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EUROPEAN COMMISSION STATISTICAL OFFICE OF THE EUROPEAN COMMUNITIES (EUROSTAT)

ORGANIZATION FOR ECONOMIC COOPERATION AND DEVELOPMENT (OECD) STATISTICS DIRECTORATE

Joint UNECE/Eurostat/OECD Seminar on the Management of Statistical Information Systems (MSIS)
Sofia, Bulgaria, 21-23 June 2006

REPORT

Prepared by the UNECE secretariat

1. The Joint UNECE/Eurostat/OECD Meeting on the Management of Statistical Information Systems was held in Sofia, Bulgaria, from 21 to 23 June 2006. It was attended by participants from: Azerbaijan, Bulgaria, Canada, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Ireland, Italy, Japan, Kazakhstan, Latvia, Lithuania, Netherlands, Norway, Republic of Korea, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, The former Yugoslav Republic of Macedonia, United Kingdom, and United States of America. The European Commission was represented by Eurostat. Representatives from the following international organizations also attended: United Nations Educational, Scientific and Cultural Organization (UNESCO), Organization for Economic Cooperation and Development (OECD), and the International Monetary Fund (IMF).

2. Mr. Daniel Valchev, Vice Prime-Minister responsible for the National Statistical Institute at the Ministry Council of Bulgaria, addressed the meeting at the opening session. He highlighted the importance of setting best practices and standards on statistical information systems and developing strategies for development information technologies, in particular with respect to the dissemination of information to end-users of official statistics. Mr. Hadjiiski, President of the Bulgarian National Statistical Institute, emphasized the importance of the international exchange of experience. He also informed the participants that the Bulgarian NSI is in the process of setting up a new statistical information system.

3. The agenda of the meeting (ECE/CES/SEM.54/1) consisted of the following substantive topics:

(i) Changes in statistical processes;
(ii) Dissemination and client relations;
(iii) Exploitation of IT service partnerships within statistical organizations;
(iv) Other activities of the Conference of European Statisticians related to statistical information systems;
(v) Special session of presentations of developing information systems in the Bulgarian National Statistical Institute.

4. The sponsoring international organizations (UNECE, OECD and Eurostat) thanked the members of the Steering Group on Management of Statistical Information Systems and the Bulgarian National Statistical Institute for their work in preparation of this meeting.

5. Mr. Mel TURNER (Canada) acted as Chairman of the meeting. The preparation of topics (i) to (v) was organized by: Mr. Marton Vucsan (Netherlands); Ms. Cathy Wright (IMF); Mr. Dayantha Joshua (United Kingdom); Mr. Juraj Riecan (UNECE) and Svetlana Ganeva (Bulgaria).

RECOMMENDED FUTURE WORK

6. The participants appreciated the opportunity for the international exchange of experience in the field of management of statistical information systems, and recommended organizing another meeting in the future with the aim of identifying leading practices in national statistical offices.

7. The participants considered the following topics as being of common interest for the meeting to be held in April-May 2007:

(i) Governance and management:
- changes in organization;
- outsourcing;
- changes in funding;
- management, acquisition, transfer and retention of knowledge;
- managing;
  - projects;
  - programmes;
  - portfolio;
- administrative sources and coordination between several institutions;
- relations with international agencies;
- links to NGOs;

(ii) Architecture:
- re-usability;
- metadata driven systems;
- service-oriented architecture;

- disclosure control;
- drilling down from macrodata to microdata;
- data collection channels;

(iii) Accessibility and usability:

- usability testing;
- understanding users' needs, client analysis;
- new audiences;
- alternative ways of visualisation;
- visualisation using geography;
- alert services;
- using visualisation as a part of search process;
- public search engines (Google, etc.).

8. The meeting recommended that the Steering Group, in cooperation with Italian National Statistical Institute (ISTAT), consider the possibility of organizing a survey on IT organization and standards in National Statistical Offices (further information is provided in paragraph 6 of the Annex).

9. The meeting also recommended that the National Statistical Offices be encouraged to join the initiative launched by the Office for National Statistics of the United Kingdom (ONS) aimed at cooperation in development of web services (more information is provided in paragraph 16 of the Annex).

FURTHER INFORMATION

10. The participants thanked the Bulgarian National Statistical Institute for hosting the meeting and providing excellent facilities for its work.

11. The conclusions reached during the discussion of the substantive items of the agenda are contained in the Annex. Presentations and all background documents for the meeting are available on the website of the UNECE Statistical Division (http://www.unece.org/stats/documents/2006.06.msis.htm).

12. The participants adopted the present report before the meeting adjourned.

ANNEX

SUMMARY OF THE MAIN CONCLUSIONS REACHED BY THE PARTICIPANTS DURING THE DISCUSSION

Topic (i): Changes in statistical processes
Discussant: Marton Vucsan (Statistics Netherlands)
Documentation: Invited papers by Bulgaria, Canada and United Kingdom; supporting papers by Finland, France, Greece, Ireland, Italy, Serbia and Montenegro[1] and Slovenia

1. This topic reviewed the impact of changes on statistical information systems, notably the changing environment and organizational setup, developing statistical methodologies and changes related to core IT processes.

2. The following points were made in the discussion:
- The trend in statistical information systems is towards metadata-driven systems using common processes supporting the survey cycle from design to processing and dissemination;
- The electronic response option is often appreciated by business reporting units;
- The Internet influences to a great extent the approaches to dissemination of statistics;
- Changing communications patterns towards a higher level of integration, making data exchange easier between government offices as well as regions;
- The growth in statistical data sharing, in particular when several institutions are involved, results in increased requirements on governance and coordination; setting standards and agreeing on data models is important in undertaking cooperative projects;
- Some countries provided examples where changes in the IT environment may require changes in the IT governance structure that balances the involvement of IT managers and representation of the user community (subject matter statisticians);
- The SDMX initiative provides guidance for setting data dissemination standards, but national statistical offices also take into account other specific requirements in deciding on their approach to dissemination;
- Some offices make use of open source software and generalised software for statistical analysis.

3. Regarding the use of administrative sources, the following aspects were discussed:
- Use of administrative registers and records constitutes a widespread data collection method that impacts on the technological setup;
- It is necessary to take into account issues related to variable quality of data originating from administrative sources, but it does not always mean that administrative data are worse than survey data;
- Data from several administrative sources may be used to construct statistical estimates, in order to improve the quality and coverage;
- A partnership within the government should be established – this issue was also discussed within Topic (iii);

[1] The supporting paper was submitted by the federal authorities of Serbia and Montenegro, before division of the Republic of Serbia and the Republic of Montenegro.

- There may be benefits in establishing a partnership with businesses that supply large amounts of data for the purpose of business analysis.

4. The participants discussed issues related to confidentiality and statistical disclosure control and made the following points:

- A study conducted by a statistical office suggested that cell suppression was preferred for data users; the evolutionary algorithm was developed and tested on synthetic data as a part of this study;
- There are broadly used tools for disclosure protection, like Argus;
- There were numerous cases of privacy violation by entities other than statistical offices, so the public perception of the disclosure risk in statistics is decreasing.

5. The following issues were highlighted in connection with generalised systems:

- Generalised systems may help portability of developed applications and the sharing of solutions;
- Generalised systems may require more specific skills for development and maintenance;
- Several statistical institutions embarked successfully on the implementation of generalised systems;
- There are also examples of failure, and these are probably due to resistance from the business systems owners, claiming differences in their needs; it is unlikely to succeed if the most important surveys are not committed to participate;
- The use of different administrative sources may represent one of the challenges for generalised systems.

6. The meeting agreed that, based on the recommendation by Italy, the Steering Group should, in cooperation with ISTAT, consider undertaking a survey on IT organization and standards in National Statistical Offices. The Steering Group should compare the survey proposal developed by ISTAT with the previous one developed by Statistics Canada, make the necessary adjustments and seek volunteers for responses from the MSIS constituency at large.

Topic (ii): Dissemination and client relations

Discussant: Cathy Wright (International Monetary Fund)
Documentation: Invited papers by Denmark, Netherlands and United States; supporting papers by Azerbaijan, Italy, Republic of Korea and Slovakia.

7. This topic focused on on-line services to clients mainly for dissemination, but also for data reporting. Aspects concerning organization, design and functionalities were considered. The meeting also took into account issues related to confidentiality and microdata access in the context of remote access.

8. The following points were made in the discussion:

- Generally official statistics are disseminated free-of-charge, but value-added services are provided on a cost recovery basis. These value-added services usually concern more detailed statistics and special tabulations, but in some cases also the setting-up of data dissemination services for other government offices and ministries;

- Web dissemination is characterized by a significant increase in the volume of statistics made available to users and the shift of control from the statistical agency to the end-user;
- Initially, free on-line dissemination put pressure on telephone and e-mail support; recently, external users request less support, which is due to improved metainformation, more user-friendly search facilities as well as increased skills on the users' side.

9. With regard to researchers' access to anonymised microdata, the discussion also focused on the following:

- Remote execution, when all data manipulations are made on protected servers, represents a possible option for remote access to microdata;
- Transaction logs and script of analysis performed by researchers on microdata files may help to identify intrusion attempts;
- Selection of permitted types of output would exclude those outputs that might dissimulate confidential information. The exclusion of graphs/figures was mentioned in this connection.

10. The Internet provides a new medium for the dissemination of statistics and the meeting discussed the following aspects:

- The medium used for communicating statistics is important for users, and some inexperienced users still prefer paper, while others appreciate the extended search and browsing capabilities of new electronic media;
- While considering Internet dissemination and other electronic media, due attention should be paid to content, because there is a temptation to focus more on the system;
- Currently many publications are still available in printable form (PDF files), even if some of them are no longer published in hard copy. But it is expected that PDF versions will be phased out in the long term in favour of more interactive formats;
- More user-friendly navigation tools should be explored in the future.

11. There was also a discussion on alternative navigation and presentation tools such as the following:

- Some statistical agencies are currently exploring alternative ways, as opposed to simple tables, of presenting and navigating through statistics available on the Web;
- OECD will discuss at a workshop later in 2006 the experience of countries and organizations with dynamic graphical presentation tools such as GapMinder. GapMinder is based on Flash technology and uses experience from the development of computer games. It has gained the appreciation of young people, but also of senior statisticians and policy analysts.

Topic (iii): Exploitation of IT service partnerships within statistical organizations
Discussant: Dayantha Joshua (Office for National Statistics, United Kingdom)
Documentation: Invited papers by Czech Republic and United Kingdom; supporting papers by Germany, United Kingdom and IMF.

12. Participants reviewed the motives and expected benefits in concluding service partnerships. Furthermore, they discussed possible ways of exploiting such partnerships and cases where service partnerships are preferable to in-house solutions.

13. Participants made the following points during the discussion:

- Service partnerships may, in justified cases, provide better value for money, which is important for achieving higher cost-efficiency of public services;
- The statistical agency does not necessarily accumulate all the necessary skills needed to respond to the changing technological environment;
- Service partnerships between in-house ICT services and subject-matter statistical departments are more often formalized and accompanied by a transparent accounting system for internal and external users;
- The success criteria for evaluating service partnerships were: (i) cost savings; (ii) service-level requirements; (iii) client satisfaction; (iv) process maturity and compatibility; (v) strategic partner's management capability and commitment to the statistical agency;

14. The following general aspects of outsourcing were brought up in the discussion:

- Outsourcing requires changes in governance, in order to accommodate managing the relationship with external suppliers;
- There is often a cultural resistance to outsourcing, and a perception of a lower quality service obtained;
- In many cases outsourcing is used mainly for infrastructure and general purpose ICT, such as budget support and human resources;
- Some statistical offices consider outsourcing of more substantive services like data protection, metadata systems, etc.;
- The institutional knowledge of external suppliers is often limited.

15. With respect to hardware and other infrastructure operations, the following issues were highlighted:

- The same or similar infrastructure is usually used by several clients of the external supplier to achieve greater efficiency;
- The hardware renewal is faster if the statistical office limits the quantity of in-house maintained equipment;
- Specialized hardware is not used throughout the year (for example tablet PCs for interviewers).

16. National Statistical Offices (NSOs) are united by a common statistical value chain (SVC), which indicates a strong possibility for sharing business service models and solutions. The Office for National Statistics of the United Kingdom suggested: (i) committing to development of future Web Services in such a way, that they may be re-used by other NSOs; and (ii) forming a consortium of NSOs for developing Web Services solutions for components of the Statistical Value Chain. A number of the international organizations present also expressed their interest in this.

17. In concluding the discussion, the meeting made the following recommendations:

- Build service partnership relationships around the mutual achievement of business objectives;
- Identify the key issues impacting sourcing management objectives if the statistical agency;

- Make a checklist of functional requirements for an overall service management framework.

Topic (iv): Other activities of the Conference of European Statisticians related to statistical information systems
Discussant: Juraj Riecan (Economic Commission for Europe)
Documentation: Papers by UNECE and Latvia.

18. The representative of the UNECE introduced this topic by highlighting the activities that are of direct concern to the work on statistical information systems. The participants showed a particular interest in the area of electronic data reporting. During the discussion participants made the following points:

- There are several initiatives (SDMX and others) that we may learn from. It is important to look into synergies between existing and proven approaches before inventing new ones;
- As a starting point, the UNECE and Eurostat intend to collect national experiences in EDR through the joint meeting to be held in Geneva on 6-8 November 2006.

19. The example from Latvia demonstrated experience in using portable computers for interviewers. The application uses Blaise for electronic questionnaires (data validation), communication with interviewers (questionnaires, respondents lists), archiving responses and planning and monitoring the work progress.

20. The electronic response option for the Canadian Census was also presented at the meeting, and this version was used by an important number of respondents. Further analysis of efficiency should be conducted before drawing conclusions. With respect to the technical capacity, the system handled 7000 concurrent users at the peak. Statistics Canada may use the architecture developed within the census programme for social surveys. The security infrastructure is also re-usable by other government programmes in Canada.

21. The following issues were raised by the participants during the discussion on the Canadian Census:

- Internet penetration in the country is an important parameter in the success of the electronic response option along with the availability of a high speed Internet connection, but respondents may also use connections at their workplace or public access points;
- It is difficult to build a system with a sufficient capacity for one “census day”, so it may be better to determine a “census week”;
- Impact of the electronic response option on the response rate and costs has to be evaluated after the first experiences with this census;
- The possibility of suspending and resuming a session is useful for longer questionnaires, but there is a risk that some respondents do not come back.

Topic (v): Special session on presentations of developing information systems in the Bulgarian National Statistical Institute
Coordinator: Svetlana Ganeva (Bulgarian National Statistical Institute)
Documentation: Papers by the Bulgarian National Statistical Institute

22. The participants used the opportunity of having the meeting convened in Sofia to learn more about the development of statistical information systems in Bulgaria. The Bulgarian National Statistical Institute organized presentations of the integrated statistical information systems developed component by component. The experiences in the development of the information system was presented for the following subsystems:

- Information system 'Register of Statistical Units';
- Information system 'Statistical Classifications';
- Information system 'Planning and Design of Statistical Surveys';
- Bilingual (Bulgarian/English) electronic metadata vocabulary for experts from the Bulgarian National Statistical Institute;
- Information system 'Demography'.

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