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HOW TO COMMUNICATE STATISTICS

Invited paper submitted by Federal Statistical Office (Destatis), Germany¹

THE INTERNET - A FIXED STAR FOR COMMUNICATING STATISTICS

1. The permanent changes in information technologies over the past nearly ten years have opened up increasingly new, different and - in most cases - better possibilities of disseminating information, in particular for institutions such as the Federal Statistical Office of Germany (Destatis), whose business it is to deal with information. The evolution goes on and there is no end in sight.
2. In the centre, the Internet! When the first ideas for Internet presence were being conceived, in Destatis's case this was in 1995, nobody could imagine the dimension of this innovation. At the beginning, the Internet was a fast transmission channel, conveniently time-controlled as requested, with transmission cost being extraordinarily low. However, the spectacular thing was that suddenly a kind of self-service shop had appeared, which was open to anyone interested, provided that a person had access to the Internet. At that time many people were still regarding the Internet as a publicity instrument, which, though equipped with huge possibilities, was just one possibility among many others. Very few people imagined that it would soon dominate and change the dissemination strategies we used to know.
3. Moreover, at that time it was, strictly speaking, no longer correct to say 'dissemination' of statistics when referring to the web; the term to employ was rather 'provision' or 'offer'.

¹ Paper prepared by Günter Kopsch, Michael Neutze, Annette Pfeiffer.

Most people still remember that in many cases the contents of that information consisted of text-based press releases and important socio-economic indicators with HTML tables and addresses for contact.

4. First successful implementations were followed by a steady extension of what was being offered on the Internet: interfaces were created even for those stocks of data that originally had not been regarded as potential candidates for an Internet solution. For the first time, e-commerce solutions made it possible to sell products via the Internet. Redesigns became necessary more and more frequently to keep the handling of a permanently growing content volume manageable, but they were equally a tribute to the extremely fast development of technology and the appearance of ever more powerful computers.

5. However, as often as not, 'going online' meant nothing more than trying one's best to adapt products and services, which had been conceived for other kinds of dissemination, to the new medium. The case of downloadable pdf files is a good example: pdf files, conceived in most cases as printed publications, were - and still are frequently - the easiest and cheapest way of getting that information on the web as an additional offer. Although most Internet users accept such practice, it is far from using the real and specific strengths of the Internet technology.

6. However, as the World Wide Web's teething troubles disappear and the required software becomes increasingly sophisticated, more and more efforts are undertaken to develop special forms of presentation and even customised Internet products and offers. Here, the key words are, for example, interactivity and online databases.

7. Thus, it is unambiguously clear that the Internet is the medium that enables our marketing strategy to move from dissemination to communication; a thesis first evolved by British national Helena Rafalowska. In the last analysis, that is true of all public relations in the statistical field, for it is not only the Internet itself that changes at high speed but, by doing so, it also influences many or even all other kinds of dissemination in a fundamental way. The Internet has become a quasi-fixed star for communicating statistics, around which everything else revolves and which indicates the direction and sets the pace.

8. This paper is intended not only to present an overview of new strategies and developments of Destatis in the Internet area, but also to describe, as examples of its 'dominance', the influence of the Internet on marketing strategies and implications for information and service activities. The most important developments and innovations on the Internet website of Destatis are also presented: the keywords are database access, visualisation, animation and interactivity on the web, but also Geographic Information System and Content Management System. This is followed by a description of the change in Destatis's marketing policy, a change brought about by the possibility of using the web to provide a large volume of statistical information free of charge. The paper describes the attempts made to introduce some sort of price-driven demand control, gearing 'simple' requests to do-it-yourself procedures on the Internet, so that the personal service sector can concentrate on value-added services such as replies to complex requests and counselling activities. This is achieved by a flat charge to be paid by customers who prefer having their requests answered by the service unit, rather than using the Internet for a comfortable search to find the answers themselves.

NEW DEVELOPMENTS AND STRATEGIES OF THE FEDERAL STATISTICAL OFFICE ON INFORMATION MADE AVAILABLE VIA THE INTERNET

Basics

9. Destatis intends to continue the practice of making series of basic data available in the form of static HTML tables. This ensures that access to the information offered via the Internet is granted even to occasional users. Such information is made available free of charge in conjunction with the Destatis's press releases and additional products placed on the web in the context of press conferences.

Database access

10. Apart from these predefined static data tables, the vast majority of the Destatis's data is in its databases. In the beginning, this was mainly a time-series database, but now it has been replaced by a cube-based design. Although these databases were not intended to be used through the web during their early days, it soon became clear that demand for database access was high and that it had to be made available to the users directly.

11. In the mid to late 90s, with the appearance of CD-ROMs and reasonably powerful personal computers, products derived from databases and offering some sort of retrieval software were developed and made available to the public. But these CD-ROM applications were difficult to maintain, did not allow for timeliness and were too cost-intensive. This, together with the ubiquity of Internet access that we can take for granted today, will slowly substitute those CD-ROM products with our online offerings.

Shortcomings in presentation

12. The visualisation of statistics is generally a very difficult job. The reason is that converting data into high-quality visual elements may quickly result in some kind of interpretation. Interpretation, however, is widely left to the discretion of users, whereas we feel responsible for the objectivity of data presentation. That being so, in the past we often tended to take a quick decision in favour of using 'simpler' graphical means for a presentation, which in most cases would be straightforward and free of flourishes.

13. Today's graphical possibilities of the Internet go far beyond those we used to know. This also relates to the field of visualisation, where new possibilities have appeared which are equally straightforward, but which offer forms of presentation that are much more expressive and commensurate with the highly developed Internet medium. There are some more sophisticated diagram types that usually require specialised applications: population pyramids and maps.

14. Fortunately, the latter diagram types make very good examples for interactivity and animation, both being a strongpoint of online media. And here is where the very recent accomplishments of Destatis have taken place.

Visualisation, animation and interactivity on the web

15. It is interesting that people often stress the weakness of online media. They complain

about the lack of screen resolution (no one wants to read longer texts on screen), that annotations can no longer be made and read everywhere. But no one ever complained that paper lacks animation and interactivity. Destatis suggests taking a look at some best practice examples that are recent additions to their website.

16. The ageing population in western societies is especially apparent in Germany where the average woman gives birth to only 1.4 children, which poses serious problems to social security schemes that were built on different assumptions. The recent population projection data of Destatis caught the public's attention and, for the first time in quite a while, population pyramids can be seen more often in daily newspapers.

17. The changing age structure over time is a time series consisting not just of one value, but of 200 - which is what makes a population pyramid, 100 single age bands for each sex. To visualise this change over time, in our case looking back 50 years as well as looking ahead 50 years, an animated population pyramid is needed.

18. Without going into technical details here - they were described in publications for the ISI conference - it should be pointed out that Destatis makes use of a technology called Scalable Vector Graphics (SVG) which is an XML based open standard for data-driven graphics on the web. SVG is extremely well suited to the presentation needs of official statistics.

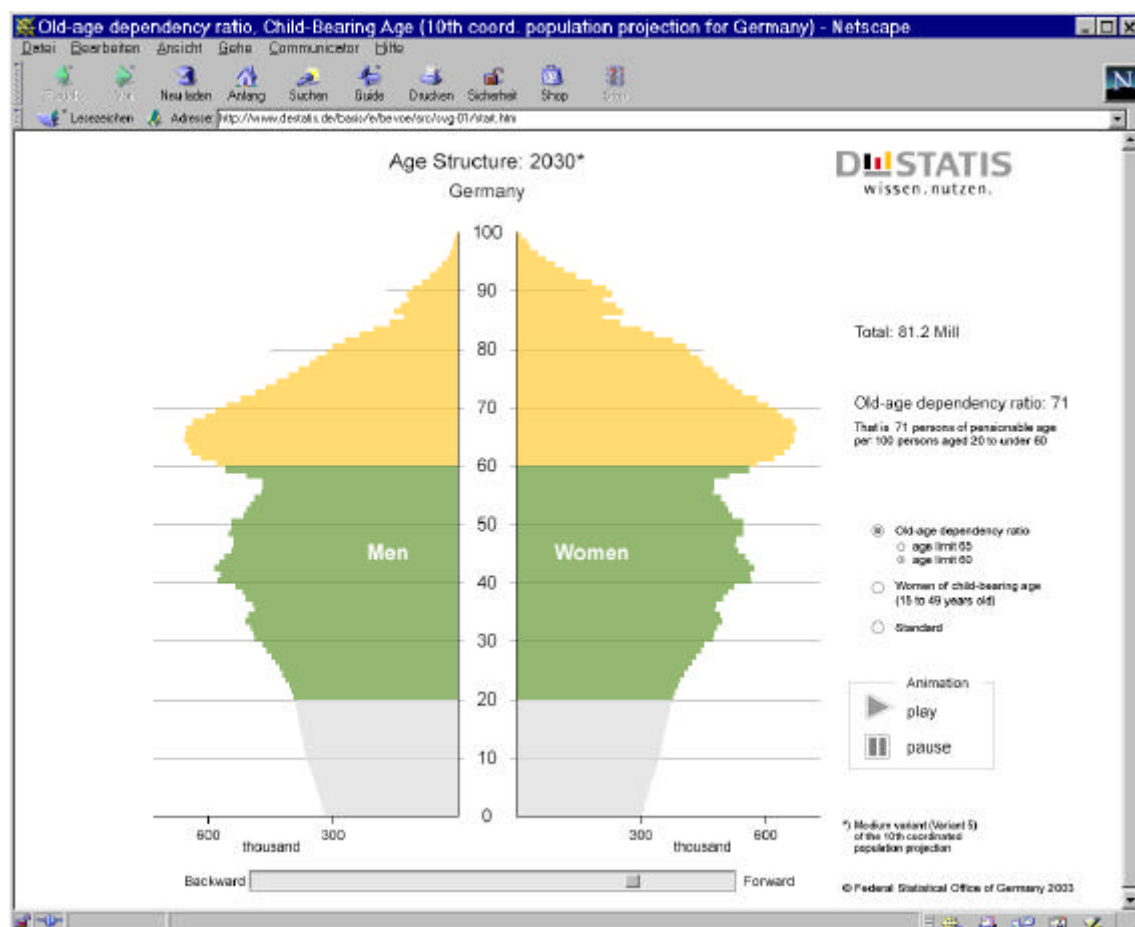
19. The animated population pyramids that can be found at www.destatis.de/basis/e/bevoe/bev_svg_var.htm are a first example of efficient presentation of data on the Internet. Here we can reveal underlying structures in the data while the user examines the data at his leisure.

Geography-related products

20. Due to the organization of Germany as a federal system, the Federal Statistical Office so far has not been dealing with regional statistics but could only act together with the regional offices of the "Länder". Despite this disadvantage, it examines geography-related products closely.

21. The need for geo-referenced data is growing rapidly and here again it is the visual appeal of Geographical Information Systems (GIS) that brought Destatis's data to life in more meaningful ways than tabulated data could ever have done.

22. Now with Internet technology still progressing and experience gained in data-driven graphics (see above), Destatis had a good starting point from which to bring GIS functionality to the web.



Animated Population Pyramids for the 10th coordinated Population Projection. The slider lets you move 50 years back in time as well as 50 years ahead; in this example old-age dependency ratios are calculated on the fly with the user being able to choose between different age limits.

23. The Federal Returning Officer who also uses the infrastructure of Destatis is currently publishing regional data in preparation for the European Election on 13 June this year. Using the same technology as in the animated population pyramids (SVG), Destatis made available an interactive map that runs in the browser and offers insight into the regional patterns of currently 16 variables. The classification can be controlled by the user as well as the zoom or colour scheme.

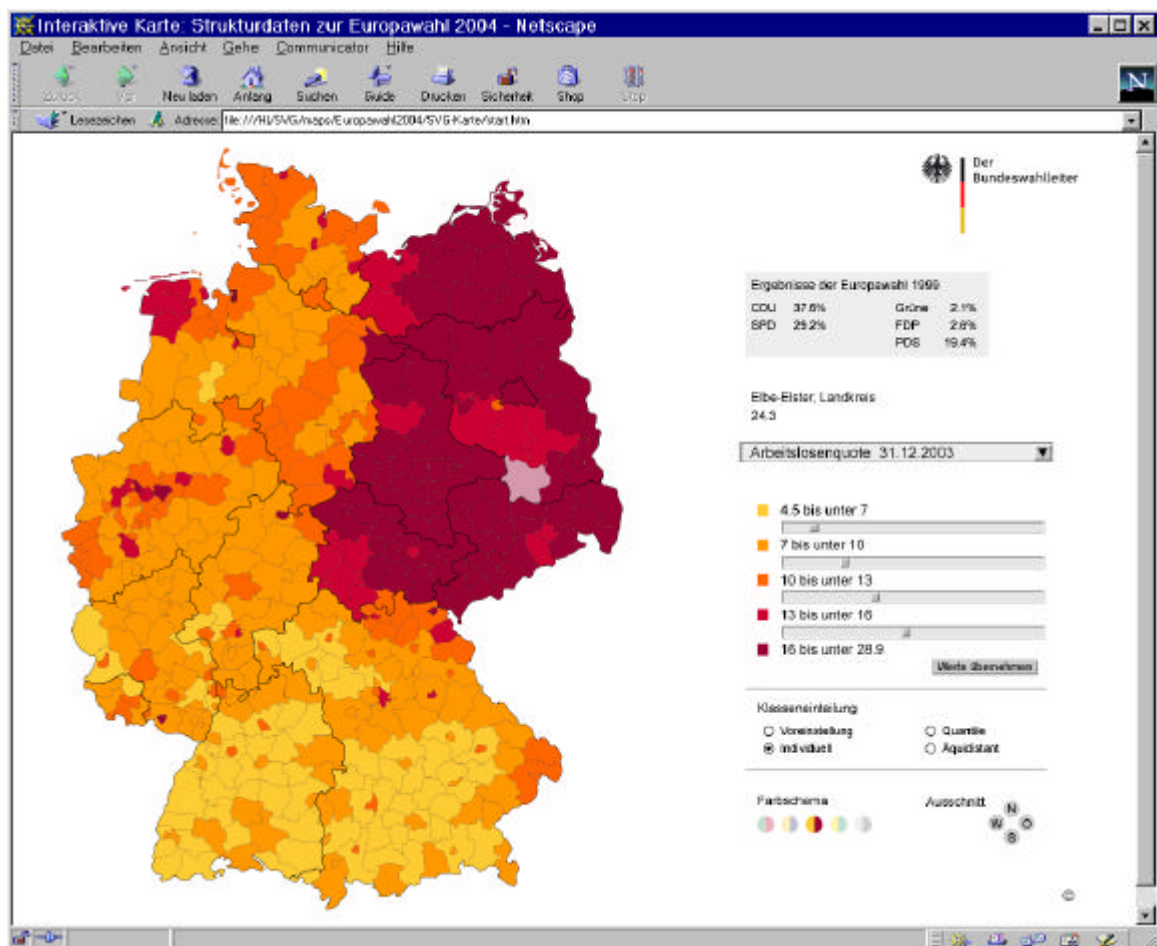
Managing Content: Content Management Systems (CMS)

24. Ever growing content makes traditional editing of websites unfeasible. Therefore Destatis currently introduces a content management system. The main goals are to allow decentralised editorship, while guaranteeing coherence at the same time. Nevertheless, since any CMS will control standards only technically via templates, Destatis's editing tasks will shift from merely keeping things up to date to deciding what and how to communicate.

Shop

25. The year 2004 marks a substantial shift for Destatis: the transfer of printed publications to online versions. This will particularly affect publications that mainly consist of tabulated data. Here, a reasonable cost-benefit ratio is expected and customer satisfaction will increase in most cases. However, we are learning from librarians that all the issues related to archiving digital content are not yet solved, which often results in customers demanding printed publications.

26. Supporting measures such as print on demand are an integral part of the dissemination strategy. Destatis recently introduced a digital in-house print shop that will be accessible to the dissemination group. Print jobs will be managed with an electronic job ticket, so that printing even a very small number of copies can be managed efficiently. It remains to be seen, though, how customers will respond to the new cost structure, as the price of on-demand print will have to cover all costs.



Interactive thematic mapping: Structural patterns made visible. In this example the unemployment rate is mapped and the underlying data can be accessed by mousover.

INFLUENCE OF THE INTERNET ON THE MARKETING POLICY

Influence on the marketing strategy

27. As the cost of providing even a large volume of information is almost negligible on the Internet, 'pure' statistics as such may be provided on this medium practically free of charge. The 'production cost' of a statistical figure does not play a role in this context, as in official statistics this cost is normally financed from public budgets. That being so, the developments in the Internet area in Germany, like in many other national statistical offices as well, have led to a paradigm change in the marketing strategy: to a large and always increasing extent, data are made available on the Internet free of charge. What actually costs money, however, is a 'processed figure', meaning a figure integrated in a value-added product or a figure requiring the staff of the office to perform an additional service 'with or round the data'.

Influence on service and performance in the information and consulting area

28. One might think that the more statistics are made available on the web, the fewer the requests of customers that reach the statistical offices. What happened at the Federal Statistical Office, as in many other statistical offices, was the reverse: since the introduction of the Internet service there has been a strong increase in the number of requests reaching Destatis's in-house information unit. Today, this number amounts to some 420,000 per year. It is very difficult to evaluate this development correctly. On the one hand, it may be assumed that many interested people were not aware of information services existing at statistical offices before they learned about it via the Internet. This interpretation can be derived from the permanent increase in the number of cases of access to the respective Internet websites, but, in particular, it can also be inferred from the large number of requests forwarded and handled via the Internet. On the other hand, many users find it difficult to get along in the very extensive and complex world of information provided on the Internet. In the long run, the more figures are made available on the web in a user-friendly way, the fewer requests information services will have to answer and the fewer people they will need for that purpose. But the more information is provided and the more customised that information is to cover the needs of specific target groups, then the more difficult it may be for a customer to search for that information.

29. What the Federal Statistical Office tries to do in the future is a kind of balancing act. In the future, everything that a customer can comfortably and easily access on the web - by using databases or ready-made tables or even downloads - will only be charged as a special flat sum to cover investigation expenditure, as soon as the customer asks the information service unit to perform such an investigation. Thus, the investigation flat rate is supposed to be a control instrument, which makes sure that many 'simple' requests for data are answered by the customers themselves via the Internet.

30. This approach is expected to open new capacities for the information service units to deal with complex requests and consulting services. This is a necessity, because no user guidance can do anything about the basic problem: websites are basically self-service areas, but Destatis's products are far from being self-explanatory. Nowadays, customers themselves extract the data they need, but in doing so, they require help on a different level: understanding definitions, trying to interpret and understand the data, finding additional sources for comparison. These inquiries require a high level of expertise and most likely will not remain

available for free in the future, whereas the sole distribution of data in all probability will increasingly become a free service.

CONCLUSION

31. The Internet has become a pivotal point in the communication between statistical offices and their customers. The Internet itself is submitted to a process of high-speed changes that were completely unimaginable a few years ago. At the same time, the Internet, with its tremendous potentials and peculiarities, dominates and defines the modern marketing strategies of countries.

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