

## Quality Audits at Statistics Sweden

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### Abstract

In November 2002 Statistics Sweden launched a Statistical Quality Audit Activity. Over a period of five years most of the agency's approximately 200 statistical products are to be audited in a standardized way.

The audit procedure consists of three main steps:

- 1) The staff of the product to be audited fills out a self-assessment form containing questions on e.g. management and planning, staff competency and relations to users and customers as well as on survey design, data collection, data processing, dissemination and other processes.
- 2) A team of three persons visits the product during one week (five working days), studying documentation, reports and publications associated with the product and discussing the product with the staff. The team members' combined expertise covers statistical methods, statistics production and software systems. The evaluation results in an Audit Report, which describes different aspects of the production, identifies good examples and ends with a number of improvement proposals.
- 3) The product staff is responsible for taking measures according to the proposals from the team.

The audit work is led by a small secretariat responsible for recruiting and training auditors, composing teams, scheduling audits, following-up of measures taken and compiling and presenting the good examples found.

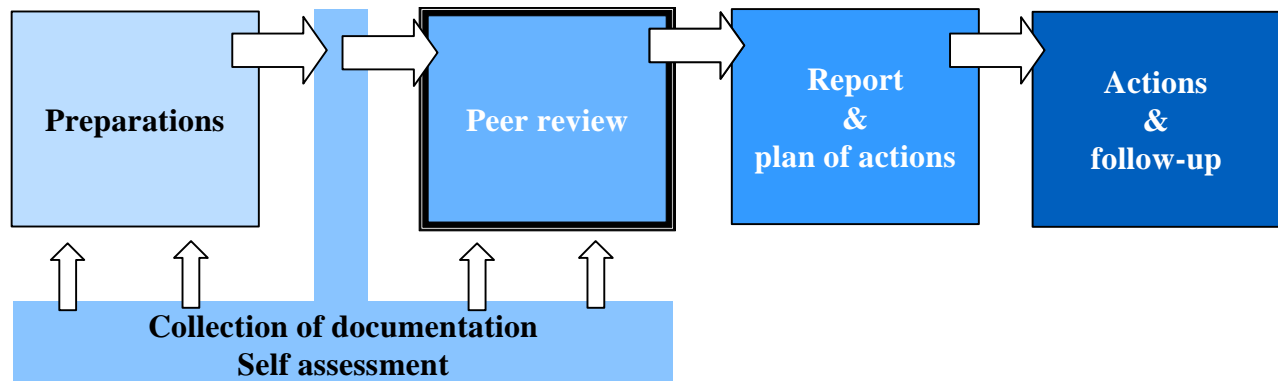
63 auditors have been trained so far. Each one of them makes 2-4 audits a year and they usually find this task very interesting, useful and for the benefit of their regular work.

58 audits were carried out during 2002-2004, resulting in some 585 improvement proposals. The managers and staffs of the statistical products have been impressed by the devotion and knowledge of the teams and the usefulness of the audit reports. Both products and teams comment on the good atmosphere during the work.

During 2005 the first quality audit outside Statistics Sweden is to be performed at another governmental authority's request.

This paper describes the auditing process in more detail and presents some of the major findings.

**Keywords:** quality audit program, self assessments, peer reviews, action plan



## 1. Background and Objective

### 1.1 The Vision of Statistics Sweden

*"To be a world leader in the development, production and dissemination of statistics"* is the vision of Statistics Sweden, presented by our DG. Reaching such a position – and maintaining it – calls for ongoing development of our activity. We have to consider changes in requirements from users of statistics and we have to make use of the new possibilities created by continuously developing methods and technology.

A number of conditions are required to keep this kind of permanent improvement work going in an organization:

- a basic attitude that improvements can be achieved
- a readiness to make changes
- a systematic approach to the activities of evaluating and questioning ways of working and methods and techniques applied in different operations and processes

### 1.2 Early Quality Activities at Statistics Sweden

In the late sixties Statistics Sweden made a survey on certain control activities in the production of statistics: manual data editing, punching controls and coding controls. Within the framework of a large-scale quality project in the seventies several production processes were studied and enhanced methods were developed. Quality matters also have been the subject of different seminars, conferences and quality (study) circles.

The launching of TQM methods (Total Quality Management) in 1993 very clearly put quality questions into focus. A new way of running development projects using quality pilots was implemented. Not less than 98 pilots were trained and then used in improvement projects all over the organization.

### 1.3 The Purpose of the Auditing Programme

As described above, belief in progress and willingness to make changes has been present at Statistics Sweden since long and many improvements have been made in different statistics productions. However there has been a lack of an overall systematic way of action. The purpose of such a work would be to

- get a basis for improvements at statistical products level
- get a basis for improvements at a central level
- identify and make known good examples

### 1.4 Development of an Auditing Programme

During the year 2000 Statistics Sweden began to look closer at the ways of making systematic audits of working processes that had started at a number of eminent statistical bureaus like those in Canada, United Kingdom and the Netherlands. The ideas were presented at a management meeting in December 2000 and were received with great interest even if some questions on financing were raised. In May 2001 a project team was appointed with the mission to develop principles and methods for an audit of all statistical products at Statistics Sweden.

The project ran for one year, developing and testing models and instruments for self assessment at single statistical products as well as for performance of audits by external teams. The project also tried to estimate the number of statistical products (not easily defined!) at Statistics Sweden and found the number to be about 200.

The final project report suggested a programme with the objective to initiate, accomplish and follow up audits of all statistical products at Statistics Sweden during a five-year period. The programme was suggested to start in the autumn 2002 and the DG decided according to the suggestions.

The project provided the audit activity with a number of recommended working methods and tested tools. Project members were active during a period of transition into a regular activity which made it possible to start planning the first audits at the same time as the audit secretariat was staffed.

## 2. The Scope of an Audit

### 2.1 Components

The audit procedure at Statistics Sweden consists of three main elements:

- self assessment
- external review
- plan of action

Making the self assessment before and taking measures after the external review is up to the staff of every statistical product subject to an audit. The external team – which almost always finds the self assessment report very useful – has no responsibility beyond the review itself. The audit secretariat makes different follow-ups of what happens after the external reviews, but the total responsibility for something to happen rests with the line organization.

## 2.2 Preparatory Procedure

Once a year departments supply lists of products to be audited (see above). The first direct contact with a product scheduled for an audit is a phone call from the secretariat to the survey manager, normally 1-2 months in advance. This conversation has turned out to be a useful opening. The product staff is not always aware of what is expected from them and during this first talk a number of questions can be answered.

The phone call is followed by an introduction mail with written instructions, a specification of material needed by the review team, the self-assessment form, names of team members etc. The convener of the team then decides on times and places together with the survey manager.

## 2.3 Self Assessment

The self-assessment form is quite extensive, some 25 pages. The questions are concise and most of them can be answered with Yes or No. They deal not only with the statistical work (data collection, data editing etc.) but have a broader scope of topics within the frame of a statistical product and its quality. The headings are:

- Administrative information
- Contacts with users and customers
- Management and planning
- Staff, working situation and competence
- Production conditions
- Software systems
- Data collection
- Data processing
- Dissemination
- Documentation
- Evaluation and improvements

The self assessment is not a matter for managers only. To get the best result all kinds of staff involved in the production should to take part when the form is completed. This very activity sometimes gives the staff new knowledge and causes various actions. Gathering all staff to a discussion about the product also gives some of them a general picture that they did not have earlier.

## 2.4 Peer Review

Teams of three persons out of Statistics Sweden's own staff perform the reviews. The teams are external in the sense that team members should have no connection to the statistical product they review.

The audit means analysing and checking the production against current rules, recommendations and the

joint experience of the team. During five working days the team of three persons is to

- study documentation, reports, publications and other material associated with the product
- discuss the different elements and processes of the production together with its manager and staff
- write a report on their findings: good examples as well as improvement needs

Usually the team spends the first day on their own, studying and discussing the material handed over from the product. During following meetings with the survey manager and staff the completed self-assessment form often serves as a starting point for questions and further discussion.

Each review is to result in a report of 10-12 pages. To be able to finish on time the team is recommended to start writing at an early stage – preferably on the second day. The report has the same headings as the self-assessment form (see above) and in addition *Good examples* and *Recommendations*. The production staff gets the opportunity to comment on the report before it is finalized and normally the team and the product staff reach an agreement on both description and proposals.

The review week requires an intensive effort from the team. To give them a break, the recommendation is to let the five working days be divided by a weekend.

## 2.5 Action Plan

After the review week, the product staff has to make an action plan based on the recommendations made by the team. Demands for such plans are laid down in the departments steering documents. The audit secretariat makes regular follow-ups on 1) if plans have been made according to the team-recommendations and 2) if actions have been taken. Progress reports are distributed to the department heads as well as to the DG's office.

## 3. Base Activities

### 3.1 The Audit Secretariat

Administration and development of the audit work is carried out by a secretariat of three persons. However, these three do not work full-time at the secretariat; during the first year the number of secretariat hours was equivalent to hardly more than one full-time employee.

The secretariat is not an organizational unit of its own. The leader and her two colleagues belong to different units at Statistics Sweden – they are not even working

in the same city. E-mail, telephone meetings, common files, a common e-mailbox and a current-minutes-file are important tools for running the work.

### 3.2 Recruiting and Educating Auditors

#### 3.2.1 Recruiting

As already mentioned, an audit team consists of three persons. Together they should have a broad experience and knowledge of different aspects of the production of statistics, statistical methods and software systems. The teams are not fixed; they are composed differently from audit to audit.

Being an auditor is a part time work as it is considered important that they are still involved in regular statistical work. They are recruited through internal advertising and head hunting and a number of applications have come as results of colleagues' enthusiasm over the assignment. Since personal qualities are important the secretariat ask for references from the head of every applicant.

#### 3.2.2 Training

The first part of the training of candidates is one day of information on background, procedures and working tools of the audit programme.

Most appreciated is the section when "old" auditors share their experiences, give good advice and give hints on pitfalls.

The on-the-job-training of the first audit is the next important element of the training of an auditor. After the initial stage every team includes at least one experienced auditor.

Finally all auditors gather once a year to share experiences and to discuss questions of common interest.

#### 3.2.3 The pool of auditors

So far 51 auditors have been trained. Each one makes 2-4 audits a year and they all have found this task very interesting, useful and for the benefit of their regular work. None of them has left the pool.

### 3.3 Planning of Quality Audits

In the end of each year, every department at Statistics Sweden is asked to update their list of statistical products and to review their priorities concerning audits. At the same time the auditors are asked to indicate restrictions for audit contributions during the next year.

Based on this information the secretariat makes a time schedule for audits during the following year. The schedule is on the whole followed but a certain readiness for flexible planning is needed. Upcoming situations have been solved due to different auditors flexibility and good will.

### 3.4 Follow-up Activities

As mentioned above the secretariat has the task to make regular follow-ups on plans made and actions taken after every audit and to present progress reports to different forums.

### 3.5 Development of the Auditing Process

Through feedback reports from teams and products the secretariat gets incitements to changes and development of routines, tools and the training of auditors.

### 3.6 Information to Statistics Sweden's Staff

The audit secretariat keeps the whole agency informed through the internal website where "latest news" is published regularly and where different documents show e.g. accomplished audits (with links to the reports), products to be audited and the pool of auditors.

The secretariat also makes oral presentations of the ongoing work at seminars, management meetings and in different working groups.

### 3.7 The Auditing Network

A network of representatives from different departments has been established to be discussion partners for the secretariat and contacts into the organization.

## 4. Results

### 4.1 Recommendations

During the 58 audits made in 2002-2004 the teams came up with 585 recommendations/improvement proposals, i.e. an average of 10 recommendations per audit. Most frequent topics were

- insufficient documentation of working routines and/or software systems
- suggestions on new data collection methods
- dissemination: as well increased use of data bases as freshening up written publications

Several suggestions concerned ways to reduce response burden, update of quality declarations and

vulnerability caused by dependency on single key persons.

The value of the audit activity highly depends on to what degree audits are followed by actions. Therefore the products are expected to make up plans of action based on the recommendations from the teams. In November 2003 a follow-up was made of the 204 recommendations issued half a year ago or earlier. The products then reported as follows:

“taken care of” – 23 % of the recommendations  
 “ongoing work” – 28 %  
 “actions planned” – 17 %  
 “nothing yet” – 25 %

One year later the products reported as follows on the same 204 recommendations:

“taken care of” – 39 % of the recommendations  
 “ongoing work” – 27 %  
 “actions planned” – 11 %  
 “nothing yet” – 15 %

Obviously the audit reports have not become shelf-warmers and the staff continues to work with the recommendation over a long period.

#### 4.2 Good Examples

Because of the size, the geographical splitting and the invisible boundaries between departments and units in an organization like Statistics Sweden, there is a risk that good solutions to different problems not become widespread. Therefore one of the main objectives for the audit programme is to “identify and make known good practices”. This means that the audit teams are not only looking for insufficiencies and improvement needs but also have the important task to look for working practices, system solutions and other elements that could be useful for other statistical productions.

A product certainly might be well run without having something special for others to learn from. Therefore it is not remarkable that one third of the 36 audits did not generate any good examples. As a matter of fact some of the 74 good examples that the teams have listed are nothing but common routines – though maybe not very commonly used.

Several of the good examples concern software system solutions. Other topics are management, backup solutions and routines handling respondents’ and users’ questions.

#### 5. General Experiences

The principle of current improvements also applies to the audit programme itself. To catch opinions and ideas every audit is followed by a simple inquiry. The product and the team are each asked to summarize their experiences under the headings

- good experiences
- problems
- advice to the secretariat

The main impression from reading the answers is enthusiasm from all parts. The products are impressed by the devotion and knowledge of the teams and the usefulness of the audit reports. The teams find the task developing, inspiring and beneficial for the future. Both products and teams comment on the good atmosphere during the work.

An important observation is that several of the improvement ideas in fact origins from the different product staffs themselves, sometimes as concrete suggestions not taken care of, sometimes as vague feelings like “Maybe we should do something here?” In those cases the team has served the purpose to catch the ideas, put them into words and give the product an incitement to act, which often has been appreciated.

Problems reported from the audits concern i.e. the time limit (when it comes to large products), the tools (mainly the self-assessment form, which later has been revised), some initial lack of understanding of the audit requirements (the secretariat therefore has improved the advance information) and finally the fact that some recommendations might be a bit superficial (probably inevitable, considering the short working time for the team).

No objections have come from the fact that all audit reports are published at the internal website for every colleague to read and learn from. This possibly means that the launching of the audit activity as an essential condition of success for our organization and not a tool for the control of single products has been successful.