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## **Effect of Globalization on Services Producer Price Index Change in the IT Industry:**

Case Studies for Selected Multinational Companies

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One aspect of globalization is the international mobility of companies and factors of production. The intensity of globalization can be measured by the international relocation of industries, flows of goods and services between firms or subsidiaries of firms, short-term capital or financial flows, flows of knowledge and technology, and international migrations of workers.

The pace with which multinational companies have located abroad in order to deploy their activities internationally has accelerated in recent decades.

Growth in trade is not a recent development, and has been accentuated by greater intra-group trade as a result of the firms' international deployment.

This is the case for both goods and services. Services, which were once considered nontradable (in that they are consumed as soon as they are produced) are also subject to growing international trade, and their production is increasingly offshored. Service trade liberalization has been negotiated particularly in the framework of the WTO with the General Agreement on Trade in Services (GATS).

In services, decisions to outsource certain functions (general administration, logistics, transportation, marketing, and IT) were the occasion to proceed with offshore outsourcing.

Outsourcing in the IT sectors—variously known as facilities management, BPO (Business Process Outsourcing) or TMA (Third-Party Application Maintenance)—has gradually become offshore outsourcing. The first jobs to be offshored were in helpdesk, back-office, and data-entry operations. These relatively low-skill jobs were offshored rapidly. The positions now concerned are high-skill jobs and tasks of greater strategic importance for the firm, i.e., network administration, programming, software development and testing, design and prototyping, and systems integration.

While measuring the amount of offshored IT services is difficult, and the figures should be viewed with caution (see "Effects of Globalization on IT Services," Mike Holdway, BLS), it is generally accepted that—subject to qualifications regarding classifications and the definition of what is meant by IT services (for example, does it include software?)—about 10% of IT services is outsourced in the U.S., 5% in France, and probably over 15% in the UK. But these percentages could rise—even though, with the crisis, some sources believe that services will be "backshored" to the original country.

It is also generally accepted that, by and large, some 80% of offshored IT services is for the U.S., and the remaining 20% for the European Union.

### **How does this aspect of globalization affect the price index measurement?**

The main motivation for outsourcing is to obtain identical or similar services at lower cost. This may translate into lower prices. The production function is altered, the inputs are different, and they are organized and located in different places with different players. A change in the production function for services is not a sufficient condition for changes in prices. If the output is unchanged depending on the two types of production processes (before or after offshoring), two cases arise:

- The pricing methodology **is not** "time-based," in which case everything continues in the standard way (recurrent contract prices, prices for specified work units, etc.).
- The pricing methodology **is** "time-based," in which case one must take account of cost elements, which are themselves based on time elements. And those cost elements are affected by offshoring—primarily by wage differences.

In an attempt to understand the potential links between offshore outsourcing and the measurement of price indexes in IT services, we paid visits to companies or organizations involved in these operations, either as actors, observers, or consultants to firms, as follows:

- 3 SYNTEC (the main trade organization for French IT companies)
- 4 CIGREF (Club Informatique des Grandes Entreprises, an association of large "user side" companies)
- 5 Hewlett Packard
- 6 Cap Gemini
- 7 T-Systems
- 8 KLC/Solucom (consultant for outsourcing and offshore)

9 PAC-Online (consultant for outsourcing)  
 10 Mr. Y (consultant to French and Indian firms)

None of the companies we met would provide a precise, numerical example. There are few competitors in the field, and the methods for preparing bids and prices are long and complicated, based on nomograms and previous experience. Few if any companies measure prices in a way compatible with our requirements. There are many variables that determine prices. Despite the high technicality of the area and the complexity of the terminology, the visits contributed to a better understanding of some determinants of pricing. This is an area where not everything is open to inspection, but understanding the modes of functioning can help to focus attention on errors to avoid in service- price measurement.

- **Not all production of offshore IT services will affect SPPI (services producer price Indices). Where is the production sold?**

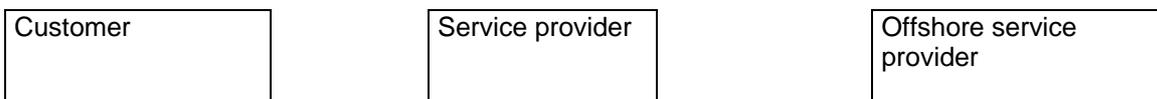
The organizational model of the relationship between customers and offshore service providers may or may not impact the calculation of the indices: depending on whether or not the final producer sells its production on its domestic market, the indices to be considered are either the domestic producer price indices, or the imported producer price indices (if they are calculated):

**1. Direct offshore service**



*No national IT company is involved here. The services purchased by the customer are direct imports by the customer (with no national production in the customer's country). Responsibility for measuring the service lies with the official entity that prepares the balance of payments. These imports are classified as intermediate consumption imported by the customer.*

**2. Offshore service provider with intermediary**



*The services are sold by a national company that contracts out to an offshore provider. The production is taken into account in the national accounts; the offshore services are imports by the national service provider.*

**3. Transparent offshore service**



*The national service provider has resources offshore. The customer deals only with the IT service provider, which handles the relationship with its subsidiary.*

**4. Creation of offshore subsidiaries**



*The same as in case no. 1, except for the difference in the legal relationship between the customer and the service provider.*

**5. Offshore service with front office in the country**



If the front-office service provider is a company identified and declared in the country, the services rendered offshore are considered imports by that company, and if the total production is declared in the customer's country, the total production must be included in the field of the price index. The front office may also be simply an intermediary, or a local unit of the offshore company.

- **Two main categories of offshored services: IMS (Infrastructure Management Services) and AMS (Application Management Services)**

This distinction is made by all industry professionals. **IMS** include operation of an IT system, maintenance of a production department (machines, servers, network, workstations, and helpdesk). There is long-standing experience in IMS, as IT outsourcing began in these areas. Note, however, that offshored datacenters are fairly rare, as customers are concerned to keep the items they consider particularly strategic and sensitive nearby.

**AMS** includes all operations related to applications: writing, programming, and applications maintenance, which is subdivided into "building" (writing and upgrades) and "running" the applications.

For each category, the prices of the services are defined for a specified period, so the customer can control its costs. Nevertheless, it is difficult to track an IMS price except via the price per work unit, whereas AMS, which requires primarily intellectual resources, is measured more through the price per man-day (daily charge-out rates).

- **What about average daily charge-out rates?**

The only benchmark for CIOs (Chief Information Officers) continues to be the average daily charge-out rate. The problem is that the definition of the average daily rate changes over time; as do definitions of skills, over, say, a five-year interval. Purchasing departments focus on average daily rates because they are easy to define. But their use is complicated; for instance, interns can work without pay; profiles are not harmonized or defined in the same way over time or in different places, or even in the same company. There are average daily charge-rates based on qualifications and country, circulated by the consulting firms, which provide average levels and trends:

	IT engineer, junior (€/day)	IT engineer, 2-5 years' experience	IT engineer >5 years' experience
France	450	700	1000
India	52	162	316
Vietnam	37	84	158

Source: *Offshore Developpement 2008*

But salaries are rising everywhere. And the higher you go in the company organization, the smaller the difference with Western countries.

Some companies compute, or try to compute, a "**blended charge-out rate**" as a weighted average of the charge-out rates of the people working on a project. This kind of indicator is frequently computed and submitted by companies bidding on a call for tenders. But it is not an indicator for tracking the work, and therefore is still of limited operational interest for our price-index calculations.

The downside to the use of average daily charge-out rates is the impact of non-measurement of productivity gains, due to lack of information. Here, this point is obviously crucial.

- **What work units for IMS?**

In principle, infrastructure does not go offshore, or only to a very limited degree. (For Airbus, the machines have remained in France. On the other hand, it is possible to remote-manage infrastructure [see notes on CAP Gemini].)

Still, a list of selected operations or areas can be made, without however any undertaking by the firms to provide the real prices, although they consider it would be theoretically possible to do so. The following can be noted:

Workstation management	Helpdesk (by telephone) Masters management Corrective action management Local assistance Service desk IMACD (install, move, add, change, delete) management
Infrastructure management	OS management Backup management Data storage management Database management (e.g., Oracle) Disaster recovery plan management

Possible work units: price per call ticket, per user, per PC, per corrective action, per backup unit, per gigabyte of managed storage)

Quality-related adjustments must be included: "One customer may ask for 90% of calls to be answered within 30 seconds; another may be satisfied with 60%, and will pay less." The price depends on the SLA (Service Level Agreement), which can vary over time, and thus lead to a change in the quality of service.

"The problem with information technology is that it is a network activity, combining many different work units. There are nomograms for measuring service price levels as a function of 'criticality,' 'availability,' 'number of version upgrades,' 'documentation,' and other factors."

Formerly, there were mainframe systems whose performance could be measured in MIPS; today's servers are used to only 20-25% of their capacity. What's at work is virtualization, which combines various resources into a virtual server cloud. This will make it impossible to say exactly where the work is performed.

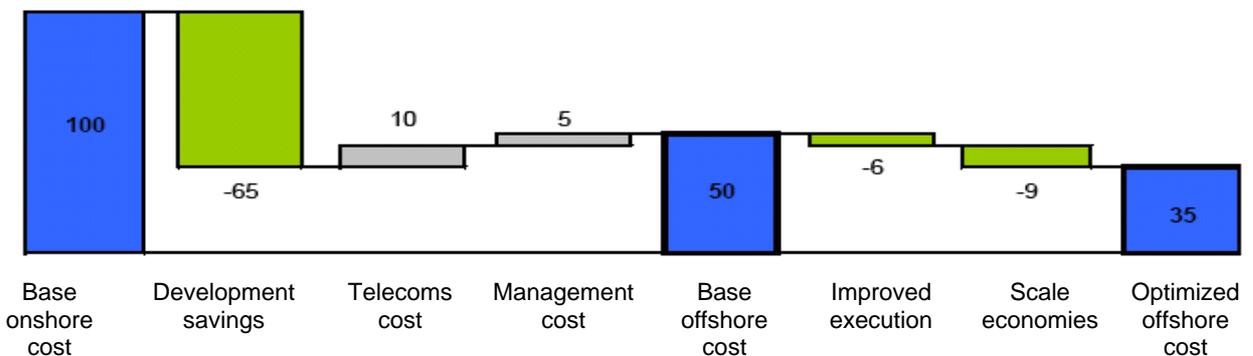
The new imperative for data centers is cooling the equipment, and therefore the cost per kVA, compared with a cost per square meter of floorage before.

- **Choosing where to outsource and estimating gains**

"Customers want low prices, but not necessarily offshore: they prefer nearshore (e.g., Poland or Spain), which is more reassuring."

Depending on the expected degree of cost savings, offshoring will be to Bucharest, or to Rabat, or to Bangalore.

But wages are not the only item to take into account in cost-cutting. This is a somewhat optimistic example:



Source: McKinsey GI

"Some companies still have reservations about offshoring, for reasons of language, culture, communication, or management." (This is illustrated in the cost of management in the chart.) Unexpected additional costs can arise (e.g., high employee turnover in India).

Offshoring—to India in particular—requires preparing specifications that are far more precise and detailed than if the operation were in France: in France we are no longer in the habit of doing that; it might not be in the culture. That's probably why offshoring is more straightforward in the UK and the U.S.

"Each time the offshore country is far from [the customer's] bases, increasingly complicated interfaces have to be put in place, raising the cost of the operation. For instance, costs are 20% lower in Morocco, but interfaces add 10%. The greater the distance, the more additional layers are needed because of language, culture, and so on."

Offshoring is also supposed to generate cost savings due to the complete re-engineering of existing processes. For example, when Renault outsourced to Atos Origin with offshoring in India, the new process replaced a system with 800 outside staff working in many different companies.

- **What could an overall solution look like?**

One contact discussed a price-calculation approach involving three 3 components:

- A. The **front office/back office ratio**, which could be, say, 35% front office and 65% back office. This is typical of French structures, but theoretically there is no limit to the back-office percentage.
- B. The levels and **differences in prices** (wages) between the customer's country and the offshore country.
- C. The **pyramid of offshored functions** (where are programming, expertise, and management located?).

This looks like an appealing solution but would be hard to implement. It indicates a direction in which it would be possible to move forward.

- **Market trends**

For IMS (the machines, and the management of the machines), lower prices have resulted from: (1) higher productivity due to pooling, virtualization, and consolidation arising from the definition and implementation of a common technical software base<sup>1</sup>, and so on; (2) the decline in infrastructure prices. But wages are rising, except in nearshore locations.

For AMS (the service, or people), wages and therefore prices are rising.

When national firms issue invitations to tender in their national markets, bids by offshore companies (primarily Indian) are 20 to 30% lower than bids from national IT companies. Those Indian companies locate virtually all the activity in India. Even if the Indian companies are not awarded the contract (owing to fears, risks, hesitations, and so on), they nevertheless indicate to the market the level of the price limit that can be achieved at that point in time, and exert downward pressure on prices.

But more than offshoring (to a single country), many companies wish to work continuously (with a "follow-the-sun" solution), and a single offshore location is no longer sufficient. They seek "global sourcing" on several continents at once—something that India's companies do not yet provide.

Offshoring also provides IT companies with an opportunity to establish a foothold in potential future markets, like China. The objective is not only lower costs, but also to gain market share in developing areas.

- **Conclusion**

There is obviously **no miracle recipe** for measuring offshore outsourcing prices in the IT industry. On the other hand, it is important for SPPI practitioners to understand what the industry means, how it fits into the market, and what a firm seeks when offshoring. Practitioners should also share **a common language** with

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<sup>1</sup> With the same software and versions across the system.

those specialists (and IT industry jargon is not very straightforward, as it often differs from one company to another).

Some things are certain:

- Offshore costs are lower. It is not absurd to think that costs are falling, given the competition among multinational companies. This must not be omitted in contacts with the major MNCs. So, don't be surprised if prices are declining, or, rather, prepare to be surprised if prices do not decline (in the absence of evidence to the contrary)!
- Depending on whether we are looking at infrastructure or applications, the working environments and pricing differ. This must be taken into account in the price-collection methodology.
- The volumes of offshored services are not very high at present, compared with national production (about 5-10%), but this could change. In that case, calculating import indexes could be useful. Offshoring is just a globalized version of the outsourcing that has already occurred at national level.

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