INFORMATION SYSTEMS OUTSOURCING: AN EMPIRICAL STUDY OF SUCCESS FACTORS

Gonzalez, R.; Gasco, J. and Llopis, J. University of Alicante

Abstract

Purpose
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. Also it establishes a number of measures to value the degree of success reached by firms at outsourcing.

Design/methodology/approach
We have validated both things through a survey carried out among the Information Systems managers of the largest Spanish firms.

Findings
Factors determining success in IS outsourcing that have been proposed in this study should been taken into account by researchers and practitioners in IS Outsourcing.

Research Implications/Limitations
The paper examines IS outsourcing success from the client viewpoint. In the future it will be advisable to complete the scene with the providers' perspective.

Originality/value
The list of success factors provided has been validated along the time.

Paper Type
Research Paper

Keywords
Outsourcing, Information Systems, Success Factors, Factor Analysis,

1. INTRODUCTION

The tendency to outsource various firm processes, both nationally —onshore outsourcing— and internationally —offshore outsourcing— (Khan, 2007; Lacity, Willcocks and Rottman, 2008) has been increasing consistently in all the world's developed economies during the last few years (McIvor, 2008; Aktas & Ulengin, 2005). The search for higher efficiency levels along with 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 outsourcing. 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. In the academic context, a considerable number of studies which try to explain the influence of diverse factors on outsourcing success have appeared in recent years. Thus, a paper by Saunders, Gebelt & Hu (1997) analyses the connection between the nature of the contract, the perception of providers, the role

of IS and the success of outsourcing. Lee & Kim (1999) deal with the influence of partnership quality on outsourcing success. Lee (2001) focuses on the link between knowledge sharing, organizational capability and partnership quality when it comes to analysing outsourcing success. Kim & Chun (2003) observe the influence exerted by the tasks that the firm plans to outsource and the characteristics of the relational exchange on the success of outsourcing. Finally, Rustagi (2004) examines the extent to which the characteristics of clients, and of the tasks to be outsourced, as well as the degree of control, are relevant for outsourcing success.

In any case, although the reference to the studies above could suggest the opposite, the truth is that literature has produced little clear-cut advice on the keys to IS outsourcing success (Seddon, Cullen & Willcocks, 2007). And this paper precisely has as its aim to cover this lack. So the objective of this paper is to identify the factors which are important to achieve IS outsourcing success and, at the same time, 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 in the hope that it would help us to prepare a list of those factors which are most likely to influence outsourcing success. We additionally carried out a survey among the IS managers of the largest Spanish firms, asking them to value the success factors proposed by us and to specify the level of success achieved by their companies at IS outsourcing.

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; Provider's understanding of clients' objectives; Provider's attention to clients' specific problems; Choosing the right provider; Frequent client-provider contacts; A good-value-for-money relationship; Top management's support and involvement; and *Proper contract structuring.*

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). Unfortunately, many firms resort to outsourcing with only a vague idea of what they want to obtain from the vendor, as a result of the unavoidable uncertainty related both to the technological aspects of the IS service and to the volume of needs that they must meet. In other words, they wonder how to identify the technology that will be most suitable for the firm in a few years' time or how to determine the amount of data it will handle in future (Barthélemy, 2001). For this reason, it is advisable to outsource only those activities of which the firm has a clear understanding and for which the organisation can draw up a solid contract. It is equally advisable to sign the contract for a length of time that allows the firm to monitor its business requirements (Lacity & Willcocks, 1997).

The client firm must make an effort to clarify the business objectives that it seeks to achieve through outsourcing: What is the primary intent of the relationship? (a) to

reduce costs?; (b) to ensure permanent access to new technology?; (c) to introduce a radical change in the firm's technological position?; (d) to use technology in order to gain strategic flexibility?... Not only is it important to make the objective of outsourcing clear so that we can choose the provider that best fits our objective; different objectives may actually require different styles when handling relationships with providers. When the main aim is cost reduction, a very rigid contract becomes the best choice. However, when trying to gain access to new technology, it is more convenient to establish a flexible relationship with the provider. We can thus restructure both the nature of the services provided and the technical platform which serves to supply them (Clarck, Zmud & McCray, 1995).

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 (Kern & Willcocks, 2000). 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, 1993b; Martinsons, 1993), since each organisation is different and will consequently require a different contract (Saunders, Gebelt & Hu, 1997).

Choosing the right provider. The most important task that a client can perform in order to guarantee outsourcing success is to select a capable provider (Kim & Chung, 2003). The success or failure of the outsourcing agreement can largely depend on this choice (Barthélemy, 2001). For this reason, 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 (Baldwing, Irani & Love, 2001); to locate a potential outsourcing provider, an organisation should investigate current outsourcing partnerships in the same sector as well as in related industries (Martinsons, 1993). It is advisable to analyse the stability (Ngwenyama & Sullivan, 2007), quality and reputation of the provider chosen. After all, technology or business conditions may change during the contract's validity period, which means that it is necessary to count on such features as stability and quality (McFarlan & Nolan, 1995), along with reputation (Barthélemy, 2001), to ensure that the provider will be a suitable one. 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). These relationships will result in a partnership-type agreement between client and provider that is essential for outsourcing success (Judenberg, 1994; Lee, 2001).
- To ensure the provider's extensive acclimatisation to understand his client's style, standards and culture. We must bear in mind that management and cultural fit have proved to be key outsourcing success factors (Hurst & Hanessian, 1995; Martinsons, 1993; McFarlan & Nolan, 1995).
- 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 (Baldwing, Irani & Love, 2001; Lee & Kim, 1999; Han, Lee & Seo, 2008).
- 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.
- To set up the relationship structures and management mechanisms that ensure successful work with the outsourcing vendor over time (Diromualdo & Gurbaxani, 1998; Gowan & Mathieu, 2005; Zhang, Zeng & Huang, 2007).

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. It is precisely these expectations that numerous authors (Alner, 2001; Ang & Straub, 1998; Baldwing, Irani & Love, 2001; Clarck, Zmud & McCray, 1995; Gupta & Gupta, 1992; Hayes, Hunton & Reck, 2000; Jurison, 1995; Lacity & Hirschheim, 1993a; Lacity, Hirschheim & Willcocks, 1994; McFarlan & Nolan, 1995; McLellan, Marcolin & Beamish, 1995; Smith, Mitra & Narshiman, 1998) place among the most important reasons leading firms to consider IS outsourcing.

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 (Brabander & Thiers, 1984; Dos Santos, 1989; Feeny, Edwards & Simpson, 1992; Jarvenpaa & Ives, 1991; Kanter, 1992; Rockart, Earl & Ross, 1996; Ross, Beath & Goodhue, 1996; Schein, 1994; Yap, Soh & Raman, 1992). By the same token, senior management support is also crucial in the IT outsourcing process (Zviran, Ahituv & Armoni, 2001; Fjermestad & Saitta, 2005; Burdon & Bhalla; 2005). Both senior management and IT management involvement is thus necessary to conduct a rational outsourcing evaluation. When both the senior management and the IT management are involved, each one assumes a role that helps to reduce political behaviour (Lacity, Hirschheim & Willcocks, 1994):
- The senior management assumes the roles of identifying the objectives —either financial, business, or technical— defining the scope of the outsourcing evaluation, developing bid analysis criteria, and finally verifying the bid analysis.
- The IT management assumes the critical role of creating the detailed request for proposal, evaluating the legitimacy of vendors' economies of scale, estimating the

effects of price/performance improvements, and providing insights on emerging technologies that might affect the business.

Proper contract structuring. Having a properly structured contract is a vital element for the success of outsourcing (Saunders, Gebelt & Hu, 1997). The contract is the materialisation of the outsourcing relationship, which is why research works on outsourcing have recurrently highlighted its relevance (Lacity & Hirschheim, 1993b, McIvor, 2008). As some authors point out (Palvia, 1995), the contract is of paramount importance; you live or die by the contract; you cannot rely on verbal promises. If an organisation outsources its IS, the outsourcing contract is the only certain way to ensure the fulfilment of expectations. In practice, weak contracting based on inadequate assessment of a vendor's bid and backed up by poor monitoring systems, not only results in unanticipated, higher costs; it can create major problems for clients, too (Willcocks, Lacity & Fitzgerald, 1995). 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-Saether, 2005). This is why, even though we admit that the contract is not the panacea that guarantees a successful relationship, the contract turns out to be unarguably essential for outsourcing success (Kern & Willcocks, 2002; Fjermestad & Saitta, 2005; Burdon & Bhalla, 2005; Kim & Chung, 2003).

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

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[1].

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).

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[1] For instance, the most commonly mentioned outsourcing reasons are cost control, achievement of economies of scale or access to state-of-the-art technology. These may not be the objectives pursued by certain firms when they outsource, though. In any case, any firm wishes to achieve satisfaction with this service.

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 (Gupta & Gupta, 1992) and outsourcing makes it easier for firms to focus on their basic competences (Grover, Cheon & Teng, 1996; Hayes, Hunton & Reck, 2000; Lacity, Hirschheim & Willcocks, 1994; Smith, Mitra & Narasimhan, 1998; Willcocks, Feeny & Olson, 2006). In this way, the computer area liberates line managers because they do not have to coordinate with a large IS department, which simplifies the organisation. Likewise, computer experts will be able to concentrate their efforts on IS key activities, while companies outsource the most routine activities (Grover, Cheon & Teng, 1994). The client can focus on his business and the outsourcing firm will be responsible for updating the hardware and software and covering the business needs contained in the outsourcing contract (Alner, 2001).

Increasing Flexibility. Taking into account the significant changes that technology has gone through during the last few years, many firms can achieve considerable advantages from outsourcing, as this will prevent them from becoming technologically obsolete without having to make great investments in technologies. Firms can increase their flexibility through a continuous redesign of the contracts meant to satisfy their information needs (Clarck, Zmud & McCray, 1995). Outsourcing additionally 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 (Jurison, 1995). 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. This is due to various reasons: for example, the provider may have access to more advanced technologies, a more motivated staff, a better management system that can coordinate or control services or simply be more strongly committed than the internal staff to make the alliance with the client work well (Clarck, Zmud & McCray, 1995). At least in theory, firms outsource in order to access high-quality IT services and knowledge (Baldwing, Irani & Love 2001). 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, 1994, 1996; Hayes, Hunton & Reck, 2000; Lacity &

Hirschheim, 1993a). 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 (Jurison, 1995, McFarlan & Nolan, 1995).

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 (Claver *et al.*, 2002; 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, 1994, 1996). Companies can increase their flexibility through a continuous redesign of contracts that makes it possible for them to cover their information needs (Hayes, Hunton & Reck, 2000).

Facilitating Access to Technology. Outsourcing brings client firms advantages related to technology (Jurison, 1995), 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). In addition to this, the 'shiest' organisations which prefer to wait and see what happens with state-of-the-art technology may resort to outsourcing as a way to minimise the risks incurred if a specific technology is not the most suitable one (Gupta & Gupta, 1992). In this sense, outsourcing can arise as a form of experimentation with new technologies (Baldwing, Irani & Love, 2001).

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 (Alner, 2001; Ang & Straub, 1998). The client has in mind a staff reduction which will mean considerable cost savings for him. Additionally, among the characteristics of IS work stand out the deterioration of general knowledge and the scarcity of specific knowledge; the firm's ability to find and acquire the necessary IS knowledge is actually very important. In these circumstances, trying to retain a permanent workforce with a high-level, up-to-date training may prove prohibitively expensive for many firms (Slaughter & Ang, 1996, Olson, 2007). This is one of the reasons that have most often led firms to offshore outsourcing.

Saving Technology Costs. Service providers face a wider variety of problems and experiences with IS, which is why they can achieve greater knowledge and skills to solve these problems. Moreover, 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 (Hayes, Hunton & Reck, 2000). Outsourcing makes it also possible to turn fixed costs (associated with the maintenance of an IS department) into variable costs (dependent on the client's needs) and, if the design of the contract is correct, into predictable ones (Grover, Cheon & Teng, 1994, 1996; McFarlan & Nolan, 1995). What is more, the outsourcing contract may mean a cash infusion for the client firm when it transfers software licences and staff to the provider (Alner, 2001).

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 (Ravichandran & Ahmed, 1993; 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. In any case, the economic advantages (or, more precisely, those linked to saving costs) always have a connection with offshore outsourcing and equally with the possibility to access international markets.

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; Grover, Cheon & Teng, 1994; 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. In order to determine the study population, we used the directory *Las 5.000 Mayores Empresas* [The best 5,000 enterprises] of the Actualidad Económica magazine, later subject to collation with other databases such as Duns and Bradstreet's *50,000 Principales Empresas Españolas* [The main 50,000 Spanish firms]. Among the 5,000 companies with the highest turnover, we left out 893 because they were firms in which the address and telephone coincided, which indicated that they were either affiliate or subsidiary companies.

The remaining 4,107 firms received a questionnaire along with a stamped addressed envelope to return it. 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 2 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 three main variables of the study.

INSERT TABLE 1

The questionnaire addressee is the IS manager of the selected firms. Table 2 shows the technical specifications of the empirical work. 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). Furthermore, one should consider how difficult it is to obtain answers from executives, particularly IS executives, as technological progress along with the considerable investments of firms in technologies have made them become the target of numerous studies (Poppo & Zenger, 1998). The firms which answered the questionnaire correctly are representative of the total population in terms of size (sales and number of workers) and sector[2].

INSERT TABLE 2

4. RESULTS

4.1. IS Outsourcing Level

Table 3 shows that outsourcing has become a widespread phenomenon in the largest Spanish enterprises, since 83.6% of them outsource some IS 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.

INSERT TABLE 3

4.2. Outsourcing Success Determining Factors

INSERT TABLE 4

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).

INSERT TABLE 5

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.

Next, we carried out a Principal Components Factor Analysis with the information about the items related to IS outsourcing success determining factors. This analysis has

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[2] We used a T-test to verify the differences of means regarding the number-of-employees both for the firms which answered the survey and for those which did not, T having a value of -1.080 with a 0.280 significance level. In the case of sales (turnover), we performed a non-parametric test —Mann-Whitney's U-test— with a value of 444732.5 and a 0.338 significance level. A Chi-square test served to see the connection between the industrial sector and the response or lack of response by firms. Chi-square had a value of 2.802 and a 0.246 significance level. All this implies that there is no response bias in these three values.

as its aim to reduce the information offered by the original variables to a series of factors or constructs underlying that information, and with a smaller number of final factors than original variables. In this way, we can consider each factor as a combination of several original variables. Highlighting the underlying factors in each group seeks to obviate the least important or redundant information. We have checked that this factor analysis was pertinent[3]. The Kaiser criterion suggests the convenience of extracting a single factor, as there is a single eigenvalue above one, which accounts for 65.68% of the information supplied by the original variables (a satisfactory ratio because it exceeds 50%). As there is only one factor, we did not apply a factor matrix rotation to interpret it. 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 (Table 6).
INSERT TABLE 6

4.3. IS Outsourcing Success

Table 7 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).
INSERT TABLE 7
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[4]. 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

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3

Correlation Matrix Determinant	0.004
Kaiser-Meyer-Olkin Index	0.915
Bartlett's Test of Sphericity	1425.151
Significance	0.000

4

Correlation Matrix Determinant	0.013
Kaiser-Meyer-Olkin Index	0.844
Bartlett's Test of Sphericity	1164.879
Significance	0.000

varimax rotation with the aim of interpreting factors better. The results of this analysis appear in Table 8, 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 7).

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.

INSERT TABLE 8

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, as well as practitioners, 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 (Grover, Cheon & Teng, 1994; Gupta & Gupta, 1992; 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 (Ciappini, Corso &

Perego, 2008; Saunders, Gebelt & Hu, 1997; Kern & Willcocks, 2000; Fjermestad & Saitta, 2005; Seddon, Cullen & Willcocks, 2007).

The access to new international markets has been associated in the factorial analysis with the economic benefits, like the staff and the technology costs savings. This reinforce the idea that for Spanish firms offshore outcourcing is more related with cost savings than onshore outsourcing.

In addition to the above, 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).

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Table 1: Measures of the Variables and Reliability

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

Table 2: Study Technical Specifications

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

Table 3: IS Outsourcing Level

		2001		2006	
		N	%	N	%
Onshore Outsourcing	No	51	14.3	54	16.4
	Yes	306	85.7	275	83.6
Offshore Outsourcing	No	-	-	275	83.6
	Yes	-	-	54	16.4

Table 4: IS outsourcing Success Factors

Not important at all   1   2   3   4   5   6   7   Very Important

	Mean	Median	Mode
Choosing the right provider	6.52	7	7
Provider's understanding of clients' objectives	6.47	7	7
A clear idea of the objectives sought through outsourcing	5.89	6	7
Provider's attention to clients' specific problems	5.82	6	7
Top management's support and involvement	5.47	6	7
Frequent client-provider contacts	5.29	6	7
Proper contract structuring	4.29	5	6
A good value-for-money relationship	4.17	4	5

Table 5: IS outsourcing Success Factors (2001-2006)

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

Table 6: IS Outsourcing Success Factors: Total Variance Explained and Rotated factor Matrix

| | Total Variance Explained | | | | | | Factor Matrix | |
| | Initial Eigenvalues | | | Rotation Sum of Squared Loadings | | | | Factor |
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Variable	1
1	5.255	65.689	65.689	5.255	65.689	65.689	Choosing the right provider	0.804
2	0.701	8.762	74.451				Provider's understanding	0.869
3	0.542	6.777	81.228				A clear idea	0.852
4	0.426	5.326	86.554				Provider's attention	0.864
5	0.313	3.917	90.471				Top management's support	0.803
6	0.310	3.875	94.346				Frequent c-p contacts	0.825
7	0.242	3.025	97.370				Proper contract structuring	0.718
8	0.210	2.630	100.000				A good value-for-money	0.735

Table 7: IS Outsourcing Success

It has not been gotten at all   1   2   3   4   5   6   7   It has been gotten totally

	Mean	Median	Mode
Perceived Benefits			
Focus on Strategic Issues	5.25	5.50	6
Increased IS Department Flexibility	5.13	5.00	5
Improved IS Quality	5.05	5.00	6
Elimin. Troublesome, Everyday Problems	5.02	6.00	6
Providing Alternatives to in-house IS	4.77	5.00	6
Decreased Obsolescence Risk	4.72	5.00	5
Increased Access to Technology	4.57	5.00	4
Staff Cost Savings	3.99	4.00	3
Technology Cost Savings	3.70	4.00	3
Access to new International Markets	2.95	3.00	1
Satisfaction			
To be satisfied with IS out. in general	4.89	5.00	5

Table 8: Perceived Benefits: Total Variance Explained and Rotated factor Matrix

| | Total Variance Explained | | | | | | Rotated Factor Matrix | | | |
| | Initial Eigenvalues | | | Rotation Sum of Squared Loadings | | | | Factor | | |
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Variable	1	2	3
1	4.512	45.117	45.117	2.427	24.273	24.273	Focus on Strategic Issues		0.800	
2	1.188	11.879	56.996	2.359	23.587	47.860	Increased IS Dep. Flexib.		0.712	
3	1.134	11.339	68.335	2.047	20.475	68.335	Improved IS Quality		0.561	
4	0.819	8.190	76.525				Elimin. Problems		0.684	
5	0.548	5.475	82.000				Providing Alternatives		0.507	
6	0.519	5.186	87.186				Decreased Obsoles. Risk	0.794		
7	0.403	4.028	91.214				Access to Technology	0.888		
8	0.377	3.768	94.982				Staff Cost Savings			0.845
9	0.279	2.785	97.767				Techn. Cost Savings			0.622
10	0.223	2.233	100.000				Access Internat. Markets			0.778