Quality assurance framework
Case of Hungarian Central Statistical Office (HCSO),
December 2009

1. Context, quality policy, quality model

Introduction

The HCSO started its systematic approach to quality in official statistics in 2003. It was based on the analysis of quality-related experiences of our office and other NSIs, progress made in UN and Eurostat, experiences gained in training courses and projects organized in EU. Within this process HCSO utilized the recommendations of Michael Colledge and created a vision on quality for the office. In 2005 HCSO has developed its strategic plan for the period 2005-2008, published on the website (www.ksh.hu). A leading chapter deals with the approved quality concept of the HCSO: quality commitment, definition of quality, description of quality components, statistical processes and products, quality indicators characterising products' quality. Under this strategy a number of programs are in line with the implementation of TQM principles, like 'Programme planning and self assessment systems', 'Improving relations with respondents', or 'Development of the meta-information system'. The main quality related program 'Quality assurance of the statistical products and processes' had the objectives to develop an internal quality control system for statistical products; elaborate, test, amend and document quality criteria and standards for the main statistical working processes; promote the culture of corporate quality through training; select and set up a model covering all components of quality management. The central methodological unit was appointed as responsible for the implementation of the main quality related projects. *The Project dealing with product quality* identified indicators for measuring product quality, calculation methods and assessment criteria, compiled the standard quality report template, and developed their documentation in the meta-data system. *The Project on process quality* developed quality guidelines, identified process variables for the different process stages and monitoring system.

The new strategy for the period 2009-2012 also emphasizes HCSO's commitment to quality issues, as this commitment is stated as a core value of our institution in the

document. Based on the earlier results, linked to data production and corporate management issues, we also stated the development plans for the operation of a process quality monitoring system and the introduction of an institute-level quality management system as well. Within the framework of the quality management system we will elaborate the general operational rules for integration, reporting and use of the quality information coming from different sources. This system would serve as an inevitable feedback point for the organisational units on their activities from a quality point of view, as a “PDCA-cycle” (Plan-Do-Check-Act). We also intend to reach an office-wide quality assurance or at least introduce the requirements of such a set of measures.

Quality policy

Quality policy has been published recently, available on the website in both Hungarian and English, and it is in line with the previous strategic document. The core sentences are the followings:

“The mission of the Hungarian Central Statistical Office as part of the European Statistical System is to provide credible and good-quality statistical services – adequate for users’ needs – about the state and changes of society, economy and environment. “

“The products of HCSO are published data transferred to users, statistical analyses, classifications, registers, methods and other statistical services carried out as services. The statistical products of HCSO – in line with the ISO definition – must be “fit for use” and in accordance with the following interrelated components:

- relevance;
- accuracy;
- timeliness;
- punctuality;
- accessibility;
- clarity;
- comparability and coherence.”

Although not a measure of quality, the costs involved in the production of statistics as well as the burden on respondents put a constraint on quality. Notwithstanding the

resource constraints every effort must be made to assure supreme quality in each component.

"HCSO operates in line with the basic principles of the European Statistics Code of Practice and facilitates other national organisations of official statistics to apply them. In the frame of standardised self-assessment, coordinated on European level, HCSO regularly reports on the fulfilment of the Code's principles. The related documents are published on the website of HCSO in Hungarian and English."

2. Quality objectives, standards, guidelines and measurement tools

In the frame of the strategy internal standards and guidelines have been developed, in line with Eurostat recommendations.

The Board on Methodological Issues was set up to discuss horizontal methodological and quality related topics, standards, recommendations.

As the first results of the Process quality project, the elements of the statistical value chain were defined, a production process model was created and a handbook entitled Quality Guidelines[1] covering all the production process steps were compiled. After a comprehensive and exhaustive discussion it was accepted by each unit, and formulated as an internal regulation described by the president of HCSO in 2007. The handbook provides some brief guidelines on the principles, recommendations and methods that should be kept in mind to achieve the best quality during the production process. The structure of the handbook follows the statistical production process therefore it consists of the following chapters:

- Register
- Frame
- Objectives, uses and users of the survey
- Concepts, definitions and classifications
- Accessing administrative data
- Sampling design
- Questionnaire design
- Data collection
- Data capture, micro validation, editing
- Imputation

[1] Quality Guidelines of the Hungarian Central Statistical Office

- Weighting, estimation, sampling error computation
- Index number construction
- Macro validation
- Seasonal adjustment
- Further analysis
- Confidentiality and disclosure
- Dissemination
- Data archiving
- Assessment, review and feedback

The structure of the different chapters is the same: definitions, principles, quality guidelines. An annex contains the bibliography of actual references related to the production process steps.

The quality measurement **tools** of HCSO are the product quality indicators, the Quality report and the process quality indicators. These tools were elaborated in the above mentioned framework of strategic development projects, widely discussed and tested, confirmed by Board on Methodological Issues.

a) The system of product quality indicators was implemented in 2008, in the form of internal regulation. The nomenclature, which contains 24 indicators, categorizes indicators according to the accepted quality components in line with the Eurostat statistical quality indicators. The indicators must be calculated when the product is finished, according to the frequency of publication and additional written explanation must be provided. The calculation and the preparation of the additional written explanations are the tasks of subject-matter departments.
b) HCSO Quality report is a detailed report, containing numeric and written information on statistical products. Quality reports were specified to fill out for statistical domains[2] once a year. For monthly and quarterly surveys basic data are given in the beginning of the reference year, than the report must be updated according to the frequency of publication during the year. The report is divided into chapters in line with quality components, and those product quality indicators must be provided, which are fit to the statistical domain.
c) Process quality indicators (PQI) provide information on the quality of certain production process steps so that assigned people could intervene during the

[2] The system of statistical domains is a system of “topics” prescribed in an internal provision, used to structure surveys, data publications, and metadata describing them. Metadata on more than hundred statistical domains are available on HCSO website (www.ksh.hu).

process. The process steps in the manual for the elaboration of indicators are in line with previously accepted production process model of HCSO. The manual for PQIs contains guidelines for the elaboration of specified process quality indicators, since the data-collections can be considerably different.

Two main types of PQIs can be distinguished by the use of them: indicators for the purpose of checking (posterior) and indicators for control (used during the production process) to support quality assurance.

d) In order to measure user satisfaction, HCSO developed a system in accordance with the principles of the European Code of Practice, and with the support of it users' opinions are collectable and analysable in structural way, while feedbacks and utilising steps get enough emphasis as well. In every year several user surveys are carried out based on the actual priorities coordinated by the Dissemination Department.

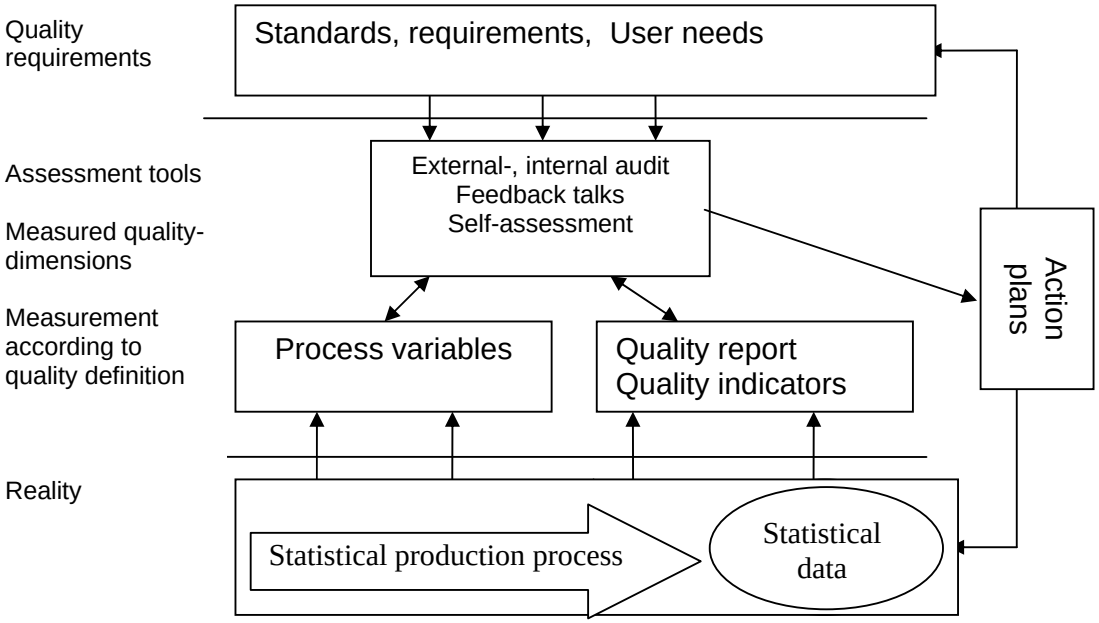
3. Quality measurement and assurance procedures

The primary aim concerning quality measurement is the automatized measurement embedded in the production process and the documentation in every data-production period.

All the product and process indicators, as well as the data in the Quality report are parts of the META information connected to data.

Concerning the **tasks and responsibilities** the elaboration, revision and development of the indicators and the Quality report is the task of the Methodology department cooperating with the Planning department. The calculation is executed by the responsible statisticians of the production steps of the different surveys with the coordination of the Planning department. The survey managers are responsible for filling in the Quality reports.

Figure 1: Elements and tools of quality measurement and assessment



4. Quality assessment procedures

The most important tasks in quality assessment are comparing documented quality with requirements, establishing the grade of correspondence, disclosing occurred lacks and risks, recommendation for elimination of gaps, reduction of risks, finally modifying requirements or other elements.

Tools of quality assessment can be:

- self-assessment (for products and processes),
- feedback-talks,
- internal and external quality audit.

Self-assessment

The internal standard questionnaire for self assessment has been developed based on the DESAP checklist, adopted according to HCSO quality guidelines. This questionnaire has the purpose of systematic and structured quality-assessment of surveys, as well as the assessment of product-quality.

The self-assessment questionnaire must be filled in by the survey manager, but it is also necessary to involve other experts of the process. It is a useful tool for considering arrangements and assigning development recommendations.
Filling in the questionnaire is suggested for each surveys but it is obligatory for new and significantly altering surveys prior to audit only.
HCSO Quality report also contains questions related to the self-assessment of statistical domains.

Assessment of product- and process quality

The most important tasks are coordinating self-assessment, timing of filling in, and technical assistance, collecting and answering methodological questions, monitoring the grade of completeness of answers, creating a database, finally preparing a summary by surveys.
By the result of the self-assessment it is possible to make an action plan for the own unit and also possible to make proposals for other units.
Last but not least a summarized report is done on product-quality and self-assessment at HCSO level and the main areas to be developed. This report is part of the Annual Report on the activity of HCSO.

Further plans of development concerning quality assessment

Feedback-talks

Our goal is to collect experiences through feedback-talks – structured consultation with main users –, at first for the main statistical domains, later extended for a wider scope.

Internal and external quality audit

Internal and external quality audit will be organized first for the main statistical domains, later extended on-demand.
The assessment procedures will be carried out according to an accepted schedule, assessment plan.

5. Quality improvement procedures

The promotion of quality commitment and use of standards were parallel activities, with presentations, reports, and regular internal training courses.

Action plans

Based on the results of (self) assessments the subject-matter departments can prepare action plans, if necessary. If the action plan concerns only the subject-matter department, it can be included in the regular annual planning procedure. In this case the resources needed can be assured, and the given department is responsible for the execution of accepted plans. In case of wider action would be needed the subject matter department make the proposals for other units. Action plans are the feedbacks of assessments, hence give the reason of them.

Through summarized reports, a comprehensive action plan can be done on institutional level.

6. Future improvement of quality framework

The already referred Strategy 2009-2012 includes the necessary actions' main characteristics on institutional level. On the basis of that detailed mid-term work plans were also elaborated, where the necessary steps are explained and deadlines are set.

Developing quality-requirements operate by subsidiarity, decisions can be made on subject-matter department level, institutional and EU level.

Subject-matter departments are responsible for developing quality-requirements for statistical domains.

- Quality-measurement tools and system, quality-requirements on institutional level - like standard question-blocks, standardized nonresponse-codes must be provided and reviewed at least once in 5 years, or if necessary. Subject-matter departments are responsible for using/implementing (and in special case for providing and developing) tools.
- HCSO is in the scope of the outlined quality framework. At present in Hungary there is no Quality framework for the whole official statistics, which means that standardized interpretation and application of quality requirements and tools for HCSO and other organizations producing official statistics have not been defined yet.

- Peer reviews related to Code of Practice are good example for assessments ordered and operated by EUROSTAT.

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