

VOORBURG GROUP ON SERVICES STATISTICS

22nd Meeting

SEOUL, SOUTH KOREA, 10-14 September 2007

Session on IT Industries

Mini-presentation on turnover/output in France

**Benjamin Camus, Denis Gac, Patrick Salvatori
INSEE, France**

Comprises ISIC Sector 62, IT and Computer Services: Computer Programming Activities (6201), Information Technology Consultancy and Computer Facilities Management Services (6202), and Other Information Technology Service Activities (6209).

1) Definition of service being collected

. Development of business classifications systems

In France, as in all European countries, statistical observations are still made according to a specific national classification system (the classification of French activities is called NAF Rev. 1, and is derived from the European classification system NACE Rev. 1, which in turn is derived from ISIC Rev. 3). This national classification system does not entirely correspond with ISIC Rev. 4, giving rise to difficulties presenting the whole of the data in the 'IT and Computer Services' field (division 62 of ISIC Rev. 4).

For framework data, information will be provided for a slightly wider field, division 72 of ISIC Rev. 3 ('Computer and related activities'); in practice, the new division 62 represents nearly two thirds of the old division 72 with respect to turnover in sectors in France.

For notes on methods, we will refer to NACE Rev. 2 rubrics, in line with ISIC Rev. 4, or in a more detailed way to CPA 2008 rubrics ('Classification of Products by Activity', still in the draft stage). In fact, the categories used for observing turnover, as well as prices, voluntarily anticipate, as far as possible, the new classification system, NACE Rev. 2 (which will be implemented in 2008 for the observation of turnover, in 2009 for the observation of prices, and in 2011 for national accounts).

. Services are often comprehensive

The IT service activities covered in division 62 of ISIC Rev. 4 are precisely defined, in particular by the explanatory notes of the official classifications. We are dealing with clearly defined service provisions. As indicated in the paper by Denis Gac, three types of service can be identified: consultancy, engineering, and maintenance (cf. [1]). The difficulty is that services are often combined and mix, for example, consultancy and engineering; in this case, businesses can declare as consultancy what belongs to engineering and vice-versa. The tendency is for companies to be comprehensive, offering a large range of services from consultancy to engineering and sometimes maintenance. The classification of products can therefore give the illusion of detail, whilst businesses can effectively only provide information on more aggregated categories. This is the main problem faced in measuring IT services. It is necessary to adopt a robust level of classification in relation to these collection difficulties.

2) Unit of measure to be collected.

Services are invoiced in Euros, which therefore constitutes the unit of measure. We will in fact be collecting accounting turnover, bringing together a certain type of services. We will be looking at sales of services - commission and re-invoicing being very marginal for this activity. As for the main provision of services, we will then calculate the volume of output by deflation by an appropriate price index.

3) Market conditions and constraints

. A market that is growing strongly

In France, the IT services field of activity in the wide sense (i.e. division 72 of ISIC Rev. 3) is a dynamic activity with strong growth: in 2006, out of all market services, it was the activity that expanded most in volume: up 6.2 %, following a rise of 5.2 % in 2005, and a rise of 6.4 % in 2004; indeed, this activity has shown a strong upturn since 2004, following a slight slow-down in 2002-2003, after a phase of rapid development at the end of the 1990s. The output value for IT services as a whole (division 72) rose to €64 billion in 2006 (of which €15 billion in 'hardware consultancy' 72.1). In the medium term, these activities develop very rapidly, like other professional services (accounting or legal services). In recent years, it has been software, applications outsourcing, and consultancy in technologies and in outsourced R&D, sustained by the boom in embedded computing, which have been the motors of growth. The most dynamic client sectors have been banks and insurance companies, public bodies, telecommunications, and commerce (cf. [2], [3]).

. A heterogeneous sector of activity

In France, the IT services sector in the wider sense (i.e. all businesses whose main activity falls within division 72) comprises 44,000 businesses employing a total of 368,000 people and generating turnover of around €50 billion and a value added of more than €27 billion (framework figures taken from the 2005 structural survey, cf. table 1 in the appendix).

It is a fairly widely dispersed sector with a lot of small and medium-sized entities (88% of businesses have less than 10 employees, but achieve 17% of total turnover), but also large entities: the 10 biggest create 30% of turnover in the sector. IT systems consultancy firms (group 72.1) predominate, representing 38% of value added and 39% of people employed [4]. Amongst the main players are the major computer manufacturers (like IBM Global Services or HP), consultancy firms (like Accenture or Altran), and numerous computer engineering services companies (like Cap Gemini, Sopra, Unilog, etc.).

Apart from the variable size of businesses, it also appears that the sector brings together entities that are not all equally competitive. A priori, we are seeking to observe external services on the competitive market. The French context is that currently very different businesses are classed together in this activity. Entities that operate on the competitive market are grouped together with **captive entities** which only insure management assistance for a group or chain of shops (par exemple, IT support companies of mass distribution groups like Casino or Carrefour). These captive entities now represent nearly a quarter of turnover for the sector and this proportion is growing steadily (a rise of 6 points in 3 years). These latter entities are currently excluded from the collection of prices in so far as prices observed might not be market prices but rather transfer prices. This decision to exclude remains debateable: couldn't these prices also be observed? We would point out that the monitoring of industrial prices for purchases, recently instigated in France, following a European request, does not exclude intra-company exchanges.

. A sector with strong professional representation

This profession is characterised by strong professional organisation: the trade association 'Syntec-Informatique', which is the representative body for the sector (cf. [5]). This trade organisation claims 650 members, representing 200,000 employees and 85% of turnover and of workforces of companies with more than 10 employees in sector 72. In particular, in 2003 this organisation drew up a code of ethics to specify the content of services. It has become an important contributor, as much for the setting up and the validation of price indices, as for the defining of classifications for collecting output. It was through regular meetings with the organisation that in 2005 the significance of captive entities became clear and also that it became possible to validate the relevance of collection classifications and changes in prices.

4) Standard classification structure and product detail/levels

The official French classification of products is identical to the European classification, CPA (Classification of Products by Activity), which fits strictly into the international UN classification, CPC. For IT services in the wider sense, i.e. the current division 72, we find 22 CPA categories.

In practice, the collection of the breakdown of turnover is carried out according to a much more detailed classification (43 categories) and using terminology adapted to the corresponding businesses. The devising of this collection classification has been carried out over the last few years in close collaboration with the trade organisation 'Syntec-Informatique', which had reported that the official classification of products for its activity was obsolete. The official classification favoured an approach based on products (software, IT systems, data management, etc.) whilst professionals invoice according to an activity-based approach (consultancy, engineering, systems integration, outsourcing, etc.). It was therefore necessary to find a classification that combined the two approaches.

5) Evaluation of standard vs. definition and market conditions

The adaptation of the detailed collection classification was carried out in accordance with the development of businesses and markets; we therefore consider that the observation of turnover and therefore output takes into account market conditions.

6) National accounts concepts and measurement issues for the area related to GDP measurement

. Conceptual problems

The measures of output and prices do not pose a big conceptual problem in the preparing of national accounts. The only real recurring problem for this activity is verifying the sorting by main activity of businesses to establish the correct level of sales. The dynamism of the sector and proximity to related activities (consultancy, support within a business group, etc.) mean that the list of entities participating in the field has to be carefully checked every year.

. Current methodology for assessing output

Determining output at a detailed level in national accounts is carried out by drawing up a Balance between Resources and Uses.

For the final version of accounts (available N + 3 for year N), this balance is based essentially on the results of the structural survey, the annual survey of businesses in the service sector; these results are added to by fiscal sources to assess total output; the value of sales and therefore output are thus measured for this field of activity; in 2006, this was €64 billion for all IT services (division 72). Data on imports and exports come from balance of payments data. Uses are mostly intermediate consumption, but also intangible investment (IT systems engineering). The balance having been established in value, we move on to volumes for each category by deflating by price indices. For anticipated versions of accounts, (semi-definitive or provisional) (available N+2 and N+1 for year N), we apply to the preceding balance an index of evolution taken from the processing of monthly tax declarations of turnover, i.e. a government source by sector available at the 4-digit level of the classification of activities (NACE Rev. 1).

The balances between resources and uses are carried out at the 3-digit level of the classification of activities; so for IT services, we regularly prepare the 5 following balances:

NAF Rev. 1	Balance resources / uses	TURNOVER sector 2002 as %
72.1 Hardware consultancy services	1	29.5
72.2A Software Publishing services	2	11.8
72. 2C Software consultancy and supply services		21.1
72.3 Data Processing services	3	18.1
72.4 Database services	4	2.0
725 Maintenance and repair of office, accounting and computing machinery	5	17.3
726Z Other computer related activities		0.2
TOTAL		100.0

The price indices for services are used as output deflators for sectors alongside calculations and availability of indices. These indices are not really used except when one has enough historical background and when they have been validated by professional organisations. The paper by Denis Gac can be referred to for a presentation of the 6 indices given as A, B, C, D, E and F (cf. [1]).

Mode of current deflation: output
in 2002

Output of 72.1Z €12.6 billion deflated by index A
Output of 72.2A + 72.2Z €15.0 billion deflated by index A (soon A + B)

Output of 72.3Z	€7.5 billion deflated by index D (soon C + D)
Output of 72.4Z	€1.0 billion deflated by index E
Output of 72.5Z	€6.8 billion deflated by index F

. **A recent improvement in the measure of output volume**

The recent switch to using price indices based on recorded output instead of approximated indices, which were often no more than a cost index, has significantly changed the volume/price share and therefore the possible analyses of the development of productivity. So for all IT activities (division 72) over the period 2002-2004, productivity would have gone down by 0.5% a year with a calculation of volume based on an index of wage costs; it goes up by 4% a year if we retain the price index based on output of services collected from 2002 (cf. [6]).

We may therefore consider that we had previously underestimated the output of this branch of services. If that is interpreted as a measurement error, we would have underestimated by about 0.1 point of GDP the growth for the years 2003 and 2004 taking into account the share of investment in jobs in IT services (mainly in software). Furthermore, this revision of the volume output of services has an impact on other branches of activity that are more difficult to assess; we nevertheless consider that the impact on productivity for the whole of the economy would be slight.

7) Turnover/output data method(s) and criteria for choosing various output methods.

Activity is recorded in fine detail by the **annual survey of businesses in the service sector**. This is a survey based on sampling: in 2005, 5200 entities were surveyed with sampling rates varying from 40 for businesses without any employees to 1 for the complete stratum of those with more than 30 employees.

One of the fundamental parts of the questionnaire relates to the measure of output based on a breakdown of annual accounting turnover. So for the 2007/2006 survey (carried out in 2007 for the financial year 2006), the questionnaire specific to IT activities includes three pages with 62 categories of services grouped in a format with headings designed to match a business point of view: consultancy, engineering, outsourcing, etc. (cf. table 2 in the appendix):

. IT activities

- Consultancy (2 categories)
- Engineering (6 categories)
- Creation of standard software (8 categories)
- Outsourcing (5 categories)
- Data processing (3 categories)
- Services in on-line publishing, development of databanks, and web portals (17 categories)
- Maintenance and repair of computer hardware (2 categories)
- . Activities connected to IT activities (10 categories)
- . Commercial activities (6 categories)
- . Other activities (3 categories)

Finally, the questionnaire for the annual survey of businesses in the service sector also includes an analytical framework for clientele, which asks for a breakdown of turnover according to the type of clients (businesses in the same group of companies, other businesses, public bodies, individuals). In particular, this allows captive entities to be identified.

Surveys therefore seem a detailed enough instrument for the breakdown of turnover into 60 or so categories. But in practice, companies responding only fill in part of the categories: of the 43 categories relating to IT services, only 26 are filled in with significant amounts, of which 17 with an amount over €1 billion (cf. table 2 in the appendix). Businesses only fill in the few detailed categories that correspond exactly to their activities: the mean number of categories filled in is 2.8; the median is 2; the third quartile is 4; 90 % of entities declare information for less than 7 categories, and the maximum is 16.

It is important to note that the very detailed nature of the current collection classification system can be explained in a transitory way by the change in classification of activities: for the pivot year, 2006, a detailed questionnaire is intended to allow the results to be processed with either the old or the new classification.

In 2005, invoicing was concentrated on consultancy-engineering (about 29 billion for services belonging to 6202, of which 2.9 in outsourcing), then on technical support (about 3.4 billion for activities belonging to 6201), and marginally on activities linked to 6209 (€0.1 billion). This strong concentration of turnover remains to be confirmed with the 2007/2006 survey currently in progress.

For short-term developments, tax declarations of turnover are used; these provide monthly developments for the five components of the sector, i.e. for all businesses whose activity is mainly 72. We note that the sector-branch transition is very diagonal: more than 75% of sales in the branch of activity 72 are carried out by sector 72; more than 85% of sales in the sector correspond to this activity. This justifies the recourse to one item of data per sector to measure the development of the branch.

8) Evaluation of comparability of turnover/output data

For national accounts, it is sufficient to obtain an assessment of output and a price index for the 5 components of IT services (division 72) in order to establish the 5 balances between resources and uses at a detailed level (only 3 balances for activities belonging to division 62).

In fact data are collected on a more detailed level: 43 categories for output and 9 categories for price indices.

In the future, there will have to be a balance between resources and uses for the whole of division 62 and possibly 3 balances between resources and uses corresponding to 6201, 6202 and 6209, if these activities are discernable and of sufficient economic importance; it would therefore be interesting to have price indices

at this level. For output, we have seen that we could certainly simplify the classification for collection for the annual survey.

9) Summary

IT services in the wider sense (division 72) and in the restricted sense (division 62) are activities that are undergoing significant growth and are difficult for public statistics agencies to monitor. They give rise to numerous problems: the comprehensive nature of services, rapid obsolescence of collection classifications, growth in international subcontracting, large numbers of specialist captive subsidiaries of groups of companies, etc.

The French public statistical system has therefore been trying to set out its survey instruments on a permanent basis in accordance with this evolution, especially by working in close collaboration with professional bodies in the sector. This has been done extensively for the classifications used in surveys.

Some questions remain open for future development:

- . how should captive entities be treated?
- . how can we take account of international subcontracting?
- . how can we ensure more sensitive breakdown of comprehensive services?

It would be interesting to know how other countries deal with these points.

Finally, we should highlight the significant progress that has already been made up to this point. The recent establishing of price indices for these activities and their use in drawing up national accounts has renewed the economic analysis of these fast-growing services: the slow-down in growth in the years 2003-2004 was accompanied by lower prices, more pronounced in some services than others; the recourse to true price indices leads to an upward revision of productivity growth.

10) Bibliography

[1] 'SPPI for IT Industries in France', Denis Gac, Insee, VG 2007

[2] 'Les services informatiques' Etude XERFI, 2007

[3] 'Les services en France', Edition 2006, Insee-Références

[4] 'Les services marchands en 2006 : rapport sur les comptes' Working document Insee E2007/06 of June 2007.

[5] www.syntec-informatique.fr

[6] 'Croissance de la productivité dans les services : le rôle de la mesure des prix' Working document Insee E2007/03 of February 2007 available on the Insee website.

APPENDIX

TABLE 1: IT SERVICES IN 2005

SECTORS (NAF Rev.1)	Number of businesses	Number of people employed	Turnover in millions of €
- 72.1 - Hardware consultancy	15,987	149,465	20,812
- 72.2A - Publishing of software	4,358	44,561	6,707
- 72.2C - Other software consultancy and supply	14,882	87,474	10,860
- 72.3 - Data processing	3,814	61,489	8,696
- 72.4 - Database activity	1,253	6,647	1,044
- 72.5 - Maintenance and repair of office, accounting and computing machinery	3,943	18,581	1,878
TOTAL 72 Computer and related activities	44,237	368,217	49,997

Source: Annual Survey of Businesses in the Service sector 2005

TABLE 2
EXTRACT FROM THE ANNUAL SURVEY OF BUSINESSES QUESTIONNAIRE FOR IT SERVICES
(with totals for 2005 for the most important categories)

DISTRIBUTION OF TURNOVER BY ACTIVITY		Total before tax in billions of €
IT ACTIVITIES		
Consultancy		
- Consultancy in management and information systems	721Z20	6.8
- Consultancy in software development	722C1A	1.0
Engineering		
- Systems engineering (consultancy in technology: IT, scientific, technical, industrial; test beds; embedded computing; automated processes; engineering science)	721Z11	6.7
-VAR: sale of hardware and computer installations within the framework of a turnkey contract	721Z12	1.9
- Planning, design and development of software by contract, system integration	722C1B	4.9
- Technical support for development	722C1C	1.0
- Design and development of recorded media (including CDROM)	722C20	0.5
- Other IT services in software development, specify:	722C1Z	1.8
Creation of standard software		
- Royalties on sales of systems and tools software packages (subscriptions new versions, installation and parameterisation)	722AA1	2.3
- Royalties on sales of applications software (subscriptions new versions, installation and parameterisation)	722AB1	1.8
- Publishing of video games	722A1A	
- Publishing of other leisure software	722A1B	
- Creation of other standard software	722A1C	1.7
- Publishing of systems and network software	722A1D	
- Publishing of development tools and languages software	722A1E	
- Publishing of applications software	722A1F	
Outsourcing		
- Facilities management, outsourcing	723ZA0	3.0
- Management and support for IT centres (operations management)	723ZB1	1.0
- Backup	723ZB2	
- 'Third-party' maintenance of software	722C1D	1.2
- Provision of hardware and IT networks (including servers and internet-site hosting, not including hardware hiring)	723Z1C	
Data processing		
- Data entry and preparation	723Z1A	0.7
- Other IT work other than data entry	723Z1B	1.9
- Other data processing services, exchange of IT data, specify:	723Z90	1.4
Services in on-line publishing, development of databanks, and web portals		
- Online publishing of books	724Z11	
- Online publishing of directories and address lists	724Z12	
- Online publishing of newspapers	724Z13	
- Online publishing of magazines and journals	724Z14	
- Other online publishing activities	724Z15	
- Publishing of video games online	724Z20	
- Online publishing of systems and network software	724Z31	
- Online publishing of development tools and languages software	724Z32	
- Online publishing of applications software	724Z33	
- Online publishing of audio recordings	724Z41	
- Online radio broadcasting	724Z51	
- Online television broadcasting of generalist channels	724Z52	
- Online television broadcasting of themed channels	724Z53	
- Development of databanks, data storage	724Z60	
- Provision of data, internet user rights	724Z70	
- Internet portals	724Z80	

- Online publishing or broadcasting of adult content	724Z90	
Maintenance and repair of computer hardware and office equipment		
- Maintenance and repair of office machines	725Z10	
- Maintenance and repair of computers and other IT equipment	725Z20	1.5
Other IT services , specify:	72.....	
ACTIVITIES CONNECTED TO IT ACTIVITIES		
- Computer assisted image processing and composition	222G00	
- Supply of staff (excluding time-based work)	745A10	
- Customer service centres (consumer services, public services)	748H50	
- Technical support centres (helpdesk, hot line, SAV)	748H60	
- Generalist contact centres (outsourcer, Web Call Centre (e-mail processing centre, chat, co-browsing))	748H10	
- Training in IT tools, adult education and continuing education	804C00	
- Hiring of computer hardware and office machines	713 ⁵ 00	
- Transfer of data over fixed network	642C13	
- Internet access (cabled link) (including linked options: firewall, anti-virus, anti-spam, storage capacity, etc.)	642C41	
- Internet access (mobile link)	642C44	
COMMERCIAL ACTIVITIES		
Retail sale (total of all sales is included in turnover)		
- Retail sale of computer hardware and office machines (to individuals)		
	524Z01	0.7
- Other products, specify:	52.....	
Wholesale (total of all sales is included in turnover)		
- Wholesale of computers, peripheral IT equipment and software packages (including commission on sales of software packages) (to trade users)	518G00	2.4
- Wholesale of office furniture (intra-company)	518H02	
- Other products, specify:	51.....	
Commission on sales (only commission is included in turnover)		
- Commission on sales of computer hardware and office machines	524Z02	
- Commission on sales of other products, specify:	
Sale of advertising space linked to internet access provision	722C62	
OTHER ACTIVITIES		
- Consultancy for business and management, specify:	741G00	
- Re-invoicing of services not supplied by the company, specify:	748KB1	0.6
- Other activities, specify:	
TOTAL	999999	50.0