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Implementation of a Quality Management System

According to the European Statistics Code of Practice and the Quality Assurance Framework of the European Statistical System

Reynir Kristjánsson
Quality Manager

Statistics Iceland

Contents

Preface

Statistics Iceland is the center for official statistics in Iceland and collects, processes and disseminates data on the economy and society. In 2013 it had around 100 full time employees and some 80 part time. The organization is divided in to four departments: Economic Statistics, Business Statistics, Social Statistics, and Recourses and Services. The chief executive officer of Statistics Iceland is the Director-General.

Statistics Iceland was founded in 1914 and was formally a government ministry until the end of 2007. During this time, the main legal basis for Statistics Iceland and its work was an Act of 1913, as well as other acts on official statistics, the Act and statutes on the Central Government Administration.

On 1 January 2008 the ministerial status of Statistics Iceland was abolished and a new Act on Statistics Iceland and official statistics took effect, replacing most of the older legislation. Under this Act Statistics Iceland is a professionally-independent institution under the aegis of the Minister of Finance and Economic Affairs. In addition to the legislation mentioned above and special laws on price and wage indices, Statistics Iceland operates in accordance with the United Nations Fundamental Principles of Official Statistics, the European Statistics Code of Practice, as well as the Act on the Protection of Privacy regarding the processing of personal data.

Statistics Iceland has always laid emphasis on quality, and to strengthen this focus still further the role of a quality manager was defined. In October 2012 this position was filled with a quality expert who has, since then, worked full time implementing a quality management system for the institution.

Among the first things to do was to create a road map for the implementation (which for half a year was updated quite often), develop a quality policy, and prepare for some quality training for employees.

The quality policy, which is based on PDCA[1] and the European Statistics Code of Practice (CoP), was published in the beginning of 2013 and can be found at www.statice.is/pages/2952.

In January 2013 the Director-General established a quality council to support the implementation effort. There are six managers on the council: All the directors, including the Director-General, and the quality manager who also serves as the secretary of the council. The quality council meets once or twice every month. It is responsible for the implementation of the quality policy and all major decisions regarding the implementation are made by the council.

The implementation road map, as it was at the end of 2013, is illustrated in the table in table 1. Each activity is further explained in following chapters.

1 PDCA is a process for continuous improvement, where P stands for plan, D is do, C stands for check, and A is act.

Activity	2013				2014				2015					
Process Model														
Training														
Quality Audit (ESS)														
Internal Audits														
Performance Indicators														
Continuous Improvement														

Table 1: The implementation road map. It should be understood that activities do not end as shown in the table, and in some instances they start earlier or are ongoing. The implementation road map shows when special emphasis is made on the different activities to develop management practices and to implement quality management.

Process Model

The quality policy states that "Statistics Iceland operates within well-designed processes and according to plan." To be able to ensure quality, it is necessary that employees work according to plan and use predesigned processes to produce statistics according to specifications. These processes should be easily accessible for all employees and managers as part of standard operating procedures (SOPs) and work descriptions (WDs). SOPs show macro processes and essentially answer the question: "What is done and by whom?" and sometimes "When?" or "How often?", whereas WDs show micro processes and answer the question: "How is it done?" In most cases a WD is made, not only with process maps, but also with explanations on how to do the work. This might also require screen shots of different user interfaces of software used to perform the work. Usually a WD shows only a part of the macro process but sometimes it is more appropriate to show the whole macro process in the WD, for example when the macro process involves only few steps. Good process maps and documentation is not only necessary for quality assurance but also for process improvement.

It was clear, from the outset of the quality implementation, that improvement was needed on the documentation of processes. SOPs documentation and a structure to map and archive documents was prioritized as one of the first things that needed our attention, and even though a number of WDs were available, they were not readily accessible except for few people.

To develop the structure for process mapping and archiving, upper management came together in December 2012 in a work-shop and answered the question: "What is done at Statistics Iceland?" Participants at the work-shop were asked to think about every piece of work that is done within the institution and then write the answers on a piece of paper which was posted on the wall. The answers were then sorted so that similar activities were grouped together. Each group was given a name and collectively the names of all the groups became the names of all of Statistics Iceland's business processes. Together these processes make up Statistics Iceland's high level process map (see figure 1).

The high level process map shows eight business processes which can be categorized into three process families:

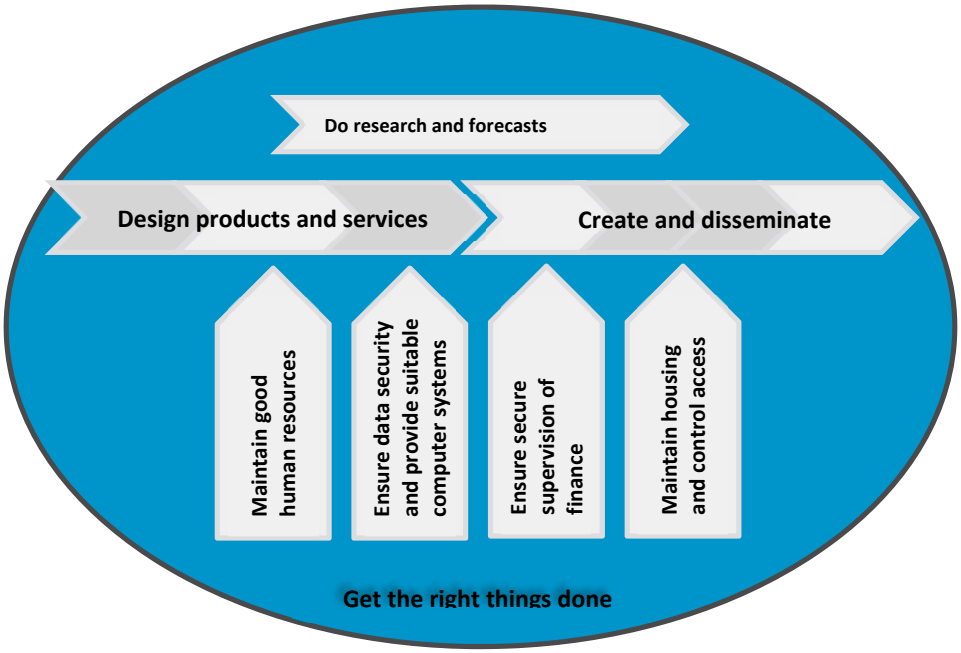


Figure 1: Statistics Iceland's high level process map showing all of its business processes.

1. Core processes
   - Design products and services
   - Create and disseminate statistics
   - Do research and forecasts

2. Supporting processes
   - Maintain good human resources
   - Ensure data security and provide suitable computer systems
   - Ensure secure supervision of finance
   - Maintain housing and control access

3. Governing process
   - Get the right things done

In the following months, selected groups of people met to discuss each of the eight business processes. We selected different groups for the different processes, including middle managers and people in non-managerial positions. They were asked to answer the question: "What is done in this process?" The rest of the meetings followed the same process as the work shop in December 2012 resulting in a definition on what is included within each of the business processes. The process Maintain good human resources, as an example, includes:

- Provide human resources
- Train employees
- Develop employees

- Manage employees' exits
- Maintain good work morale

When it came to defining the processes Design products and services, and Create and disseminate statistics, we used the GSBPM to ensure consistency with corresponding processes at other statistical institutions. This means that Design products and services, for example, includes:

- Specify needs
- Design and develop outputs, methods and systems
- Build IT systems

To be consistent with the GSBPM[2] we call this level 1 processes, making the high level process map a level 0. Each of the level 1 processes has at least one SOP associated with it. The SOPs make up level 2. The WDs together with other work related documents (like

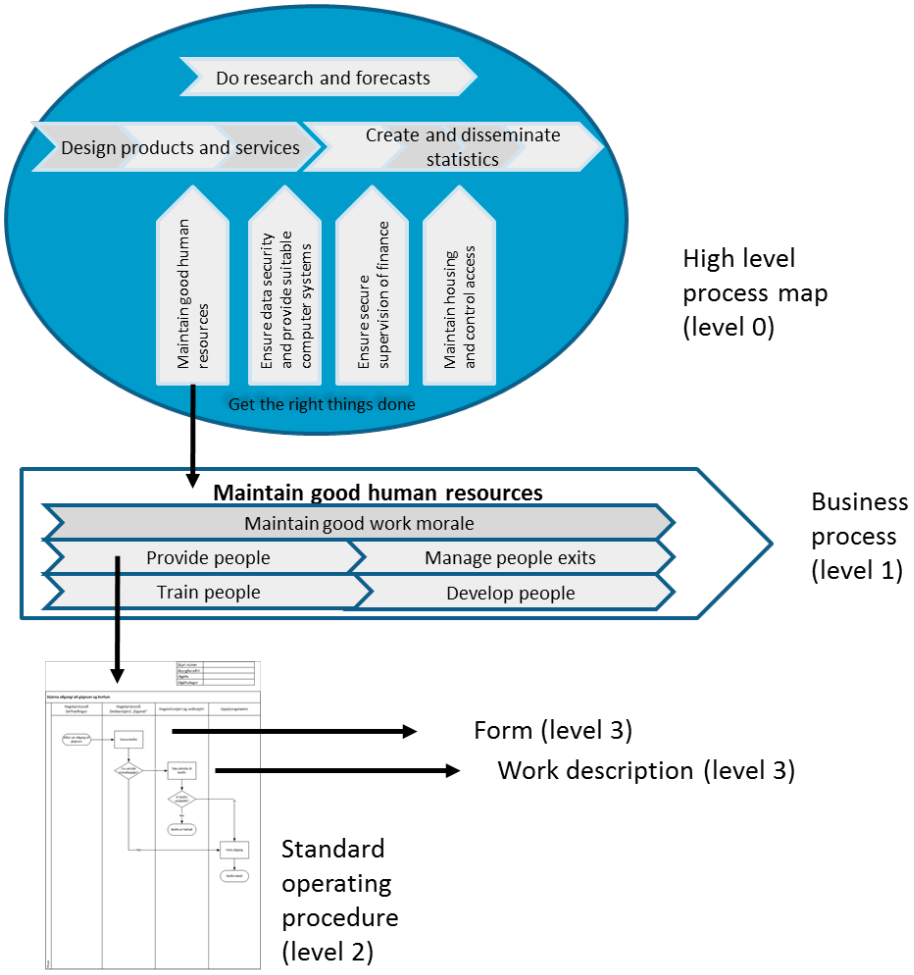


Figure 2: The process model shows processes and documentation on four levels.

2 Generic Statistical Business Process Model prepared by the UNECE Secretariat.

forms, checklists, and manuals) are level 3 documents. These four levels are connected and structured; together they make up Statistics Iceland's process model (see figure 2).

In January 2013 we started a pilot project on the SOP's, even though we had not defined all of the business processes. The objective of this project was to see how easy or difficult it would be for the middle managers and the work-force to create the SOP's. We also wanted to see how similar or different to each other the SOP's would be. We selected four project groups, one from Price statistics, one from Social statistics, one from Business trends and structure, and one from Surveys. Even though all of the groups were guided by the quality manager they produced very different process maps for their SOPs. Three of these groups (Price statistics, Social statistics, and Business trends and structure) are all processing and analysing data, but according to their process maps they seem to perform in very different ways. Closer examinations lead to the conclusion that the differences are not as great as they seemed at first. There were three reasons for the different process maps:

- There are some differences in the way processing and analysing is done in the different groups
- Different words are sometimes used for the same thing in the groups
- Each group had a different idea on how detailed their process map should be

Of these three points, the first one is important as we are interested in seeing this difference and understand why statistics are produced differently. In order to really see this difference we would like to minimize the variability in the process maps deriving from the latter two points. It just adds to the confusion when different words are used for the same thing and when some of the maps are drawn up with aggregated process steps while other are much more detailed. To solve the problems caused by the latter two points above, we decided to use the GSBPM as a standard for terminology and level of detail. In order to do so we needed to translate the GSBPM from English to Icelandic. This was not a straight forward task since individual groups would sometimes translate differently. In order to solve this we held a number of meetings with experts and managers, 30 people in total which is close to being one third of the people working in the statistical production process (SPP). Each meeting had four to seven participants and focused on part of the SPP. Two people (the quality manager and the director of Resources and Services) attended all of the meetings to ensure consistency. The output from this work was an Icelandic version of the GSBPM with a common vocabulary for Statistics Iceland. When this work was complete, we were able to continue writing the SOPs using a common vocabulary and write process maps with more consistency in detail.

The GSBPM (version 5.0) defines the statistical business process in 8 phases:

1. Specify needs
2. Design
3. Build
4. Collect
5. Process

6. Analyse
7. Disseminate
8. Evaluate

The first three phases are what we call “Product Design” and are only used once or a few times for each product, whereas phases 4 to 7 are the actual production and used every time the product is produced. We call this part of the process “Production Process”.

In 2014 we plan to design the Product Design process with a help from the directors and the head of units. This process has not been thoroughly defined yet and we see great opportunities in quality and efficiency improvement by better defining this process and in standardizing how this is done.

The Production Process has been defined more thoroughly, even though it is not very well documented. The biggest problem regarding the Production Process is the “stovepipe” character of the different processes for different products. By “stovepipe” we mean that different processes for different products have been designed and have evolved over time in isolation form processes for other products. From quality standpoint, this does not have to be a problem, but we believe that considerable efficiency gains can be realized from a more unified way of producing different statistics. We believe that by using the GSBPM as a model when developing the Production Process we can better standardize different parts of the process, making a more unified process. This is sometimes called “industrialization” of production processes.

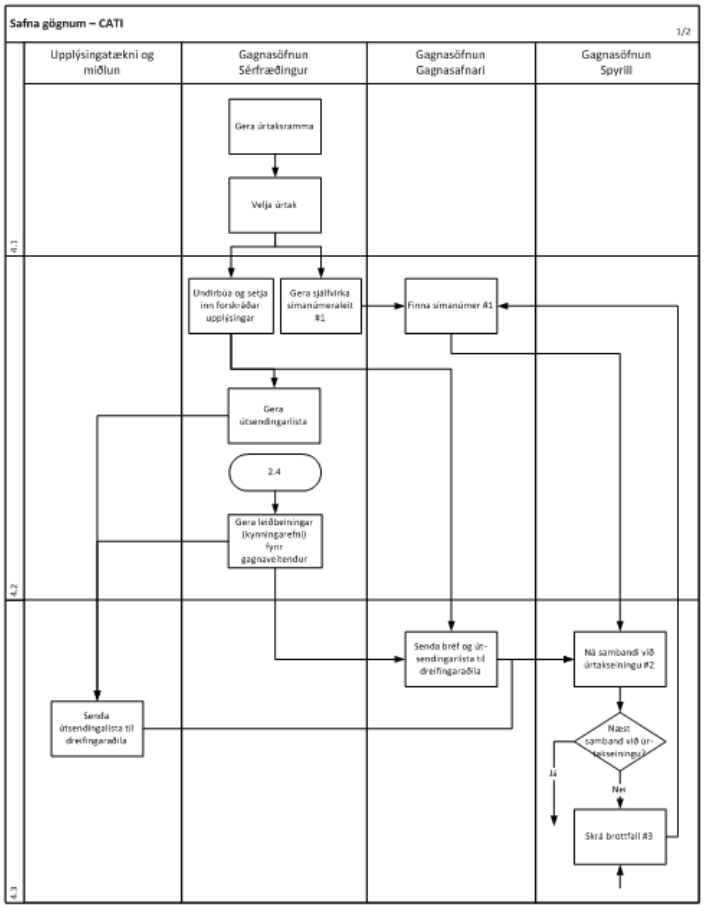


Figure 3: Process map showing part of the computer-assisted telephone interviewing (CATI) process. Note how the process is divided in to sections and on this picture we can see 4.1, 4.2 and 4.3 from the GSBPM.

At Statistics Iceland, we have already taken steps in this direction. Building upon the pilot project on the SOPs, we have now started mapping production processes (as-is) for different products using the GSBPM as a standard vocabulary. The process maps, so produced, show the way work is actually carried out but in the context of the GSBPM (see figure 3). These process maps are divided into sections according to level 2 of the GSBPM to show where in the model the actual activities take place. This allows us to compare the same process steps for different products and will serve as the bases for future process improvement.

Included in the process maps is a marker showing where in the processes quality indicators and other metadata is collected or should be collected according to SIMS.

Training

When it comes to training for quality, the best approach is learning by doing. A quality expert working in different implementation teams uses the opportunity to teach managers and other employees the methods of quality management, including planning for quality, analysis, documentation, and quality improvement, to name a few. For people to really understand these methods and understand quality thinking, they need to be able to apply the training to actual job situations. However, we felt that some basic understanding and knowledge about where we were heading was necessary so we planned for few classroom sessions for all employees, including managers. Each session was one hour long and grouping into classes was based on the organizational chart, that is to say, people working in the same department were together in classes which had 10 – 20 students each. We decided that the first three classes would be mandatory so if someone was not able to attend with his or her department, they were able to come with another department. We planned for six different sessions for each group:

1. Organizational charts and process models
2. Quality policy and quality management
3. Process mapping, procedures and work descriptions
4. Standards and quality frameworks
5. Performance measurements, metadata and quality reporting
6. Internal audits and continuous improvement

The first three were held in January–April 2013. The last three are planned to be held in 2014. Following are descriptions of the sessions.

Organizational charts and process models

Even though each organization has its unique organizational chart, they also have their similarities and can be grouped into few generic organizational structures like the U-form organization, the M-form organization, and matrix organization, to name a few. One of the interesting things, when studying organizations, is to see how they are integrated between different functions or units. Various forms of integration mechanisms are described, but a logical way to integrate between functions or units is the process focused approach. When describing organizations, it can be useful to show two different views: The vertical view which shows the familiar organizational chart, and the horizontal view which shows the processes. The high level processes are shown in a map called the high level process map. Lower level processes, all the way down to micro-processes, are structured in a logical way in a model called the process model. At the end of the session the process model for Statistics Iceland is explained.

Quality policy and quality management

The quality policy at Statistics Iceland is discussed and explained how it is based on principles in quality management and the CoP. The concept "quality management" is explained in terms of how Statistics Iceland is going to implement its quality policy.

Process mapping, procedures and work descriptions

The process model for Statistics Iceland is explained thoroughly with emphasis on how SOPs, WDs, forms, checklists, etc. are comprised in this model. Basics in process mapping are taught and how to write SOPs.

Standards and quality frameworks

CoP and the QAF are explained and an overview on few standards, including ISO 9001, is given. Some other concepts are explained in order to give participants an overview and understanding on how these concepts are related to each other. These include: Lean Management, TQM, EFQM, CAF and the Balanced Scorecard.

Performance measurements, metadata and quality reporting

Performance measurements are an integral part of all quality management systems. We use measurements to know how we are doing, to ensure quality, and as the basis for improvement. Therefore, it is important to select the right metrics, measure in a systematic way, and to have the results readily available to managers and other relevant employees. This session is about performance measurements, metrics, metadata, and quality reporting.

Internal audits and continuous improvement

Different approaches to improvement are discussed. Radical improvements, sometimes called business process reengineering, are compared with continuous improvement approaches. Improvements cultures and organizational learning is discussed and several improvement techniques are introduced. This session also gives an overview on how Statistics Iceland uses internal audits as part of continuous improvement.

Quality Audit (ESS)

Statistics Iceland was contacted by Eurostat and asked to participate in a pilot peer review. The aim of this review was to:

1. Assess the compliance of Statistics Iceland to the Code of Practice.
2. Test a predesigned process for a peer review to improve it before such reviews are carried out at other statistical institutes in the ESS in 2014.

Preparations started in May 2013 when a project group was formed, consisting of: The director-general; all four directors (Economic Statistics, Social Statistics, Business Statistics, and Resources and Services); the human resource manager; and the quality

manager. The quality manager was appointed as the project manager for the preparation project, and as the internal overall contact person for the incoming reviewers.

On our first meeting we had a brain-storming session where we came up with all activities that needed to be performed before and during the peer review. We identified the following activities:

- Organize team
- Communicate
- Organize documentation
- Answer self-assessment questionnaires
- Prepare facilities
- Contact external partners
- Contact other producers
- Prepare agenda

Figure 4: Visual management board for the project team.

Organize team

In our first meeting we decided who would be the project manager for the preparation project and who would be the contact person for the review team. Most likely, it is best to have the same person in both of these roles and that is the approach we took at Statistics Iceland.

We decided to prepare an information board (visual management board) and a war room for the project team (see figure 4) and to have weekly project meetings (except for the month of July, the summer vacation month). The information board was 1 x 3 m with heavy emphasis on the identified activities, their scheduled dates, and who was responsible for carrying them out.

At the weekly project meetings the team discussed what had been done since the last time we met, problems in carrying out the activities (if any), and how we could help

each other to get back on track when needed. We also discussed the activities that needed to start in the coming week, how they would be carried out, and if the person responsible needed any help to be able to finish on time.

Communicate

Information on the peer review was communicated to all employees in two meetings, one in the middle of June and one at the end of August. Information was also given on Statistics Iceland's internal web side.

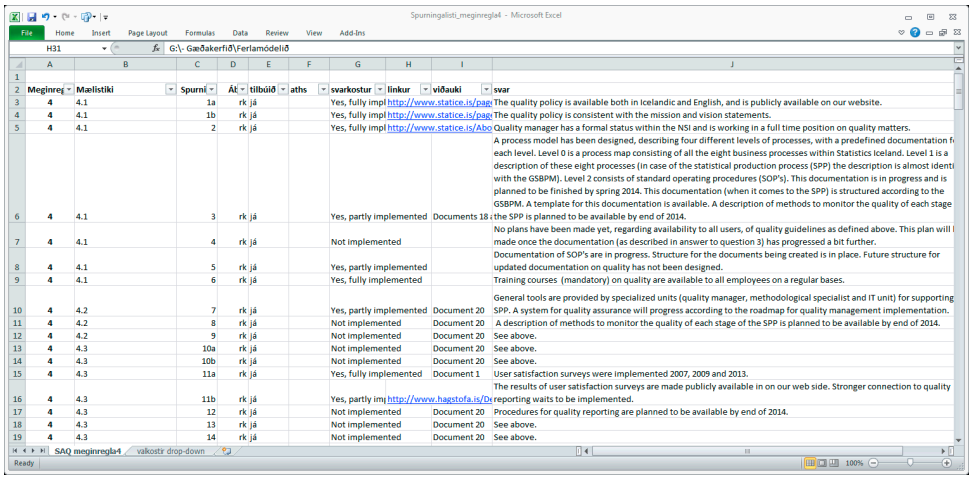
Organize documentation

A spreadsheet document was created and made available for all in the project team (actually, all documentation was available for all employees) with a list of all documents needed for the peer review.

One person was made responsible for making this master document, do the initial analysis on what documents were needed, and filling out as many cells in the document as possible. The project team elaborated further with this document and decided who should be responsible for finding, creating, or translating each document.

Do self-assessment questionnaire

The biggest part of the preparation for the peer review was to answer the questions in the self-assessment questionnaires. To organize for this we divided questioners up by responsibility and decided who should answer each question. We created 15 spreadsheet documents, one for each of the principles of the CoP, where we kept track of: Principle number (two columns); question number; who is responsible for answering that question; the status of the answer (finished or not finished); notations (if any); the answers themselves (fully, partly, or not implemented); link to a web page (if any); other supporting documents (if any) using the same number as in the master document described above; and open answers, the "please specify" part (see figure 5).



	A	B	C	D	E	F	G	H	I	J
1										
2	Meginreg	Mælistiki	Spurni	Á	tilbúið	aths	svarkostur	linkur	viðauki	svar
3	4	4.1	1a	rk	já		Yes, fully impl	http://www.statice.is/pag		The quality policy is available both in Icelandic and English, and is publicly available on our website.
4	4	4.1	1b	rk	já		Yes, fully impl	http://www.statice.is/pag		The quality policy is consistent with the mission and vision statements.
5	4	4.1	2	rk	já		Yes, fully impl	http://www.statice.is/Abo		Quality manager has a formal status within the NSI and is working in a full time position on quality matters.
6	4	4.1	3	rk	já		Yes, partly implemented		Documents 18	A process model has been designed, describing four different levels of processes, with a predefined documentation f each level. Level 0 is a process map consisting of all the eight business processes within Statistics Iceland. Level 1 is a description of these eight processes (in case of the statistical production process (SPP) the description is almost identi with the GSBPM). Level 2 consists of standard operating procedures (SOP's). This documentation is in progress and is planned to be finished by spring 2014. This documentation (when it comes to the SPP) is structured according to the GSBPM. A template for this documentation is available. A description of methods to monitor the quality of each stage the SPP is planned to be available by end of 2014.
7	4	4.1	4	rk	já		Not implemented			No plans have been made yet, regarding availability to all users, of quality guidelines as defined above. This plan will made once the documentation (as described in answer to question 3) has progressed a bit further.
8	4	4.1	5	rk	já		Yes, partly implemented			Documentation of SOP's are in progress. Structure for the documents being created is in place. Future structure for updated documentation on quality has not been designed.
9	4	4.1	6	rk	já		Yes, fully implemented			Training courses (mandatory) on quality are available to all employees on a regular bases.
10	4	4.2	7	rk	já		Yes, partly implemented		Document 20	General tools are provided by specialized units (quality manager, methodological specialist and IT unit) for supporting SPP. A system for quality assurance will progress according to the roadmap for quality management implementation.
11	4	4.2	8	rk	já		Not implemented		Document 20	A description of methods to monitor the quality of each stage of the SPP is planned to be available by end of 2014.
12	4	4.2	9	rk	já		Not implemented		Document 20	See above.
13	4	4.3	10a	rk	já		Not implemented		Document 20	See above.
14	4	4.3	10b	rk	já		Not implemented		Document 20	See above.
15	4	4.3	11a	rk	já		Yes, fully implemented		Document 1	User satisfaction surveys were implemented 2007, 2009 and 2013.
16	4	4.3	11b	rk	já		Yes, partly im	http://www.hagstofa.is/D		The results of user satisfaction surveys are made publicly available in on our web side. Stronger connection to quality reporting waits to be implemented.
17	4	4.3	12	rk	já		Not implemented		Document 20	Procedures for quality reporting are planned to be available by end of 2014.
18	4	4.3	13	rk	já		Not implemented		Document 20	See above.
19	4	4.3	14	rk	já		Not implemented		Document 20	See above.

Figure 5: Spreadsheet to keep track of: Principle no. (two columns); question number; who is responsible for that question; the status of the answer (finished or not); notations (if any); the answers themselves (fully, partly, or not implemented); link to a web page (if any); other supporting documents (if any); and open answers.

The questions were allocated at a project meeting. In order to be able to finalize on time the allocation was top-down and one team member made responsible for the harmonization of answers.

The overall progress of answering the SQA was given in a diagram on the information board in the war room. This diagram showed how many questions had been answered from week to week in accumulative format (see figure 6). This helped the preparation team to see, on weekly bases, if they were on track or not, compared to a plan with a linear progress.

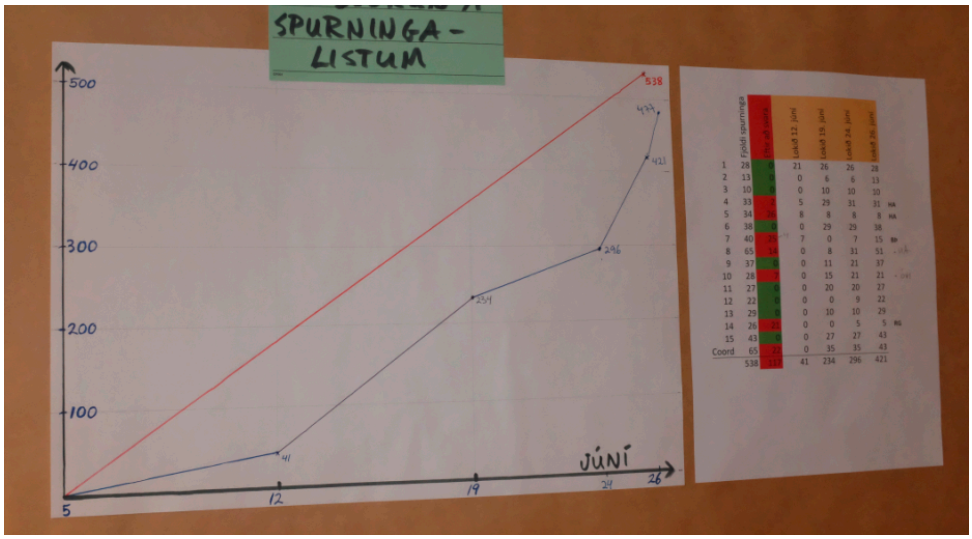


Figure 6: Diagram showing the progress of answering the SAQ from week to week in accumulative format. The blue line shows actual progress and is compared with a linear progress (plan) shown by the red line.

Prepare facilities

Following reservations and preparations were made: Hotel for the review team; a room at Statistics Iceland for the peer review meetings; an office for the peer review team to use during the peer review; coffee and other refreshments for all participants; lunch for the review team for the whole peer review week and one dinner.

Contact external partners

When the agenda was ready the main data providers were contacted with an e-mail containing a meeting request. In some cases a follow-up phone call was made. The same thing was done regarding users (customers) who were selected from three categories: Media; ministries, institutions, banks, and federations; and the scientific community.

Contact other producers

Producers of European statistics are very few in Iceland. We have:

- Seðlabanki Íslands (Central Bank of Iceland – CBI)
- Orkustofnun (National Energy Authority – NEA)
- Umhverfisstofnun (The Environment Agency of Iceland – EAI)
- Samgöngustofa (Icelandic Transport Authority – ITA)

With the exception of the CBI, these producers are very small indeed; for example at ITA only one person is working on the production of statistics. We sent the light questionnaire to the CBI, NEA and EAI. Because of the small size of NEA and EAI we did not expect that they would fill out the questionnaire but asked them to read it and prepare for the meeting with the peer review team.

Prepare agenda

Two weeks before the peer review we started to prepare the agenda. After few rearrangements, back and forth with agenda items, we ended up with using the original agenda proposed by the review team. The final agenda document given to the review team included: Time when each meeting would start and finish; agenda item; organization of participants; and name of participants. The final agenda (after few adjustments during the peer review) is in the appendix below. It shows the list of participants who actually attended the meetings.

Peer Review

The peer review took place at Statistics Iceland from Tuesday 3 September to Friday 6 September 2013, with an introduction and preparation meeting (review team with the NSI's contact person) on Monday 2 September. Members of the peer review team were:

- Marie Bohata, Deputy Director-General, Eurostat
- Marina Gandolfo, Head of International Relations, Istat
- Richard Laux, Director, UK Statistical Authority

The peer review team was in charge of the meetings, but the NSI's contact person was present on all of them, except for the meeting with the junior staff. The review proceeded without problems and followed the predefined agenda most of the time. Few small adjustments were made throughout the review. The final agenda, as it was actually carried out, is in the appendix.

Figure 7: The review team on a meeting with users.

On the first meetings, participants from Statistics Iceland used slides and a projector to introduce and explain the national statistical system in Iceland, the organization at Statistics Iceland, and other things related to the first agenda items. Other meetings proceeded with discussions and "questions and answers" format (see figure 7). At the end of the peer review, the peer review team met with Statistics Iceland's management team for discussions on the peer review process itself, and to discuss the main results and recommendations of the review.

Quality audits as part of continuous improvement

We expect to participate in the EES quality audits every 5 years or so, and see this as part of our quality management system. Recommendations from these audits will be used to further improve our institute.

Internal Audits

We plan to start internal auditing in the fall of 2014. An effort will be made to learn best practices from other statistical institutions.

Performance Indicators

As part of the work on mapping processes and writing the standard operating procedures (SOPs), quality performance indicators (QPIs) are linked to specific parts of the GSBPM and documented. By doing this, the SOPs show where in the process the measurement takes place and which role is responsible for taking the measurement. By using appropriate indicators and by collecting sound numerical information on performance, Statistics Iceland will be able to monitor quality and track progress in continuous improvement.

The indicators selected for use in this part of the project are based on the 16 QPIs included in the Single Integrated Metadata Structure (SIMS) which are specifically aimed at the producers of official statistics. The QPIs will be linked to Statistics Iceland metadata system which will be based on the SIMS (currently under development). The QPIs in the SIMS are based on the quality criteria as it is presented in the European Statistical Law (223/2009): Relevance, Accuracy, Timeliness, Punctuality, Comparability, Coherence, Accessibility and Clarity. The indicators are:

- Data completeness rate (Relevance)
- Sampling Errors (Accuracy)
- Over-coverage rate (Accuracy)
- Common units, proportions (Accuracy)
- Unit non-response rate (Accuracy)
- Item non-response rate (Accuracy)
- Average size of data revision (Accuracy)
- Imputation rate (Accuracy)
- Time lag, first results (Timeliness and punctuality)
- Time lag, final results (Timeliness and punctuality)
- Punctuality, delivery and publication (Timeliness and punctuality)

- Asymmetry for mirror flows (Comparability and coherence)
- Length of comparable time series (Comparability and coherence)
- Data table, consultations (Accessibility and Clarity)
- Metadata, consultations (Accessibility and Clarity)
- Metadata completeness rate (Accessibility and Clarity)

Other relevant QPI's are also documented in the standard operating procedures, if applicable to the specific product.

Continuous Improvement

Even though we do not expect to have a fully functioning system for continuous improvement until 2015, many parts of this system are already underway. Parts of this system were mentioned in earlier chapters on process model, quality training, EES quality audits, internal audits and performance indicators. To have a fully functioning system for continuous improvement, few other components are needed (see figure 8).

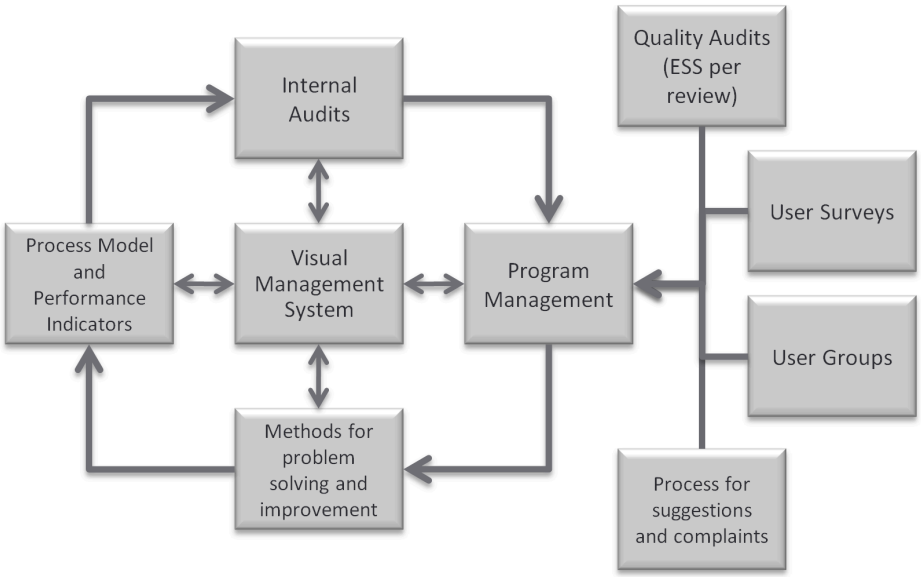


Figure 8: System for continuous improvement.

The parts of this system which have not been covered previously are: Process for suggestions and complaints, user groups, user surveys, methods for problem solving and improvement, visual management system, and program management. User groups and user surveys have been effective for many years but need to be integrated in to this system. Other parts of this improvement system, mentioned in this chapter, are still under construction and have not been formally approved.

Process for suggestions and complaints

A standard operating procedure has been made on how to handle suggestions and complaints. All complaints shall be recorded in a centralized document. Suggestions

and complaints which can be handled and acted upon within a unit (department) are treated by that unit. If the suggestion or complaint needs to be handled by cross-departmental effort, it is directed to the quality council responsible for program management.

User Groups

User groups for price indices, labor market, and national accounts have been effective for many years. The subject matter expert, who also is the head of unit, for the respective products meets once a year with representatives from selected group institutions and companies. On Statistics Iceland's website the purpose of the user groups is explained:

> User groups operate at Statistics Iceland request. The purpose of user groups is to be a forum where the providers of official statistics meet the primary users on a regular basis to discuss and comment on official statistics and thus strengthen Statistics Iceland's operations. The user groups are all subject to Statistics Iceland Director-General.

User Surveys

User satisfaction surveys were implemented 2007, 2009 and 2013. We plan to do this survey every second year. Results from this survey need to be integrated into the improvement system.

Methods for problem solving and improvement

Many different methods have been developed for problem solving and process improvement. Employees working in improvement groups need to be trained in using selected methods. As an example of methods these can be mentioned:

- A3 – method for defining and structuring improvement work
- VSM or Value Stream Mapping – method for analyzing processes
- SPC or Statistical Process Control – method for analyzing process variability
- Ishikawa diagrams – method for analyzing causes of a specific event
- Brainstorming – method for collecting many ideas free from criticism

Visual management system

Statistics Iceland has already taken its first steps in implementing visual management system (VMS) and few unit heads are using this powerful method within their unit. The project team for the census project is also using VMS and the peer review project team used VMS on its regular project meeting as has been described in the chapter Quality Audit (ESS). As for now, there is no mandate to use this method but unit heads, who are not using it currently, have started to show interest after seeing how effective it is in other units. The Quality Council is also a potential future user of this method. Sometimes there are some layout and facilities challenges regarding the use of VMS, and this is often the excuse for not using it.

Visual Management System is a method to make useful or necessary information readily available and visual for everyone concerned. Signs, traffic lights, and road surface markings (see figure 9) are good examples. In an office setting, VMS is mostly used for taking managerial information, which often is hidden from the employee, and post it on the wall or on a board where the employees can see it in their daily work (see figure 10). Managerial information can for example include: Objectives, schedules, processes, metrics, performance measurements, unsolved problems, improvement ideas, improvement projects, and results.

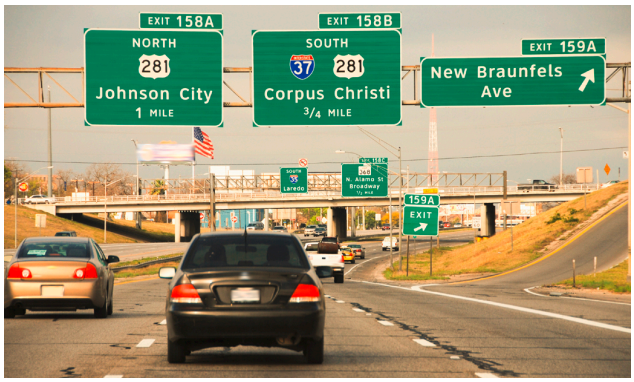


Figure 9: Visual Management System in the traffic.

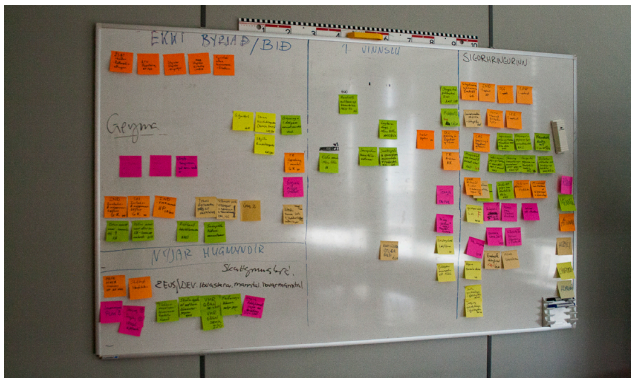


Figure 10: Visual Management System in an office setting.

The VMS has two main components, the VMS board (the tool) and the method on how it is used. The goal is to improve performance by increasing the participation of all employees in daily management (problem solving, improvement, decision making, etc.), and by promoting more exchange of knowledge between group members and between groups.

Employees can use VMS to:

- Monitor whether they are on right track or not and respond when needed
- Solve problems and work on improvement projects
- Communicate ideas with managers

Managers can use VMS to:

- Monitor activities and ask questions
- Share ideas with employees
- Be better informed about operational matters, strengths and weaknesses, to be able to take better strategic decisions

Program management

The idea of a program management office (PMO) has been discussed and the Quality Council is a potential candidate to be responsible for program management. Suggestions from employees, managers and users are directed to the quality council. External suggestions and complaints are collected through four mechanisms:

- User surveys (every second year)
- User groups (price indices, labor market, and national accounts)
- Incidental complaints or suggestions
- ESS quality audits

Suggestions form employees and managers come mainly from the VMS and the internal audits. The PMO collects all these suggestions, ideas, and complaints, and checks if they are already part of previously defined issues. If, however, this is a new issue, the PMO prioritizes this issue relative to other issues already waiting to be solved. The PMO monitors all improvement projects (possibly also product development projects) and decides when it is time to launch a new project. This only applies to cross departmental projects since smaller projects which can be executed within a department or a unit, are monitored within that department or unit.

Epilogue

This paper is written in February 2014 and describes what has been done in the implementation of a quality management system at Statistics Iceland up until then. It also describes the ideas we have now for the road ahead. It is my intention to publish an updated version of this paper after a year or so. It is my wish that this document will help other institutions on a similar journey towards quality management.

Reynir Kristjánsson

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Supervision Reynir Kristjánsson • reynir.kristjansson@statice.is