Mats Wadman

Conclusions, notes and discussions

from the

”Conference on Modernisation in Statistics Production”

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Introduction

The conference included a mixture of topics all of which are important to NSIs. It gave the large picture and brought many fragmented pieces together, broadening the perspective and giving the opportunity to share and discuss, under the clear notion that NSIs share many common problems.

The conference focussed on the sharing of experience from implementing new production systems and changing the way we produce official statistics. The overall common understanding is that we all face an increased demand for new and improved statistics and at the same time pressure to reduce costs. There is a broad understanding that we have to focus our efforts to enhance efficiency, cost effectiveness, and quality and that a key aspect of this is to successfully standardise the production process.

The conference was made up of 8 sessions on different topics connected to the modernisation of statistics production and one concluding panel discussion. The topics of the sessions were:

1. The role of the customer in statistics production
2. Quality assurance systems
3. Service-oriented architectures
4. Management of processes and resources
5. Collection and use of paradata in statistics production.
6. Innovations in data collection and design
7. Optimal use of registers and administrative data
8. Generic business models and standardised processes

The concluding panel discussion evolved around the themes:

- The importance of customer orientation
- The standardisation of processes, efficiency, change, and the continuing modernisation of statistics production
- Improving and communicating quality
- The use of administrative data
- Learning and sharing
- New areas of cooperation between NSIs

This paper/presentation is broken into two parts. In the first part we elaborate on three themes that were addressed in many of the sessions. These themes – leadership and culture, customer orientation, and learning and sharing – are discussions of what conditions need to be met for an NSI to be successful in the conversion into a more modern, process-based production system. In the second part we look closer on some of the cases in point that were presented during the conference.

Main findings from the conference

The main lesson learnt from the conference is that there are strong links between standardisation of processes, learning and sharing, organisational culture and leadership, customer orientation, and quality. They are all interlinked and dependent on each other, and we need to work with all these dimensions to be successful.

Change in how we produce statistics is needed to assure quality and to deliver new and improved output in an efficient manner. To achieve significant change top management commitment is key. A clear vision of the change must be clearly communicated and understood by the majority of staff. Broad involvement across the organisation in the process of change is vital to get the necessary buy-in and to sustain the change process over the long-haul. An incremental approach, going step-wise towards the clear vision, was universally accepted as the best approach. In doing so it is important to select initial projects carefully to achieve success stories.

Technology is changing fast and provides many new opportunities, but it is impossible for one organisation to cover all aspects. Therefore cooperation between countries and organisations needs to be strengthened, and building on existing fora should be the major way forward. A basic precondition for efficient cooperation is that IT-environments across organisations need to be compatible. This is not always the case at present and some work needs to be done in this area.

How we produce statistics must be based on the needs of the customers, and we need to also improve our communication with existing and potential customers to be able to develop our production methods to meet the needs of the customers in the long-term perspective. There is an increasing demand for more tailor-made statistics and for more accompanying analysis to increase the value of the data and to facilitate decision-making by the customers in their various roles. Metadata needs to be available for customers to judge the quality of statistics and the available outputs.

PART ONE – THREE THEMES

Leadership and culture

The importance of getting the organisation involved in the reengineering of the production process

One theme that came out strongly in many of the sessions was that on leadership and culture, together with the importance of getting the organisation involved in the reengineering of the production process.

To achieve standardisation, strong leadership and strong commitment in leadership is important. Effective strategic planning depends on management to set the right targets, and targets must be measurable. Management must also engage in the follow-up of implementation.

There are different approaches and frameworks for working with quality, but NSIs still need to learn more about the value they give to society and the conditions for the different approaches. Are new ways of improving quality best implemented in the organisation as a "big bang" or is an incremental, evolutionary approach better? This issue was highlighted in several of the presentations and discussions and there seemed to be a general agreement that an incremental approach is preferable to balance change against the ongoing activities of the organisation.

It was argued in several session discussions that it is important to have a broad definition of quality and that in order to achieve good product quality we need to *consider organisational issues such as leadership.* Also we need to consider the way we carry out our production process since it will affect product quality. This is where quality frameworks such as ISO 9001 or EFQM are helpful in that they can help us work in a *systematic way with improvements*.

The importance of compliance with standards and guidelines is absolutely essential or valuable resources are wasted. Compliance is, however, hard to achieve. Incentives to do so are needed. In an example from the US one incentive to follow the standards is that it is a requirement in order to get funding from government.

It was argued that many methodological improvements could have been implemented in statistical agencies much earlier than has actually happened – for example service-oriented architectures, selective editing, data warehousing, metadata-driven systems, and systematic quality management. It seems that culture in statistical agencies often is an obstacle to change. It is also a question of management style. Very different management styles certainly prevail in different countries and organisations, and there is no particular management style that is best suited for getting methodological changes introduced. The

approach taken must be tailored to the specific situation and conditions of the organisation and what works in one setting may not do so in another. However, there are still much to learn from each other's experiences.

The reengineering of the ONS was described as "a rocky road". A lot of money was provided to the agency to upgrade its production system. Though some headway was accomplished expectations were far from being met. ONS staff did not really have the skills to handle large projects and too much reliance had to be made on consultants to handle the work. In retrospect less resources or resources provided sequentially would probably have been a better strategy on the part of the government.

Involvement of the staff is absolutely essential and the message from the ABS was that top management must be able to explain changes in a language that is understood across the organisation in order for change to gain momentum.

Experiences with the introduction of a Six Sigma approach pointed in the same direction. It is necessary to focus more on communication and present the good examples of implementation of new methods and approaches in statistics production to justify further approaches. Picking the right projects to start with is a strategic decision. It was also clear that the approach needs to fit the situation and that it was not trivial to transfer the Six Sigma approach from an industrial setting to an expert organisation.

Customer orientation

NSIs must be able to respond to new needs of customers, but still handle continuity. There is an increasing demand for information, NSIs must focus on the customer needs without letting the image of the NSI be damaged (e.g. the balance between quality dimensions is important). Customers demand more and more tailor-made statistics and quick information about upcoming trends that require a large degree of adaptability from the NSIs.

Customers must at the same time be made aware of the pre-requisites for producing statistics, and it is the responsibility of the NSI to state this clearly. Not everything is possible to produce, and the NSI must be able to explain the restrictions without losing the confidence of the customers.

The importance of being able to re-use information is emphasised in the view of customer needs, e.g. reduce response burden, re-use survey data, use administrative data in order to timely meet needs in an efficient manner while still manage response burden issues.

In the future, NSIs need to involve the customers even more. NSIs need to be more open towards customers about what is going on within the agency. If NSIs are unable or slow in reacting to new demands, someone else will react instead. Competition in the information market is quickly getting fiercer.

In the session on the role of the customer in statistics production, the speakers argued that producers of official statistics are not, by far, doing enough to understand customers and how they use statistics. Statisticians are often too reluctant to liaise with clients.

It was argued that it is essential to build on **trust in statistics**. Trust is often related to individual people rather than organisation. So managers in NSIs must be able to market and raise the profile of NSI.

Flexibility of outputs was also considered essential. This leads towards offering services based on micro data for which we now have better and better technology, also to address the issue of confidentiality, which obviously becomes something that you have to address in connection with such services.

Intermediaries such as Google or Bloomberg can help in meeting customers' needs, using NSI data and making them available in new forms. But that does not free the NSI of its responsibilities for the quality of statistics and NSIs must be more visible in society promoting good quality and taking a stand on misuse of NSI data. NSIs must also consider providing more accompanying analysis to increase the value of the data and to facilitate decision-making by the customers in their various roles. However, there is a fine line to be drawn between further analysing the data and maintaining the objective and impartial perspective.

NSIs need to be clear towards customers on what the quality is and what the appropriate uses of data are. Otherwise, data will most certainly be used in the wrong way. Although there is a consensus view that metadata for these purposes is important, many NSIs struggle to actually keep it up-to-date and in a language and format that is understood by customers. NSIs have not yet come far in describing "fitness for purpose" and this is an area where more research is needed.

Learning and sharing

The need for cooperation, sharing and learning from each other

In the concluding panel discussion, it was clear that there is a strong consensus on the benefits of cooperation and learning from each other. NSIs can learn from each other and should not be afraid of sharing work in progress and build on each other's experience.

Services and applications could be shared, as well as research and evidence based work. The evidence based data and work must increase, but it is expensive to experiment, and thus sharing is important. There was a consensus understanding that the basic way to successful cooperation is to work in smaller constellations on urgent matters that people care about and want to engage in.

It was concluded that not only sharing, but also benchmarking between organisations is impossible without standardisation and commonality in processes. Nothing can be successfully compared unless the information (e.g. paradata) is standardised. Documentation of processes and tools is needed for efficient sharing and this is an area where much can be improved across many NSIs. Documentation also needs to be available in a language understandable to all parties involved in the cooperation.

Technology is developing fast and planning and building an efficient architecture is difficult and costly. Cooperation and sharing work is the only way that NSIs will be able to keep up with this development and make efficient use of the new possibilities. To facilitate sharing of work and successful IT-support it is important that the basic IT-environment across NSIs become more homogeneous than its present state, which now is often an obstacle to utilise what has been developed elsewhere.

One reaction during the conference on the issue of cooperation was that many international groups already exist on a variety of topics, and it is not possible to participate in many new groups when money is scarce. Small offices in particular find this difficult and bilateral benchmarking is then a good alternative.

Considering better ways of utilising already existing groups for cooperation is often more important than just starting groups for new areas. One reason why development is slow is possibly because there are too many areas of cooperation, focusing is key.

One important area of cooperating is training and development of competence. NSIs should look to bring in people from other countries and organisations for staff training in areas where they are lacking. This is also a good basis for future cooperation on topics of mutual interest. There is a need to raise the base level across countries, and NSIs should cooperate on that. It was suggested that a research agenda be set up and the work shared across agencies. We should also allow students to work in agencies in different counties during their studies.

PART TWO – SOME CASES IN POINT

The standardisation of processes

Efficiency, change and the continuing modernisation of statistics production

Integration of methodology, IT, and business is important in order to achieve standardisation and it is vital to have people with a holistic view. International meetings are often organised on subject matter areas, reflecting the traditional stove-pipe approach. Meetings organised around processes would help in pushing for standardisation of processes. Joint cooperation between process owners across organisations and inclusion of all aspects (business, methodology, IT, and management) is important.

Some interesting cases were presented on **Generic business models and standardised processes.** The main objective of the FOSS project at Statistics Norway has been to improve quality and efficiency in production of statistics. Important preconditions are a common business process model, an information model covering data and metadata and IT-systems supporting the process following certain principles that have been defined internally.

It was argued that quality work in statistics has gradually developed from assessing and reporting on output quality to a process-oriented approach, following the whole statistical business process. In Norway, the development has been facilitated by some basic and common principles of quality management.

Also in the Netherlands efficiency and quality of key statistics must be improved, while the administrative burden is significantly lowered. In order to keep control of these competing challenges an ambitious redesign program, the Master plan, was started in 2005, with substantial funding from the Ministry. The general ideas of the Master plan are represented in a comprehensive enterprise architecture. Some key elements are the identification of “steady states” in statistical processes, consisting of data sets with guaranteed quality to promote re-use of data. All tools currently in use plus a number of additional tools were rated according to several criteria. Two of these were critical: the tool *must* be able to handle metadata and the tool *must* be able to separate design and implementation, a first instalment of the toolbox was proposed, consisting of 18 preferred tools.

Some lessons learnt in the Netherlands from the development project are that there is always competition for competence and staff with their ”normal work” as well as a shortage of expertise in some areas so consultants have been used for some key areas. Working together with these consultants require much

more strict definitions on what should be developed than when development is mostly done in-house. Finding the balance between the development and use of common solutions and survey specific solutions has also been difficult.

Some thought provoking ideas were raised about **collection and use of paradata in statistics production.**

The question was put on the table why we are not to a higher degree using statistics to produce statistics. Especially the NSI's that often repeat their surveys have all the prerequisites for doing this in a systematic way. Is it lack of people capacity? Is it a conservative culture? Is it even possible to create an analytical and customer focused environment that is based on knowledge based improvements instead of anecdotic evidence? What is the best way to change current practices? What is the best strategy to create an environment where paradata and other process data are considered already in the design of a survey and incorporated as a part of communicating statistical understanding in client discussions? What competences are necessary?

It was clear that the area is still fairly undeveloped and there is a large potential to be explored. Standardisation of processes will also facilitate the efficient use of paradata across surveys and benchmarking between organisations. Information about how a process functions and what it is capable of delivering will make it easier to identify “best practice” for a broader application.

There is an increasing use in NSIs of **registers and administrative data** for different uses, like building registers and frames, forming sets of micro data for analysis, and producing statistics. The use of administrative data within a country but especially between countries also necessitates a large degree of standardisation to ensure comparability. There are many advantages to using administrative date compared with direct data collection, including reduced response burden, more detail in statistics, possibility of longitudinal data, and reduced costs in most cases. There are also a number of drawbacks such as having no direct control over definitions, processing etc. and that there is no guarantee over time – there may be changes in legislation etc.

The lack of methodology for use of administrative data is recognised by several countries. The question was posed where the responsibility for developing methodology lies and what the roles of NSIs and universities are. It was universally agreed that NSIs have to take the lead in developing methodology and effective use of administrative data. Issues involved are e.g. integration of different types of sources, quality assurance, quality measurements, and quality reporting.

NSIs need feedback in order to know that data is used professionally. In addition, to improve data quality, NSIs need influence on the administrative data sources, e.g. legal power.