STATISTICS AUSTRIA
The Information Manager

Evolution of National Statistical Systems

The Austrian Case

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Statistical systems are not stable but developing in response to changing environmental conditions and user demands. The design of a statistical institution and design-elements like constitution, organisational structure and management determine to a high degree the responsiveness to such changes. The implementation of a Total Quality Management (TQM)-system, e.g., implies that continuous improvement is a dominant goal and, hence, potentials for better coping with demands are comprehensively exploited.

Statistics Austria is in the fortunate situation that a fundamental change in the design took place starting with 2000 when Federal Statistics Act 2000 (FSA 2000, Bundesstatistikgesetz 2000) came into effect. Statistics Austria ceased to be part of the public administration and became an independent and non-profit-making federal institution under public law, the new institutional arrangement being to a high degree in line with the corresponding principles of the European Statistics Code of Practice (2005). Following the enactment of the FSA 2000, Statistics Austria was comprehensively reorganized and a TQM-system has been implemented. Driving forces of many improvements are, beside Statistics Austria's management board, (i) the TQM-board, a steering committee of four senior experts within Statistics Austria, and (ii) the Statistical Council, an external committee of independent experts which produces a yearly report to the Austrian government, assessing the compliance of Statistics Austria with a set of basic principles that are anchored in the FSA and include quality aspects of the statistical processes and products. A strategic concept for the years 2006 through 2010 suggests goals and measures for adaptations to future challenges as envisaged in the following.

National statistical institutes have to cope with challenges (i) from growing user demands and (ii) from changing environmental conditions; adaptations to such challenges often imply major changes of organization and processes. It will be shown in the sequel what challenges Statistics Austria has to deal with, and how an organization like Statistics Austria is coping with this situation.

1. Challenges from User Demands

A characteristic of our world is the rapid growth of knowledge and of speed of communication. This fact, together with growing cultural convergence and individual diversity, causes an increasing amount of information needs by an increasing number of potential users. The scope of required statistical products is widening; standardization and harmonization are crucial prerequisites for comparability. Generally, the expectations with respect to the quality of statistical products, particularly in dimensions like accessibility, timeliness, and accuracy, are growing. In addition, also the amount of details that are of interest in a world of growing complexity is increasing.

Range of Statistical Products

The number of statistical products and the diversity of their content have a strong tendency to increase. Growing together in Europe and the world and globalization of the economy and other areas of our life have caused an urgent need for statistics that provide adequate information and allows for policy development and analysis. EU-membership has resulted in an extension of Statistics Austria's product portfolio and major revisions or extensions of existing products. Examples are Intrastat, Structural Business Statistics and Short Term Statistics for the Service Industry, Community Innovation Statistics, Community Statistics on Income and

Living Conditions, and others. New price indices or statistics on education and health, revised regulations for business registers and classifications and many others will add to the load in the future. Demands from users are increasing mainly at the European level, but also at the national and regional levels and also in the wider context of various international organizations.

Quality of Statistical Products

The most relevant dimensions of quality for users are accessibility, timeliness, clarity and accuracy; further dimensions are relevance, comparability, and coherence; see, e.g., Eurostat (2003) or Rosén & Elvers (1999). In all these dimensions the user demands are growing, a fact that has to do with the increasing awareness of users of the relevance of these quality dimensions for the value of statistical information. There is no need to comment on these aspects given the high statistical literacy of the readers.

Statistics and Political Decisions

Another aspect with a significant impact on the national statistical institutes is the tendency to tie statistical products closely to political decisions. E.g., Austria's GDP is used by the EU-Commission to calculate Austria's contribution to the EU budget. This solid tie to political decisions has the consequence that the method of calculating the GDP is not only an issue that has to be well regulated; the growing volume of accounting rules implies an increasing – in scientific terms – arbitrariness of valuations and a growing gap between statistical result and reality, a price that is partly paid for improved comparability. Similarly, the regional GDP, the inflation rate and other Maastricht criteria, structural indicators in the context of the Lisbon strategy, and many other statistics are produced for a specific addressee and are immediately used, e.g., to make particular decisions or to monitor the achievements with respect to policy aims. Implications of this development are, among others, shorter deadlines and increased political pressure.

Secondary Analysis

Growing complexity of processes in today's societies has not only the effect that the need for statistical information increases, but also that the demand for in-depth analyses is growing. Twenty years ago, labour market statistics typically informed about employment and unemployment, broken down for sectors of economic activity, for workplace and firm sizes, perhaps for categories of education. Nowadays, policy analysts, labour market researchers, consultants, and other users want in addition information on labour costs, on labour market trends, on absenteeism rates, on workplace training, and on special issues like the labour market for immigrants, etc; the results shall also explain the mechanisms behind the observed reality, dependencies and causalities. The expertise for in-depth analyses is much more relevant today as it used to be a few years ago.

Challenges by the Users: Summary

As a conclusion, it can be said that the demands by users have been growing substantially in the recent years and will continue to grow in the future. Knowledge society and the modern democracy need information in growing width, depth, and quality. Politics needs indicators that allow monitoring the effects of political measures and quick reactions and decisions. Users expect easier access, improved timeliness, and more detailed and reliable documentation of statistical products.

2. Challenges by the Environment

The environment of a national statistical institute is nowadays characterized by restricted resources and a growing unwillingness of respondents to deliver information on one side, and by advances in the organization of the statistical process on the other side. The advances in technology are to a great deal due to progress in the information technology that is implemented in many areas of the statistical process.

Restricted Resources

An illustration of restricted resources is the budget that is available to Statistics Austria. As mentioned, Statistics Austria has been transformed from an institution of the public administration into a federal organization under public law by 2000. The budget of Statistics Austria has been frozen to the amount of the budget year 1998 for all years since 2000, resulting in cuts of the real value budget that amount between 3 and 5 percent each year. Restricted financial resources imply restrictions of staff and all other ingredients of a statistical organization. Reports about budget cuts can be obtained from numerous national statistical institutes.

The Response Burden Debate

The response burden has also become a concern of politicians in many countries; the debate of “negative priorities” is a common issue in various bodies of the European Community including the ECOFIN Council and motivated not least by complaints over response burden. In Austria, the FSA 2000 provides measures for the protection of potential respondents against a too high response burden: Administrative data have to be used instead of data collection where ever possible; mandatory response is only permissible if voluntary response results in unacceptable quality of results. Consequences of this situation will be discussed below.

Information Technology

A fundamental change in the statistical process has been caused by the rapid developments within the information technology. All areas of official statistics, from data collection, processing and storing of data, to the dissemination of results have been radically changing and will be object of further changes in the future. Although the use of information technology has the potential to increase productivity of human resources, to simplify processes, and to improve quality, the implementation and application of information technology is expensive and increases the complexity and error-proneness of the statistical process. Information technology is also a crucial element in getting access to and use of administrative data; it is an important means for reducing the response burden and for increasing the efficiency of national statistical institutes.

Challenges by the Environment: Summary

As a conclusion, it can be said that serious restrictions from cuts in the budget and decreasing willingness of respondents to collaborate bring the national statistical institutes into a difficult situation. The use of already available administrative data and of modern information technology can be seen as a remedy against both. This, however, has a price: The implementation and application of information technology is expensive and increases the complexity and error-proneness of the statistical process.

3. Strategies for Coping with Nowadays Challenges

National statistical institutes have various means to cope with nowadays challenges such as growing demands by users on one hand and increasingly restricted environmental conditions on the other hand. Among these means are measures for increasing organizational efficiency, the consequent usage of information technology, measures for improving the quality of statistical products, and networking with partners.

Implementation of TQM Policies

Statistics Austria has, like various national statistical institutes, adopted TQM policies (Kutzenberger et al., 2001) in order to improve the efficiency of the organization and the quality of the statistical products. Elements of a TQM-system like quality control for processes and products and continuous improvement are suited to increase not only the quality of statistical products but also the efficiency of the production process. Continuous improvement, a key element of a TQM-system, and other means of critical assessment and feedback imply comprehensively exploiting potentials for coping with growing demands and adapting to new challenges.

Usage of Information Technology

A crucial position for helping to improve quality of processes and products and to increase efficiency of the whole organization has information technology. Internet-based data collection is an example: The delivery of data is simplified by an intelligent design of the web-questionnaire; the quality of data is improved by on-line plausibility checking and reduced manipulation of data; the production time is shortened by faster information transportation. Integration of data sets, e.g., matching of survey data with administrative data, is another area of beneficial usage of information technology. It opens the possibility to extract much more and deeper information from already available data. Other issues in this context are imputation and disclosure control methods; both require computer-intensive algorithms and can result in substantial quality improvements of statistical products. Access to statistical products is provided to a great deal by means of web sites and on-line databases. Detailed results and metadata allow an efficient use of the statistical products. Among the measures for developing the IT-environment of Statistics Austria are a metadata repository and a relaunch of the website.

Quality Reports

A powerful means for improving statistical products are quality reports and feedback-talks. In 2001, Statistics Austria has established a policy to develop quality reports and publish corresponding documentations for all its statistical products (Hackl, 2004). Following a standard format, all quality related aspects of the statistical product are documented. Feedback-talks are based on these quality reports. Various quality aspects of the statistical product are discussed between the responsible experts of Statistics Austria, the Statistical Council and major users. As a result, the quality report of the product will be amended and the report on the feedback-talk will show a list of improvements planned for the future together with a time schedule for implementation. Before the end of 2007 all major products of Statistics Austria will be documented and in the sequel scrutinized within feedback-talks. Quality reports and feedback-talks are efficient means to administer a continuous improvement policy. In their report, the peer reviewers for assessing the compliance with the European Statistics Code of Practice consider feedback talks as good practice to be highlighted and recommended (Laux et al., 2006).

Partnership with Respondents

There is an agreement that the statistical burden accounts for a relatively small part of the administrative burden on enterprises (see, e.g., ECOFIN, 2006). Nevertheless, in the mind of business representatives, administrative burden is associated with statistics. In this situation, reduction of the burden on respondents is an issue not only for the respondents themselves but also for the national statistical institutes. The willingness of respondents to collaborate has a direct effect on the quality of the statistical products. This willingness is determined not only by the response burden but also by the general attitude of business people towards statistics.

The burden on respondents can be reduced in various ways. Decreasing of the sample size of a survey is a straight way; the loss of precision may be compensated by means of methods of statistical inference, based on information that is available from the past or other sources. Another possibility is the substitution of survey data by administrative data. The survey design of the Austrian Short Term Statistics is a good example for such attempts: The design includes all enterprises with more than a limited number – between 10 and 20 – of employees depending on the area of economic activity and on the turnover of enterprises. A considerable reduction of the sample size could be achieved. For the enterprises that are exempted from data collection, data from the social insurance agencies and tax information allow to derive estimates for the variables in question by means of model-based estimates.

The readiness of the respondents to collaborate and their general attitude towards statistics reflect their understanding of the value of statistical products. Business statistics contain many results that can help business people in doing their job. Results from the structural business statistics can be used for benchmarking, statistics on consumption patterns for marketing analyses, etc. Provision of statistical products that contains such information in for the business world appropriate form has the potential to demonstrate to business people the value of statistics, to let them experience statistics as a useful device, and to change the attitude of business people. Similar effects can be expected from explanations of the purpose of a survey and from demonstrations of the out coming statistical products and their use. Such activities can lead to a partnership where both sides give and take, resulting in a mutual benefit.

Cost/Benefit Analysis

A sustainable reduction of the response burden and also of the other resources that are needed for the generation of statistical products is possible only if the statistical program as a whole is taken into consideration. Impacts of existing or planned statistical products on respondents but also on the budget and other resources of national and supranational statistical authorities need to be evaluated. In addition, not only the costs but also the benefits of a statistical product must be taken into critical consideration. Cost/benefit analyses are a prerequisite for developing a program that makes use of available resources – including respondents' readiness to collaborate – in an efficient way.

Collaboration and Networking

Collaboration and networking between national statistical institutes and research institutions including university institutes have the potential to improve the methods that are used in the statistical process and the quality of statistical products and in general the efficiency of the national statistical institutes. Improved access to data including micro data for researchers is of mutual interest; it opens new research areas for researchers, improves the quality of the data, and enlarges the analysis capacity of statistical institutes. Also collaboration and networking between national statistical institutes offer considerable advantages to the involved partners.

4. Concluding Remarks

The main challenges for national statistical institutes are the growing demands by users and the increasingly restricted environmental conditions under which national statistical institutes have to produce their statistics and provide their services. Various strategies of responding to these challenges are possible. One is the implementation of a TQM policy. An important element of TQM is the intention to continuously improve the quality of the statistical products and the efficiency of the production process. Continuous improvement and other means of critical assessment and feedback imply that potentials for coping with challenges are comprehensively exploited. Another strategy is to systematically make use of alternative data sources, in particular of administrative databases, to apply cost/benefit assessments of existing and planned statistical projects aiming at streamlining the statistical program, and to implement advanced design and estimation methods, making more efficient use of data from reduced sample sizes. Improvements of the statistical processes, particularly innovations in statistical methods and in the use of information technology, will play a crucial role in the future. Partnership with respondents can contribute to increase their willingness to cooperate and to help them to develop a positive attitude towards statistics. Partnership and networks with research institutions give the chance to use more efficiently available data and deliver to a wider extent results of secondary analyses to the public.

Many of these ideas are element of the strategic concept of Statistics Austria. Although some of these measures can be introduced in a straightforward way, the implementation of many of them like partnership with respondents or collaboration and networking need much effort and many steps to get mature.

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