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Modern Services
- Possibilities and Limits of Coverage -

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I Introductory remarks

Because so far there are only few direct and quantitative indications of the structural changes occurring especially in the field of modern and production-oriented services, the Federal Statistical Office conducted two different pilot studies in July 1988 whose background, conception and results are described briefly in the following.

1. The economy undergoing structural change

It is assumed in various quarters that there is in highly industrialized societies and economic systems a growing trend towards a service society. At the same time it is presumed that this sector with its great potential for growth and employment is increasingly becoming the driving force of economic development.

There are various theories substantiating these theses. One of the oldest is probably that of Fourastié on the development of the agrarian society into a post-industrial service society. The main influencing factors mentioned with other theoretical and empirical approaches are

- the technological progress,
- the structural changes in industry,
- the pluralization of the population's life-styles.

The technological progress, especially the rapid development of microelectronics summed up in the catchword "computerization of economy and society" has made its way into all spheres of economic and social life. This is considered one of the fundamental prerequisites to structural change which manifests itself in modified production, communication and information processes.

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These structural changes should even have been accelerated by the altered framework conditions of the world economy in the 1970s. There are many indications that enterprises began to entrust third parties with the furnishing of internal services which until then they had performed themselves. The reasons given are endeavours to retain competitiveness, the rising cost pressure and the avoidance of numerous regulations. Furthermore, it seems that efficiency considerations and an increasing complexity of economic interrelations made it necessary to pay more attention to intangible input factors. There are, for instance, research and development, the qualification of staff, problem-oriented information and communication techniques as well as appropriate management and consulting, which admitted of suitable internal solutions only within very narrow bounds.

Factors of the consumer side are mentioned besides these primarily production-oriented ones. Thus it is pointed out that for instance changing preferences, an increasing individualization of demand in connection with relatively high incomes, more leisure time due to new and more flexible forms of employment and the trend towards a reduction of working hours have changed the expenditure pattern of households, gradually increasing the share of services. It is argued that especially the rising standard of living and more leisure time have created new desires which resulted in a shift of household demand from industrial goods to so-called human services above all in the fields of education, culture, health and social services.

In order to be able to discuss such theses not only in the form of abstract theories but also to analyse them empirically, science requires relevant statistical results.

2. The supply of data on services in official statistics

While a well-developed and harmonized system of statistics has existed for the goods-producing sector in official federal statistics for a long time already, there is no comprehensive statistical information on the service sector as a whole. Probably like many other countries, we have had for a long period of time already more or less well-developed (partial) reporting systems for the traditional fields, especially the distributive services such as commerce, transport and communications. Some statistical data are available also for selected spheres of the so-called

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liberal professions, though only at larger intervals. Different approaches aiming at a moderate further development and improvement of the existing statistical programme have been adopted in order to close the most important gaps in the data material.

So far, however, there has no statistical information been available on the kind, scope and focal points of the production industries' shift towards the tertiary sector providing precise and detailed indications of the significance that services actually have for the overall economic development. For this reason, the following remarks will concentrate on this field and shed light especially upon two approaches for new surveys in the statistics of the Federal Republic of Germany aiming at an improved representation of so-called "modern services".

II. Modern services

1. Conception and manifestations

Only services used mainly by enterprises as inputs for the purposes of their own production are referred to here as "modern" services. These services can either be performed by the enterprises themselves or obtained from third parties (boxes I and III of Chart 1). Such services include for instance engineering, research and development, advertising, marketing, distribution, transport and sales financing.

If the fact is disregarded that these services are also obtained by private households, though not on a large scale, the part private households play on the market is primarily that of demanders of services either relating to a commodity, such as in the case of repairs, service or installation activities (box II) or of services referring directly to persons. The latter will be called society-oriented services (box IV). Of special significance are so-called human services in the fields of education, culture, health and social services. In the Federal Republic of Germany, the state often plays the part of an important supplier of such services; this fact is not reflected in the Chart.

The following remarks focus exclusively on the modern enterprise-oriented services mentioned first, i.e. services which are either performed by the enterprise itself as inputs for the production of commodities or are furnished by service enterprises for other enterprises.

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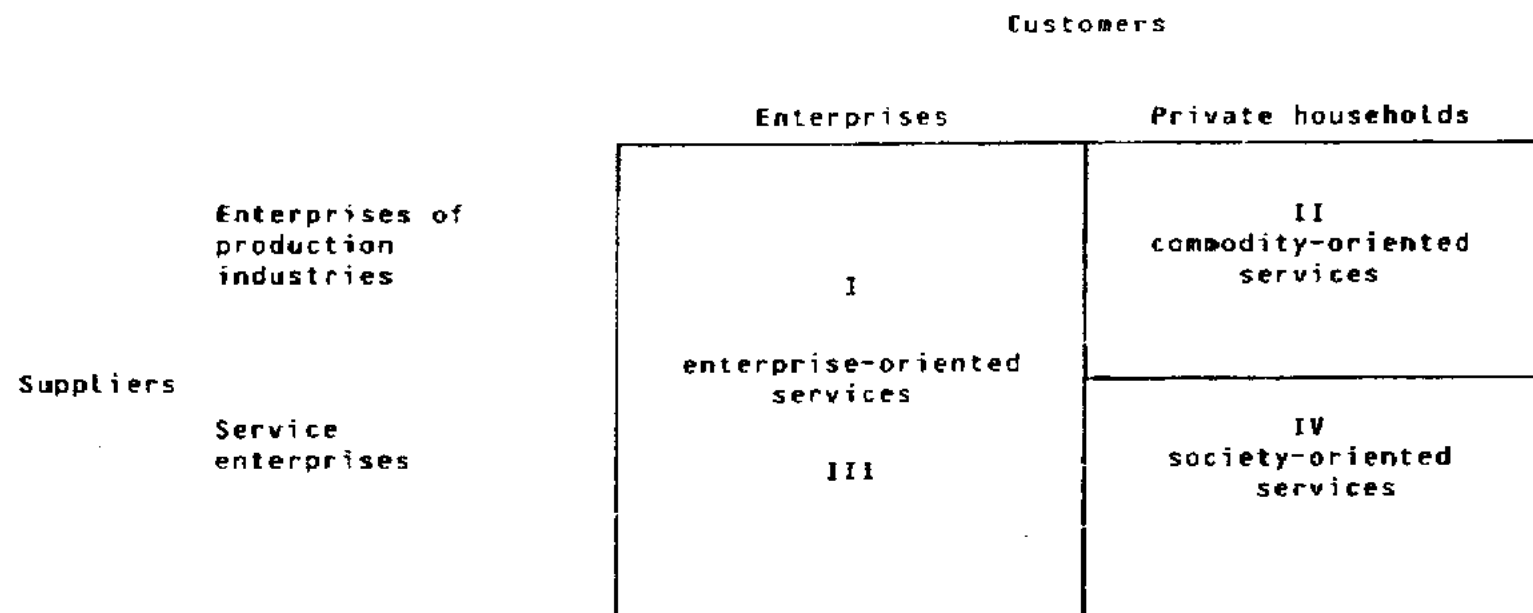


Chart 1: Types of services

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2. General problems of coverage

These modern services also have a feature which basically is common to all services and fundamentally distinguishes the service sector from goods-producing industries, namely the differing degree of materialization (see Chart 2). However, there also exists a wide "grey area" in which it is difficult to differentiate between "commodity" and "service". This applies above all if services are connected with a "carrier". Thus they are often linked with tangible goods (as for instance in the field of EDP). This involves various problems which render an unambiguous statistical coverage and classification rather difficult, e.g.

- the low degree of standardization,
- the trend towards complex packages,
- the fact that they are tradable only within certain limits,
- the limited shelf life.

Despite these difficulties it is necessary to contrive ways and means to statistically define and cover services as unambiguously and clearly as possible since their importance is increasing steadily.

3. Testing the possibilities of coverage in the Federal Republic of Germany

3.1 Conception of the pilot sample surveys

In 1988, the Federal Statistical Office in agreement with the Federal Ministry of Economics carried out two different pilot sample surveys on a voluntary basis. Both surveys were intended to provide information primarily on the survey branches, instruments and methods with reference to modern services.

The methodological conception and the groups of reporting enterprises of the two pilot sample surveys were designed and chosen so as to permit an examination of the phenomena to be observed from different points of view. (An outline is provided by Schedule 1.)

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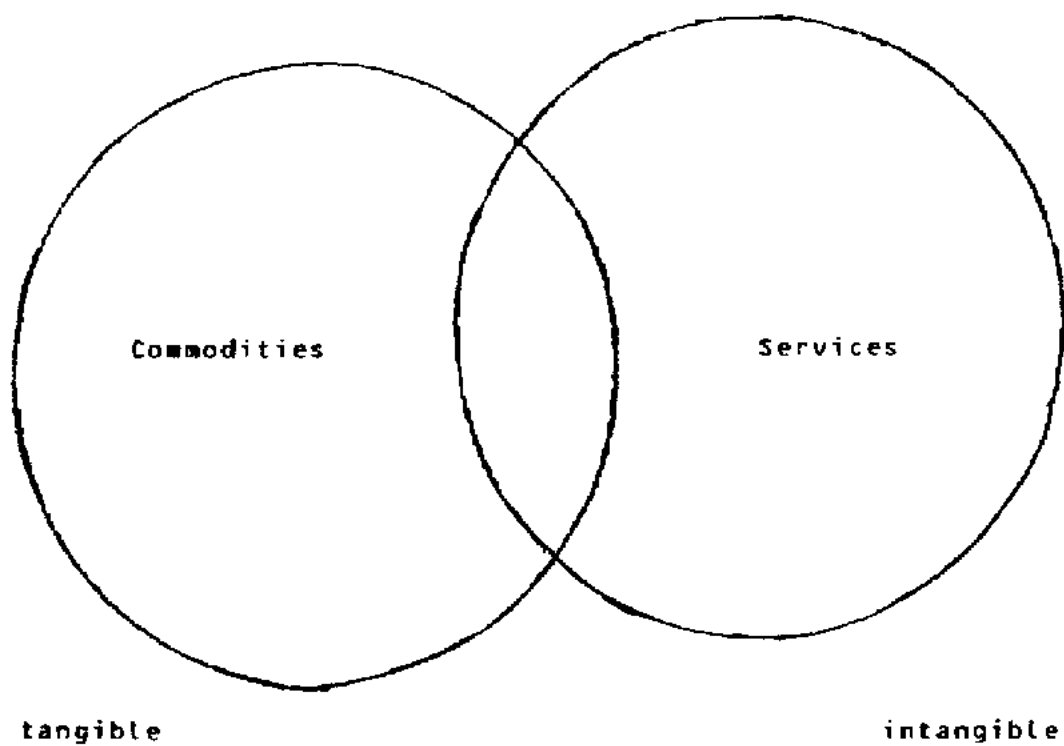


Chart 2: Relationships between commodities and services

Schedule 1: Pilot sample surveys on enterprise-related services

	Pilot sample survey in production industries A	Pilot sample survey in the service sector B
Objectives	Collection of information especially on the volume and the structure of services in production industries	Testing of the survey instruments and methods at enterprises which primarily offer "modern" services
Respondents	Enterprises and local units of production industries (excl. the fields of electricity, gas and water supply, distant heating as well as the building industry)	Enterprises and local units of the service sector
Types of services	Data processing Research and development Technical planning, consulting, etc. Letting and renting (incl. leasing) Maintenance work, inspection Documentation Training of customers' personnel Design of utility goods (excl. technical products) Advertising Waste disposal Stockkeeping Transport Purchasing Sale, distribution Training of own personnel General administration (not elsewhere covered) Other services Services which cannot be classified unambiguously	Data processing Research and development Technical planning and consulting Letting of movables, incl. leasing Tax consulting Advertising Business and management consulting Other services
Utilization	for own purposes: for third parties - use of services incl. to other - sources of supply incl. local units from associated companies	for third parties
Volume/value of the services	Turnover/estimated percentages of turnover	Turnover/percentages of turnover
Specific characteristics of enterprises	Branch of economic activity Single-unit or multi-unit enterprise Number of employees	Branch of economic activity Single-unit or multi-unit enterprise Number of employees and structure of employment Year of foundation

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While the enquiry conducted at enterprises and local units of production industries (pilot sample survey A) centred on the significance of the service activities, pilot sample survey B was to clarify above all the methodological and technical aspects of a survey covering enterprises which primarily offer modern services. Furthermore, this pilot sample survey could supply first benchmark data above all on the structure of enterprises and the scope of the services offered by the service enterprises covered.

According to these objectives, which in pilot sample survey A necessitated a much more detailed classification of the types of services covered (19 altogether, against 8 in pilot sample survey B), the enquiry of pilot sample survey A was additionally subdivided into two parts, namely services for own purposes and services for third parties. In both parts of the survey information was collected among others also on

- the modalities of accounting,
i.e. whether the services employed or offered were accounted for at all, and if so, whether they were included in the price charged for the goods delivered or whether a specific price was charged/quoted on the invoice, and
- the internal interrelations with respect to demand and supply of the services covered (especially in the case of multi-unit enterprises).

In pilot sample survey B, the main economic activity and the economic performance of the enterprise in these fields were of special interest, apart from data on its "demography" (date of foundation) and structure (e.g. number of employees and employment structure).

3.2 Results

To sum up, the following can be said on the results¹⁾: While in pilot sample survey A a group of reporting enterprises could be addressed

1) For details see also Mai, H.: "Dienstleistungen im Produzierenden Gewerbe - Testerhebung, Konzeption und Ergebnisse", in Wirtschaft und Statistik (WiSta) 2/1989, p. 57 ff.; Gnos, R.: "Dienstleistungsteststichprobe, Eine Erhebung über moderne unternehmensorientierte Dienstleistungen", in WiSta 11/1989, p. 691 ff.

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which was already familiar with official statistics, a suitable sampling frame had first to be created for pilot sample survey B on the basis of secondary statistics.

In short, the enquiries produced the following results:

a) Enquiry at enterprises of production industries (pilot sample survey A)

- About 44 % of the 5 324 enterprises participating in the survey performed services for third parties. A more detailed analysis by size classes of persons engaged, multi-unit enterprises and economic classes provided considerably higher percentages (74 % for enterprises with 1 000 employees and over, and 73 % for the multi-unit enterprises in mechanical engineering, respectively).
- S e r v i c e s f o r o w n p u r p o s e s often are furnished by the enterprise itself even if there is a special market for this service (e.g. in the fields of data processing, technical planning and consulting or advertising).
- The demand for certain enterprise-oriented services varies according to the branch of economic activity, such services being sought after on the market more frequently and regularly by smaller and middle-sized enterprises.
- As far as s e r v i c e s f o r t h i r d p a r t i e s are concerned, the size of the enterprise and the branch of economic activity it belongs to constitute major influencing factors. Among the services offered, those services prevail which are very closely connected with the production of goods. However, as they are often not accounted for or shown separately, information on the production value created in the form of the services supplied can be obtained only by means of enterprises' estimates.

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b) Enquiry at service enterprises
(pilot sample survey B)

- In terms of persons employed, single-unit enterprises with a relatively small number of employees prevail among the enterprises primarily offering modern enterprise-oriented services. A relatively small number of enterprises with 20 employees and over account for half of the total turnover/total persons engaged. In some fields such as "Letting of movables incl. leasing" or "Data processing", the share of multi-unit enterprises is however considerably larger.
- As regards the formation of new enterprises during the last decade, "Research and development" as well as "Data processing" are among the fields expanding most rapidly.
- Considering the total number of enterprises, the percentages for the service sectors "Tax consulting" and "Technical planning and consulting" are approximately equal and together account for almost three fourths.
- In terms of turnover, "Technical planning and consulting" is leading with a share of 21.9 %, followed by "Advertising" (21 %) and "Data processing" (20.6 %).

III. Conclusions

1. On the whole, these pilot sample surveys have shown that enterprise-oriented services are an important economic aggregate. At the same time it was however proved that there is a high degree of heterogeneity both on the supply and on the demand side. Furthermore, it became clear that enterprises of production industries have become major suppliers of services. As the services offered in this field are mainly production-oriented, it may be assumed that there rather is a shift of the main economic activity from the production of goods to the provision of services than an increase in ancillary activities.

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2. In order to cover economic activities in future in a most realistic way, it seems not only necessary to extend and harmonize existing parts of statistical information systems, but also to follow new paths in view of the future developments in the overall economy. This is also true of the analysis of enterprise-related services. As the service sector is far more heterogeneous as regards supply and demand than production industries and since there is a high fluctuation with respect to enterprises in the numerous "young" spheres, we should not conform here to the practice mostly followed so far. This means that a comprehensive overview can presumably be obtained only if apart from economic units concentrating on the service sector, also those enterprises are covered which belong to the other economic sectors, especially production industries.