

Quality assurance of the Swiss consumer price index

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Keywords:

quality assurance (QA), total quality management (TQM), Shewhart-Deming cycle, process models, Swiss consumer price index (CPI), zero-error approach, outsourced decentralised price collection.

Summary:

An explicit quality management system (QMS) was introduced for the national consumer price index (CPI) following a breakdown in the 2000 revision. The CPI total quality management system (CPI-TQM) is based on a zero-error approach combined with a process model.

In practice, the relevant results are identified and subjected to the necessary comprehensive scrutiny. For this, processes are analysed using a model. In this connection, the risk structures and the adaptation of implementation methods vary depending on whether the processes are on-going, such as the production of a price index, or rare or even one-off events, such as index revisions.

1 Introduction

1.1 Index breakdown despite all precautions

Since the start, quality assurance has been a main principle underpinning the Swiss national consumer price index (CPI). It is of course standard practice that each result is checked by a second person and that the plausibility of each monthly index is justified.

Nevertheless, there was a breakdown when the methodology of the CPI was revised in 2000. In the process of underweighting energy sources, units of energy [joules] were used instead of expenditure [CHF] and the fact that the price per unit of energy [CHF/joule] is different for electricity, gas and oil was overlooked. Furthermore, the person who checked the figures did not notice that the energy unit prices had not been specially adjusted. Despite this mistake, the overall relative weighting seemed to be quite plausible and the variation since the last weighting was carried out in 1993 did not seem impossible. This type of mistake – an omission or an apparently plausible but incorrect thought process – is much more difficult to detect than an item placed in the wrong category or an incorrect calculation.

When the price of oil rose dramatically in late summer 2000¹ public interest focused on the weighting for this factor and after a few weeks the mistake was discovered². There was a widespread reaction among the general public. This confirmed the fact that reliability of the CPI is extremely important to the Swiss population since the CPI is used as a compensation index. It represents a neutral yardstick that is used as a basis for salary negotiations between social partners and is an important factor for calculating pension adjustments and for modifying contracts. Furthermore, the Swiss National Bank (SNB) uses the CPI to evaluate its inflation objectives.

One of the measures taken by the Swiss Federal Statistical Office (SFSO) as a consequence was to introduce a quality management system for the national consumer price index.

2 CPI Total Quality Management: Basic principles of the CPI-TQM

2.1 Zero-error approach

As clearly stated in the introduction, the aim of the CPI quality management system (QMS) is to avoid having to revise CPI results. This automatically means that there can be no room for error.

Errors can of course never be completely ruled out. In contrast to many classical QMSs in the manufacturing sector, in the case of the CPI there is no leeway with regard to the precision of the published results. Likewise, there is no room for error concerning the results of the relevant activities, all of which are subject to verification. In general, QMSs that include and regulate all processes are known as total quality management systems (TQMS). In addition “total quality” corresponds to the “zero-error approach”. Including both requirements, we therefore refer to the system applied with regard to CPI as CPI total quality management (CPI-TQM).

2.2 Development of CPI-TQM from general QMSs

In the general sense, “quality” is basically defined by the recommendations of the European Statistical System (ESS), which is also the basis for the SFSO’s general Quality Management Handbook (QM-H). (This handbook does not exclude result revisions, however). The corresponding quality requirements for public statistics³ are regularly reviewed in relation to the CPI.

¹ SFSO: Producer and import price index for September 2000, Neuchâtel October 2000 (only available in French and German – www.statistik.admin.ch)

² SFSO: National consumer price index for November 2000, Neuchâtel November 2000 (only available in French and German – www.statistik.admin.ch)

³ According to the SFSO’s QM-H these are: relevance, transparency, reliability, comparability, impartiality, security and availability.

The Shewhart-Deming cycle discussed below forms part of both the SFSO's QM-H and the Q-norm ISO 9001:2000.

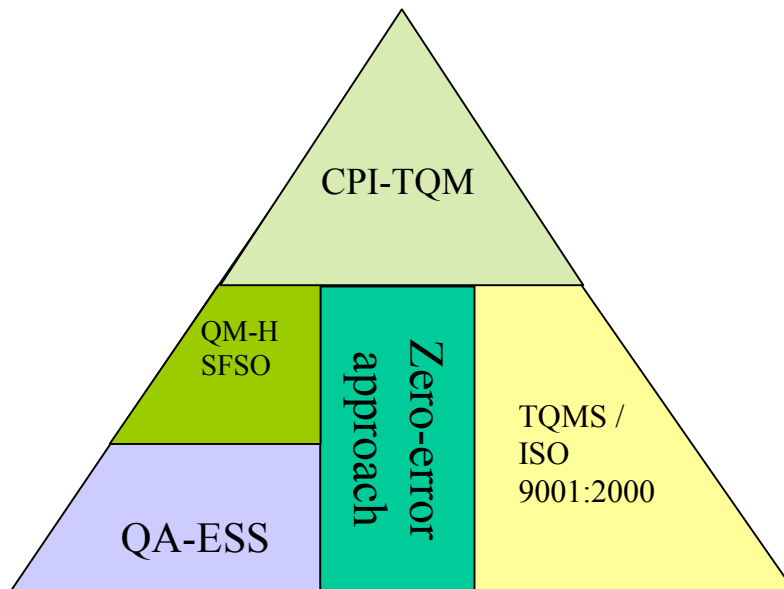


Figure 1: CPI-TQM is based on general standards applied within the SFSO and elsewhere

2.3 QMS tools should be used by the qualified personnel directly involved

Quality assurance tools should be made available to the existing organisation of specialised personnel and line managers, and staff should be trained to use them according to their level and given the necessary support. The line manager checks process descriptions and ensures coherency. Quality assurance determines how tools should be used, ensures training and support and verifies the use of the tools at regular intervals.

3 Applying CPI-TQM

3.1 Analysing processes as a starting point for the practical application of a QMS

Two questions should be asked as the outset:

- What level of detail should be monitored?
- How intense should controls be?

In order to answer these questions all processes need to be thoroughly analysed and the results should be set out in a coherent overview.

3.1.1 What level of detail should be monitored?

In CPI-TQM, monitoring should focus on including all processes that produce results at the lowest level of actual application.

All quantitative results and intermediate results that are relevant for the published results of the CPI should be included and checked according to a defined method.

For building up the process hierarchy (figure 2), the details of the organisational links at a higher level are of secondary importance and should be determined as simply and quickly as possible.

For example, the existing organisational structure or the archiving structure can be used (in this way no new additional structures are created which could lead to inconsistencies).

What is important, however, is the flow of intermediate results right through to the published result. This must be included in its entirety.

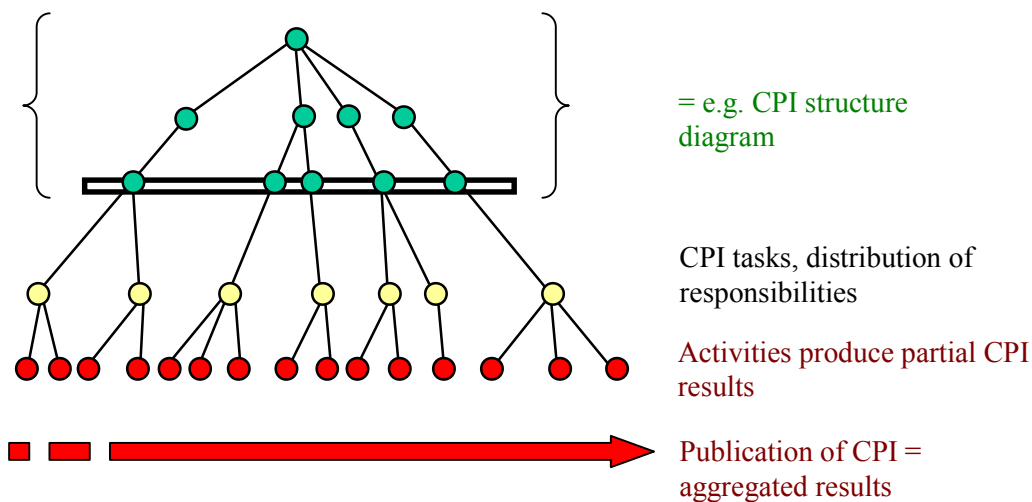


Figure 2: Practical diagram of the process hierarchy with results (dark / red circles). The important aspect here is that they are included right through to publication of the result.

3.1.2 How intensive should the controls be?

This question can only be answered according to the individual circumstances and should also be monitored at regular intervals. The results of a risk analysis of the process reveal what kind of errors may occur and how they can affect the result of the CPI. Subsequently, the standard process to be used as the model for the analysis should be flexible enough in its parameters that the necessary controls can be defined.

During the development and practical application of CPI-TQM we identified the 3 design parameters shown below. A sub-model has been devised for the density of the controls with up to 4 different levels of controls. This model is described below.

Design parameter	Question	Remarks
Frequency of controls	How often is a process divided into individual activities and the partial result at their "interface" controlled?	The aim here is to identify all quantitative results and all decisions that could affect the published result of the CPI, and to include them in the controls.
Density of controls	How many people check the partial result at the "interface"?	The CPI-TQM model includes the following 4 levels (roles) that can be used depending on the importance of the result: <ul style="list-style-type: none"> - SELF: self-checking (compulsory) - PEER: specialist within the team who was not involved - EXT: specialist from outside the team or the office, in particular for the plausibility aspect - APPROVAL: approval of the result with checks by the responsible superior (compulsory)
Intensity of controls	How intensive should the controls be?	Description of the necessary examination method. In the 2005 revision of the CPI, the following standard control methods have been defined so far: <ul style="list-style-type: none"> - Cross-checking - Check list - Internal plausibility check - External plausibility check - Calculation check - Parallel construction (the result is built up twice separately from the basic figures). In addition, there is a growing collection of check lists available.

Table 1: Three design parameters to be used for setting out the necessary and adequate control process

3.2 Available process models

As in the case of most modern QMSs, in CPI-TQM each process is constituted as a cycle of rules. The “plan, do, check, act” cycle (known as the Shewhart-Deming cycle)^{4,5}, which must be repeatedly applied, ensures that requirements and results are continually compared for evaluation and monitoring purposes, so that the necessary measures can be identified and taken⁶.

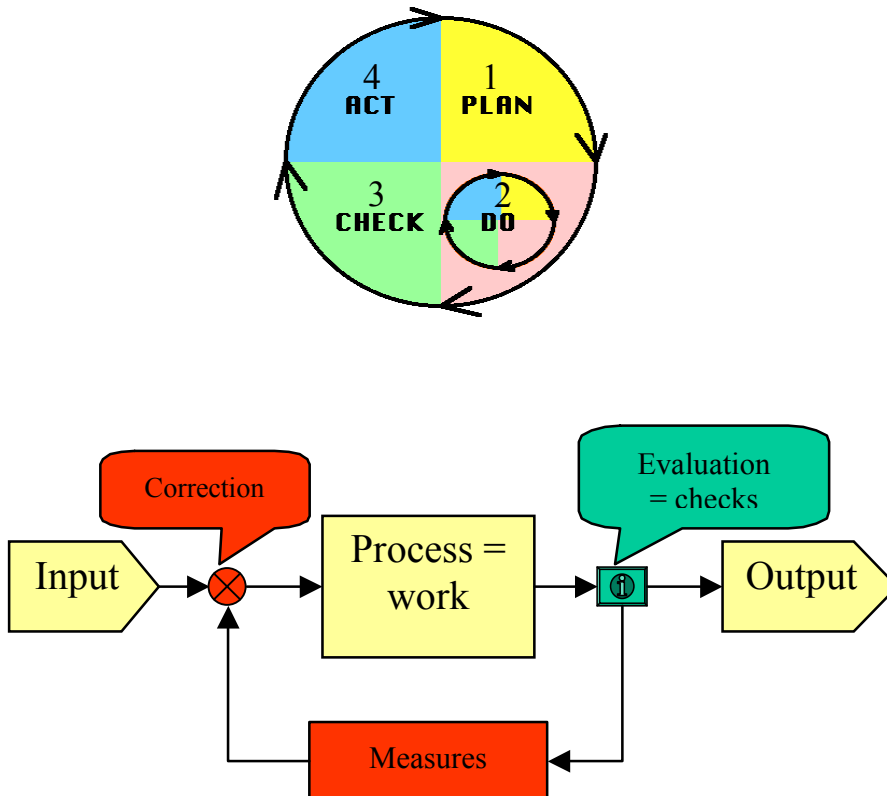


Figure 3: Two diagrams showing a regulated process: top, according to Shewhart and Deming; bottom, closed-loop control system (as used in automation)

Regarding Figure 3, the fact that the outer cycle encompasses the inner cycle in the top diagram should be mentioned first of all. Frequently, the plausibility of the aggregated results also has to be controlled. The process description itself is also a result that should be checked at regular intervals.

⁴ As part of his research into statistical process control (SPC), Walter A. Shewhart developed the “plan, do, check, act” cycle in the Bell Laboratories in the 1930s. His colleague W. Edwards Deming introduced this cycle in the industrial sector from the 1950s onwards, achieving his early success in Japan (TQM originally stood for Toyota quality management). This success was then repeated by Deming at the beginning of the 1980s, starting with the famous white paper entitled “If Japan can, why can’t we?”, published in the USA by NBC.

⁵ The PDCA cycle devised by Shewhart and Deming is also part of the ISO 9001: 2000 Q-standard (Section 0.2).

⁶ In the natural sciences and technology sectors the principle described here is known as feedback. Requirements and results are continually compared and the necessary adjustments are then calculated. In recent decades, the electronic implementation of (closed-loop) control systems in automated processes in particular has gained enormous importance in relation to quantity and quality of industrial output.

Despite the fact that the Shewhart-Deming cycle is easy to show in diagram form and to comprehend, it is still purely theoretical. A more suitable version for analysing the process is the diagram of the closed-loop control system with its variables and parameters for automatic control (bottom, figure 3). This version, however, is based on an approach where process errors are continually eliminated by applying a compensatory function at the entry point whenever necessary (integral calculation similar to an analogue computer).

The following procedure model for CPI-TQM therefore combines the desirable characteristics of both basic models.

3.3 The definitive process model used for the Swiss consumer price index

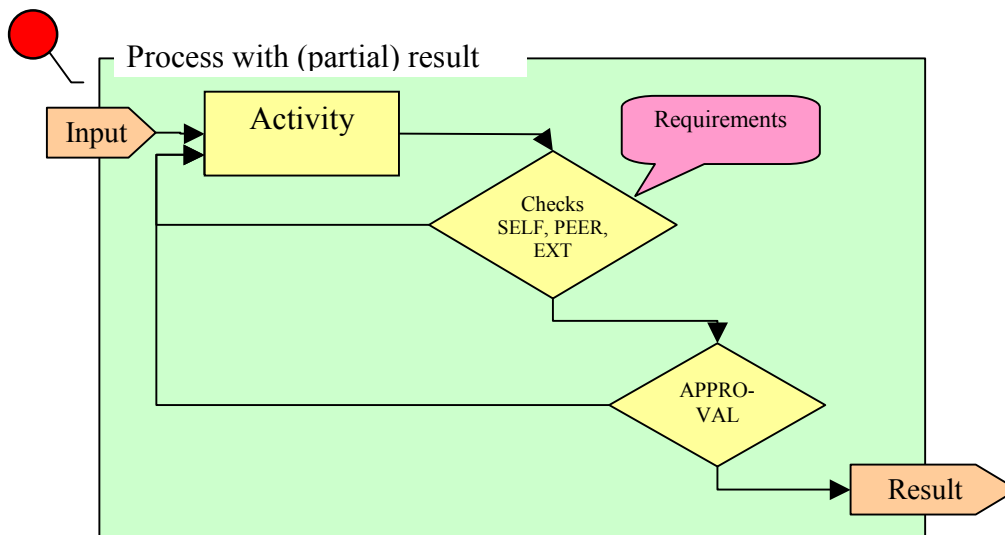


Figure 4: An individual process (activity) in CPI-TQM with its main characteristics

Parameter	Contents, definition
Input data	Are they quality-assured?
Result (Output)	Description
Activity	Description of aims, processes, methods
Requirements	What criteria must be met by the result?
Checks	SELF : who, when, how (compulsory)
	PEER : who, when, how
	EXT : who, when, how
	APPROVAL : who, when, (how) (compulsory)

Table 2: Characteristics of a CPI-TQM activity

The model of the individual process includes the parameters that are to be evaluated by analysis and the characteristics that are used to define the controls. These can then be easily defined and set out in such a table.

For CPI-TQM the tables are drawn up in a simple database which enables fixed data (names, functions) and various formats of the same content to be used over again for different people. The result is that those responsible for individual tasks have a simplified overall diagram and one page per allotted task, while the line manager has a complete catalogue with all the details of all the tasks.

4 Practical application of CPI-TQM in relation to CPI

4.1 Process security in the production of the CPI

Together with the staff, being the primary sources and users of know-how, we analysed the activities from the point of view of process characteristics (see Table 2) and stored the results in the database using brief descriptions. In addition to the elements that describe the process, **information about documentation** is also included: in many cases, there were already detailed working instructions in the production catalogue. These were checked and included through a link.

Defining the controls was of primary importance: results are never obtained without cross-checking, but it is not always necessary that checks be carried out at all 4 levels (SELF, PEER, EXTERNAL, APPROVAL; see Table 2). As a rule of thumb calculations require only an intensive peer check plus a plausibility check, which in most cases entails a recalculation of the most important contributions (internal plausibility check). For methodological decisions regarding concepts, external experts are called upon (for example, from the Evaluation and Methods Group) and comparisons with other concepts or data are made (external plausibility check)⁷.

Finally, the process fact sheet for the task was passed on to the person responsible for application and updating (in the case of modifications, the approval of the line manager must be sought and the quality manager should be informed).

As indicated in the above representation of the Shewhart-Deming cycle, a distinction can be made between inner, direct control cycles and outer control cycles involving several processes (the latter also include the regular evaluation of the actual process descriptions). Some examples are listed below.

Each month, the staff responsible for producing the CPI hold a quality assessment meeting between the preliminary calculations for the new index and publication. At this meeting, a structured assessment is made of that month's index production. The problems encountered during price collection, divided into centralised and decentralised price collection, are discussed. Any special requirements in the coming month are noted. A report is drawn up which includes the necessary measures.

⁷ A comparison often used in the CPI is based on the Eurostat HVPI, which is generally considered to be a good summary of current methods and definitions.

Before the index is approved for publication, a number of line and staff experts study the monthly press release as well as checking its plausibility.

4.1.1 Special case: Outsourced, decentralised price collection

In the 2000 CPI revision, special emphasis was placed on the system for decentralised price collection. The prices of all products with evident regional differences were collected in 24 regions. The quality of the prices noted as entry data for calculating the index constituted an important element in relation to the quality of the index.

Before the 2000 revision, 24 local authorities were responsible for collecting prices. This meant that the SFSO was in contact with 24 different local authority offices, which each had their own ideas about collecting prices. Consequently, in some cases the SFSO's task of monitoring and implementing a standardised price collection system was difficult, to say the least.

From the point of view of CPI-TQM, this meant that the requirements concerning price collection could not be set out in a uniform way, neither could the collection process be sufficiently implemented and controlled. This fact was all the more important since the problems and methods involved in calculating a price index today, such as variations in product ranges and changes in quality, are becoming increasingly demanding. An improvement in the price collection system was therefore urgently needed.

A good solution was found in that decentralised price collection was outsourced to a professional sub-contractor from the market research sector⁸. Here the compulsory methods and requirements can be set out in a price collection handbook. This must also be accompanied by suitable training and the implementation of the requirements (checks, feedback and improvements).

As far as concerns monthly price collection, controls are of great importance. The market research institute constitutes an inner cycle: it has to control the requirements regarding the results itself. The results achieved by the market research institute regarding quality assurance are summarised in monthly reports that contain a large number of figures and indicators, for example the prices collected per collector, the number of products replaced and a statement concerning the controls made and the corrections carried out by the institute.

This report already enables the SFSO to satisfactorily monitor decentralised price collection. In a broader cycle, direct checks are carried out by the SFSO and the plausibility of the information is verified a second time. For this, as for centralised price collection, the SFSO team has the back-up of the database for price statistics:

⁸ Corinne Becker Vermeulen, "Subcontracting the price collection: the swiss experience", paper presented at the Joint ECE/ILO Meeting on Consumer Price Indices (Geneva, 1-2 November 2001) (available at: <http://www.unece.org/stats/documents/2001.11.cpi.htm>).

all price changes outside certain limits are highlighted. At the same time, a list of all changes in products and ranges is compiled.

These plausibility lists are checked item by item. Telephone enquiries are made at sales points and on-the-spot checks are carried out. In addition, price collectors are monitored at regular intervals or the prices collected are rechecked. An important element here is notification by the SFSO of the errors it finds. Every month the quality of the price collection system is discussed at the SFSO and sent to the market research institute in the form of a quality report.

This is a practical example of how the cycle works: for a while, the same errors made by the decentralised price collectors had to be corrected every month. Finally, enquiries revealed that the market research institute had not passed on the remarks concerning quality made by the survey manager at the SFSO to the price collectors in an appropriate form. The “act” element in the Shewhart-Deming cycle was being omitted, i.e. the information was not being passed back to the price collectors working in the field! After this problem had been eliminated the errors disappeared almost completely within a few months.

The SFSO retains “ownership” of this whole process of price collection. Intensive controls, including decentralised price collection, and a strong presence at the 3 training sessions for collectors organised every year are as important as revising and improving the price collection handbook. The necessary level of excellence can only be achieved through maintaining intensive two-way contact and a full-hearted commitment on both sides: the sub-contractor works according to market conditions, but with a given and monitored level of quality.

4.2 Process security in the annual weighting of the CPI

Since the 2000 revision, the annual weighting of the CPI basket of goods and services of the year t has been calculated from the results of the Swiss Household Budget Survey (HBS) carried out two years previously (HBS $t-2$). Since for historical reasons the 5-digit levels of the nomenclature used for the two sets of statistics do not show a 100% match and some categories have to be carefully split according to alternative formulae (top-down principle), certain measures are necessary.

Like the on-going calculation of the CPI, the entire process was analysed and documented using the CPI-TQM model. In contrast to on-going price surveys, the risk with the weighting system is greater, however; on the one hand, the weightings have a direct influence on the whole CPI for one year and later on the interlinked Laspeyres chain index, and on the other there is a certain amount of pressure to meet the deadline because the data obtained from the HBS are finally available only in the last quarter before the adoption of the new CPI weightings.

The consequence is that plans have to be drawn up with great care and the 4 control levels are used to full capacity. In addition, the entire weighting system is checked several times; the plausibility of the entry data from the HBS is verified using market

data obtained in advance and a comparison with the previous year. The final basket of goods and services weighting is also compared with the weighting for the previous year, price trends in the different categories of items and market data.

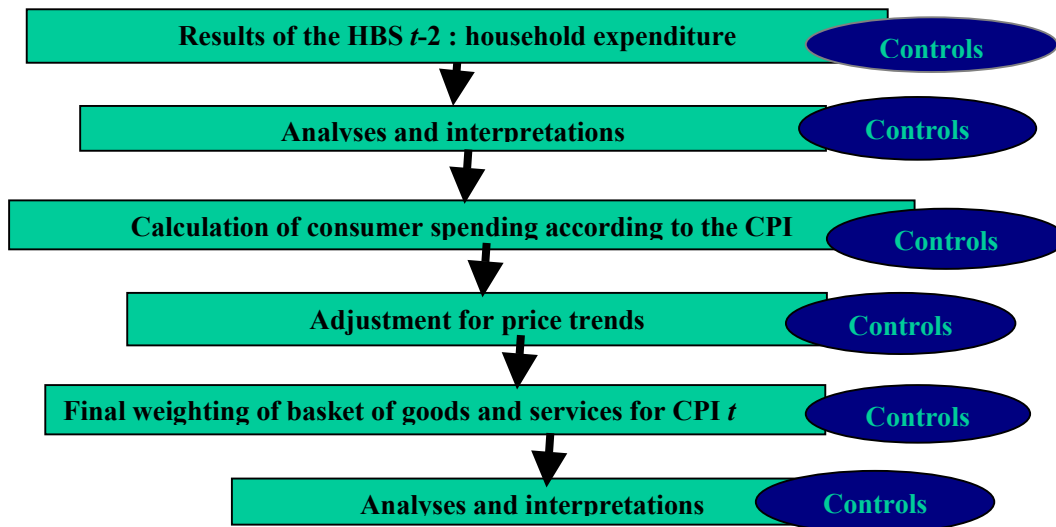


Figure 5: Transformation of the SSIC data for CPI weighting with checks at every stage

Finally, the weighting system is presented to principal CPI users at various workshops. Those attending these workshops include representatives of the regional statistical offices, social partners and forecasters from various sectors ranging from economic research and the Swiss National Bank to commercial banks and universities.

In this way, any possible errors are almost certain to be discovered. A further advantage of the workshops is that, thanks to the close contact with researchers and users of the CPI, there is always useful feedback concerning users' needs, while at the same time the users have an opportunity to learn more about the possibilities and limits of drawing up a price index.

4.3 Quality assurance in the 2005 revision

The CPI is revised every 5 years. Each revision project, which is in fact unique, involves a major risk of a breakdown: in any one such project it is far more difficult to ensure that all relevant results are of the highest quality and in particular contain absolutely no errors⁹ than in the monthly production of the CPI or in the annual weighting. It is only partly possible to repeat processes that have already been planned and evaluated!

There are two further typical risks with the project: the risk of setting a wrong goal for the project and the risk of not meeting the deadline. The date when the revised CPI will be published is announced well in advance and cannot be changed.

⁹ The zero-error approach remains an absolute priority with regard to the published results of the CPI.

4.3.1 SFSO statistical project model

Accordingly, the SFSO has drawn up a project management handbook (PMH)¹⁰ that contains a compulsory model for statistical projects.

The PMH indicates the first effective measure for reducing the risk of setting a wrong goal: users' needs should be analysed at the start of the revision process¹¹.

In order to further reduce both risks, the statistical project should be divided up into various phases. When each phase is completed, a corresponding report is drawn up and submitted to various bodies up to and including the central management of the SFSO, so that despite the uniqueness of the project there is internal repetition and the Shewhart-Deming cycle can be applied.

The SFSO project model also includes a rough outline of the results expected from a statistical project; this outline can be found in Appendix I. It constitutes the upper part of the process hierarchy (see Figure 2) for the 2005 CPI revision project. Further down the hierarchy, the concrete tasks comprising the project are identified by the project manager and allotted to the staff. The latter may then divide their tasks into sub-tasks. The yardstick for dividing tasks is the relevant result, however, that may influence the published CPI for 2005 and must therefore be controlled.

4.3.2 On-going analysis of processes under the project conditions

For the CPI revision, the scientific staff form sub-teams for each task (matrix organisation). This ensures internal exchange and feedback in the sub-team that helps them to work in a targeted and efficient way. This internal exchange is well established in the whole CPI team and is further encouraged for the revision process by weekly team meetings where those present are systematically informed of the progress being made and specific technical problems can be discussed by the team as a whole.

In the on-going processes, fixed job descriptions are enhanced by outlines and control plans for each task that the sub-teams work on independently. As the work advances, the outlines become working reports that are regularly checked by and discussed with the project management. At the end, these working reports, which are much more detailed than the general phase reports, set out decisions and procedures, as well as unsolved problems and unanswered questions that go beyond the project.

The control plans that the sub-teams draw up independently according to the prerequisites of the CPI-TQM process model (a form is provided for this purpose that indicates the necessary variables and parameters as well as instructions for the analysis) are checked by the CPI change manager and discussed with the sub-teams. At the start of a phase in the process, it is important to recognise whether a task should produce quantitative results (calculations) or qualitative results

¹⁰ See PMH V5.3

¹¹ A survey was carried out among IPC users in autumn 2003.

(conclusions, concepts, proposals) (see Section 4.1 concerning the use of the 4 checking levels). The amount of work involved in the checking and the staff that will be needed have to be estimated. Schedules then have to be drawn up with peer colleagues and other controllers.

All the controls made are described in the control plan, which thus becomes a control report. Check-lists from the SFSO project handbook are also available for carrying out the controls. In the case of particularly difficult tasks, special check-lists may be devised specifically for the project and approved separately. The change manager re-checks the final reports from the point of view of quality assurance and the project manager uses them for final approval.

The systematic planning described here and the accompanying documentation involves additional work, even when the system is optimally integrated. To the individual person writing a report, the information collected may appear at that moment to be trivial. Furthermore, awareness that the planned schedule can never be achieved 100% may cause uneasiness. The processes of collation, evaluation and synthesis, however, are prerequisites as well as the price that has to be paid for ensuring that measures can be taken in good time to guarantee that high-quality content is achieved and the deadline is met.

Since both the SFSO project model and the CPI-TQM for the 2005 revision are at an introductory stage and quality assurance is in general still being set up in the service sector, both enjoy the support of specialised consultants. When the consultants were selected, emphasis was placed on their proven success in complex projects (in fact in IT and organisational projects) and not only on their theoretical knowledge of project and quality management.

4.3.3 General check links

The SFSO project model stipulates that the results of the different phases of the project are to be set out in a report which is then discussed in various stages and is approved and passed on through the SFSO lines up to general management.

The first general link represents audits carried out by the project principal, who must be convinced that, in each phase, the approach adopted corresponds to the given aims and requirements and that suitable methods and controlling procedures are being used.

First of all, the results of each phase are submitted to a supporting panel of external experts¹² who give their opinion. Their comments and proposed measures form an integral part of the phase report and of the proposal that approval be given by general management for the next phase.

The phase reports are then distributed to all interested parties. This includes on the one hand all the users already mentioned, but the bodies involved in the price

¹² Generally, the same as those invited to the annual workshops after the CPI basket of goods and services has been reweighted (see 4.2)

collections, representing various sectors, are also important. The entire composition of the basket of goods and services and the price collection apparatus is discussed in detail at numerous meetings with representatives of the various sectors, thus ensuring the best result.

5 Conclusions drawn from the QMS experience vis-à-vis the CPI

A decisive factor in the success of a QMS is the integration of Q-tools into the processes. These tools must be made available to the lines and those working in the field, who should be appropriately trained to use them and regularly monitored. Furthermore, QMSs should not be allowed to have a life of their own. Quality assurance must not be an imposed, foreign element that uses up additional resources but remains an outside factor (for example, as an appended, additional organisation). If the QMS is not properly integrated many errors will remain undetected, those with knowledge and experience will be incapacitated and the responsibilities they take on will be reduced.

If a QMS is to be really well integrated into the processes it must be simple and efficient, while at the same time a QMS that is easy to use and always up-to-date requires the type of electronic support that is not yet available in a simple, integrated form. With regard to the CPI, the CPI-TQM is also still at the construction stage and is evaluated and improved in every phase with the help of specialised consultants.

A systematic QMS involves additional work. This is the price that has to be paid for ensuring that quality assurance measures will be identified without fail and in good time. If in practice there are difficulties meeting the deadline, these measures mostly consist of setting priorities and deciding on which tasks to abandon, since no additional resources are available.

In the case of decentralised price collection where the SFSO implemented the change of system already mentioned for the 2000 CPI revision and mandated a market research institute to collect prices, experience shows that the decisive factors are: precise specifications concerning the services required, continual and detailed checking of the results received and on-going optimisation of the collaborative aspect.

With unique projects such as the revision of a price index, a phase model can serve to ensure artificial repetition on the one hand, and risks can be reduced through proven structural prerequisites, forms and check-lists on the other. This is achieved through the project management handbook that is being introduced at the SFSO.

It is also possible to improve security with regard to content and deadlines within each phase through repeated checks, for example through regular presentations, reports and discussions of the partial results. Existing process documentation in continually repeated processes is replaced by “on the fly”, on-going process analyses

by those responsible for individual tasks, the analyses then becoming work and control reports.

For important results all possible means of controls, including the double calculation of important results, must be fully used. It is also important that the methodological results of revisions are accepted by internal and external experts and users before they are implemented.

Appendix I: Sections and results of the SFSO project model with 5 phases and chapter titles

Sections and results	Phases				
	Start	General concept	Detailed concept	Realisation	Introduction
X10.0 Purpose	<u>110.0</u>	<u>210.0</u>	<u>310.0</u>	<u>410.0</u>	<u>510.0</u>
X20.0 Procedure	<u>120.0</u>	<u>220.0</u>	<u>320.0</u>	<u>420.0</u>	<u>520.0</u>
X30.0 Results	<u>130.0</u>	<u>230.0</u>	<u>330.0</u>	<u>430.0</u>	<u>530.0</u>
X31.0 Project management	<u>131.0</u>	<u>231.0</u>	<u>331.0</u>	<u>431.0</u>	<u>531.0</u>
X31.1 Project plan	<u>131.1</u>	<u>231.1</u>	<u>331.1</u>	<u>431.1</u>	<u>531.1</u>
X31.2 Project report		<u>231.2</u>	<u>331.2</u>	<u>431.2</u>	<u>531.2</u>
X31.3 Project administration		<u>231.3</u>	<u>331.3</u>	<u>431.3</u>	<u>531.3</u>
X31.4 – X31.5 Phase results	<u>131.4</u>	<u>231.4 / 5</u>	<u>331.4</u>	<u>431.4</u>	<u>531.4</u>
X32.0 Project realisation		<u>232.0</u>	<u>332.0</u>	<u>432.0</u>	<u>532.0</u>
X32.1 Basic conditions		<u>232.1</u>	<u>332.1</u>	<u>432.1</u>	
X32.2 Methodological framework		<u>232.2</u>	<u>332.2</u>	<u>432.2</u>	
X32.3 Organisation and processes		<u>232.3</u>	<u>332.3</u>	<u>432.3</u>	
X32.4 Resources		<u>232.4</u>	<u>332.4</u>	<u>432.4</u>	
X32.5 IT		<u>232.5</u>	<u>332.5</u>	<u>432.5</u>	
X32.6 Tests		<u>232.6</u>	<u>332.6</u>	<u>432.6</u>	
X32.7 Training			<u>332.7</u>	<u>432.7</u>	<u>532.7</u>
X32.8 Communication		<u>232.8</u>	<u>332.8</u>	<u>432.8</u>	<u>532.8</u>
X32.9 Overall system		<u>232.9</u>	<u>332.9</u>		<u>532.9</u>
X33.0 Quality assurance		<u>233.0</u>	<u>333.0</u>	<u>433.0</u>	<u>533.0</u>
X33.1 Checking plan		<u>233.1</u>	<u>333.1</u>	<u>433.1</u>	<u>533.1</u>
X33.2 Check on completeness and deadline		<u>233.2</u>	<u>333.2</u>	<u>433.2</u>	<u>533.2</u>
X32.3 Check on content		<u>233.3</u>	<u>333.3</u>	<u>433.3</u>	<u>533.3</u>
X40.0 Consultations and decisions	<u>140.0</u>	<u>240.0</u>	<u>340.0</u>	<u>440.0</u>	<u>540.0</u>