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OF STATISTICAL OFFICES
SESSION II

Improvement of productivity - A continuous and strategic target of Statistics Finland

Submitted by Statistics Finland¹

INTRODUCTION

1. The development of public sector productivity has a long tradition in Finland. Already in the early 1980s measures were called for in public administration to remove e.g. overlaps in the data collection of various administrative authorities. Authorities were encouraged to participate in extensive and mutually beneficial co-operation. This co-operation led to the creation of uniform identification systems for, inter alia, enterprises, buildings and persons to be used in various data systems. The uniformity of identification codes has been a central requirement for quality in the use of administrative registers in statistics production. In the 1990s, management by results was introduced into administration to support the development of customer oriented services and the expansion of authorities' financial decision-making power.

2. To manage Finland's disadvantageous population structure and the expected lack of labour force, the Government for the period 2004-2007 has required that administration undertakes concrete measures to improve productivity. A project for the regionalisation of central

¹ This paper has been prepared at the invitation of the secretariat.

government activities has also been under way. Consequently the Government has set objectives for transferring jobs from the capital region to growth centres in rural areas. By emphasizing its aims for improved productivity, Statistics Finland has so far avoided becoming the subject of regionalisation measures.

3. Statistics Finland's Productivity Programme 2010 was connected to the Government policy programmes for improvement of public sector productivity and regionalisation of central government activities. In Statistics Finland's Productivity Programme these policies are combined in one document. Besides developing its own activity, Statistics Finland has taken part in the programme for improvement of productivity by developing measurement of public sector productivity.

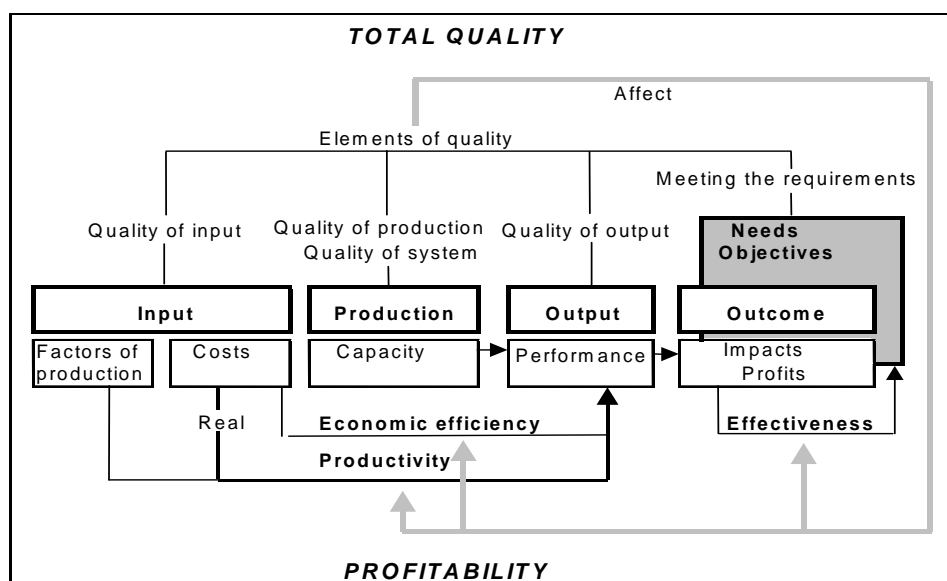
4. This paper discusses the starting points and aims of the improvement of Statistics Finland's productivity as well as the measures undertaken, and evaluates their realisation.

I. STARTING POINTS OF IMPROVING PRODUCTIVITY

5. Improving productivity at Statistics Finland has been closely linked to strategic management and the concept of total quality, and it has not been regarded as separate from other development work. Improving productivity has been an important strategic aim for a long time.

6. The view has been that productivity can be improved by developing processes, unifying IT tools, improving personnel competence and by developing the organisation and leadership. These were the key starting points in the drafting of the above-mentioned Statistics Finland's Productivity Programme.

7. Productivity as a phenomenon exists in public sector organisations, though it is often difficult to measure. Therefore discussions are often steered towards effectiveness, which is the ultimate aim of the activities of public organisations. The connections between the concepts are presented below in a simplified form. The changes in productivity refer to the change in the ratio between input and output volumes. The development of productivity cannot be measured if inputs and outputs are not defined and measured.



II. KEY MEASURES TO IMPROVE PRODUCTIVITY

8. The formulation of the Productivity Programme 2010 in 2004 strengthened Statistics Finland's need to evaluate critically its own activities and to sharpen the objectives of improving productivity. The overall objective of the Productivity Programme 2010 was to improve Statistics Finland's productivity (productivity – as stated by the Government - must improve by two per cent per year, on average), to ensure and develop the quality of statistics and services, to safeguard the availability of skilled personnel also in the future and to improve the conditions for meeting the challenges of the changing operating environment in other respects.

9. Ongoing development projects and extensive projects which were seen to have productivity improving effects were pulled together into the Productivity Programme and new outlines for development in the coming years were defined. All in all 27 measures were defined during the drafting of the Productivity Programme. These measures are expected to be realised during the period 2005-2010.

10. By 2007 some projects have already been finalised, some are ongoing and some require continuous development. Some projects are still in the initial starting-up stage. In the following chapters only the most important measures Statistics Finland has undertaken in the past few years in order to improve productivity are reviewed.

A. Data collections based on extensive use of administrative registers

11. Over 95 per cent of Statistics Finland's basic data is derived from administrative registers collected by other authorities. The most well known example of the use of administrative registers is the register-based population census, which has been possible in Finland since 1990. The use of administrative files is widespread in social and business statistics. In addition to some statistics being entirely based on the use of administrative files, there are also other ways to utilise register in statistics production. Data from administrative registers are used, for example,

- to improve estimation of variables,
- as sampling frames and updates,
- to supplement the information received in surveys and
- to produce completely new structural and change statistics.

12. Our experience is that the use of administrative registers decreases the amount of input that goes into the compilation of statistics especially with regard to data collection. When evaluating the productivity gains of using administrative registers it must, however, be borne in mind that the processing of data, quality control and assurance require specific efforts as compared with conventional data collection. The use of registers in statistics production has also meant a continuous need to develop personnel competence.

13. Even though the productivity gains from the use of administrative registers have been considerable, Statistics Finland has had to invest in various ways in the promotion of the use of such administrative registers. Extensive and continuous co-operation with the authorities (as a part of the development and co-ordination of the Official Statistics) has been absolutely essential. This co-operation takes place at the level of top management and at the level of experts. Statistics Finland has nominated persons in charge of different registers, whose task it is to stay in contact with the register authorities, to inform statistics units of changes and development measures, to co-ordinate the needs of different units and, when necessary, to organise negotiations.

14. Register expertise is a core competence area at Statistics Finland, and various parts of the organisation devote much effort to maintaining it. Regional statistics and GIS are also strongly linked to register expertise. Statistics Finland started to collect know-how on them in the late 1980s.

15. Continuous monitoring of the quality of register data is another area which has necessitated efforts. In part this too is a question of co-operation with various authorities. Every other year the data of the Labour Force Survey are used for a special quality survey on the reliability of the data in the population register.

16. Statistics Finland can no longer improve productivity by increasing its use of administrative registers, but the use can be made even more efficient. Significant unused administrative registers simply do not exist. Possibilities for rationalisation in the remaining direct data collection exist in the electronic data collection from enterprises and in the standardisation of the data collection process. Replacing interview-based household surveys with the use of the Internet could also save resources. This option, however, still includes many factors influencing the content and quality of data which have not yet been studied in sufficient detail.

B. Developing the production process

17. The Production model project, which was active in 2002-2006, made a significant contribution to the developing and harmonisation of the statistics production process. The project aligned ongoing technical development projects in various areas (new and uniform tools from data collection to data distribution, giving up the mainframe computer and the related

system updates) into entities which worked towards the same goal and supported each other. The aim of the Production model project was to standardise the statistics production process, to decrease the number of manual working phases, to make data management, processing and distribution more effective, and to create a more uniform framework for the development and maintenance of data systems.

18. Statistics Finland has approximately 200 different statistical systems which used many different tools as well as divergent applications and tools for developing these applications. This also meant that Statistics Finland had to maintain very different kinds of expertise and the transfer of an employee from working on one kind of statistics into working on another kind often required considerable orientation. Often also the data and the applications used were very integrated. As a result, a small change in e.g. the basic data of the statistics led to a considerable need of maintenance work on the application. The aim of the Production model project was to identify common solutions to this rather fragmentary situation.

19. Within the Production model project several new tools were developed (such as the tools for the electronic data collection of enterprises and corporations and the tools for disseminating statistical data) and recommendations were prepared for the use of information technology in the production process (such as application architecture and development of software engineering) and for the standards to be applied (such as interfaces and data structure). Their implementation will continue in the coming years as the data systems are updated.

20. The implementation of the new production model is supported by organisational changes. In the beginning of 2006 the application related work of the IT and Statistical Methods department was reorganised to support the practical implementation of the new production model. A steering group has been appointed to guide the implementation of the production model, and the implementation projects report to this steering group.

21. Statistics Finland set an objective to offer the option of responding electronically in all direct data collections from enterprises and corporations by the end of 2006. This objective was met, and this was supported significantly by the XCoLA (an XML-based data Collection Application) data collection system developed by the Production model project. In addition to XCoLA, some data collections have been executed by an external operator. Data collection has also been rationalised with co-operation between authorities. The next development phase is a data collection in which the data is collected directly from enterprises' data systems. This approach has traditionally been applied in Finland in certain wage and salary statistics, and most recently also in accommodation statistics. As the integrated data collection necessitates co-operation with IT service providers who offer IT applications to enterprises, international co-operation could offer new possibilities.

22. Even though the development of electronic data collection from enterprises has required a considerable investment in terms of resources, we can already state that the results are excellent. Responding electronically became much more widespread during 2006. In addition – and this is very significant – the data is of a high quality as the system has inbuilt logic and other checks. As a result, the whole production process is clearly faster and more reliable.

23. XML-based solutions of disseminating statistical data have reached a very advanced phase.

The XML-based publication production process is defined and the tools for the process have been selected. The Common Structure for Statistical Information (CoSSI) developed as the basis for publishing statistical data and metadata has drawn international interest.

24. The challenge of developing a harmonised microdatabase and the ways in which it could be used proved to be an insurmountable challenge for data management and the development work was given up. Resources were reallocated to the development of a metadata system, and in this context a test version of a common metadata system was created. The special feature of this system is its ability to combine metadata from different systems. Work on this is ongoing.

25. The major challenges for the years ahead are connected with the development of the processing of data and the uniformity of tools. Especially the development of the methods for editing data is projected to produce substantial productivity gains. We are currently examining the compatibility of the editing and imputation software developed by Statistics Canada with our systems.

26. Securing the confidentiality of data before its release still involves a lot of manual work. Statistics Finland is currently looking into the introduction of the automatic disclosure control programs (μ - and τ -ARGUS) developed at Statistics Netherlands to the publication of data in table format.

C. Development of support and administrative processes

27. From the viewpoint of costs and efficiency of the statistics production process, it is essential that red tape is brought to a minimum and that the departments can focus on performing their key tasks. In the early 1990s Statistics Finland introduced a fairly decentralised model of administration. The model was intended to support management by results and it applied to both financial and personnel administration. As a result the amount of administrative work done in departments increased significantly, as did the ways in which different decisions concerning staff and finances were applied. Gradually it became clear that uniform practices, and systems and guidelines to support them, were needed. Therefore a notable effort has been made in the past few years to develop administrative support processes, and clear productivity gains can already be seen.

28. The intranet of Statistics Finland has established itself as a forum through which uniform practices and guidelines can be distributed. Today a very thorough description of the recruiting process complete with templates and instructions is accessible to all those, whose work involves the preparation of recruitments. A job orientation program and the associated tools intended for new employees are accessible to all on the intranet. The appropriate tools for those preparing procurements are also available on the intranet.

29. The checking and approval procedure for invoices is now electronic. The decentralised basic administrative systems for employees (registration of leaves and absences) also functions via an internal network. Documents no longer circulate as paper copies but as electronic forms.

30. The intranet also contains a large number of handbooks guiding different activities; there are handbooks on quality in statistics, on wages policy, on processes, on pricing of products and

on supervisory work and on customer service. All of these guidelines have contributed significantly to the harmonisation of activities and their quality across the departments.

31. Benchmarking events organised from time to time with other general government authorities and the resulting ideas for development are put to use in the developing of administrative and support processes.

D. Management and personnel development

32. Improving the productivity of an organisation is a question of management. The importance of leadership and supervisory tasks will be emphasised in the coming transition period during which experienced and skilled personnel retire and a new generation of employees is recruited.

33. Notable challenges for management stem also from the growing needs for improved coherence in statistics, more efficient use of data, limiting the response burden and increasing co-operation between statistics departments in a way which results in smoother statistics production processes and allows for verification of improved productivity. The management plays an important role also in the development of the planning and follow-up processes of activities.

34. Currently the statistics departments at Statistics Finland are relatively independent. It has been necessary to create mechanisms to support inter-departmental collaboration and to avoid excessive differentiation. In addition to the Management Group of Statistics Finland, also a group of the directors of statistics departments has held regular meetings. The work of this latter group has been developed and intensified with the Deputy Director General responsible for Statistics Production, who was appointed two years ago, acting as chair. The group deals with e.g. issues related to the consolidation and co-ordination of statistics production, the harmonisation and steering of processes and improved coherence and, when necessary, puts forward suggestions to the Director General or to the Management Group. The close co-operation of managers also promotes the spreading of a common organisation culture and good practices and assists staff rotation.

35. Statistics Finland has a Personnel 2010 programme which comprises a set of measures aimed at developing personnel well-being and competence. A closer description of these measures can be found in a paper presented at the ECE/CES 2006 seminar.²⁾

E. Quality work

36. For over a decade Statistics Finland has systematically developed the quality of its work according to the principles of Total Quality Management. The most recent measure aimed at improving total quality was the participation in the 2006 Finnish Quality Award competition (EFQM). The competition process included a feedback report from an external assessment team. This report will assist in setting the focus for Statistics Finland's strategic objectives and

² Strategy based human resources management in practice - experience of Statistics Finland
<http://www.unece.org/stats/documents/ece/ces/2006/14.e.pdf>

developing activities for the coming years.

37. The assessment team regarded the entity formed by Statistics Finland's leadership, activity and quality development as exemplary. According to the same assessment, however, one of the biggest challenges relates to the uniform application of policies and good practices throughout the organisation. The assessment also revealed a need to sharpen the setting of objectives and their follow-up and evaluation. Both these points – like many others suggested improvements in the assessment report – have a clear link to increasing productivity.

38. For many years already Statistics Finland has made an effort to continuously improve its activities and quality. For example the units evaluate their activities and ways of action annually with the help of the so-called ITE self-assessment procedure. The assessment framework has been developed at Statistics Finland. After the assessment, development measures are agreed on and their implementation is monitored.

39. An internal audit procedure was set up in 2006 to assess and improve the quality of statistics and to promote good practices. The audit team consists of experts in statistical methodology and IT as well as of statistics experts from outside the target unit. With the help of the agreed framework the team goes through the factors influencing quality in various stages of the statistical production process and writes a feedback report which includes suggestions for improvement. This procedure is a lighter version of the internal audit process applied by, inter alia, Statistics Sweden.

F. Development of project work

40. The successful completion of development and renewal projects is a key factor improving productivity. As late as in the 1990s development projects at Statistics Finland could take years to be completed. The launching of such projects was sporadic and the targets set were often vague. Follow-up and assessment procedures were undeveloped.

41. Some five years ago Statistics Finland began the systematic development of project work procedures. Presently development projects have set objectives, timetables and resources. There are guidelines for project work, and models of the various stages have been saved in a data bank of project work, which is accessible to all on the intranet. This data bank comprises descriptions of the various stages of project work, and instructions and templates for the project plan, the setting up of a project and reporting on a project, among other things. Much training on project work has also been arranged. A support team has been set up to develop and steer project activities.

42. The management of a project portfolio has also been developed over the past years. Different departments' projects are prioritised on the basis of Statistics Finland's strategy in the context of annual planning. Approved projects make up the Statistics Finland project portfolio, whose management is interconnected with the monitoring and assessment of the entire agency's activities.

43. The current focus of the development of project work is the changeover to programme management. Instead of separate development projects, the aim is to manage broader

development programmes, which act as frameworks for individual projects. The Personnel 2010 and Productivity 2010 programmes have offered many good experiences. At present three new programmes, mostly in the field of business statistics are in the initial stage.

III. MONITORING OF THE IMPLEMENTATION OF PRODUCTIVITY IMPROVEMENTS

44. The implementation of the productivity measures is regularly monitored and assessed by the Management Group of Statistics Finland. In addition, the various projects of the Productivity programme generally have steering groups, whose task is to guarantee the successful implementation of the project. When the projects have completed their work, the results are assessed by the Management Group.

45. Additionally, the management of Statistics Finland assesses once a year the implementation of the Productivity Programme 2010 in their strategy seminar and decides on the necessary measures and possible new priorities.

A. Cost monitoring

46. Resources can be used more efficiently by developing cost accounting and by improving cost control. Good cost accounting also facilitates decision-making on the prioritisation of projects and activities. The introduction of management by results led already as such to clearly higher awareness of costs in the organisation. The expansion of chargeable services has also been significant. This has required even more transparency from cost accounting. Therefore much attention has been devoted to cost calculations and monitoring.

47. Reports on the review of the costs of certain important activities have been commissioned from external service providers. For example, the total costs of Statistics Finland's information technology (using the model of Total Cost of Ownership - TCO) have been reviewed by a private consulting company. The results are analysed and necessary measures discussed by the Management Group. Monitoring of ICT costs and comparison to the other ICT intensive organisations are considered useful. The aim of Statistics Finland is to repeat these reviews at regular intervals.

48. Cost evaluation of interviewing activities has also been subject to a review. Statistics Finland's telephone interviewing centre is located in Helsinki, and a part of the telephone interviews are conducted from there. The cost effects of regionalising this activity were evaluated in 2005. The findings showed that when taking into account both the short and the longer term costs, transferring the telephone interviewing centre to a rural location would be more expensive than keeping it in Helsinki.

B. Electronic management system of planning and follow-up - STOJ

49. Statistics Finland has an electronic organisation-wide management system (STOJ) for planning and monitoring activities. The system was updated at the turn of the millennium. Its predecessor has been constructed good 20 years previously.

50. With the STOJ system activities, outputs and timetables can be planned and monitored by product and project. The updating of the data in the system is decentralised to the departments. Information on the production and completion times of statistics and e.g. data on deviations from the release plan can be drawn from the system. Once a year the system generates automatically a release calendar, which is published on the Statistics Finland website. The weekly calendar on the website detailing the statistical releases of the coming week is also generated by the system. As the system is integrated with the working time recording system, cost data on statistics can be calculated with the help of the working time records and information on the price per working hour. Data on working time are also used in productivity calculations.

51. The system in itself does not, however, create productivity gains. The requirement is that all users appreciate the advantages it can offer and maintain the good quality of the data they feed to the system. Organisation-wide systems (such as STOJ, the working time recording system, the customer management system) create gains gradually as users commit to using them. The quality level of the data in these systems has improved, as management has paid constant attention to the issue. However, there is still room for improvement.

C. Benchmarking

52. Statistics Finland's activities have been compared a few times with those of other countries' statistical agencies. The most comprehensive comparison was done in 2000 with Statistics Denmark. A comparison with Statistics Sweden is being completed at present. As a part of both comparisons also the costs of different statistics and the work inputs used for them have been examined.

53. As useful as comparisons between different countries' statistical agencies can be, significant measurement and comparability problems associated with differences in quality and the budget systems of the public sector still remain.

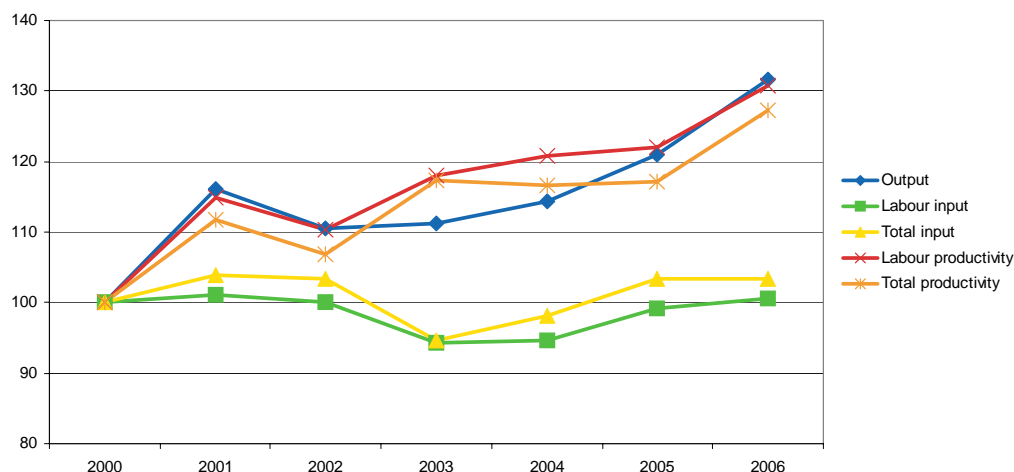
IV. MEASUREMENT OF PRODUCTIVITY

54. The measuring of the development of productivity supports the improvement of productivity. Calculations on the development of Statistics Finland's productivity have been done since 1995. In 2006 the indicators were updated as a part of a Ministry of Finance development project on measuring productivity. The measurement follows principles common to the entire state administration, which are based on Statistics Finland statistics on public sector productivity. A persistent problem is that it has not been possible to integrate changes (usually improvements) in the quality of statistics into the measurement of productivity.

55. The below figure illustrates the development of Statistics Finland's output, inputs and productivity from 2000 to 2006. Total productivity has grown by 27 per cent over the reference

period and average growth in productivity has been 4,3 per cent annually.

Figure 2. Development of Statistics Finland's output, inputs and productivity in 2000-2006 (2000=100)



V. CONCLUSIONS

56. Statistics Finland's experience has shown that it is important to link the improvement of productivity closely to the strategic objectives of the organisation. The rationalisation of data collections is key, as a large part of costs are generated from this activity. Significant productivity gains can also be obtained by harmonising processes, developing common tools and promoting a quality conscious organisation culture and application of uniform policies throughout the entire organisation. Development of personnel competence and well-being are prerequisites of improved productivity. Cost monitoring and analysis as well as measures based on them also contribute to improved productivity.

57. In the coming years Statistics Finland faces the major challenge of the tight ceiling on staff-years imposed by the Ministry of Finance, which requires an even wider prioritisation of activities and a reallocation of resources. We believe that improved productivity and efficiency will strengthen the agency's abilities to successfully tackle the challenges ahead.

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