INFORMATION SYSTEMS OUTSOURCING: AN EMPIRICAL STUDY OF SUCCESS FACTORS

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Abstract

The unstoppable tendency toward Information Systems Outsourcing contrasts with the lack of success in many of these contracts, which makes it necessary to study the factors determining that success. The present paper proposes a set of key factors to achieve IS outsourcing success and also; it establishes a number of measures to value the degree of success reached by firms at outsourcing and verifies the existence of a positive relationship between “being successful at Information Systems Outsourcing” and “valuing success factors positively”. We have validated all of this through a survey carried out among the Information Systems managers of the largest Spanish firms.

Keywords: Outsourcing, Information Systems, Success Factors, Factor Analysis, Regression Analysis.
1 INTRODUCTION

The tendency to outsource various firm processes, both nationally —onshore outsourcing— and internationally —offshore outsourcing— (Khan, 2007) has been increasing consistently in all the world’s developed economies during the last few years (McIvor, 2008). The search for higher efficiency levels along with the cost control efforts has forced many companies to specialise in a number of key areas, focusing on their distinctive competences. This process has become especially evident in the area of Information Systems and Technologies (IS/IT). In fact, the growth of IS outsourcing seems to be unstoppable, as shown by the fact that 89% of the organisations interviewed by the consultant KPMG plan to maintain or increase their current level of IT outsourcing (KPMG, 2007).

However, despite the growing proneness to outsourcing, few organisations openly state that they have achieved success with it. Moreover, both the client firms and the providers of these services are facing pressures to demonstrate the positive results derived from outsourcing (Han, Lee & Seo, 2008), and also to show how this process has added value to their organisations.

The literature has produced little clear-cut advice on the keys to IS outsourcing success (Seddon, Cullen & Willcocks, 2007). So the target of this paper is firstly, to identify the factors which are important to achieve IS outsourcing success and secondly, to propose a number of measures to assess the degree of success obtained by firms at IS outsourcing. In order to achieve this aim, we reviewed the literature on the topic and we additionally carried out a survey among the IS managers of the largest Spanish firms.

2 CONCEPTUAL BACKGROUND

2.1 Factors Determining IS Outsourcing Success

Based on the previous literature on this topic, we propose the following determinants of IS outsourcing success:

*A clear idea of the objectives sought through outsourcing.* Organisations often outsource processes without fully understanding the nature of the process and the linkages with other parts of the business, and this can lead to poorly specified requirements in the contract (McIvor, 2008). A basic condition for outsourcing success is the accurate definition of the project’s scope and specifications (Lacity, Willcocks & Feeny, 1996; Zviran, Ahituv & Armoni, 2001; Gottschalk & Solli-Saether, 2005).

*Provider’s understanding of clients’ objectives.* Just as it is important to make sure that the client knows the objectives sought through outsourcing, there is a need for the provider to be aware of his client’s objectives. Client-provider relationship management should basically focus on the provider’s managing to achieve clients’ aims. Suppliers with a good understanding and an interest in the outsourcing firm’s business will be in a better position to help to define mutually beneficial goals (Behara, Gundersen & Capozzoli, 1995) that will turn out to be essential for the middle/long term continuity of an outsourcing relationship.

*Provider’s attention to clients’ specific problems.* Clients do not want to be treated impersonally, like a number on a list; they want the provider to take into account their special technological and business characteristics. This is why experts usually advise against standard contracts (Lacity & Hirschheim, 1993), since each organisation is different and will consequently require a different contract.

*Choosing the right provider.* Prior to contract signature, a detailed evaluation and selection of potential vendors is necessary. The selected provider must come from a wide range of IT vendors; to locate a potential outsourcing provider, an organisation should investigate current outsourcing partnerships in the same sector as well as in related industries. It is advisable to analyse the stability, quality and reputation of the provider chosen. The provider’s stability and vocation for the future must materialise in the design of a long-range business plan; quality and reputation will rely on staff composition and on the variety of technological resources. It is equally important to see if client and vendor have the
right mixture of competences and know-how to meet the client’s information needs, and also to check whether or not their respective organisational cultures and working behaviours fit at all levels (Diromualdo & Gurbaxani, 1998).

**Frequent client-provider contacts.** IS outsourcing success requires a careful management of client-provider relationships (Koh, Ang & Straub, 2004). The contacts between both parties will make it possible: to build working relationships based on confidence, comfort and trust, which takes time and may involve dealing with problems and difficulties (Clarck, Zmud & McCray, 1995; Willcocks, Lacity & Kern, 1999); to ensure the provider’s extensive acclimatisation to understand his client’s style, standards and culture; to establish a good communication between client and vendor. Both parties must agree to communicate effectively so that the outsourcing deal is successful for everybody (Lee & Kim, 1999; Han, Lee & Seo, 2008) and to enable continuity through a design of relationships that anticipates change. After all, the intent and ambition for outsourcing may change over the course of the contract as business conditions and technology evolve. Therefore, it is important to foresee shifts in these priorities.

**A good-value-for-money relationship.** Financial justification is one of the top ten outsourcing success factors. Consequently, one can say that outsourcing is successful when it covers such financial-economic expectations as the achievement of a cash infusion, cost reductions, production and transaction cost economies, financial slack or even tax advantages (Lacity, Hirschheim & Willcocks, 1994; Smith, Mitra & Narshiman, 1998).

**Top management’s support and involvement.** Scholars have repeatedly described the involvement of the top management in IT-related decisions as the determining factor for the good or bad performance of IS departments within organisations (Rockart, Earl & Ross, 1996; Ross, Beath & Goodhue, 1996). By the same token, senior management support is also crucial in the IT outsourcing process (Zviran, Ahituv & Armoni, 2001; Fjermestad & Saitta, 2005).

**Proper contract structuring.** The contract is the materialisation of the outsourcing relationship, which is why research works on outsourcing have recurrently highlighted its relevance (Lacity & Hirschheim, 1993, McIvor, 2008). As some authors point out (Palvia, 1995), the contract is of paramount importance. A complete IT contract must rely on information symmetry in a predictable environment with occurrence adaptation that prevents opportunistic behaviour in an efficient collaborative environment with a balance of power between client and vendor (Gottschalk & Solli-Sæther, 2005).

The section dedicated to presenting the results of the empirical work will show the extent to which the firms under study value the importance of the factors proposed above.

### 2.2 IS Outsourcing Success: How to Measure

It is extremely difficult to define and measure success at IS outsourcing (Kim & Chung, 2003), to such an extent that a survey recently carried out for the consultant KPMG (2007) revealed that 72% of the customers of these services do not have or do not share the criteria for measuring the success or failure of their sourcing arrangements with their service provider. However, from the academic point of view, different authors have suggested measuring the degree of success at outsourcing as the addition of two factors: the overall satisfaction achieved with the adoption of outsourcing and its perceived benefits (Grover, Cheon & Teng, 1996; Kim & Chung, 2003; Saunders, Gebelt & Hu, 1997; Rustagi, 2004; Han, Lee & Seo, 2008; Seddon, Cullen & Willcocks, 2007).

Satisfaction is a good measure of outsourcing success for two reasons (Seddon, Cullen & Willcocks, 2007): firstly, because it means including and tacitly calibrating the costs and benefits involved in outsourcing and, secondly, because satisfaction is a valid measure, unlike other more specific measures which are not appropriate in all cases.

Concerning the benefits perceived, they refer to the perception by the client about the advantages that outsourcing can provide. Since such benefits are at the same time the reasons underlying any outsourcing contract or, to put it in another way, the client’s expectations with respect to it, the
perceived benefits measure the degree of achievement of those perspectives from the client’s point of view (Kim & Chung, 2003).

Taking as a reference a literature review, we propose the following reasons or expectations for IS outsourcing: Focusing on Strategic Issues, Increasing Flexibility, Improving Quality, Getting rid of Routine Tasks, Having Alternatives to IS Staff, Reducing the Risk of Technological Obsolescence, Facilitating Access to Technology, Saving Staff Costs, and Saving Technology Costs. Furthermore, we have analysed a reason that we should consider for the case of offshore outsourcing (not for onshore outsourcing), namely Accessing International Markets. We will comment separately on each one of them below.

**Focusing on Strategic Issues.** Market forces are somehow leading firms to outsource anything that does not form part of the business core and outsourcing makes it easier for firms to focus on their basic competences (Willcocks, Feeny & Olson, 2006).

**Increasing Flexibility.** Outsourcing provides great flexibility because the use of IT resources makes it possible to treat volatility in business levels more easily and allows the provider to assume fluctuations in IT workloads. Companies can apply outsourcing as a strategy to obtain flexibility during a restructuring or reorganisation process (Yang et al., 2007). Organisations also outsource as a way to react before the changing needs of their clients as well as those of IS users.

Outsourcing can **Improve the Quality** offered by IS services. At least in theory, firms outsource in order to access high-quality IT services and knowledge. This reason would find support among those who do not share the traditional view based on saving and cost control and, instead, believe that outsourcing takes place in firms which see IS as a basic function that can improve IS capabilities beyond those which the firm owns internally.

Despite the ideas mentioned in relation to the previous reason, outsourcing very often serves to **Get rid of Routine**, time-consuming Tasks within the area of IT management (Grover, Cheon & Teng, 1996). Some authors even claim that outsourcing not only liberates the company from routine tasks but also, if the IS function appears as something difficult to manage that the top management very often sees as “a headache” (Lacity, Hirschheim & Willcocks, 1994), it can help to eliminate or minimise a function regarded as problematic.

**Having alternatives to the internal IS staff.** This reason closely relates to the increase of flexibility in IS management mentioned above. What nobody can deny is that, thanks to outsourcing, the firm does not depend exclusively on its internal IS resources (Gonzalez, Gasco & Llopis, 2005).

**Reducing the Risk of Technical Obsolescence** is another important reason for outsourcing. It is precisely the fast rate of change in technology that places firms before the dilemma of making investments in new technologies or working with very mature, or even obsolete, technology. Technological outsourcing can minimise the problem too, since the technology that is available to the client belongs to the provider, which is why the latter, and not the former, suffers that risk (Clarck, Zmud & McCray, 1995; Grover, Cheon & Teng, 1996).

**Facilitating Access to Technology.** Outsourcing brings client firms advantages related to technology, as they can have access to specialised state-of-the-art technology, which is the one that the provider supposedly supplies. On the other hand, the efficient use of outsourcing will possibly allow the firm to make fewer investments in mature technology and also to have a greater availability of resources for new technologies on the part of the customer (Clarck, Zmud & McCray, 1995).

One of the most oft-cited outsourcing reasons is **Saving Staff Costs.** Outsourcing facilitates the access to a more specialised IT management, since the provider company finds itself in a better position to select, train and manage the technological staff, thanks to which customers can have at their disposal high-level specialists without them having to be permanent staff members.

**Saving Technology Costs.** Service providers dedicate all their capabilities to IS service provision, which is why they can obtain greater economies of scale and scope (Smith, Mitra & Narashimhan, 1998). Arguably, there is a transfer of part of these economies to the customer through lower prices for the delivery of the same services by means of outsourcing than through the in-house IS department.
Accessing International Markets. Many firms see offshore outsourcing as a way to approach other countries, not only to find more competitive providers, but also to acquire knowledge about them and explore their possibilities as potential markets (Sobol & Apte, 1995; Gupta et al, 2007). This is important if we bear in mind that some IT offshore service provider countries, such as India, China or Russia, have an enormous potential market because of their large populations and their high economic growth expectations.

Previous empirical works have tested all the reasons listed above, and this has permitted to reduce and summarise the perceived benefits of outsourcing in three groups: economic, strategic and technological (Saunders, Gebelt & Hu, 1997; Rustagi, 2004; Han, Lee & Se, 2008; Kim & Chung, 2003; Grover, Cheon & Teng, 1996). We will check whether or not the above-mentioned division into the three types of benefits applies to the firms under study in this paper.

3 METHODOLOGY

Based on the belief that the biggest firms are the most prone to outsource (Lee, Miranda & Kim, 2004), we decided to send a questionnaire to the largest Spanish companies. The directory “Las 5,000 mayores empresas” (The 5,000 largest firms) of the Actualidad Económica magazine —later collated with other databases largely used in business studies served to determine the target population, selecting the firms with highest sales. As in many cases the telephone numbers and addresses were the same, it was determined that some firms belonged to the same group, thus reducing the final data base from 5,000 firms to 4,107.

The questionnaire, which the interviewed firms filled out in 2006, mainly stems from a previous questionnaire prepared by the same authors, filled out in 2001 that, the same as this one, took the literature on the topic as a reference for its construction. Additionally, some experts in IS management analysed the test. Only 3 of the 26 questions in the final questionnaire appear in this work, because this study forms part of another larger one devoted to a wide range of issues related to IS outsourcing. Of those 3 questions, one refers to the IS activity outsourcing level, either nationally (onshore) or internationally (offshore) and two focus on the determinants of outsourcing success and on its measurement. Concerning the factors determining success, previous works have applied a procedure similar to ours, insofar as they offered a number of critical success factors and asked interviewees to assess them using a specified range of options (Gottschalk & Solli-Saeter, 2005). As for the last question, which measures the degree of success, it did not appear in the previous questionnaire as it does in this one; instead, it focused on determining the benefit level that customers associate with the adoption of outsourcing and, in general, the degree of satisfaction with outsourcing. This perceived benefit related to the compliance of the reasons which led the company to outsource, an issue that did appear specifically in the previous survey’s questionnaire. Table 1 shows the measures about the main variables in the paper.

<table>
<thead>
<tr>
<th>Construct</th>
<th>Source</th>
<th>Measure</th>
<th>Reliability (Cronbach’s α)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IS Outsourcing Success Factors</td>
<td>Literature review, 2001 questionnaire and own materials</td>
<td>8 items, likert scale from 1 to 7</td>
<td>0.919</td>
</tr>
<tr>
<td>IS Outsourcing Success: Satisfaction + Perceived Benefits</td>
<td>Literature review, perceived benefits are based on outsourcing reasons (2001 questionnaire) and own materials</td>
<td>11 items, likert scale from 1 to 7</td>
<td>0.872</td>
</tr>
</tbody>
</table>

Table 1. Measures of the Variables and Reliability.

The questionnaire addressee is the IS manager of the selected firms. We used the statistical program SPSS for Windows to elaborate the information obtained from the questionnaire and later treated it with univariant and multivariant methods. Table 2 shows the technical specifications of the empirical work.
Table 2. Study Technical Specifications.

There were 329 valid responses, which represents an 8% response ratio. This ratio is indeed low, but other works devoted to IT have produced similar or lower ones (Bahli & Rivard, 2005; Ma, Pearson & Tadisina, 2005; Shi, Kunnathur & Ragu-Nathan, 2005). The firms which answered the questionnaire correctly are representative of the total population in terms of size (sales and number of workers) and sector.

4 RESULTS

4.1 IS Outsourcing level

Table 3 reflects that outsourcing has become a widespread phenomenon in the largest Spanish enterprises, since 83.6% of them outsource some function nationally. However, a comparison with previous years reveals a certain degree of stagnation. In other words, the outsourcing volume has not increased during the last few years. Moreover, Spanish firms still show a very ‘shy’ attitude toward offshore outsourcing.

<table>
<thead>
<tr>
<th></th>
<th>Year 2001</th>
<th>Year 2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scope</td>
<td>Spain</td>
<td>Spain</td>
</tr>
<tr>
<td>Population</td>
<td>4,416 of the largest Spanish firms</td>
<td>4,107 of the largest Spanish firms</td>
</tr>
<tr>
<td>Sample size</td>
<td>357 valid answers (8.08%)</td>
<td>329 valid answers (8.01%)</td>
</tr>
<tr>
<td>Sampling Error</td>
<td>5%</td>
<td>5%</td>
</tr>
<tr>
<td>Survey date</td>
<td>June-October, 2001</td>
<td>September-December, 2006</td>
</tr>
</tbody>
</table>

Table 3. IS Outsourcing Level.

4.2 Outsourcing Success Determining Factors

We asked the interviewees to assess with a value between 1 and 7 the factors determining outsourcing success, according to whether they saw those factors as ‘Not important at all’ or ‘Very Important’ to achieve that success. The result appears in Table 4. The first reading indicates that all of them deserve consideration when trying to obtain success in this type of contracts, as each and every factor reaches a rather high score (all the means, medians and modes are above 4). Furthermore, Table 5 reveals that the relevance assigned by interviewees to these factors has hardly changed in recent years. The same
as in 2001, the selection of a suitable provider, the provider’s understanding of the objectives sought by the client through the adoption of outsourcing, the client’s clear awareness of his own goals and the provider’s ability to respond to the specific problems of each client appear as some of the most important success factors.

<table>
<thead>
<tr>
<th>Choosing the right provider</th>
<th>2006 Ranking</th>
<th>2001 Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provider’s understanding of clients’ objectives</td>
<td>1st</td>
<td>2nd</td>
</tr>
<tr>
<td>A clear idea of the objectives sought through outsourcing</td>
<td>2nd</td>
<td>1st</td>
</tr>
<tr>
<td>Provider’s attention to clients’ specific problems</td>
<td>3rd</td>
<td>3rd</td>
</tr>
<tr>
<td>Top management’s support and involvement</td>
<td>4th</td>
<td>4th</td>
</tr>
<tr>
<td>Frequent client-provider contacts</td>
<td>5th</td>
<td>7th</td>
</tr>
<tr>
<td>Proper contract structuring</td>
<td>6th</td>
<td>5th</td>
</tr>
<tr>
<td>A good value-for-money relationship</td>
<td>7th</td>
<td>8th</td>
</tr>
</tbody>
</table>

Table 5. IS Outsourcing Success Factors (2001-2006).

Next, we carried out a Principal Components Factor Analysis with the information about the items related to IS outsourcing success determining factors. The fact that only one underlying factor appeared after the initial items linked to outsourcing success determining factors leads us to the conclusion that they closely relate to one another and are equally very important, or as we have seen, reach high values when it comes to achieving success in this type of contract.

4.3 IS Outsourcing Success

Table 6 includes some statistics which describe the degree of outsourcing success achieved by the firms under examination. As explained above, we measure this success in accordance with the benefits perceived and the general level of satisfaction reached after the adoption of outsourcing. We asked the interviewees to assess between 1 and 7 the degree to which outsourcing in their firms had allowed them to obtain certain benefits or to be satisfied to a greater or lesser extent. The first thing that becomes evident is that, in their opinion, outsourcing has given them quite a few advantages, and that, on the whole, they are satisfied with outsourcing. The least valued factors have to do with potential cost savings (the mean and mode corresponding to these items are below 4, though its median is 4, which coincides with the middle measure of the Likert scale). Neither has it been possible, according to the interviewees, to turn outsourcing into a way of accessing new international markets, which makes sense taking into account that the application of offshore outsourcing is rather unusual in our case (See Table 3).
Table 7. Perceived Benefits: Total Variance Explained and Rotated Factor Matrix.

We have carried out a Principal Components Factor Analysis with the information about the items related to the perceived benefits of IS outsourcing in order to reduce the information offered by the original variables and thus highlight the factors underlying those variables. It became clear that such a factor analysis was pertinent (Correlation Matrix Determinant = 0.013; Kaiser-Meyer-Olkin Index = 0.844; Bartlett’s Test of Sphericity = 1164.879; Significance = 0.000). The Kaiser criterion indicates the convenience of extracting three factors, since there are three eigenvalues above one which explain 68.33% of the information provided by the original variables (a satisfactory ratio because it exceeds 50%). We carried out a varimax rotation with the aim of interpreting factors better. The results of this analysis appear in Table 7, where we have excluded the lowest rotated factor matrix values in order to facilitate the interpretation.

We have called the first factor ‘Technological Benefits’ because it is associated with the possibility that outsourcing gives to access new technologies and reduces the risk of technological obsolescence. This factor, which accounts for 24.27% of the information derived from the original variables, grasps those benefits reached (see Table 7), but to a lesser extent than strategic benefits, which have to do with the following factor.

Indeed, we identify the second factor —which explains 23.58% of the total variance— as ‘Strategic Benefits’, since it coincides with the outsourcing reasons linked to the possibility for the firm to focus on strategic issues, to increase the flexibility of the IS department, to improve IS service quality, to spare the firm from IS routine activities, and to have alternatives to the in-house IS. This factor includes the most often perceived benefits according to the interviewees (Table 6).

The third factor receives the name of ‘Economic Benefits’, as these refer to the possibilities provided by outsourcing to save staff or technology costs. Here also belongs the item associated with the possibility to access new international markets, even it was the least important perceived benefit. This third factor has less value than the two previous ones insofar as its contribution to the total variance is smaller (20.47%) and, moreover, as seen in the descriptive analysis, includes the items that interviewees valued the least.

5 CONCLUSIONS

IS outsourcing has become a widespread phenomenon worldwide, also in the case of the largest Spanish firms, though the latter are being somewhat slow in the application of offshore outsourcing.

Our interviewees confirmed the outsourcing success determining factors proposed in this study, which is why researchers should bear them in mind as a guide that can contribute to the success of IS outsourcing contracts. What is more, the importance assigned to these factors has hardly changed during the last few years, as we can see through the comparison between the results of the present survey and those of the survey carried out by the same authors five years before. Among the factors determining success stands out the importance of choosing the right provider, the need for the provider to have a clear understanding of the objectives sought by the client, and even the need for the latter to
be fully aware of his own objectives, that is, of what he seeks to obtain through outsourcing. Also, importantly, providers must give specific attention to each client’s own problems.

We can measure the degree of outsourcing success from the benefits perceived by the client and by the general level of satisfaction with outsourcing. An important conclusion has been the reduction of the perceived benefits of outsourcing to three types — technological, strategic and economic. This coincides with the information provided by previous works (Saunders, Gebelt & Hu, 1997), which suggest that these three reasons summarise the main motivations of firms when they decide to adopt outsourcing. What is more, the strategic motivations appear as the most important ones in the study, followed by the technological and economic ones, which confirms the conclusions of other authors with respect to the fact that IS outsourcing, far from focusing exclusively on economic and cost-saving foundations, seeks further strategic and improvement benefits (Saunders, Gebelt & Hu, 1997; Fjermestad & Saitta, 2005; Seddon, Cullen & Willcocks, 2007).

The access to international markets has been associated in our study with the economic benefits, so in the case of Spanish firms offshore outsourcing is more related with economic benefits than national or onshore outsourcing. In addition, the interviewed firms feel satisfied with outsourcing and, although companies have achieved economic benefits to a lesser extent than strategic and technological ones, we can state that IS outsourcing has been successful in the firms under scrutiny in this paper.

We have designed this paper from the client’s perspective, as is the case in most of the research works dedicated to IS outsourcing success (Koh, Ang & Straub, 2004). This is a limitation of the present study, which should be complemented with other works that analyse success from the point of view of the provider in the future. For this relationship to be successful, both parties (client and provider) must win. Otherwise the relationship will most probably not be a fruitful and lasting one (Gottschalk & Solli-Saether, 2005).

References


