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SPPI for IT Industries in France
(Computer Services and Related Activities).
NACE Rev 2 "62"

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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 the service being priced: three types of services to be monitored

The forthcoming introduction of the new European classification system, NACE Rev. 2, due for 2008-2009, calls for a review of the approach of the IT and computer industries sector and a reconsideration of the segmentation of activities whilst this classification has yet to come into force.

Division 62 includes a whole range of activities related to consultancy, programming, development, systems and software integration, and maintenance of systems and applications. It no longer includes everything relating to IT, as before (in division 72), but only what relates to consultancy, development, integration and maintenance of computer systems (hardware), and customised applications (software).

Three types of service can be identified:

Services in **consultancy**, relating both to hardware (assessment of IT requirements, purchase management, advice in the choice of hardware and software, security advice) and to software (designing software solutions, either from already existing software packages or by creating personalised, customised solutions). Note that the sale of standard (packaged) software does not come under this division, but is classified along with the rest of publishing (of books, music etc.).

As an extension of consultancy, services in **systems engineering and integration** are also included, encompassing the design, implementation and installation of solutions that have been assessed as optimal at the study phase of an information system.

The **maintenance** of the IT facilities of a business or public office by a third party also comes under this division and includes: maintenance of applications (third-party maintenance of software applications)
management of the overall system (systems management or IT outsourcing);
management of IT facilities.
Management of computer installations can be carried out at either the client's or the supplier's premises. This outsourcing of IT services is expanding rapidly throughout the world.

Division 62 of NACE Rev. 2 is, in one sense, narrower and currently relates to a better defined business sector involving consultancy, development, and maintenance of both application software and infrastructures.

The following table shows the proposed CPA 2008 classification and its correspondence with ISIC Rev. 4.

Table 1

ISIC Rev 4	CPA 2008			
62	62	**Computer programming, consultancy and related services**		
6201	62.01	**computer programming services**	62.01.11	IT design and development for applications
			62.01.12	IT design and development for networks and systems
			62.01.21	computer games' software original
			62.01.29	other software original
6202	62.02	**Computer consultancy services**	62.02.10	hardware consultancy services
			62.02.20	system and software consultancy services
			62.02.30	IT technical support services
	62.03	**Computer facilities management services**	62.03.11	network management services
			62.03.12	computer systems management services
6209	62.09	**Other information technology and computer services**	62.09.10	Installation services of computers and peripheral equipment
			62.09.20	Other information technology and computer services n.e.c.

2) Pricing unit of measure

Services are not usually recurrent. In general, the services provided to companies are high-level services, relying on high-level qualifications. Consultancy, development, integration and engineering require highly specialised staff.

Two types of services can be distinguished: those that require an obligation of means and those that require an obligation of results.

Those that require an obligation of means are clearly easier to comprehend and measure. These services are included in cost-based work for which staff are made available to companies and paid by the day: they can be paid for programming or for maintaining the standard of software.

The most difficult area is assessing services involving obligation of result, where the price is the result of negotiation between the supplier and the client. As a general rule, the supplier estimates the cost of the work (the number of days) and the type of work (the qualifications that are required), and the negotiation is based on this initial estimate.

These contracts tend to be unique, can amount to large financial sums and can be spread over a number of years.

The clients are often helped in their negotiations by consultancy firms and benchmarking of IT solutions. This can sometimes help bring clarity to an area where there is strong competition but little transparency.

3) Market conditions and constraints

a. Size of industry

Although there is still no definitive estimate as to the output of the IT sector corresponding to NACE Rev. 2 "62", the level of output for 2005 can be estimated at around €30 billion, as indicated by the results of the 2005 annual survey of businesses in the service sector.

In 2005, the figures for turnover and staff for businesses in this sector were as follows:

CLASSES (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

for 2005 the turnover as well as the predicted correspondence table from one classification to the other can be established thus: (table 2 below)

The figures in rows are from the results of the Enquête Annuelle d'Entreprises (EAE) 2005 (Annual Survey of Businesses 2005) in the service sector, whilst the figures in columns are the result of calculations by the author. They give an initial approximation of the expected levels of output sold in division 62 of the new classification system CPA 2008.

Table 2

Output sold	Cpf 08										Total	Saleable output from National Accounts
	58.1	33.12	58.21	58.29	62.01	62.02	62.03	62.09	63.11	95.11		
		Machine repair	software publishing	Software publishing	Computer programming services	Computer consultancy services	Computer facilities management services	other IT and computer services	data processing services	pc repair		
721Z						15600					15600	14000
722A			500	3900		2000					6400	15700
722C					3400	7300			50		10750	
723Z						1300	2900	100	5300		9500	9200
724Z	?								1000		1000	1100
725Z		500							500	500	1500	7100
Total 2005 figures	0	500	500	3900	3400	26200	2900	100	6850	500	44750	47100

33.12: maintenance, repair
58.1: publishing of books, newspapers etc.
58.21: software publishing

These figures for output by product are from the results of the EAE (Annual Survey of Businesses) and take into account the activity of service and commercial businesses that have an IT component to their business activity.

The estimates for output in each class of division 62 will probably be somewhat unstable, certainly more than was observed under the NACE Rev. 1 classification, but this remains to be seen.

b. Special conditions or restrictions

Market developments

While the **world market** is dominated by American businesses, mainly manufacturers that have developed more towards providing services, 2/3 of the **French market** is still covered by French businesses. However, these businesses are increasingly forced into alliances and takeovers in order to maintain critical mass and be able to maintain their market share and keep prices to a level acceptable to their customers (see above for pressure on prices).

While manufacturers are offering services (for example, IBM, who sold its PC division), major consultancy firms have also merged with IT companies (Accenture, PwC Consulting, Ernst &

Young). Similarly, software publishers are offering more and more consultancy services, such as integration, upstream as well as downstream, linked to their sales of licences.

The IT sector has registered strong growth over the last few years. Strong demand has led to the arrival of new players on the market (telecommunications services, through the convergence of IT and telecommunications, and Indian companies, who are trying to get closer to their clients). It has also led to difficulties recruiting IT specialists in certain high-value-added segments.

The catalyst for this strong growth is the strong tendency towards outsourcing, both for applications and infrastructures, presented as a strategic tool for businesses in terms of both competition and productivity. If the prospects for outsourcers are good, outsourced companies are very sensitive to the level of prices charged and improvements in productivity, which they also hope to benefit from.

Lower costs, demanded by customers and encouraged by IT consultancy firms, generate an **industrialisation** of processes that goes along with specialisation of service centres between front-offices and back-offices. Anything that allows costs to be lowered is good: services are increasingly onshored (within French territory), nearshored (Morocco and Eastern Europe) or offshored (India). However, not all IT facilities can be offshored, since proximity, the ability to respond quickly and language are important criteria in contracts agreed. The French IT trade association claims that the maximum work outsourced offshore would be approximately 15%. It is currently at 2% of the French economy, and the projection is for 5% by 2009. Even if not all IT activities can be offshored, it is a strong tendency in this field that should not be underestimated. Some contracts even stipulate that whole parts of services should be offshored.

Offshoring is a form of subcontracting, and specialisation leads to constant pressure on prices: it has gone from an approach based on man-hours (i.e. cost-based work), to one based on service centres equipped with joint tools that can be deployed anywhere in the world ('follow-the-sun' system). This results in a **pooling** of staff on several projects, thereby achieving a rise in **productivity.**

ITIL standards put pressure on prices (these are a detailed set of good practices). They recommend that when changes take place, they take place once and for all. Clients depend on these standards to argue that "if you work well, you will travel to sites less, so you will be able to make it cheaper...".

Pooling, subcontracting, offshoring and contractual reductions in prices over the duration of contracts are new elements that have a strong influence on pricing mechanisms in the sector.

c. Record-keeping practices

Most companies surveyed have the requested information available at their head office. Sometimes large corporations only have detailed sectoral information from their specialist sectoral subsidiaries. We are only concerned with information from profit centres.

Amalgamations and mergers in progress often cause delays in the centralisation of information. Many companies are involved in multiple activities, and each one needs to be surveyed individually. It is obviously not a question of surveying on a business by business basis, but rather on an activity by activity basis. There may be several respondents within the same company who provide us with the necessary information. For one large French business group, no less than nine distinct legal entities were surveyed.

4) *Standard classification structure and detail related to the area* – does the standard include necessary product detail based on identified price-determining characteristics?

The European classification system, NACE Rev. 2, is more detailed at the four-digit level than the ISIC classification in the sense that it separates ISIC class 62.02 into two, clearly identifying 'facilities management' services in this class, previously included in class 72.3 (NACE Rev. 1). The designation of the IT sector has changed between the last two classifications systems as follows:

ISIC Rev. 3.1   72: 'computer and related activities'
ISIC Rev. 4   62 'computer programming, consultancy and related activities'
NACE Rev. 2   62 'computer programming, consultancy and related activities'

a   Not included are **non-customised software publishing** activities (58.2), where the pricing process belongs to a completely different mechanism, which in turn derives from a different business model: as with other publishing activities (music, journalism, cinema), it is the production of the master that carries a cost, the units sold being just copies of the original product and having an almost negligible production cost.

However, it should be noted that **maintenance/support**, which has responsibility for revised versions, software updates, and software publishers' hot-lines does come under 62.02, along with consultancy. There is a risk of a loss of coherence in the classification of the software publishing business.

b   The inclusion of a clearly identified sub-field of outsourcing (**facilities management**), corresponds to a reality. It is a service that is growing significantly and is therefore correctly identified.

c   The evident separation between **consultancy** and **development** is made clearer than before, in the sense that consultancy in hardware and in software is placed in the same class, 62.02. Consultancy also includes engineering and integration.

d   **Third-party maintenance of systems** (62.02b), previously included with outsourcing as a whole, is now integrated with consultancy. Here too, the 'business-based' approach of the professionals risks losing coherence.

E   **Business Process Outsourcing (BPO)** is an activity that is often taken on by IT consultancy firms, for example Cap Gemini, which specialises in BPO in finance and accountancy. However, business process organisation, re-engineering and consultancy should not be treated as IT consultancy or engineering. BPO is not taken into account at this level in the price index.

5) Evaluation of standard vs definition and market conditions.

- *The view of professionals:*

As in the previous classification system, the essential problem derives from the great difficulty of separating what is consultancy from what is development in IT activities. Even though it may be quite conceivable in the absolute, the reality is quite different. In the previous classification system, the price index was not calculated for consultancy on the one hand (72.1z-hardware consultancy) and for development on the other (72.2c-other software supply activities).

After discussion with **professionals**, it would seem that the classification system is not in practice totally adapted to IT services. **The main reason cited by professionals is that services are increasingly global. It is difficult in many cases to separate out their components, and it is especially difficult to separate out purely software aspects from other aspects. One computer service company contractor of an IT project seems unable to distinguish between 'consultancy in computer configuration' and 'software development'.**

SYNTEC, the main IT trade association, with whom INSEE has produced indices in the IT field, distinguishes the following businesses:

A Consultancy (consultancy, studies and training)

Consultancy businesses bring together the high-level professional services of consultants and experts who are involved in the strategy of a business to implement the transformation of an information system, a functional process or technical infrastructure. The profession integrates consultancy in IT (about an information system or infrastructure) along with consultancy in strategy, management and organisation.

B Software packages

Software packages (professional software) are a product characterised by their methods of operation and sale to multiple users. Software packages have software specificities in that they comprise a package of programmes developed to respond to a fairly wide IT function.

Marketing (direct or indirect) of software packages is associated with a range of services such as documentation, maintenance, upgradeability, training, various support services to end users and operations teams, etc.

As successive versions are released, software packages should be able to adapt to technological, regulatory and other developments, as well as to the new requirements of users.

five families of software packages:

- systems software packages, which run the computer and its environment,
- office software packages, which offer automation of office tasks,
- data management software packages, which enable various kinds of data (texts, images, sounds, documents) to be created, stored, manipulated, and made accessible,
- development tools (tools software), which facilitate development operations and maintenance of programmes,
- application software packages, which are designed to respond to the needs of a particular economic activity (vertical software packages) or of a business function (horizontal software packages).

A software package can be implemented at different levels, as follows: off the shelf (or pre-packaged) without modification, with parameterisation or with further modifications to allow for adaptation to a particular context.

C Engineering

Systems engineering:
This activity consists of designing, creating and installing an IT system to respond to specific needs.
In its simplest form, systems engineering can just be creating software according to a client's functional specifications. It can extend as far as the development of a complete information system, with or without supply of hardware.

The development of an IT system goes through all or some of the following stages:
opportunity studies, functional studies, technical studies (of IT architecture, simulation or prototype), implementation plans (costs, time period, organisation of the project), detailed specifications, choice and supply of hardware, choice of software packages and/or implementation of specially designed software, quality-control tests, integration of the different sub-parts, preparation of the host site and hardware, installation and connection of the different units, adjusting the overall system to the site, training of operators and users, supply of documentation, launch of the system, optimisation of performance, maintenance and development of hardware and software. Engineering involves the responsibility of contractor on the part of a computer services company.

Systems integration:
Systems integration involves the ability of a computer services company – contractor – to design and implement a complete system with heterogeneous components from different suppliers, on the basis of general specifications supplied by the client.
Computers, peripheral equipment and communication equipment, systems or applications software packages, specially designed software, integration tests, support, consultancy, training etc.: these are the usual components implemented in this kind of work.
The range of competencies and different components employed by a systems integration service requires a strong capacity for coordination, an aptitude for subcontracting and supervision of projects.

Systems integration is differentiated from systems engineering on the basis of two criteria: the degree of heterogeneity of the components implemented and the size and complexity of the project.

Technical support:
Technical support involves a form of flexible activity with rapid implementation.
The level and the qualification of the engineers, analyst programmers and specialists involved are the same as those of other services (especially systems engineering and integration), the essential difference being that the technical management and project management are the responsibility of the client, whilst in systems engineering and integration they are the responsibility of the computer services company.

D Outsourcing

This is the partial or total management of the information system of company Client by an IT Service Provider

The client hands over the management of all or part of its information system to one or several service providers, with or without transfer of the client's resources (manpower and hardware), and with or without relocation.

The most common forms are:
- **applications outsourcing, or third-party applications maintenance**, generally without transfer of resources (maintenance of an application domain for 3 to 5 years)
- **infrastructure outsourcing**, sometimes with transfer of resources (for the means of production or PCs for example)
- **total outsourcing**, of both infrastructures applications portfolio, often with transfer of resources.

Value-added Networks and Services: This is where users – IT specialists or otherwise – are offered access to server centres for the use of software resources, databases, information etc. through the intermediary of PCs, work stations, or terminals.
These services are based on managing the operation of high-powered computers and the use of complex networks. It makes it possible to manage a community of interests shared between several clients. They include:
- Multi-client services (or information centres): these offer technical support and IT resources for handling applications
- Disaster recovery or backup: emergency procedures designed to ensure continuity of service in case of failure or deficiency in an existing configuration
- The provision of a server centre for information suppliers and multiple-user access to services (e-banking and telematics, for example, come under this heading).

How French professionals see the breakdown of Software & Services:
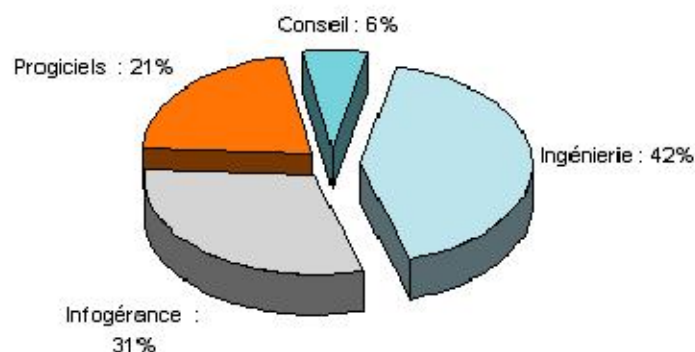
Progiciels = software packages
Conseil = consultancy
Ingénierie = engineering
Infogérance = outsourcing or facilities management

From this it would seem that for the IT market:
Consultancy essentially corresponds to high-level strategic consultancy, geared especially towards management, and is therefore very closely related to management consultancy. BPO comes under consultancy.

Engineering also includes design, consultancy and development.
Third-party applications maintenance and backup come under outsourcing.
Software publishing activities include support and maintenance.

- ***Creating basic indices based on the view of professionals:***

The classification for collecting prices has had to take into account the existing classification (NACE Rev. 1.1) and the understanding of professionals of the way their business has been classified. This detailed classification of activities is in any case made easier and more accurate in France through the annual survey of business in the service sector, which gives a breakdown of overall business activity according to a classification designed specifically for the survey, and is much more detailed than the official classification.

The main sub-indices produced in France:
- *Consultancy and system integration*   *A*
- *Technical support*   *A*
- *Software publishing - licences*   *B*
- *Software publishing - support*   *B*
- *Third-party applications maintenance*   *C*
- *Outsourcing, facilities management*   *C*
- *Data processing, data entry, tabulation services* *D*
- *Database activities*   *E*
- *Maintenance and repairs, hardware maintenance* *F*

Only six indices, those grouped A-F, are published (see below the list of published indices and the relationship between these sub-indices under NAF Rev1.1 and the forthcoming indices under NAF Rev 2).

Quarterly calculated price indices:

IT activities French Production Price Indices
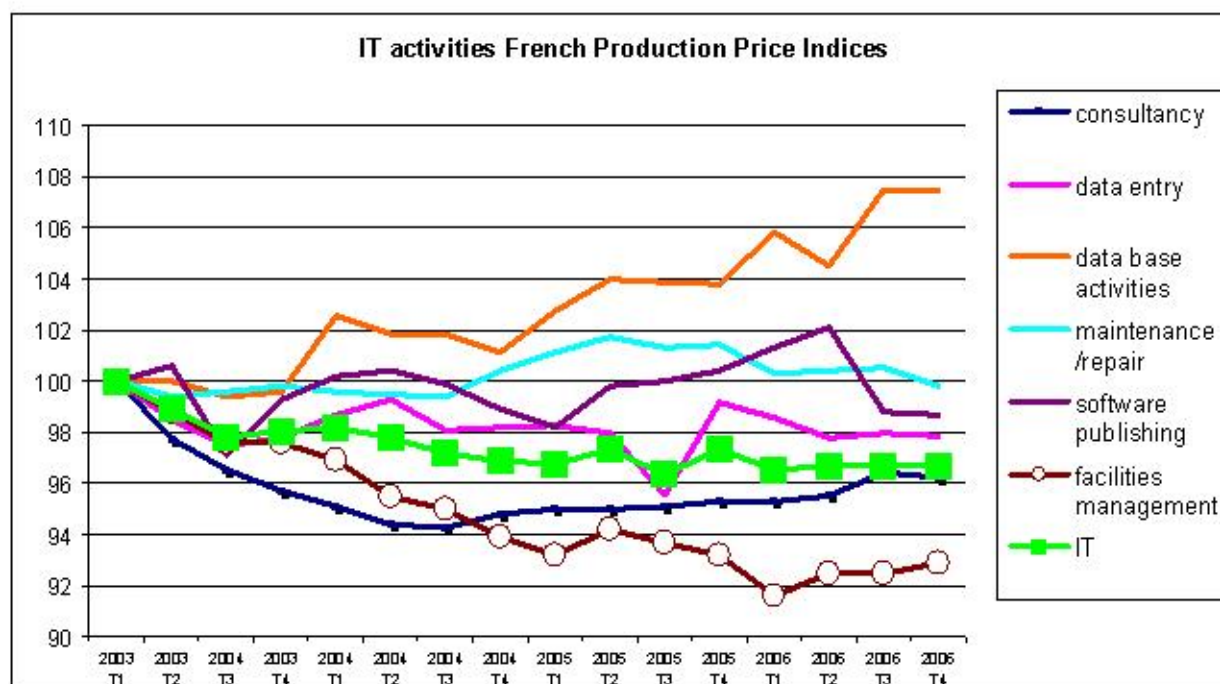
changes with the CPA 2008 classification:

Table 3

NACE Rev.1.1	Most important calculated sub-indices		published indices	NACE Rev. 2 "62"				
				62.01	62.02	62.03	62.09	others
72.1	A1	hardware consultancy,	A		hardware consultancy, engineering, integration, development			
72.2		engineering integration, development						
	A2	technical assistance		technical assistance				
		Games software						Games software
	B1	software publishing (licences)	B					software publishing (licences)
	B2	software publishing (support)			software publishing (support)			
	C1	Third applicative maintenance	C		Third applicative maintenance			
72.3	C2	Facilities management				Facilities management		
		backup					backup	
	D1	data processing	D					data processing
72.4	E1	Database activities	E					database activities
		web portals						web portals
72.5	F1	maintenance and repair of hardware	F				software installation	maintenance

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

The calculated price indices attempt to be as close as possible to the concepts of national accounting:

Output sold on national territory
Coherence between the period of output, the measure of output and the price measure.
Market price measure (on the competitive market).

Coordinating the drafting of national accounts is carried out in France by INSEE. As far as IT activities are concerned, they are currently carried out according to NAF Rev. 1.1. They will not be carried out according to NAF Rev. 2 until 2011. Therefore, INSEE does not yet carry out economic accounts of Division 62 of NAF Rev. 2. The Annual Survey of Businesses in the Service Sector (EAES) carried out in 2007 on the results for 2006 will give a new breakdown of companies' turnover, which will allow the activity of the different fields in the new classification to be measured.

Notes Certain considerations have to be taken into account in drawing up the national accounts:

- only **75% of IT activities** in 2003 were carried out by businesses classified as belonging to the 'IT services' sector. Industry (8.1%), commerce (14%) and other branches of the services sector (2.9%) also contribute. Large companies outside the 'IT' classification should not be forgotten.

- **Captive companies** are also part of this field. Even though they are not part of the 'competitive' sector, these numerous companies contribute to the output of the sector. In the EAES (Annual Survey of Businesses in the Service Sector), companies in the IT sector achieve 1/4 of their turnover with companies in the same group. This percentage is rising steadily (a rise of 6 points in 3 years). This involves €10 billion of turnover. Amongst these businesses are ones that manage the IT of the banking agencies of insurance agencies, sell and maintain the software of various subsidiaries, carry out data processing for supermarket chains or wireless telephone networks, etc. The concept of price is not as clear as in the competitive sector, but this section of the economy should not be forgotten. Sometimes these businesses issue invoices to an ordering party, in which case price measures are possible; sometimes the turnover is a sum just allowed for to balance the company's accounts. Turnover is then more a budget allocated by ordering parties, or group of ordering parties, to cover costs and pay salaries.

- Even though this activity is outside division 62 of NAF Rev 2, direct invoicing for software packages to **sites outside national territory** poses a problem for the assessment of the level of output (for example: all Microsoft software is billed directly to Microsoft Ireland). When a hotline is in the same country and updates are billed in the same way, it is the level of output of 62.02 that is affected, especially when flows are wrongly identified by the balance of payments, as can seem to be the case.

- The **output on own account for software packages** (72.02C having a value of €10 billion, against €15 billion of output sold) currently comes into the same price index as output sold. Should output of 'original software', which currently comes under 62.01, have its own index?

7 *Pricing method(s) and criteria for choosing various pricing methods –*

depending on record keeping practices and billing practices, there may need to be a hierarchy of methods from actual to best proxy (discuss order and list prices, current or lagged prices, transaction, shipment, etc.) -- Refer to the categories in the PPI Quality Assessment Tool for guidance. <u>(Note: these headings will include agreed upon methods developed by VG pricing experts as part of a paper referred to by Roman Numeral I on the first page of this proposal.</u>

INSEE has completed reporting of IT sectors (division 72 in NAF Rev. 1), begun at the start of the 21st century. This experience is being built on in anticipation of a rebasing for all sectors in 2007. The state of the market has changed over 5 years (concentration of the market, more openness and outsourcing of a large number of functions). This, of course, has consequences for price levels, but also for related methods of price recording.

Several types of methods of pricing have been established, which have an impact on resulting methods of record-keeping.

   Where a business has **an obligation of means**: An IT business places the means – i.e. staff – at the disposal of the client, and the client can use these means as he sees fit. This applies in particular in the case of technical support, and often in the case of third-party maintenance of applications. It is a form of provision of staff and the sale price for the service is simply the product of the price for a day's work times the number of days billed, according to the qualifications of the staff provided.

   Where a business has **an obligation of result**: This is more complicated and generally involves a larger-scale project that requires a large range of skills. The transaction is negotiated on the basis of an estimation of the overall cost measured by the IT company (salaries, fixed costs, variable costs, depreciation, length of the contract, markup).
In general, the business presents the client with a quotation outlining the different components. The negotiations relate to the whole project, including unit prices by qualification, number of man-days etc. These contracts are generally long (sometimes several years, especially where they involve outsourcing for large companies, or even for public bodies).
Given the scope, the length of the contract, and its one-off nature, possible solutions are:
>   Unit-value pricing
>   Model pricing
>   Component pricing
>   Charge-out rates (hourly rates by qualification).

   A/ **Charge-out rates**: for activities that come under division 62 in NAF Rev. 2

Even when services are not charged by the day, IT service businesses are still able to calculate the average hourly rate for their staff.
However, competition between businesses in the sector is fierce. Services are increasingly subcontracted to low-cost foreign businesses. This outsourcing means that work that was previously done by French engineers is instead done by others who are less well paid.
The monitoring of charge-out rates only makes sense if the environment, or the cost structure and the production function of the company are stable over time. Currently, it is anything but stable due to the constant pursuit of lower costs. The hourly charge-out rates of a French engineer are no longer a good indicator of the sale price of a company's output: work outsourced at lower cost being carried out abroad, the ratio of turnover to hours worked no longer correlates to the sale price of the service.
The variables that influence charge-out rates are:
>   1   The share of the work subcontracted abroad
>   2   The salaries paid in these countries (as an indicator of the sales price of imported services, it is equally true that the level of unitary salaries in these countries is not a good indicator of the price of imported services either)
>   3   The markup on imported services.

Businesses are therefore in a situation where they measure higher charge-out rates and say they charge lower prices.

We also notice that it is not just outsourcing to low-cost countries that makes monitoring charge-out rates unreliable. Even outsourcing of work within the same country makes monitoring charge-out rates risky, because the service sold by a French engineer also includes outsourced services, which alone increases the French engineer's productivity.

We can, however, note that the share of subcontracted work (according to the trade association) would not be more than 5%. The previous cautions are all relative, but might be more real in years to come, given that in France outsourcing is not as developed as it is elsewhere. Outsourcing will endure because, with increasing numbers of businesses, it is the only way to stay competitive in world markets.

Charge-out rates reflect national production costs, which are rising, whilst world prices are falling.

B/ **Model pricing (or component pricing)** is, a priori, a good method of avoiding the disadvantages of monitoring charge-out rates. This method allows modifications in the production function of a business to be accounted for: national salaries, general services, outsourced work, national markup on national work, share of the markup on offshored work.
    The industrialisation of processes and rapid changes in markets make monitoring based on prices risky: for example, HP has services all round the world, which work in relay, one after the other, in a process known as 'follow-the-sun'. The service is delivered in France, involving various participants. Only model pricing could take account of the diversity in the mode of operation.

    The main difficulty lies in persuading IT businesses to accept this method, as the results are not directly obtainable from reporting sheets and requires calculations and estimations based on operations actually carried out.

C/ **Identifiable service prices.**

Recording identifiable service prices, where they exist, is perhaps easier to carry out than model pricing. The monitoring of prices of components produced is certainly methodologically better than monitoring component costs, where changes happen differently to the changes in production prices because of variations in production functions. The main difficulty that arises is the very existence of identifiable service prices. They may appear in service level agreements. ITIL (Information Technology Infrastructure Library) standards, which provide a frame of reference for the process, can be very useful here.

In services or consultancy, units of work are difficult to identify. In outsourcing, it is easier:

The following list of possible units of work has been suggested by professionals:

Workstation management	Help desk
	Managing backups
	Managing patches
	On-site support
	Service desk
Infrastructure management	Management of operating systems
	Managing data backups
	Managing data storage
	Networks
	Software management
Disaster management	

These units of work, often recognised by businesses, could lend themselves to price monitoring, employing the direct use of prices of repeated services method.

Even monitoring identifiable service prices can have problems in the face of rising productivity and industrialisation of processes: pooling of processes (one employee can monitor two servers, the price for monitoring each server goes down, but the charge-out rate for the monitoring service can go up).

The process for calculating indices in France is conducted as follows:
Sampling from the Annual Survey of Businesses returns, which gives the breakdown of turnover by product (cut-off method)

A visit to all companies sampled by (5) field officers who determine, in agreement with the managers that they meet, a quarterly protocol for sending data, depending on data available or retrievable without excessive cost. Pricing methods are part of the responsibility of field officers, who also contribute to the drawing up of methodology pertaining to each branch studied. Each field officer visits around 80 businesses a year.

The price for services is then integrated into the normal, usual calculation of price indices using a dedicated IT application.

	Number of companies:	Number of price reports
Computer services companies	90	1700
Software/ maintenance	46	150
Facilities management	45	280

Below are the measures of services recorded by company, according to the Eurostat/OECD classification of pricing methods, and by calculated sub-index (see table 3), reproduced in CPA 2008

Table 4 heading
In millions €

		consultancy engineering integration	technical support	software maintenance	third applicative maintenance	facilities management	TOTAL "62"
		index A1	index A2	index B2	index C1	index C2	
contract pricing	for same clients			180	31	164	376
	increasing price rate			110			110
direct use of prices of repeated services	average of real transaction prices	450	103	108	3	379	1045
model pricing	model pricing				9	251	261
pricing based on working time	input prices (wages + markup)	140	122		2		266
	charge out rates	432	638		644	140	1856
	charge out rates for identified clients				6		6
	charge out rates by level of skill	1285	1186		251	241	2965
	charge out rates by activity	103	158			80	342
	revenue per day	3	35				38
all		2416	2246	398	949	1257	7268

Tableau 5

	consultancy engineering integration	technical support	software maintenance	third applicative maintenance	facilities management	TOTAL "62"
	index A1	index A2	index B2	index C1	index C2	
contract pricing	0%	0%	73%	3%	13%	7%
direct use of prices of repeated services	19%	5%	27%	0%	30%	14%
model pricing	0%	0%	0%	1%	20%	4%
pricing based on working time	81%	95%	0%	95%	37%	75%
all	100%	100%	100%	100%	100%	100%

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8/ Quality adjustment methodology(s) – depending on the pricing mechanism and item substitution practices

The rise in productivity is evident for many professionals. The share of the productivity gains, and therefore the lowering of prices, is introduced as a component in its own right in contracts. All means of reducing costs are, therefore, good.
Where charge-out rates are monitored, the structure of qualifications should be periodically updated so that the structure does not interfere with measured levels of prices.

The units of work measured one year, may no longer apply 1 or 2 years later. The rebasing in progress in France has, in agreement with professionals, brought with it a more rapid updating of services monitored. Instead of the 5 years that it was previously, it has been agreed to review every 2 years in order to adapt better to services actually carried out and units of work that correspond more closely to reality.

The increasingly strong integration of businesses, which offer a combination of consultancy, development, outsourcing and software publishing, sometimes also with management consultancy, has lead us to integrate the samples of specialist indices into a combined sample of businesses. This is what will happen when indices are rebased in the middle of 2007.

For example, for all businesses in 72 NACE Rev. 1, base 2002, we surveyed 212 businesses with a total of €8.7 billion in turnover. In the rebased sample (2007), with 250 businesses in the sample, we report more than €22 billion in turnover; in other words, about half the output for the sector.

9   Evaluation of comparability with turnover/output measures (including an assessment of the quality of turnover/output data and problems encountered in using classifications systems, especially for product line determination) (The purpose of Headings 8 and 9 is to help ensure that turnover/output and quality adjusted price data are adequate for use and provided in enough detail that major differences are not lost within the aggregates.)

Point 1   the divide between design/development (62.01) on the one hand, and consultancy/support (62.02) on the other is not clear, even if the presence of the notion of outsourcing, an activity well recognised by the profession, clarifies the situation. In June 2007, CPA 2008 is not yet definitive (it will be put before the Parliament and European Council in July 2007). It has therefore not yet been translated into French texts, which does not make its introduction into the real world any easier.

Point 2   the production of original software is in 62.01.29, when it is the object of output on its own account: what idea of price and turnover?

Point 3   the output of services rendered inside the same group (company) also warrants price monitoring, to which the usual procedure for monitoring services is not adapted. The monitoring of components of volume of work would probably be preferable. The question that arises is whether output not sold (i.e. on own account) should deflate by the price index of output sold (on the competitive market) or by another index, in which case, which one? One deciding factor is the share of output not sold in overall output.

10   Summary

1   The desire to calculate indices according to the breakdown of the classification used, CPA 2002 or now CPA 2008, is limited by the capacity of businesses to correctly identify their business activity in the classification system. The relationship was not easy in CPA 2002, which was why we decided to create and publish indices that did not completely coincide with the limits and divisions of

the classification. It will be somewhat the same with CPA 2008, although with one undeniable improvement: the recognition of a specific class for outsourcing.
The difficulty that was continually reported is the problem that businesses have in differentiating between consultancy and development.

2   More frequent rebasing and a clearer move towards the reporting of unit prices or well identified real transaction prices are solutions that we have retained in order to adapt to frequent renewal of business activities and practices, and succeed in capturing levels of services within constant parameters, in particular in outsourcing where the market is very responsive.

Quality Assessment Tool

Points	Category and Questions	Consultancy, engineery, system integration	Technical assistance (in development)	Software maintenance	Third applicative maintenance	Facilities management
	1. Shipment Price (Weight = .10)					
	Select a. or b.					
0	a. Price represents order pricing, actual price at shipment may well be different.					
100	b. Price represents the completion of service or a proxy measure for the completed transaction.	**100**	**100**	**100**	**100**	**100**
	2. Representative of current period production (Weight = .10)					
	Select a. or b.					
50	a. Emergence of new product lines or critical new product features has not occurred since the index reference period or since sample augmentation last done.	**50**	**50**	**50**	**50**	
0	b. Emergence of new product lines or critical new product features has occurred since the index reference period or since sample augmentation last done.					**0**
	Select c. or d.					
50	c. Product substitution usually occurs when an item becomes obsolete or, if model pricing applies, the models are regularly updated to reflect changes.	**50**	**50**	**50**	**50**	**50**
0	d. Product substitution usually does not occur when an item becomes obsolete or, if model pricing applies, the models are not regularly updated to reflect changes.					
	3. Transaction price (Weight = .25)					
	Select the one most prevalent in the industry					
100	a. The price is the real transaction price or a list price that can always be assumed to be equal to the transaction price.			**100**		
50	b. The price is a list price not equal to the transaction price.					
100	c. The price is a unit value for a homogeneous group of products.		**100**			**100**
50	d. The price is a unit value for a non-homogeneous group of products.	**50**			**50**	
75	e. The price is a model price.					
50	f. The price is constructed from input cost plus profit and overhead mark-up.					
	4. Output price (Weight = .25)					
	Select the one most prevalent in the industry					
100	a. Recorded price reflects an actual transaction or average of actual					

	transactions.					
75	b. Recorded price reflects a model transaction incorporating the pricing of all features found in an actual transaction.	**75**	**75**	**75**	**75**	**75**
50	c. Recorded price reflects a model transaction incorporating the pricing of only some of the features found in an actual transaction.					
50	d. Recorded price reflects some components of a transaction.					
50	e. Recorded price reflects input costs plus overhead and profit margins incorporating the pricing of all features found in an actual transaction.					
25	f. Recorded price reflects input costs plus overhead and profit margins incorporating the pricing of some of the features found in an actual transaction.					
0	g. Recorded price reflects charge out rates for fixed labor inputs not directly tied to a specific quantity of output.					
	5. Timely measure (Weight = .10)					
	Select a. or b.					
50	a. Pricing data reflect the service provision in the current period and are not lagged.	**50**	**50**	**50**	**50**	**50**
0	b. Pricing data are lagged.					
	Select c., d., or e.					
50	c. Pricing data reflect an average over the entire period.	**50**	**50**	**50**	**50**	**50**
40	d. Pricing data reflect an average of multiple measurements over a portion of the period.					
25	e. Pricing data reflect a single point in time.					
	6. Constant quality maintained (Weight = .20)					
	Select a. or b.					
100	a. Rapid changes to product specification are not expected or, if they are, a good method to explicitly quality adjust is in use.	**100**	**100**	**100**	**100**	
0	b. Rapid changes to product specification are expected and no explicit quality adjustment method is in use.					**0**
	Total =	81,25	93,75	93,75	81,25	68,75
	Type A point range = over 90		93,75	93,75		
	Type B point range = 70 to 90	81,25			81,25	
	Type C point range = less than 70					68,75

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Projet CPA2008 (anglais et sa traduction en français).

62	**Computer programming, consultancy and related services**	**Services des technologies de l'information**
62.0	**Computer programming, consultancy and related services**	**Services des technologies de l'information**
62.01	Computer programming services	Services de programmation informatique
62.01.1	IT design and development services	Services de conception et développement informatique
62.01.11	IT design and development services for applications	Services de conception et développement informatique pour applications
62.01.12	IT design and development services for networks and systems	Services de conception et développement informatique pour réseaux et systèmes
62.01.2	Software originals	Originaux de logiciels
62.01.21	Computer games software originals	Originaux de jeux électroniques
62.01.29	Other software originals	Autres originaux de logiciels
62.02	Computer consultancy services	Services de conseils en technologies de l'information
62.02.1	Hardware consultancy services	Services de conseils en configurations informatiques
62.02.10	Hardware consultancy services	Services de conseils en configurations informatiques
62.02.2	Systems and software consultancy services	Services de conseils en systèmes et logiciels informatiques
62.02.20	Systems and software consultancy services	Services de conseils en systèmes et logiciels informatiques
62.02.3	IT technical support services	Services d'assistance technique informatique
62.02.30	IT technical support services	Services d'assistance technique informatique
62.03	Computer facilities management services	Services de gestion d'installations informatiques
62.03.1	Computer facilities management services	Services de gestion d'installations informatiques
62.03.11	Network management services	Services de gestion de réseaux
62.03.12	Computer systems management services	Services de gestion de systèmes informatiques
62.09	Other information technology and computer services	Autres services des technologies de l'information
62.09.1	Installation services of computers and peripheral equipment	Installation d'ordinateurs et d'équipements périphériques
62.09.10	Installation services of computers and peripheral equipment	Installation d'ordinateurs et d'équipements périphériques
62.09.2	Other information technology and computer services n.e.c.	Autres services des technologies de l'information n.c.a.
62.09.20	Other information technology and computer services n.e.c.	Autres services des technologies de l'information n.c.a.