

GLOBAL OUTSOURCING OF IT-ENABLED SERVICES – AN OPPORTUNITY TO BRAZIL: THE eSOURCING CAPABILITY MODEL AND THE NEED FOR A ‘SERVICE ENGINEERING’

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ABSTRACT

Information Technology Enabled Services (ITES) international trade has been growing at very high rates. Alongside traditional IT services providers such as India and Ireland, and new entrants like China, Brazil is a potential candidate to reach important positions in such markets. One of the order-winning criteria in such markets is to be certified in well-known and respected reference models. In what concerns ITES, a new model, the eSourcing Capability Model (eSCM), specific for this industry conditions, and developed by Carnegie Mellon University, offers a unique opportunity for new entrants to differentiate themselves. Brazilian strategy to increase its IT related services exports may find in the eSCM label an important lever. But to reach such standard Brazilian firms will have to implement advanced organizational practices, a general effort that will need a renewed ‘Service (Industrial) Engineering’.

INTRODUCTION

‘Outsourcing’ can be defined as the practice of handing over the planning, management and operation of certain functions to an independent third party, under the terms of a formalized service level agreement (Sparrow 2003). It’s a type of sourcing arrangement that is handled by an external part. ‘Sourcing’ is understood as the formal structure of responsibility and delegation of tasks instituted for obtaining services and the management of resources and activities required for producing these services (Dibbert *et al.* 2004). Sourcing services are a subset of services that are delivered on a repetitive basis, usually in long term.

The outsourcing practice is not recent. In manufacturing operations, it was already common by the 60s. For the last decades, however, it has been gaining *momentum*, particularly in what concern services, given the increasing lower costs of Information Technology (Hyder *et al.* 2004). IT progress allows organizations to be re-designed, and new business models to be developed. New ways of providing sourcing services are conceived. In such context, a new breed of IT-enabled sourcing services, or simply IT-enabled services (ITES), appears in the global market. Such are services that heavily use IT infrastructure – including, of course, advanced telecommunication solutions under the IT banner – to allow services to be provided by an organization far away from the client – as an offshore basis, for instance.

As noted by Hyder *et al.* (2004), such kind of services were, originally, related to routine, non-critical tasks, usually labour intensive, and mostly with operational meaning to the client organization. Lately, they began to get sophisticated, either in its content – e.g. Engineering Services – or in the way they are delivered – such as in providing remote IT platform (hardware & software) for the entire client operation. In any case, IT-

enabled Services (ITES) are generally defined as services that are provided away from the client site, in spite of being a relevant activity for the client current operation. They have their sourcing relationship to the client supported by significant IT infrastructure, and they spread – in content and in reach – as a viable business alternative by surfing on IT non-stop developments.

It should be emphasized the difference between the acronyms ITES and IT services (ITS). While the ITS are directly related to provision of IT stuff, such as software development and application maintenance (NASSCOM-McKinsey 2002), the ITES refer to any services that can be performed remotely, with the support of telecommunications and data networks (Hyder *et al.* 2004). Therefore, though they are not the same thing, some IT services may also be an IT-enabled one, since the ITES characteristics are also found in their case.

In fact, there may be dozens of ITES types now being provided or, at least, being tested by new ventures. One may talk of a coming ‘explosion’ of IT-enabled offshore outsourcing services, as the search for available low cost professional (or knowledge) work seems to be at the centre of efficiency strategies of big companies nowadays. In fact, such is the perspective for the world market as seen by the Indian ITES industry. Providing more sophisticated services – ITES such as in Human Resource Management, Marketing, Accounting and Finance, Engineering, Legal areas, and even Health Care – is at the heart of their explicit strategy (NASSCOM 2004).

THE ITES INDUSTRY: INDIA AND THE OTHERS

According to a study presented by AMR research (apud Hyder *et al.* 2004), 50% of IT firms will outsource a portion of their business in 2006. In fact, a recent research by Gartner Group (2001) estimated the industry growth for the Business Process Outsourcing (BPO) market alone from a US\$ 119 billion in 2000 to a US\$ 234 billion in 2005 – at a 14.4 percent compound annual growth rate (CAGR). BPO is a particular kind of ITES where a full internal process of the client organization is outsourced for a remote site managed by the service provider.

Estimates for the whole market vary around big numbers. According to NASSCOM (2004), the ITES sector, which notched up revenues of approximately US\$ 773 billion in 2002, is expected to step up turnover to over US\$ 1 trillion by 2006. Such an explosive growth allows for a large movement towards offshore outsourcing. On one hand, there is labour shortage and rising costs in the developed countries. On the other, many developing countries have educated and relative lower cost professional workers available. The move to promote high earning arbitrages is, under normal open market conditions, inevitable.

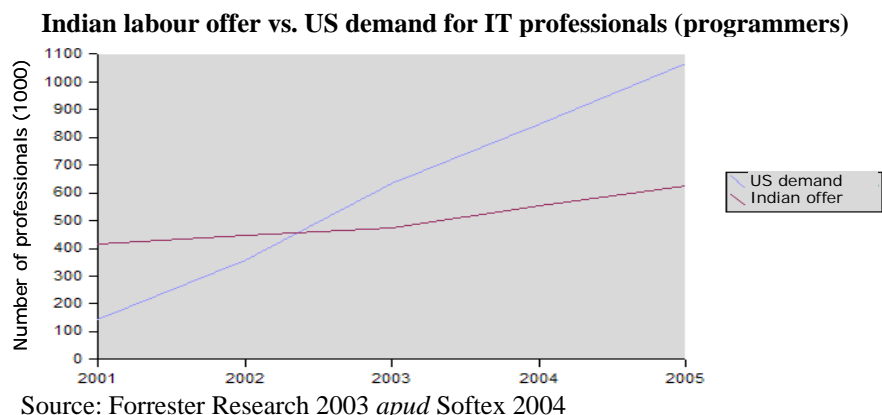
In such context, India presents itself as the main offshore sourcing service provider. According to A.T. Kearney (2003, 2004), India remains the star site among the countries to locate an offshore service. McKinsey, on its turn, estimates that for each dollar available to offshore services in the US, India captures 33 cents (McKinsey 2004). India differential in the sourcing services market lays on three combined advantages: significantly lower labour costs, higher productivity and increased quality in its services. In what concerns India costs, they are generally considered to show potential reductions of 40-60% when compared to average costs for the same operation in the US. Its quality index shows very competitive levels, sometimes even better than the US references. For example, GE’s call centre at New Delhi has achieved customer satisfaction ratings of 92%, while the US mark remains at 85% (www.callcentersindia.com).

Such differentiated position allows India to show amazing projected growth numbers in IT Services (ITS) and ITES. According to McKinsey and NASSCOM (2002), they expect ITS and ITES to represent 7% of India GDP by 2008. In 2001, such cipher was 1,4%. They also expect the industry to provide around 4 million jobs by 2008.

One might doubt such perspectives. But the same report informs that the projected growth to US\$ 17 billion in 2001 in 1998 had to be corrected for the real result of US\$ 21-24 billion reached by the industry. The

2002 report suggests that the Indian Industry may reach the astonishing level of a US\$ 80 billion services (ITS and ITES) industry, growing in a CAGR of 34%.

However, such growth may not find the adequate pool of professional workers. The 2002 report refers to an increase in 17 million graduates till 2008, of which 1 million would work with ITS/ITES. In fact, Forrester Research (2003 *apud* SOFTEX 2004) estimates a relevant gap between the demand side of the industry, and Indian sheer capacity to attend it. It is under this window of opportunity that other competitors see the chance of catching the Indian locomotive.



It is well known that countries like Ireland and Israel also offer a strong IT infra-structure and well prepared professionals. But such countries have been facing increasing limits in their professional IT workers pool growth and the inevitable increase in wage costs (NASSCOM-McKinsey 2002). In fact, the same report considers as the main threat to India's dominance the coming of other Asian countries to the Industry, and most specially the ever present China.

China has been increasing its share of the service provider markets. Exports increased from 5% to 9% of the world total. However, unresolved business issues around Intellectual Property, the complex exchange rate regime, and culturally-based relationship management problems have been a drag to China outsourced service growth (A.T. Kearney 2004). So, apparently unseen till now by NASSCOM's 'early-warning systems', there comes the chance for a vigorous IT domestic industry such as the Brazilian one to enter the IT-enabled services outsourcing global market.

AN OPPORTUNITY FOR THE BRAZILIAN INDUSTRY

In terms of offshore location attractiveness, recent research published by A.T. Kearney (2003, 2004) about the attractiveness of service offshore sites shows Brazil well placed as a potential country for providing offshore services in the global market.

In the 2004 edition, Brazil ranks seventh in the index, among the 25 countries evaluated. According to this study, Brazil ranks highest among the Latin American countries in terms of people skills and availability. One of the world's largest and most populous countries, Brazil's strong points include cost advantages and a large workforce with relatively good BPO experience in its sophisticated domestic market. Despite those advantages, however, the report advices that Brazil will find it difficult to move further unless it can improve its overall education levels and language skills.

Although there are no full studies about the Brazilian ITES industry, Veloso *et al.* (2003) provide separate assessments of Brazil, China and India in their quest to develop an internationally competitive software industry, and then compare their situations. The study demonstrates that, despite the economy size *vis-a-vis* the level of development of these countries, they have been able to develop their national industry very well. The

authors point out that in India one finds an export-oriented software industry (76% of the market), by which the country is internationally recognized, while China and Brazil had their growth commanded by the domestic market.

By comparing realities, history and prospects of the three countries, Veloso *et al.* establish some assumptions about potential paths for a competitive entrance by each one in the global market. In the case of Brazil, the work focuses on the size, structure and complexity (sophistication) of the demand for software in the domestic market. Top players have been working with leading domestic firms and have acquired important specific industry knowledge and good maturity in these areas, with solid experiences in high level services and products. Since it is difficult to compete in the lowest market segments (such as application maintenance) - given Asia's combination of low cost and qualified labour on which those services are based - Brazil should differentiate itself by combining products with highly customized services. Thus, the relevant opportunities to explore in the global market would be based on higher added value software services in vertical markets, where current Brazilian customers are world-class, such as telecommunications, e-gov, data and network security. These are areas where there would be niches in which the qualification and maturity of Brazilian software companies may be able to stand out. Such approach - to evaluate the present stock of resources and capabilities learned with demanding local clients - may also help to define potential niches for Brazilian companies in the ITES global market. In fact, one would then be following the footsteps set by Porter (1990) mighty research about the origin of the competitive advantage of national industries.

A second effort would be towards the complex service integration outsourcing, such as the development of large scale customized systems for governments and large companies, where many users spread out over a large geographic area. Brazilian integration firms may use software factories in regions with lower labour costs than those of big domestic demand centres, while their expertise in defining requisites and breaking up development into parts may allow for higher quality products. Such combination may lead to a unique competitive advantage. Again, what has been found for the ITS industry might also work as guidance for IT-enabled Services firms: such integration-based business model may well be one way for them to position itself in the global market.

There is without doubt an opportunity for the Brazilian industry. But the potential growth of the ITES sector would only be achieved by a change in Brazilian companies' competitive logic. According to Veloso *et al.*, that would mean restrain the expansion of the services portfolio - their present drive - and build narrower and more value-added relationships with clients. According to NASSCOM (2004), the same strategy has been pursued by many Indian IT companies in recent years, in order to move towards the ITES sector. In any case, alternatives to support Brazilian industry moves towards the international market are on the agenda. And one such breach seems to be the emergence of the need for a better provision of services world-wide.

QUALITY SERVICE PROVIDING: A GLOBAL CHALLENGE

Given the opportunities for ITES export and the rapid growth of the international market, competitiveness worries need to consider not only aspects related to the quality of products and processes (as seen, essential); but also the quality of service delivery itself, which is associated to successful sourcing relationships.

Quality of service is a critical aspect for sustaining a competitive position in the global market. In fact, the quality of the service provided must be not only developed but also, when possible, certified. Such approach has allowed in the past a vigorous process of manufacturing outsourcing, since certificated and reference models and practices allow buyers to save money and time when searching for suppliers. The development and the diffusion of reference models, best practices and management techniques internationally accepted are also important, then, for the global services industry. The agenda includes issues related to the guarantee of a service execution, respecting the levels of quality, cost and security previously established in the contract. It also relates to contract preparation, to the relationships between the service providers and client organizations before and after contracting, to risk management before and after finishing the contract, and to issues concerning resources

transference between partners, management of the available competences, intellectual property management, security information management, and others.

There are lots of anecdotes and internal reports about the under-performance of a lot of outsourcing relationships, which failed to deliver what was expected. American firms that followed the offshore outsourcing strategy did not reach the expected benefits in terms of costs reduction. That may be explained, among other factors, by the time consumed - high above the expected - and the effort made to select the appropriate service providers, to transfer the needed competence to the selected service providers and to monitor the work done by the chosen providers. Although the workforce cost in those providers is 1/5 to 1/4 of the American cost, the benefits for the US companies who did it don't reach, in most cases, 25% of cost reduction (Hayes *et al.* 2005).

There is, therefore, a global problem in such global industry. The firms and countries who first develop clever solutions for such problems can achieve important competitive advantages in the world market.

In the case of Software Engineering, certifications and normalizations have been crystallized among the progressive adoption of international and national models related to software development quality. Those models, such as CMM and the ISO/ IEC 12207, focus on improving the development, delivering and maintenance of software products and processes.

On the other hand, there is another set of frameworks and models (ISO 9000 series, National premiums etc.) that have been established to recognize quality and performance excellence. The ISO 9001, for instance, identifies the requirements of a quality management system which focuses on quality and clients, while the Brazilian National Quality Award measures how far an organization is to the parameters of a defined management model of excellence. However, those models do not contemplate critical issues in sourcing for both client and service providers. They do not provide methods to assess the capabilities of IT-enabled service providers in order to establish, manage and improve relationships with clients (Hyder *et al.* 2004). They are general references that do not offer solutions for a particular industry, like the ITES one.

The explosive growth of the ITES industry shows, therefore, the need for developing "best practices", frameworks and processes in the particular issues related to the operations and relationships between service providers and client organizations. In fact, there is a set of references being developed and a few of them have started to appear in the international market.

It is in this context that the *eSourcing Capability Model – eSCM*, developed by a research consortium led by *Carnegie Mellon University's Information Technology Services Qualification Center (ITsqc)*, appears as a relevant contribution for sustaining the dynamics of the industry.

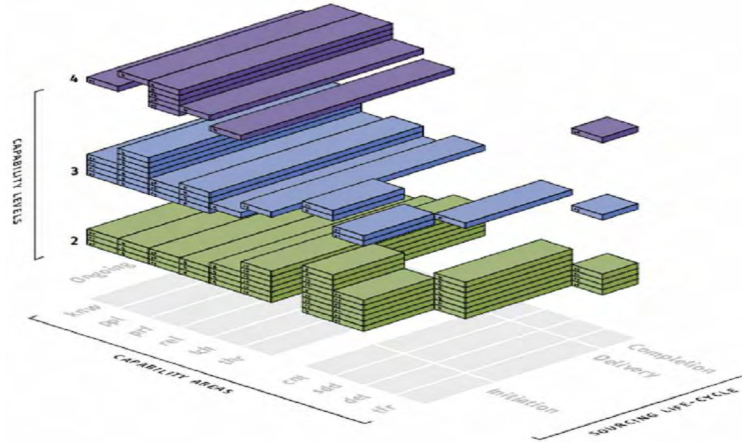
THE eSOURCING CAPABILITY MODEL

The *eSourcing Capability Model for Service Providers (eSCM-SP)* is a "best practices" model that prescribes a set of requirements for a high quality IT-enabled sourcing provision. ITsqc has also begun a related effort to define best practices for IT-enabled sourcing clients – the *e-Sourcing Capability Model for Clients (eSCM-CL)*. This model is being developed to provide compatible, effective sourcing practices for client organizations (similar to the *eSCM-SP*) (Hyder *et al.* 2004).

The *eSCM-SP* is composed of 84 Practices that address the critical capabilities needed by IT-enabled sourcing providers. These practices are arranged along three dimensions: Sourcing Life-Cycle, Capability Areas and Capability Levels. The Sourcing Life-Cycle includes Initiation, Delivery, and Completion. Ongoing spans the entire Life-Cycle, while each of the others occurs in specific phases of that Life-cycle. All the Ongoing practices are contained within six of the ten Capability Areas: Knowledge Management, People Management, Performance Management, Relationship Management, Technology Management and Threat Management. The other four are temporal and presented in a sequential order: Contracting, Service Design & Deployment, Service Delivery and Service Transfer. Once the *eSCM-SP* is a capability model, not a maturity one, it also includes five

Capability Levels that describes a path of improvement for service providers: providing services (level 1), consistently meeting requirements (level 2), managing organizational performance (level 3), proactively enhancing value (level 4) and sustaining excellence (level 5). The figure below shows the complete model structure.

The dimensions of eSCM-SP: Sourcing Life-Cycle, Capability Levels and Capability Areas



Source: Hyder *et al.* 2004

As a new model, an eSCM-SP certificate can be used as a competitive advantage to potential entrants in ITES market. Given its potential as a competitive site and a relatively extensive experience in its domestic market, Brazil seems to have here an unusual opportunity for its local industry. Once Brazilian firms satisfy the requirements prescribed by the model as nearly first-movers, they may differentiate themselves along the service quality dimension in the global market (Meth 2003). Yet that will not be an easy task.

DEVELOPING INDUSTRIAL ENGINEERING APPROACHES TO DESIGN ITES OPERATIONS: METHOD FOR A ‘SEVICE ENGINEERING’

The challenges raised by the eSCM impose the need for the re-design of the most part of the contemporary Brazilian IT-enabled service provider firm business processes. To fulfil the model requirements – to indeed implement its proposed practices – is, however, just part of the modernization agenda of such firms operations. The eSCM refers only to the firm practices related to providing the services, and signals ‘what’ is needed. The decision about ‘how’ to do it remains with the firm management.

In the best tradition of the ‘new industrial engineering’ of the 90s (Davenport and Short 1990), the design of such renewed organizations should depart from the design of its main business processes. Such work should be informed by reference models and management techniques, and by the full power of contemporary IT solutions. The target is to establish a potent Management Model (Caulliraux and Proença 2005), to be developed in order to sustain the business model and the strategy of the enterprise.

The point of depart for such work should be, indeed, the understanding of the business as a whole, including not only its market position, but also the relationships it should have with suppliers, customers, competitors, ‘complementors’ and other relevant stakeholders, and the resources and capabilities base that will support it through time. It is important, at this moment, to identify its main macro-processes, and its relevance inside the firm value chain.

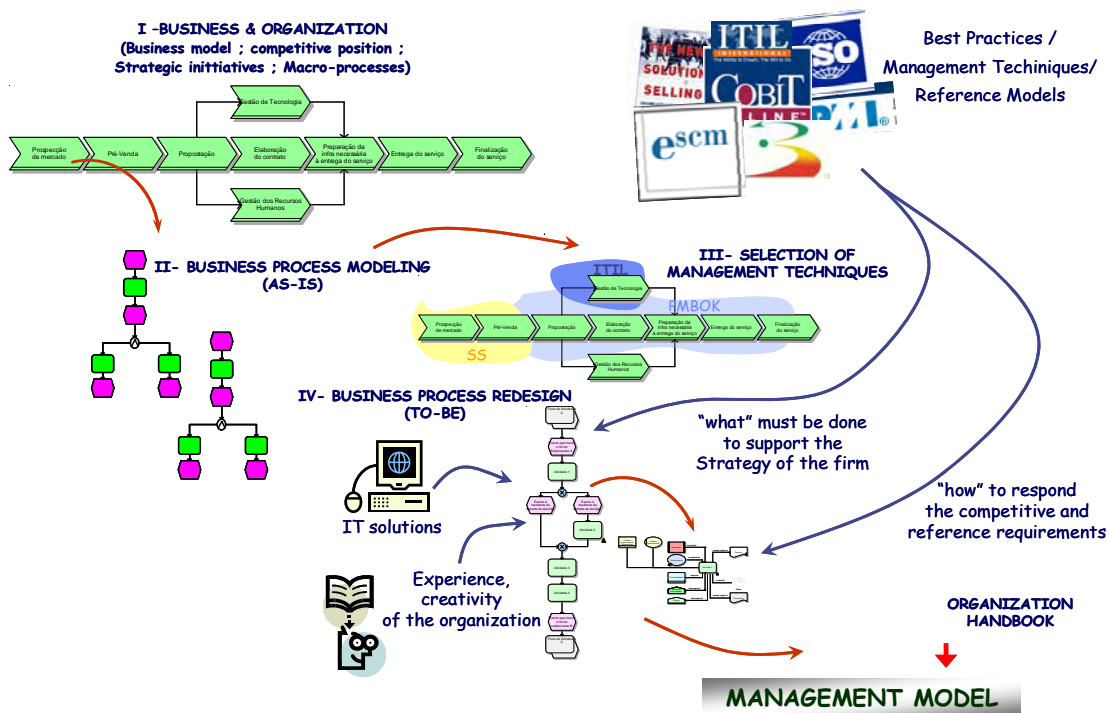
The modelling of the present situation of the firms' processes (Pidd 1999) is then a natural second stage of the work, since is based on it that one may discuss present problems and future needs, when moving to reach eSCM standards.

The next step is the most difficult one, for it demands sheer creativity in combination with choices among the present knowledge of best practices and advanced techniques in management. Such references will guide the redesign of business process, together with the possibilities opened by IT solutions. The eSCM-SP is, at this moment, a potent reference model, since it is focused in the 'what a service provider must do' to be effective and trustworthy for a (usually) international client.

On the other hand, the 'market of ideas' offers many Management Techniques to solve current management issues. The IT industry in general developed a series of models and policies guidance, such as ITIL, COBIT etc. There are also more general references (e.g. Malcom Bridge Award) and more specific solutions (e.g. PMBOK for project management; the Balanced Scorecard for performance measurement and control). The complexity of any organization, however, usually prevents one single approach to be sufficient for achieving effectiveness. One has to study and develop its singular management model, looking for the right combination of approaches and techniques. Such management 'framework' must respond to real work and business processes' issues, and so should be conceived informed by front line worries and tacit knowledge – from professionals and managers alike.

The definition of such set of management techniques includes also issues relating to organizational design and human resource policies. Such result will guide the redesign of the organization processes, in order to produce a prospective Organization Handbook, over which the real organization may model itself. It is relevant to say that in practicing such new 'handbook', organizations will develop a new Management Model, aligned to the requirements of the contemporary ITES industry. The figure below tries to illustrate such approach.

Proposed method for the design of an Organization Handbook / Management Model



Such approach departs from the usual Industrial Engineering toolset, and brings with it the usual distance such Engineering shows in what concerns deeper human and management issues. As in the case of the manufacturing tradition, such 'Service Engineering' will have to have what it lacks compensated by the contribution of other disciplines and the experience of seasoned managers. Given, however, the urgency to take

advantage of the window of opportunity now opened by global capitalism, a more Cartesian approach should be of some help. In fact, there is an overall demand for a Service Engineering strongly attuned to the possibilities opened by the ever evolving IT technology. Such Service Engineering demands study, research – and action.

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