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SESSION 1

PRODUCER PRICE INDEX FOR SERVICES

PRODUCER PRICE INDEX FOR PRE-PACKAGED SOFTWARE

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1) Industry output

Publishing (non-customised) software includes the services of developing, producing, supplying and documenting standard software, as well as publishing it. Software publishing should therefore be distinguished from the development of software adapted to a client's particular requirements.

However, in some cases **the difference between publishing pre-packaged software and the development of customised software can seem unclear.** Some software publishers design "elementary blocks of software". A great many of these blocks are juxtaposed in a certain way depending on the client's requirements. All of these blocks represent the client's software solution. There are also large companies (such as Dassault Système in France) who are involved in a small amount of new business a year, which is nevertheless very considerable and not "standardisable". Although they have pre-packaged software, they mainly adapt and define it according to the client's specific requirements. So, in addition to the clearly defined cases where standard software is published and developments are customised, there is a grey area where the two methods of operation are combined.

In connection with the previous point, it seems that the standard software publishing market is very segmented in France. **In addition to the very large companies (Microsoft, Oracle) who turn over a substantial amount of business, there are many publishers who are specialised in a specific market.** For example, when we were setting up this survey, we met a publisher who made just one product for managing local authority debt. This product is adapted and defined for the client.

In relation to defining a product, two particular cases can be reported:

- the reference field consists in services to companies and not services to households. However, games software does appear in this field as the software publisher "sells" his product (licence sales) to a retailer (specialist shop, hypermarket) which then sells it to an household.
- some companies, included in the survey base, design software which they incorporate into more sizeable equipment. It is this equipment which is sold. Examples of this include the design of flight simulators and driving simulators. Although the software is at the heart of the equipment, we have decided to exclude this type of product from the scope of the survey.

Those involved in software publishing mostly refer to **maintenance** as technical assistance (such as the setting up of a hotline) and upgrading of the software sold. This type of activity is by no means negligible. It has even become the core business for software publishers whose turnover is greater from "maintenance" than it is from licence sales. The term "maintenance of pre-packaged software" does not appear in the product classification. Only maintenance of customised software for the client is considered. In fact, regarding the "upgrading" section (supplying later versions of software), it is more a question of deferred licence sale than maintenance. Furthermore, this definition of maintenance is not the same for all publishers. For example, according to the accounting regulations of companies quoted on the NASDAQ, Oracle must count this type of business as licence sales. Although a great many companies refer to this type of business as "maintenance" and count it as such, we will probably reintegrate it into licence sales.

Regarding the classification used in the survey , following the practice of the professional organisation, we have identified the following elements:

- **systems software package and infrastructure** (including middleware)
- **tools software packages** (in particular, Database Management System)
- **application software packages**
- **games software packages**
- **maintenance**

As we have already said, it is highly likely that we will eventually include maintenance in licensing sales of software packages. The notion of tools software packages is not always understood by the professionals. Isolating this type of product has certainly not been entirely appropriate. Aside from this breaking down into product, some publishers mention sizeable turnover in the "consultancy, engineering and integration" section which comes under another activity. Everything indicates that the

share of software packages in IT services is not as high as it appears in the "official" statistics because it is difficult to tell which is standard and which is customised.

In the **CPC**, the notion of software packages and publishing software can be found under item 83142 (software consultancy services). However, software and software packages are not explicitly noted in the CPC. In fact, no distinction is made between packaged software and customised software.

2) Index methodology

a) the method of fixing prices

In theory, the software publisher fixes the price of a software package to cover **his research and development costs by estimating the sales of this same software package.** In practice, this seems to be mostly empirical with no real modelling, apart from a few companies. At the end of the packaged software's life, the publisher takes stock – in terms of turnover generated – to find out how profitable the product is. Packaged software is in fact a product with a sizeable fixed cost (costs of research and development) but with a marginal cost of practically zero, negligible compared to the fixed cost. For the leaders in this market, **prices are set at an international level** and are usually the same within the euro zone, extending to Great Britain. If the parent company is in the United States, the "Europe" prices of course take the dollar/euro parity into account. Changes in the "catalogue" price of packaged software take into account the prices of competing products and a possible revised estimate of number of units sold. The frequency with which the catalogue price of a software package (for a given version) is updated is very variable: no update, annually, every six months, every quarter or every month (the latter seems to be very rare).

Packaged software is sold in two ways: **direct selling and indirect selling.** In direct selling, the product is sold to the end user and in indirect selling, to a retailer (distributor, specialist shop, another publisher, IT services company) who will sell the product (licence sale) to the end user. In the case of direct selling, the product is sometimes sold at its catalogue price, but not always. There is also the idea of **negotiation and discount.** We find negotiation when the publisher works more on a case-by-case basis (see section 1) than purely standard products. There is also negotiation for the most important contracts. **In the case of indirect selling, the publisher applies a percentage discount to the retailer**, mostly on the catalogue price. This percentage reduction depends on the retailer and stays the same over time, apart from special cases. It should be noted that retailers place an order with a publisher, in most cases, when the sale to the end customer is guaranteed, in order to cut down the risk. This may also explain why the percentage reduction can be applied to the negotiated price and not the catalogue price.

With regard to **maintenance** (telephone assistance and product upgrade), the initial price is defined as a percentage which is applied to the catalogue price of the purchased product. This is valid for the first year of the contract. The price is then revised, on the 1st January or the anniversary date of the contract, according to changes in labor costs of the IT services companies measured by the professional organisation for this sector. This indexing seems to be automatic and not gradually negotiable.

b) the method of monitoring prices

First of all, we can say that **software publishers attach little (or no) importance to monitoring prices.** This is because they are only interested in the turnover a product generates. In fact, there is very few information about transaction prices within the companies' management systems.

The only item of available information for all publishers is **the catalogue price** of each product. We therefore have to see whether monitoring catalogue type prices is relevant. In some cases, it is not too much trouble to limit the monitoring of prices to monitoring catalogue type prices. This applies to publishers of substantial size who sell a lot of licences for the same software package, mostly at a catalogue price which is set at an international level. However, for many publishers, monitoring catalogue prices has proved irrelevant. For example, for publishers who rarely sell the same solution, catalogue prices have little meaning. The number of transactions is limited, each output is a one-off at most and negotiation is still important.

If monitoring catalogue price is not appropriate, we try to monitor **an average transaction price** per product or type of software package. As we have already mentioned, it is not always possible to monitor average transaction prices because this type of information is not recorded in the company's management system. In the absence of reliable information, we may decide not to monitor the prices for a given software publisher. This applies to those who tell us that they only have catalogue prices, as these are not relevant to monitor. We may also monitor "Europe" prices if prices in France are unavailable.

Regarding **indirect selling**, in addition to the previous information (catalogue price or average price), we monitor **the rate of discount** given to retailers. It may be a rate per retailer (choosing the most important retailers) or an average rate for all retailers. Before that, of course, the amount of indirect selling per publisher must be ascertained.

Regarding **"maintenance"**, we mostly monitor **the price of contracts** with certain customers. This price changes once a year. When a publisher tells us he applies the same price variation on the same date for all contracts, we can follow this percentage change, often applied at the beginning of the year.

There are few similarities between monitoring the prices of software packages and monitoring other prices in the services sector, particularly in IT services. The disconnection in time between the cost of the product, previously supported during the research and development phase, and the market price makes it tricky to follow up prices in a relevant way (in connection with the indicators available through the management system). Likewise, the definition of the product – practically customised in some cases – complicates this price monitoring. In the case of products which are not really standard, we can ask ourselves whether the price monitoring used for consultancy, integration type IT services would be relevant.

3) Sampling and weights

The initial survey base is made up using the answers relating to the breakdown of turnover by product in **the annual survey of services companies.** Based on this survey, it is easy to identify the products which come under the domain of software packages. There are two product codes :

- licence sales of system and utility software packages
- licences sales of application software packages

In this survey base, we always chose the largest companies and selected the others by sampling, using size as a stratification criterion. At the end of this process, we added a few companies taken from the consultancy-integration-engineering-technical assistance sample who had told the field officer that they were publishers of standard software. **The final sample consisted of 70 companies.**

Many weighting methods are used in surveys on price monitoring of software packages. The basic item of information for the weighting is still **the publisher's turnover.** However, the method of calculating this turnover is not the same for companies. For example, **Microsoft France** in its turnover only declares the share of turnover ceded back by Microsoft Ireland, in the form of a subsidy. It seems that all the licence sales in Europe by Microsoft are declared by Microsoft Ireland. Microsoft Ireland

then pays a subsidy to every national Microsoft company in Europe. If we take the turnover declared by Microsoft France into account, we are being consistent in terms of the accounting regulations. However, we are underestimating the "real weight" of Microsoft compared to other important players such as Oracle, in relation to business in the country. This point is under investigation: in Microsoft's case it is essential to have a shared position in Europe.

Each publisher's turnover is then divided up according to the classification (see section 1). For each publisher, we also ask for the respective share of direct and indirect sales. The weight, in the publisher's turnover, of each software package whose price we will be monitored is also required. The relative importance of each product varies very quickly over time. This is why **we revise all the weightings once a year** by asking for a breakdown of the publisher's turnover once again. This revision may result in us monitoring the price of new products on the market at the expense of others which are at the end of their life.

4) Issues in maintaining constant quality

Dealing with the quality effect takes on special significance when monitoring the price of software packages. This effect seems to be very important and the relevance of the price indices calculated depends to a large extent on dealing with it correctly.

Briefly, we can identify **three types of problem** associated with the quality effect:

- the rapid change in the relative importance of the software packages monitored in the sample of publishers changes rapidly
- the change in the relative weight of the players, the appearance of new players. This is a quality effect which also appears outside the sample
- the treatment of the quality effect associated with a change in version of the same software package.

As we have just said, **rapid changes in the relative importance of each software package** will call for **an annual update of all the weights.** This update may be followed up with the introduction of new products whose prices we will monitor every quarter. Conversely, other software packages will disappear from the price monitoring. In order to link up the new and old products, **the "matched-model" method** will be used. For a given quarter, we will ask for all the prices (old and new products). It should be noted that this treatment of the quality effect only relates to companies in the initial sample.

In addition, there may be a change in the relative importance of publishers, with the possible **appearance of new players and/or new leading products** made by companies which do not belong to the sample. This would require a partial revision of the sample. However, this problem seems to be less important than the previous one, according to our contacts in the companies. For the moment, we are not planning to treat this type of problem (quality effect outside the sample), and will mostly take another sample.

The major problem with the quality effect lies in the treatment **of version changes** for the same software package. These version changes may be frequent (every 6 months for example). In all cases, it is not possible for two different versions of the same software package to coexist in a given quarter. Publishers do not want situations such as these. As soon as a new version comes in, the old one is no longer marketed. There is therefore no overlap. In most cases, when a new version comes in, it seems to be sold at the price of the old. So the price stays the same although the product has changed, improved. **How can we evaluate the profit from a version change?** On one hand, publishers are unable to answer this question. Although they know which new functionalities have come out, they cannot quantify the profit to be had from a change in version. On the other hand, the client's point of view may be completely different from the publisher's. The new functionalities which have come out may very well be of no use to the client who only uses basic functions, for example. Likewise, the estimated profit from a version change is different from one client to another. This problem is therefore very tricky to deal with. We have not come up with any satisfactory solutions yet. **International cooperation seems to be very important here.**

5) Price measurement challenges

In order to monitor the prices of standard software in a relevant manner, **there are many challenges to take up,** which are specific compared to other service activities. Likewise, for this sector, **international cooperation** seems to be highly desirable.

Regarding international cooperation, we can notice three main points:

- **harmonise the classification of standard software packages,** ensure that publishers adopt the same view of the activity referred to as "maintenance"
- **deal with large companies in the same way**, particularly in Europe. The case of Microsoft can be held up as an example on this point
- **find an appropriate and harmonised method of dealing with the quality effect associated with version changes of the same software package.** In my opinion, this point must be resolved if we are to ensure the reliability of indicators.