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Topic III: Object-oriented technologies, component architecture

IT-CONCEPT OF THE NEW STATISTICAL INFORMATION SYSTEM GENESIS

Contributed paper

Submitted by the Federal Statistical Office of Germany [1]

Summary

I. INTRODUCTION

1. Statistical Information systems have been developed and operated in the Federal Statistical Office for many years. In our view a Statistical Information system may be described as a database with statistical data and metadata and tools for data-retrieval and access, which are able to analyse the data and generate new information from them and to produce printed and electronic publications. In addition there is, in many cases ability to access the database online from outside the office. The Federal Statistical Office has reported on various aspects of its "STATIS-BUND" information system at ISIS-Seminars and the ECE Working Party on EDP.

2. Although the system has worked well since its first implementation in 1976, a lot of additional facilities and applications have been developed, e.g. access via the Internet, some new challenges have arisen which we have only partly met with the old system.

3. As a result , we decided to build a totally new system. The following contribution deals with the development of that part of the new system, which is called GENESIS and the benefit we have derived from the use of client/server architecture and object-oriented technologies in that system.

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II. DEVELOPMENT OF THE STATISTICAL INFORMATION SYSTEM GENESIS

4. In this section we will give a short description of the structure and content of GENESIS and the special conditions which had to be taken into consideration during its development. Then by means of different facilities of the software we shall comment on the IT-infrastructure and the object-oriented technologies used.

III. CONCLUSIONS

5. What were the lessons learnt during the planning and development of GENESIS?
The development of a Statistical Information system is an ambitious project in itself. Additional requirements arose from the multitude of stakeholders involved and the decreasing budget and human resources. Nevertheless the use of new technologies like object-oriented tools, web-technology and client/server architecture enabled us to cope with these problems, as they facilitated a very efficient and flexible development process. The software of the new information system with its different user interfaces is both portable and scalable and therefore appropriate for the differing demands of all the Statistical Offices and applicable to experienced users and people "who need only one figure" as well. It should be mentioned however, that the qualifications of the personnel involved in the development have to be of a high order.

6. Besides speed and flexibility of development the new technologies, especially component architecture, enable new models to be developed organise the work in the decentralised statistical system in Germany. So, for example, using the detailed and advanced access and protection system of GENESIS it would be possible to install different "virtual" data warehouses for several *Länder* within GENESIS on the one server. Although the clients would remain decentralised in different locations, the costs of installing and maintaining the basic hardware and software would have to be done only once.

7. Steps have also been taken to integrate the commercial software package for evaluation, analysis and reporting implemented in the Federal Statistical Office via the client interface to enable access from the evaluation system to GENESIS data and metadata. The first version is running successfully and we will continue these developments to integrate different applications in the Office.