

CONFERENCE OF EUROPEAN STATISTICIANS

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Statistics and Geography**

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Topic (ii): New technological solutions, including those based on online data access

SERVING CUSTOMERS WITH GIS SERVICES

Submitted by Statistics Finland¹

Contributed paper

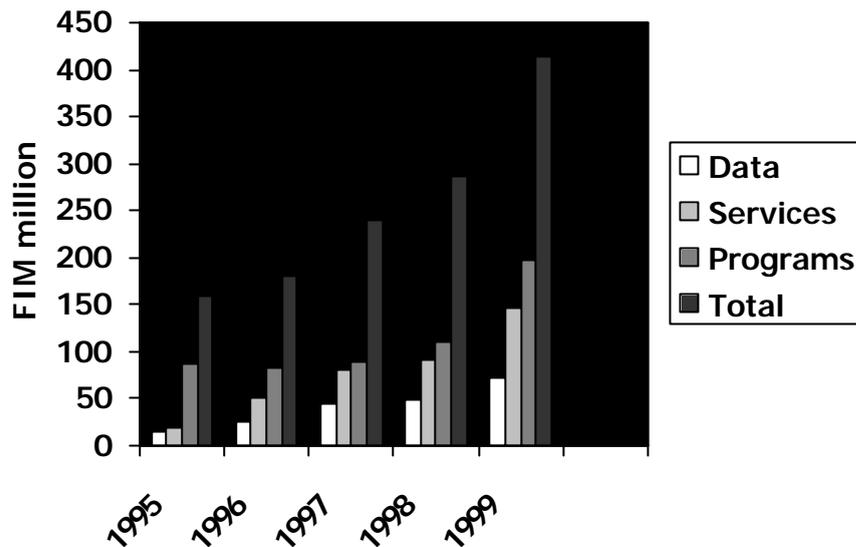
I. GIS market in Finland (an overall picture)

1. As a result of considerable technical development and growth in the use of GIS programs in the 1990s, data producers have been able to serve customers interested in GIS products and services much better than before. It has been a custom of the office of the National Land Survey in Finland to gather annually information and data from the various organisations offering chargeable GIS products and services. The inquiry has extended to both private and public companies and organisations. The results of the inquiry have been published in a GIS magazine, *Positio*, produced by ProGIS, the Finnish national GIS association belonging to the international GIS associations (GI Norden, EUROGI, etc.).

2. Investments in GIS by enterprises and organisations have grown yearly since the 1990s. In its inquiry, the National Land Survey divides the purchasing of GIS services by data, services, device services (in 1999) and programs. The volume of exports is also inquired but it is not divided into smaller units like all the other GIS services. At the beginning of the 1990s the crucial investments in GIS were programs. The share of services and data has grown considerably in the late 1990s. The total market value of all GIS services in 1999 was FIM 414 million, having been FIM 160 million in 1995.

3. Growth in the GIS market is shown in the graph below.

¹ Prepared by Sinikka Laurila.



Source: Positio, 2/2000, pages 8-9.

II. Chargeable operations at Statistics Finland

4. Statistics Finland's total revenue from operations subject to charge rose in the 1990s, from FIM 20 million to FIM 50 million by the end of the decade. In the late 1990s, the income from chargeable operations made up about a quarter of the budget-funded figure. Most of the customers are still from the public sector, but the importance of private enterprises has been growing yearly. A cost analysis of these chargeable operations indicates that the activities are on the profitable side at Statistics Finland. The trend in future is focusing on increasing the income from chargeable operations at Statistics Finland. This has led to a cultural change in the servicing of both public and private sector customers. The personnel have been trained toward a more business and service oriented approach in their interaction with customers.

III. Serving GIS customers at Statistics Finland

5. The GIS tradition at Statistics Finland is long, dating back to the early 1970s. Its basis lies in the Population Census of 1970, when building co-ordinate data were collected from municipalities for the first time. The basic registers containing building co-ordinate data were taken into use quite extensively in 1992 when the GIS project was founded. The task of the project was to combine the new, effective GIS programs, the available data and the GIS trained personnel constituting the GIS knowledge at Statistics Finland. The original GIS project concluded its work in 1995 and from the year 1996 onwards it has been a permanent project at Statistics Finland. Today, the GIS project has a personnel of ten specialists, representing cartographical, statistical and ADP expertise.

6. From the very beginning, the activities of the GIS project have perhaps been more service oriented than is the case in the conventional statistical sphere. The main services offered to customers are listed below:

- Thematic map printouts
- Digital map data collected and maintained by Statistics Finland (localities, municipal sub-areas, postal code areas)
- Statistical data comprising a spatial element (grid square data)
- Products (TeemaCD)

- Spatial analyses
- Geo-coding
- Consultation and training
- Program resales (ArcView, MapInfo)

7. The GIS customers are divided into internal and external customers. The GIS project produces services to other sections and units within Statistics Finland, too. These services mainly comprise statistical thematic maps for various publications. For example, the Statistical Yearbook of Finland contains a section of maps every year. The provision of GIS training and consulting to internal customers has also grown in importance, as many programs have a map module in them. The personnel have been systematically trained to use the map module in the Microsoft Excel program. No real money has been involved in these internal services so far, although the costs and the spent working hours are documented against each assignment.

8. The external customers are from both the public and the private sector. The public sector has traditionally been the main customer and also a collaborator in joint projects. As users of GIS technology, the public sector customers are often area planners and other planners, university researchers, etc. The size of the organisation is not crucial. The customers can be single municipalities and ministries alike.

9. The supplied service varies by organisation. The bigger the organisation the likelier it is that they purchase digital map data or statistical data comprising a spatial element. The smaller the organisation, like a single municipality, the more probable it is that, besides data, they also order thematic maps and some kind of a spatial analysis. This is because the bigger the organisation, the better equipped it is with GIS technology, and may want to do the analysing themselves. It will be interesting to see how the collaboration between various public sector data producers will develop in future, as technical development is so fast in information technology.

10. The role of the customers belonging to the private sector is growing steadily. The same phenomenon is seen with the private customers as with the public ones, i.e. big companies nowadays prefer to purchase data and not analysing services. However, it could be claimed that analysing tools must be used in the processing when major grid net data are produced over the whole country. The result of the processing is called "data". Small and medium-sized enterprises that have not purchased the necessary equipment for, or trained their personnel in GIS analyses, make the majority of the customers wanting full-scale GIS services, consisting of both data and analyses. The main areas of use of GIS technology in business are listed below:

- Sales territory management
- Targeted marketing
- Site selection for offices and stores
- Trade area analysis
- Distribution planning
- Product mix comparisons by geographic area
- Customer profiles

11. The most common analyses made by the GIS project are those concerning trade area analysis, site selection for offices and stores and drawing of customer profiles. A customer profile is produced in the following sequence of steps. The enterprise delivers to Statistics Finland its customer register, which is then updated with demographic data from base registers. The analyses produce tables, graphics and maps. Data protection is very stringent in these analyses. Personal identity numbers are never used when combining customer data with base register data. The identification is done using a person's name and address, which are public information in Finland.

IV. Setting prices on chargeable services

12. There are several laws defining the setting of prices at Statistics Finland. The principal laws are listed below:

1. Act on the Charge Criteria of the State

– defines which services are chargeable and which can be produced free of charge

2. Decree on the Charge Criteria of the State

– specifies how the cost price value should be calculated

3. Decision of the Ministry of Finance Concerning the Charge Criteria of the Performances of Statistics Finland

– defines the chargeable services

4. Statistics Act

– defines the chargeable interaction between the suppliers of data and Statistics Finland

5. Act on Restrictive Business Practices

– defines the pricing principles of services that compete with “similar services on the market”

13. The prices of the services and products are calculated in principle so that the costs of producing them are covered. The price of a customer service is determined by the amount of working hours spent on producing it. The service can be a consultation, spatial analysis or spatial data processing (e.g. producing grid square data). The services typically demand a lot of personnel’s working hours and expertise.

14. In respect of products, the prices are set. The estimated revenue and the copies sold determine the price of a product. A product can be a statistical map of regions, a CD-ROM or a database, etc. It is characteristic of these products to be “ready-made” and quickly obtainable by the customers.

15. The prices of digital data and products are also influenced by the number of potential users the customer has. Prices for multiple users are set by licence agreements and the user licence prices are added to the basic prices.

16. The technical development in information technology and, especially, in the dissemination media presents new challenges to the production and distribution of statistical information, and to their pricing. The media where the customers may want the information in future may be their personal communicators or an application on the Internet. The GIS project conducted a customer survey in the early spring of this year. Surprisingly, the professional GIS customers were not very interested in possible services offered via the Internet. The stated reason was lack of sufficient information about the products that were available via the Internet. This is a challenge to us data and service producers when we are designing applications for supplying products and services via the Internet. In addition to the actual data, these Internet applications should also include sufficient metadata descriptions, data quality reports and perhaps also examples of how to use the data.

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