Strategic vision of the HLG

Summary

In 2010 the Bureau of the Conference of European Statisticians created the High-Level Group for Strategic Developments in Business Architecture in Statistics (now called the High-Level Group for the Modernisation of Statistical Production and Services), comprising heads of several national and international statistical organizations, to reflect on and guide strategic developments in the ways in which official statistics are produced. The High-Level Group has developed a vision paper to provide the necessary coordination and strategic direction to the many international initiatives currently working on related topics. This vision paper is presented to the Conference of European Statisticians to inform delegates, and seek their feedback and support.

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I. Introduction

A. The product challenge

1. Traditionally the output of statistical organizations has been determined by the demands of their respective governments and other organizations. The process is one of reasoning back from the output desired to survey design. This approach was mostly caused by the fact that little or no data were available. This has shaped the way official statistics are designed and produced. We have elaborate coding schemes like the International Standard Industrial Classification (ISIC) on which we have based carefully designed surveys. Gradually - and somewhat reluctantly at first - we have included the use of official registrations in our daily work. We determine which registrations would be able to fit our pre-specified needs, then try to process and edit them to replace or supplement survey data.

2. We, the statistical organizations, have thus been conditioned to look at data through a filter that discards all data without the stamp "officially sourced" or "officially collected" as generally not fit for our use. There was little of that type of data anyway. This traditional approach is now rapidly becoming outdated.

3. The experience at Statistics Netherlands with the household expenditure survey shows that the way we used to produce statistics may become outdated soon: People in the survey keep track of their daily spending in a small book for a month or so, which is then processed into statistics on household spending. While it was feasible to ask people to do this 10 or 20 years ago, the dynamics of current society are such that:

(a) People are conducting many more transactions daily;

(b) They have less patience with statistical organizations amidst all kind of commercial surveys and television shows that draw their attention;

(c) Representativness is becoming problematic because some groups in society are not willing to cooperate at all.

4. In the future it will prove to be unrealistic to expect meaningful figures from this approach, even when results are collected and transmitted electronically. This is a typical statistical product from a past era, when this was the only way to get at these data.

5. Internet companies and other entities have demonstrated that something very interesting is happening. We are in a changeover from a society with little or no data available to one that has an abundance of data. In this light we have to rethink our traditional business values and the reasons of our existence. We see other parties making statistics that are akin to ours but much, much quicker (e.g. Google) and on an almost global scale. We also see other very interesting uses of statistics, prompted by the availability of so much data. Another important point is that nowadays it is much easier to get data that cover more than the traditional national statistics users would need. We do not, however, have the mechanisms in place to make full use of these data.

6. The above is a strong indication that we have to rethink our products at the risk of becoming obsolete. For example, some products should be designed and created as international statistics in international collaboration right from the start.

7. In an information society there is an abundance of data. To a statistical organization this represents an abundance of opportunities. We have to learn to look in this way at the available data and find the opportunities hidden in there and not only see them as ore for our stovepipes which have to be refined to fulfil our predefined needs.

B. The process challenge

8. The changes in our society increase the need for more and quicker statistics. Quality is negotiable but needs to be communicated. The challenge for statistical organizations is to be sufficiently flexible and agile to provide statistics according to user needs, at an acceptable cost. Statistical organizations are starting to acknowledge that it is becoming too expensive for each and every one of them to individually change their tailored production systems to meet user expectations.

9. Statistical organizations have a long experience in harmonising statistical products and regulating requirements within the different statistical domains. Providing statistical results has been regarded as statistical production for decades, but international cooperation has not concentrated much effort on harmonising production processes, leaving many possibilities for increased standardisation of production means.

10. However, the last few years have been a wake-up call for statistical organizations. New technologies and communication facilities have sprung up and are reforming the landscape in which we do our business.

11. Most international collaboration in the area of information and communication technology (ICT) and the automation of processes and statistical methods has been between specialists. The common objectives have been to share experiences and best practices, and occasionally carry out research and demonstrate innovation. However, collaboration and the common uptake of results in this area have proven to be difficult. The specialists have the power to agree, but miss the authority to initiate substantial changes in their organizations.

12. For real progress senior and top level management have to step in and drive the changes, actively request organizational innovation and show commitment for international cooperation.

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II. Vision

13. The High-level Group for Strategic Developments in Business Architecture in Statistics (HLG-BAS) has been established to add power and governance to the various groups working under the umbrella of the Conference of European Statisticians, and other groups working in the area of modernising statistical production. It provides top management ownership and coherence. As a first step the HLG-BAS is defining a strategic vision, which will also serve as a means of alignment for the groups.

14. Why do we need to do this? Because official statistics need to stay relevant to the modern world. The fact that others are starting to create output we used to have a monopoly on, means that we are losing relevance. Does this mean that we be defensive about it and try to maintain our foothold by legislation etc.? We don't think so. We propose to actively pursue a course in which we use our strengths and resources to create the statistical outputs that will give our stakeholders a clear perspective on what is happening in the world today.

15. We need to define our strategy in two directions:

> (a) Statistical output: New and better products and services more tuned to the way the world is operating today, and created from a global perspective. This will help us to stay relevant;
>
> (b) Production methods: Different and better processes and methods tuned to delivering our products at minimal cost with greater flexibility and in cooperation between institutions. This will help us to improve efficiency and effectiveness.

A. On products

16. Statistics can be a most exciting business, showing causality where there was none expected and providing insight into the inner workings of our society. It used to be very difficult to fulfil that role, data being scarce and expensive; a survey is a costly instrument. In a society that is transforming into an information society, we can be an exciting business. Data are everywhere and are much cheaper than they used to be. Slowly people are beginning to understand the real value of this fact. For example, although they did not start out as such, social networking sites and search engines are now perceived as data collection devices. We, as impartial organizations with legislation on our side, are in a unique position to connect to the data of the emerging information society and transform them into something useful.

17. As the global dimension of events gains importance we can no longer work on a national level only and rely on international organizations

alone to consolidate. We need to expand our work and deliver products that explain what is happening on a multinational level. In some specific statistical domains, only cross border data make sense, for example globalisation, enterprise groups and climate change.

18. The raw materials, the data we use to create our products, will need to be found in the data that are already available throughout society. The opportunities these data represent will need to be transformed into concrete statistical products. The active pursuit of data and the creation of products that give insight from an impartial perspective, our unique selling point, will be our new mission. It will undoubtedly mean that our organizations will have to leave their comfort zone and will have to question the work that seems so normal at present.

B. On processes

19. The production of statistics should be based on common and standardised processes, transforming raw data into statistical products according to generic and commonly accepted information concepts. In some cases, standardisation of processes and the availability of international data sources could lead to statistical production at a multi-national level, for example perhaps price statistics could be produced in a single production process for more than one country. Similar examples could be envisaged for processes using data from aerial-surveys or remote-sensing techniques. International agreements and uptake of these principles should lead to increased harmonisation of production methods, and subsequently extend the market potential for common production means and solutions provided for by the statistical community or the commercial information and communications technology industry.

20. We view this as the industrialisation and standardisation of statistics production.

21. Each statistical organization is a factory of statistical information. Together these statistical organizations form the 'official information' industry. Like any established industry, the production of official statistical information should have its own industrial standards. On the one hand, this will provide a necessary foundation for development and exchange of the means of production among the statistics producers, and potentially create a market of commercial interest to our benefits. On the other hand, this will consolidate the use of our statistical outputs in the global information community, making them readily accessible, interpretable and comparable.

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III. The road to new statistical products

22. Key to a new understanding of our profession is the fact that the changeover to an information society will cause a profound change in our business.

23. Common wisdom states that you need to research the market for what it needs and then produce what is needed. That is not the way the automobile was born, or the "smart phone". The fact is that these artefacts were not needed at all; market research would not have revealed them as opportunities. What happened is that the presence of enabling technology and innovative thinking created a product that was at first only of any importance in the eyes of the innovators and their funders. They struggled considerably in early incarnations before the general public caught on. Once manufactured in a sufficiently mature form they became "must haves". The process of innovation at work is not only imaginative design of new products, but also relies on well tuned consciousness of enabling technologies, availability of raw materials and conceptual readiness.

24. Obviously we cannot force our organizations to create successful innovative products. We can, however, create an environment and conditions in which the innovators will thrive and task them with research in the right direction.

25. We believe that the amount of available data is one of the key factors. These data have to be actively hunted for and their possibilities researched. We need to assess whether this is a viable direction for our trade before we think about full commitment. For the coming year we propose to delve deeper into the opportunities we perceive and thus demonstrate their added value.

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IV. The road to industrialisation and standardisation

26. The strategic goal of industrialisation is a complex set of prerequisites that must be aligned and converged.

27. In industrialised activities, it is not important by whom and where parts are produced. Parts are cheap and available as variants of the same basic design. It is all about standardisation and the removal of cost from the production process. Cost is defined as human labour, materials and duplication of efforts.

28. In Figure 1, the objective of industrialisation is symbolised by the smaller blue square. In this square we have fewer but more standardised and cheaper ways of producing statistics. The big square symbolises the present statistical production universe with lots of different activities and a much larger cost. The basic aim is to converge to the industrialised part of the model, and decrease the unnecessary diversity and duplication

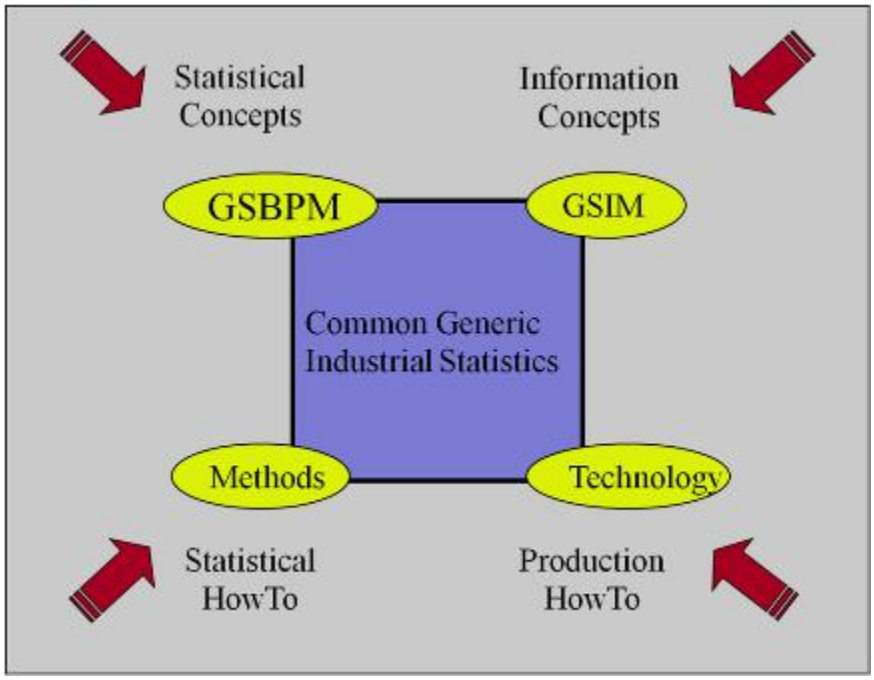
within the whole community illustrated in the outer part of the model.

29. The blue square is divided in two parts, the conceptual part being described by architectures and models including common standards, and the implementation part comprising best practise and standardised methods and the technical implementations.

30. The keyword standardisation is equally applicable with regards to methodology. Standardisation of methodology is not to impose a single solution. It implies adoption of the best, or common, solution. Any variations must be justified based on a rigorous evaluation of the alternatives, which also provides an impetus for auditing of the existing practices. Over time, therefore, standardisation will result in a methods library, from which sensible solutions can be fetched, configured and implemented according to the actual needs.

31. The new statistical process (the blue square) is to be seen as the area where the statistical production is compliant with four constraints. The Generic Statistical Business Process Model (GSBPM)[1]and the methods used for realisation and the Generic Statistical Information Model (GSIM)[2]and the technology used to expedite. The methods and the technology are a practical implementation of the models in the conceptual area and as such the set of standard solutions used to produce statistics.

Figure 1: Industrialising statistics



32. To enable statistical organizations to arrive at standardised generic industrialised production of statistics, we first need to find one another at the conceptual level. We have to bring our concepts within the blue square under the umbrella of the GSBPM and the GSIM. This is a very high ambition which will take time. A first goal for the models is to act as a common language. We are lost if we cannot communicate properly.

33. It is obvious that the current version of the GSBPM is only a starting point which needs to evolve further, the same way common industrial standards evolve. This holds even stronger for GSIM for which a first version has yet to be established. The HLG-BAS needs to actively promote development of and convergence on these conceptual standards.

34. Having united on concepts, this will allow us to start moving our diverse production systems slowly into the area where we are building our common industrialised set of methods and logistics. A common platform independent framework will be of great help in this area. Once we have achieved this we can start reducing human labour from the production equation.

35. There should be a requirement for any international collaborative initiative in this area to describe how their efforts contribute to the overall goal of industrialisation, either by enhancing the frameworks, models and standards at the conceptual level, or by enhancing methods of work or technological solutions at the implementation level. Achieving this, any accepted and agreed international collaboration would contribute to the overall, global goal of industrialising statistics production. Overlaps could be avoided, and any initiative could be appreciated, rather than being overwhelmed by scepticism.

36. The increased cost effectiveness represented by the industrialisation of statistics should be realised by dividing the whole process in four phases:

(a) Product design; we need to start designing statistical products with manufacturability as a prominent constraint;

(b) Process design; the statistical production process (manual and automated) should be designed using methods and logistics that are modular in nature and exchangeable between organizations, and as independent as possible from subject matter constraints;

(c) Production: the statistical process should be executed by machines, with as little human intervention as possible, and with short turnaround times (close to real time should be possible). Key is the minimisation of operational costs;

(d) Analysis: Statistical subject-matter specialists should use outputs and intermediate results to publish articles and do research with advanced tools and as little human intervention as possible.

37. Although production and analysis will have to be carried out by each organization, design should be done in collaboration between organizations, and enterprise architectures will need to be aligned. For this all to become reality, things will have to change.

38. The change is urgently needed. The demands of modern society are completely different from what they used to be 20 years ago and we risk becoming obsolete. Although our organizations have a reputation to uphold for producing statistics of indisputable quality, which inevitably implies a time lag. We need not impose our own planning upon the world; our figures should be ready as soon as our sources have delivered.

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V. Challenges

A. Energise innovation

39. We need to establish a culture for change. Among our most important assets are our human resources. That is where we keep our knowledge and our culture. In most organizations there is a good supply of forward thinking people. The challenge is to unlock this potential. We should encourage an entrepreneurial attitude and look for ways to change the culture in our organizations where necessary.

40. Another important asset is our official status, backed by legislation. This distinguishes us from most other statistics producers. In the past, this asset has led to big advantages in data collection. We could collect data from sources that were not accessible to other parties. This advantage is declining, however. There are already risks that our main sponsors may turn elsewhere. Our challenge is to use the combination of "informal" and "formal" data to create products that have an added value for our governments and other important parties.

41. We need to systematically exploit new data sources, and learn how to utilise them. Finding new ways to produce statistics from data already available is challenging. Potential new data sources can be found either among the growing number of formalised administrative registers, or less formalised as electronic traces of existing processes or hidden in the vast amount of information kept on the Internet. At first sight this looks as a technology issue, but it is not. New competences are needed, and various actions must be undertaken to exploit these data and enable us to rethink our products in a truly innovative way. Research programmes have to be defined and executed.

42. Innovation must be a management driven part of our core business. In order to drive our workforce outside its comfort zone and try new ways of producing statistics, ownership and responsibility for business innovation in statistics must be clearly defined and mandated. In a world that is in "fast forward" mode, we have to become more outward looking.

43. True innovation takes nothing for granted. We need to think out of the box. Looking back at previous attempts to create standardisation in the statistical system, only minor results have been achieved. Most of the attempts lost momentum by taking the existing situation and underlying statistical processes for granted. Our challenge will be to do the opposite and ask ourselves the hard questions. If we keep doing what we did, we will keep getting what we got.

44. Being part of an information network must become part of our culture. Instead of being self-contained and self-sufficient as a statistical system, we must realise that we are becoming part of a more complicated network of data providers and information producers. We need to be aware of the processes that create the data we are interested in. This means that we must take a place at the negotiations table on numerous occasions to fight for our position in the value chain of information producers. We must show our added value as professionals in statistical data processing.

B. Standardise to improve latitude

45. Standardisation is an enabler for change. The objectives of standardisation are to gain efficiency, to be able to automate processes and to prepare for added value of various kinds. Through standardisation we can re-allocate resources, change the focus from production to products and become more agile to respond to the needs of our users and societies.

46. To get product quality without a huge labour cost, process quality is needed. Our challenge is to standardise our processes and achieve better and more uniform product quality without the labour cost. We also need to learn to negotiate product quality with our customers and find economic optimums. We might even consider a number of standard quality levels for our products.

47. Protect and govern your profits. Standardisation is not a goal in itself, and can not be driven irrespectively of well defined business cases. Accordingly, when reaching the objectives, the profit from successes must be captured and re-allocated.

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VI. Conclusion and pressing forward

48. The changes we are proposing are profound and it will be a challenge to achieve them, but the world in which we used to define our role in no longer exists. For us, as statistical organizations, there is no other way forward than to adapt and to create an advantage (again). This will take a lot of time and effort, and we will have to collaborate to retain the relevance we need. But then, our world is changing and we have to change with it.

49. For a first alignment, the HLG-BAS group will convene with the leaders of all relevant groups in October/November of this year to share this vision with them, and to discuss the way forward leading up to a strategy document that focuses on implementation.

50. We, the HLG-BAS, seek your commitment to implement this vision in the coming decade and together create a statistical industry that can keep up and even be ahead of its time.

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[1] Developed by the Conference of European Statisticians Steering Group on Statistical Metadata - see www.unece.org/stats/gsbpm
[2] To be developed in cooperation between various international groups including the Statistical Network and the CORE (Common Reference Environment) project.