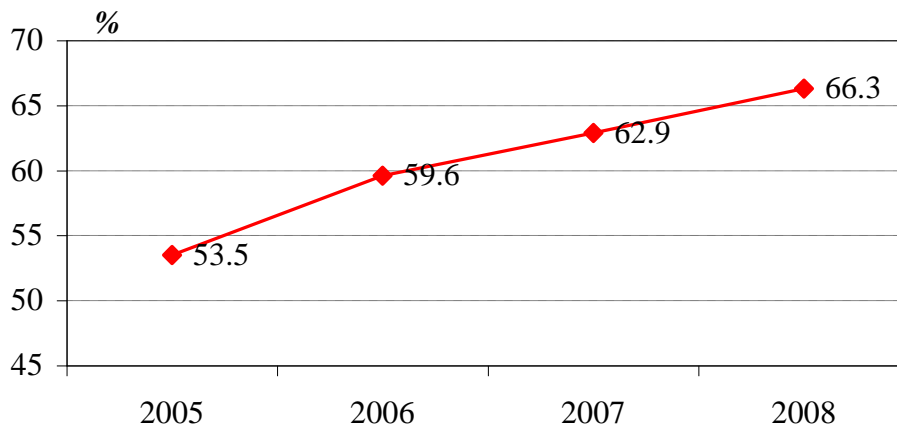
Implemented quality assurance framework is having a direct impact on user satisfaction. In the recent years, the user satisfaction level has grown rapidly. This fact demonstrates that the improvements introduced have had a direct positive effect on user satisfaction. The main activities carried out are as follows:

- The SL website has been revamped with a more dynamics and psychologically sound user interface and navigation.
- All statistical publications have been made available on the SL website free of charge.
- The range of information about methods used for a particular survey and the quality of statistics disseminated has been expanded; all this information is bilingual (in Lithuanian and English).
- A dynamic Advance Release Calendar, incorporating news, press releases, pre-defined tables, statistical output database, publication filters by topic, type of release and period with an actual link to a relevant product, has been programmed.
- An e-shop has been introduced.

- A lot of activities directed towards the education of a modern user and promotion of professional use of official statistics have been carried out. To this end, different sessions, discussions and training events with users have been organised. Particular attention has been paid to schoolchildren: an e-school has recently been introduced to the website of Statistics Lithuania (at <http://mokyklele.stat.gov.lt/index.php?id=74>).

- The statistical output database has been expanded.

**Figure 6. User satisfaction, %**



## 7. Conclusions

The experience of Statistics Lithuania proves the fact that quality management is effective only when it is systematic. Another important point is directly related to the staff attitude and feeling about the institution and quality. Only committed and recognised staff is able to initiate and implement really effective and substantial improvements.

A lot of challenges will be faced by the institution in the nearest future. Some of them are closely related to the improvement of the system of performance indicators: definition and scope of performance indicators; analysis and improvement of measurability of performance indicators; improvement criteria used for setting critical values; applicability of performance indicators – making them more informative for reflecting critical changes.

Another direction is the stimulation of responsibility and initiative of all staff members. It is closely related to the activeness of the staff in identifying nonconformities and finding optimal solutions for their elimination.

An important area is work on the reduction of the response burden and bureaucracy inside the institution, enhancement of procedures enabling to make timely decisions and assurance of their expeditious implementation. Situations are occasionally observed when certain procedures do not bring tangible benefit for the organisation of work and final statistical outputs. Statistics Lithuania combats them boldly and encourages the staff to consider every additional internal “bureaucratic” factor in terms of the benefit it could bring.

It is obvious that quality work is very complex and requires a lot of efforts from the entire institution. Nevertheless, Statistics Lithuania keeps on following its direction: to work, solve

problems, find the most effective ways to harmonize the institutional and individual staff interests and be more focused on user expectations.