

# Implementing Service Management Standards: Motivations and Key Factors

Cots Santi and Casadesús Martí

**Abstract** This chapter analyses the motivations and key factors reported by organizations after successfully implementing a service management system according to the ISO 20000 standard. ISO 20000 (approved in 2005 and revised in 2011) defines the requirements for implementing a standardized service management system, and has a form similar to the pre-existing general quality management standards while adapting its contents to standardize Information Technologies Service Management practices, although there is nothing to prevent it being used in other service management fields. The research is based on a survey that was answered by 105 ISO 20000 certified, Spanish organizations. It enables the profile of these organizations, as well as their main reasons for, and key factors when, implementing the standard, to be characterized. Motives are divided into external and internal factors and, as such, reveal the predominance of external reasons when deciding to implement certification. Furthermore, some key factors in successfully implementing the standard are highlighted, especially in terms of management and staff involvement. Other specific factors have also been analysed: such as the norms with which it is integrated, and the reasons why some organizations abandon the certificate. This research is the first reported in the literature to deal with two fundamental issues related to the implementation of the ISO 20000 standard: the reason behind implementing the standard and what the key factors in its adoption are.

**Keywords** ISO 20000 · ITIL · ITSM · Management standards · Service quality · Service management

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## 1 Introduction

Most of the value delivered by Information Technology (IT) to users takes the form of services (Bitner et al. 2000), whatever definition of value one decides to adopt (Davis et al. 2011). When IT services are produced by organizations, the management of those services becomes a necessity (Radovanovic and Sarac 2011), at least for those who want to deliver them with sustainable quality (Gupta et al. 2005; Stamenkov and Dika 2015).

Some organizations choose a formal and documented approach to their management activity through implementing a formal management system. If the management system follows the requirements of a standard, it could be said that the organization has or owns a standardized management system.

The benefits of standardized management systems have been broadly studied for the most widely-used standards; specifically ISO 9001 and ISO 14001 (Buttle 1997; Casadesús et al. 2001; Gotzamani and Tsiotras 2002; Casadesús and Karapetrovic 2005; Psomas et al. 2011). The service management standard ISO 20000 adopts a similar form to that of pre-existing general quality management standards, but adapts its contents to standardize IT Service Management (ITSM) practices, by defining the requirements to implement such standardized service management systems.

As the standard has rapidly reached a mature level of diffusion (Cots and Casadesús 2015), and in order to gain a deeper understanding of its impact, it would seem relevant to analyse the motivations for, and the key factors in, deploying IT service management systems by organizations that have already obtained ISO 20000 certificates. To this end these aspects are analysed in this chapter.

## 2 Standardisation and ISO 20000

The phenomenon of ‘Management Standards’ has been widely diffused as exemplified by the widespread use of ISO 9001, aimed at defining the characteristics of a standardized quality management system, and of ISO 14001 which focuses on environmental management systems (Marimon et al. 2006; Psomas 2013; Castka and Corbett 2015). Beyond general purpose management standards represented by, but not limited to, the standards mentioned above, a growing collection of sectorial or specific standards aimed at guiding more specific aspects of management, standards such as ISO 26001 (Corporate Responsibility Management System), ISO 50001 (Energy Management System), etc., have been developed.

Additionally, a common threat of most management standards is that they are auditable. This auditability characteristic means that anyone qualified can check an actual management system against the standard’s requirements by using a procedure called ‘audit’, and, in need be, declare compliance with the standard. Thus, independent organizations specialized in carrying out these audits, ruling on compliance and issuing the so-called “certificates” have emerged. It is important to

stress how a certificate relies on the prestige of the issuer and that it is only issued when compliance with the standard is complete i.e. certifying “partial” compliance is not possible.

Within this framework, ISO 20000 is the only international standard that specifically defines a service management system. The standard originated in the desire to establish a management model for Information technology (IT) services, meaning it could be referred to, at least in its beginnings, as a sectorial standard. However, there is widespread opinion that ISO 20000 also seeks to define a model that is applicable to many other sectors, to transform itself from a sectorial standard to a specific but multi-sectorial one for management services beyond IT (Cots and Casadesús 2013).

ISO 20000, which was based on the pre-existing British norm BS 15000, was officially approved by ISO in 2005. The latter was adapted to become an international norm using the procedure known as ‘Fast-track’, which allows the test period to be shortened under certain conditions. Since the first document, ISO 20000 has been progressively extended with the editing of different documents or parts. Of these, only the first establishes the requirements needed for a management system and so is the only one that serves as a basis for a certification audit. Table 1 shows the current set of documents that conforms the whole ISO 20000 standard.

### 3 ISO 20000 in Spain and Research Questions

Historically, Spain has been a leader in implementing management standards, such as ISO 9001 and ISO 14001 (Casadesús et al. 2001, 2008) and, in a similar way, ISO 20000 (Cots and Casadesús 2015). Given that this chapter is based on

**Table 1** Current documents of ISO/IEC 20000 series

Document	Name
ISO/IEC 20000-1:2011	Part 1: Service management system requirements
ISO/IEC 20000-2:2012	Part 2: Guidance on the application of service management systems
ISO/IEC 20000-3:2012	Part 3: Guidance on scope definition and applicability of ISO/IEC 20000-1
ISO/IEC TR 20000-4:2010	Part 4: Process reference model
ISO/IEC TR 20000-5:2013	Part 5: Exemplar implementation plan for ISO/IEC 20000-1
ISO/IEC TR 20000-9:2015	Part 9: Guidance on the application of ISO/IEC 20000-1 to cloud services
ISO/IEC TR 20000-10:2015	Part 10: Concepts and terminology
ISO/IEC TR 20000-11:2015	Part 11: Guidance on the relationship between ISO/IEC 20000-1:2011 and service management frameworks: ITIL®

the analysis of certified companies in Spain, it is important to briefly set in context the specific characteristics of this country in relation to the standard under study.

First, the fact that in Spain, like in other countries, there is a company whose various roles include carrying out functions of normalisation (the creation of standards) must be taken into account. This company represents the Spanish position and proposals in relation to ISO, and at the same time acts as a certifying entity in the market. In the case of ISO 20000, it can be easily estimated that the quota of certifications issued by the aforementioned company is more than 50% of the total issued in Spain. Another important factor, which could differentiate Spain from other countries, is that for some years there were official programmes that facilitated obtaining certification, which could have encouraged companies who would otherwise not have opted for achieving certification to do so. In all, it seems that a thorough study of the motivations and key factors in implementing ISO 20000 in Spain is sufficiently representative and can be extrapolated to other markets once the differential characteristics have been considered.

It would seem even more salient, then, to pinpoint and highlight the fact that at the time this study was undertaken, the standard had been in force for just eight years, during which time its diffusion had been rapid but limited (Cots and Casadesús 2015).

Regarding the motivations and key factors in implementing a specific standard like the ISO 20000, even though they are the same of mature global standards, the degree of influence of each of them may be different for that of this young and specific standard must be considered. Furthermore, they may even have varied according to the evolution of society itself or to the phenomenon of standardisation. Thus, studying the motivations and key factors in implementing a standard like ISO 20000 could provide information not only on the standard itself, but also on the standardisation of management in general and its evolution.

Finally, one valuable characteristic of some management standards is the possibility of integration or integrated installing (Karapetrovic et al. 2006; Simon et al. 2012) in which a single and holistic management system conforms to several standards by fulfilling all their requirements. As integration has a lot of advantages, ISO is currently in the process of reviewing all its management standards so that they will share a common form, which will make them much easier to integrate and assist integrated audits. While most of the previously cited standards have undergone this revision process and have already taken on the new structure, ISO 20000 will have to wait until its next revision, scheduled for about 2018, to do so. It is within this framework that questions about how this standard is currently integrated, or not, with others that are implemented within the organisation must be asked.

## 4 Empirical Study: Methodology

The main contribution of this chapter is based on field work that aimed to discover the motivations and key factors in implementing ISO 20000 through the experience of certified companies. To do so, the methodology previously tested by Casadesús et al. (2008) is used.

To investigate the perceptions of the organisations that have obtained a certificate based on ISO 20000, it was decided that those responsible for it within the companies should be surveyed. To this end, after having revised the existing literature on ISO 20000, a research framework and specific questionnaire were designed. Only one previous study with a comparable objective and methodology, although rather more limited in scope, was found (Disterer 2012). Existing studies on ISO 9000 and ISO 14000 were also considered to be basic references (Buttle 1997; Corbett et al. 2003; Karapetrovic et al. 2006, 2010).

In order to decide which concepts would be analysed and which questions would be formulated, all of the questions posed in the research of Buttle (1997), Corbett et al. (2003) and Disterer (2012) were systematically gathered. In this way, a relationship between the questions and categories to be analysed regarding motivations, implementing the standard and obtaining a certificate were established. Those that concerned similar, identical or globalised concepts were grouped together to create a new, unified list of questions which, in one way or another, included all of the concepts from the references. A Likert-type 1–5 unipolar scale of categories (Cañadas and Sánchez 1998) was used to collect the answers.

In order to study its integration with other standards, those that were considered to be relevant to ISO 20000 (ISO 9001, ISO 14001, ISO/IEC 27001, ISO 22301, ISO 31000, ISO 38500, COBIT, ITIL) were selected, including the most widely-diffused standards worldwide and also the main ones from the IT sector or this area (security, continuity).

It was decided that the questionnaire would be conducted through the individualised web formula where a personalised link is sent to each participant using a web platform. That way, the status of each answer could be monitored while ensuring that nobody outside the selected population could input questions into the system.

Once an initial questionnaire was designed, a panel of 8 reputable experts was selected to validate the content of both the questionnaire and the platform. Three of these were academics who had carried out similar studies on other standards at some time previous, and the other 5 were experts from ITSMF Spain and distinguished members of the sector with excellent knowledge of the norm in question. For the study, the aim was to send the questionnaire to a discerning individual in a position of responsibility (CEOs, CIOs, quality assurance managers, or similar) in each of the companies that had obtained an ISO 20000 certificate in Spain at some point.

Table 2 outlines the data of this study, highlighting the answer ratio of 70% that represents the 105 questionnaires answered out of the 149 sent, which is probably a

**Table 2** Characteristics of the study

Date	May–July 2013 (3 months)
Population (estimated)	186 companies
Study sample	149 questionnaires sent
Valid answers received	105 answers received
Answer ratio	70.46%
Maximum error ( $p = q = 0, 5$ )	$\pm 6.32\%$

reflection of the participants' interest in the matter and of our insistence sending reminders by email and making personal phone calls. The maximum error of  $\pm 6.32\%$  assuming normality, based on the approximated population and the number of answers with 95% reliability received, confirms the representability of the results.

Finally, note that during the data treatment process (September–October 2013), several of the participants were contacted via email to verify data that, a priori, seemed to be incoherent (such as dates that did not tally). Where participants' answers were able to clarify one of the aforementioned inconsistencies, the register was corrected accordingly. A deeper analysis of the content of the whole research is available in Cots (2014).

## 5 Motivations for Implementing ISO 20000

To find out the level of agreement regarding the possible motives that lead the companies surveyed to seek and obtain ISO 20000 certification, a list of motivations grouped into related concepts and based on the literature was proposed to them.

Figure 1 is a summary of these motivations ordered according to the average of the answers received for each, on a Likert 1–5 scale. The average value for each of the answers gives us a good idea of what the predominant motivation for most organisations were. Observe how only audits have a below average agreement value (low to medium).

Figure 2 is a graphic overview that gives us a deeper understanding of how the answers are distributed. For example, it shows that although user satisfaction and competitive advantage have valuation averages that are virtually the same, in the first there is a higher consensus as nobody expressed no or very low approval, whereas there were some opinions of this kind when participants were asked about competitive advantage as a motivation.

A usual classification of motivations, and one that was used previously by Buttle (1997) to study the motivations for implementing ISO 9000, suggests grouping them into internal and external motivations. Internal motivations are those that are directed towards making development and improved organisation possible, whereas external motivations refer to promotion and marketing, pressure from clients or other entities or increases in market shares, to give some examples. Although, of

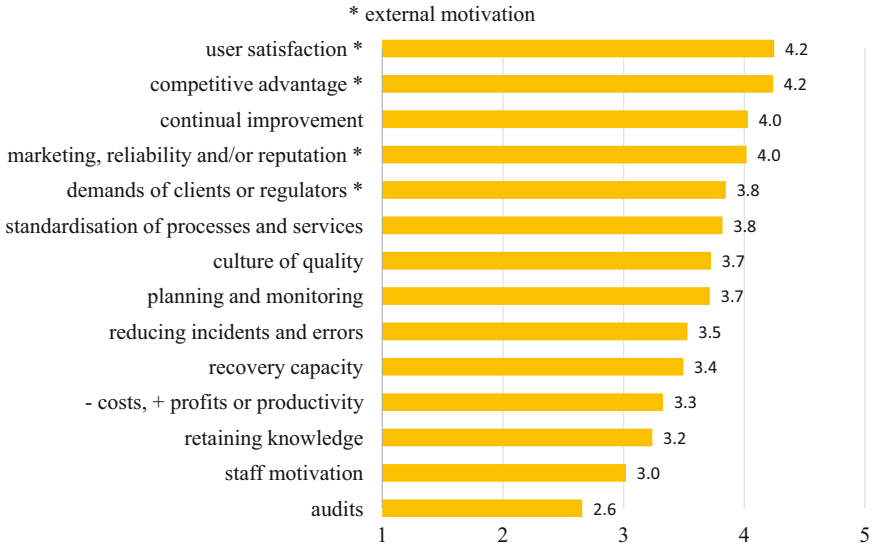


Fig. 1 Motivations to implement ISO 20000

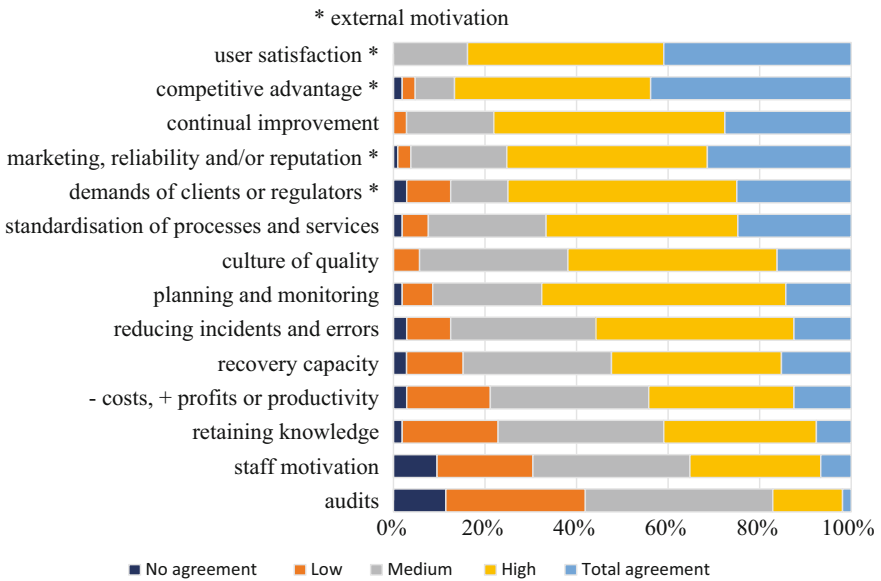


Fig. 2 Distribution of motivations to implement ISO 20000

course, participants were not informed about this classification, and neither was a specific order followed or grouping made in the questionnaire, the external motivations were marked with a “\*” in both figures.

While one type of motivation is as legitimate and respectable as another, it is usual for companies to have their own mix of the two types of motivations. It is also true that the list of internal motivations suggested is longer than the list of external motivations, as it was in the reference studies used and that some studies suggest that internal motivated organizations tend to internalize more the quality standards (Tari et al. 2013).

Starting the analysis of motivations with the external ones, it can be seen how user satisfaction just has the highest consensus. The very nature of the norm and the services is sufficient to explain why user satisfaction is a key motivation, if not the main one, in taking a decision like implementing a standardised management system for managing the company’s services. There is almost the same degree of consensus for competitive advantage. It seems reasonable to assume that the relative youth of the norm at the time of the study fostered a much more accentuated perception of competitive advantage among the first companies to adopt it than there would have been in a more mature market where most of the sector had already implemented it. Thus, if the implementation of the norm becomes generalised, as have enormously successful standards such as ISO 9000, the motivation of competitive advantage would be expected to be progressively substituted by the demands of clients or regulators, which currently features as the last of the external motivations (while still way ahead of most of the internal ones).

In any case, the four affirmations that encompass external motivations feature among those with the highest agreement, allowing us to confirm that, in general, the initial motivations for obtaining ISO 20000 certification are external. At the opposite extreme, the least valued motivations were found to be those linked to staff motivation and especially audits.

## 6 Implementation of ISO 20000: Key Factors

It is pertinent to analyse the key factors involved in successfully implementing the management system and its later external certification. Tacitly identifying obtaining certification with success, as all of those surveyed represent certified companies, we can assume that they have been successful in this area. Thus, their opinion, based on experience, must represent the factors that are key to success.

Figure 3 shows the average opinions of participants with respect to seven success factors. The degree of concordance for all of them is quite high, such that they can all be confirmed to be success factors. Most of the factors have a degree of agreement within the range of 3.5–4, on a scale of 1–5.

Staff, and especially management, involvement stand out with a very high degree of concordance. In fact, it can be seen in the distribution shown in Fig. 4



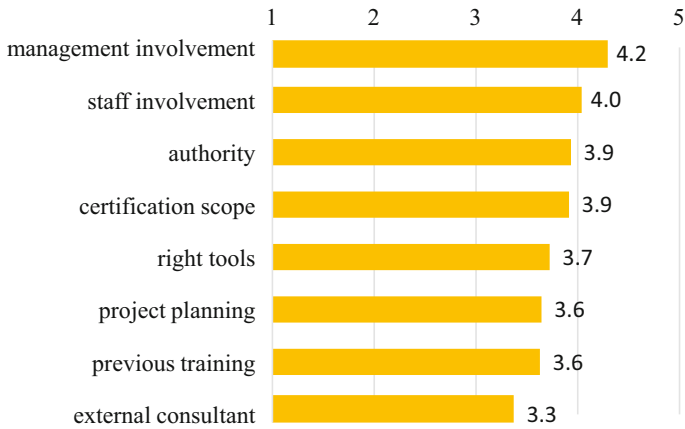


Fig. 3 Key factors for successful implementation

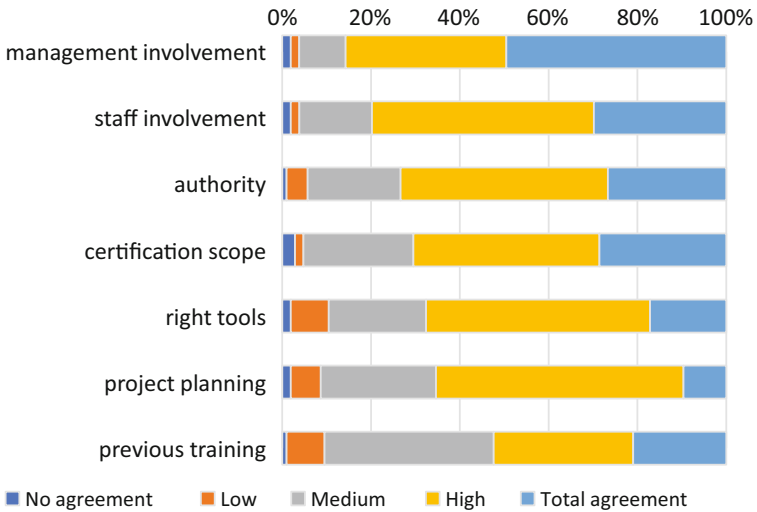


Fig. 4 Distribution of key factors for successful implementation

how approximately 50% of participants totally agree that management involvement is a key factor.

Regarding the need for a good consultant to undertake the project, even though on average it appears to be a less determinate factor than the rest, it is important to note the dispersion of the answers here. The fact that there are certain companies that successfully achieve certification without turning to external consultants for assistance makes the average for this success factor quite low. On the other hand, many participants either totally agreed or highly agreed with this factor, more so in

fact than for previous training. It must be pointed out that in the open field of the questionnaire a couple of participants highlighted the role of consultants or auditors as key success factors, thus recognising the importance and value of these figures in their specific cases.

It can also be observed that staff involvement is considered to be key to success in this type of project, despite staff motivation not being one of the objectives that stand out for obtaining certification.

## **7 Integrating ISO 20000 with Other Standardised Management Systems (SMS)**

The joint and simultaneous use of different systems in a single management system is generically known as integration or integrated implementation. Additional benefits are normally obtained from this type of integrated system thanks to the synergies and optimisation of the management itself (Karapetrovic et al. 2006; Bernardo 2012). The use of integrated management systems is a form of efficient organisation that is highly beneficial to those who use them (Casadesús et al. 2011).

The capacity to integrate with certain ease is a characteristic required by all standards. It adds value to some standardised management systems and is actively pursued by organisations like ISO who facilitate integration with each successive version of the norms. Consequently, many standards increasingly tend to use more common and/or compatible structures as they are revised and/or reedited.

At the same time, integration itself, or the knowledge and eventual use of other standards, can indirectly serve to characterise different organisations. There are organisations that are more clearly inclined towards standardised management, that feel comfortable following this type of norm and consider them to be part of their arsenal, while other companies do not display this tendency or have only recently started up and are in the process of maturation. Evidently, not all of the standards offer the same value, nor are they applicable to all organisations. Each potential user must be aware of what standards are available and decide which of them will provide solutions that meet their individual needs.

Thus, in a scenario where different standards, reference frameworks, etc., could be used, organisations can take different stances. For the purposes of this chapter, it was decided that these would be graded from one end of the scale whereby the organisation ignores the existence of standards (either because they do not know about them or as a conscious decision) or simply considers that their area of application has no place for them, to the other end of the scale whereby the organisation decides to make fully integrated use of them and obtain certification in the same standardised management system, as has been done for ISO 20000.

Somewhere on the scale a position can be found where the norm is used as a reference (that is, it is taken into consideration in some way). Another position can be found where the norm is used formally but without certification, another where a

standardised management system has been implemented and separately certified, another where the norm is formally integrated with the ISO 20000 management system, but no certification is sought for the additional norm, and finally, another where both (or more) are integrated and certified together.

To find out the state of integration, a list of norms and common standards in the sector was proposed: ISO 9001, ISO 14001, ISO/IEC 27001, ISO 22301, ISO 31000, ISO/IEC 38500, COBIT and ITIL. However, not all of the standards proposed in the study are certifiable. Answers for all of the categories of integration and standards were admitted, although some of the possibilities were not formally possible. In fact, the number of answers that affirmed formally unviable degrees of integration for some standards is significant and requires an analysis of the specific causes. Apart from the odd erroneous answer, some participants may not have been completely clear about the concept of integration or the market (consultants) may even have support a specific idea of the non-certifiable standards, which would have contributed to this confusion.

In any case, leaving aside the ‘false integrations’ it can be affirmed, as illustrated in Fig. 5, that there are a large number of organisations that use ISO 9001, ISO 27001 and, to a lesser degree, ISO 14001 in an integrated way with ISO 20000, or who maintain separate certificates. The use of ITIL is also very widespread, as was expected given its popularity in the sector and its close relationship with ISO 20000.

Finally, in an attempt to find out which norms are used in the sector and, at the same time, to better identify companies with a normal experience, participants were asked to identify which other standards they use. These are shown in Table 3.

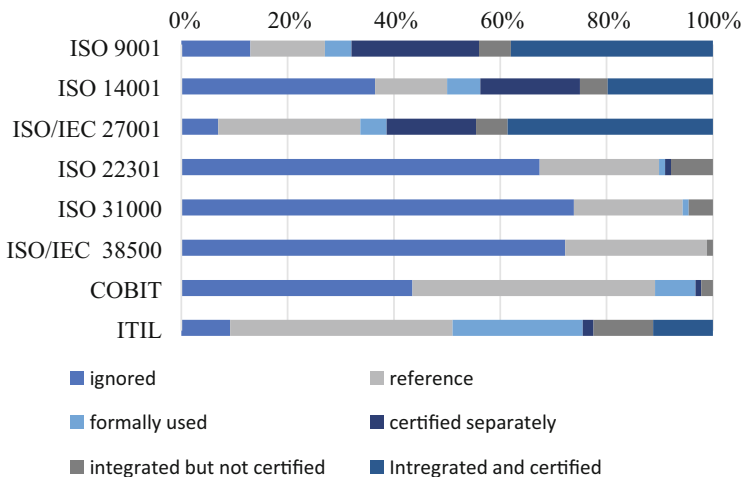


Fig. 5 Integrations with ISO 20000

**Table 3** Other standards used

Standard or norm	Answers
ISO 15504	7
CMMI	7
UNE 166002	3
EFQM	2
UNE-EN ISO 14006	1
PECAL 2110 y 2210	1
OHSAS 18001	1
PMBOK	1
MOF	1

As can be seen, the standards most often mentioned correspond to the field of software development, while among the special cases some very specific standards or norms can be found, such as military regulations.

## 8 Conclusions

First, it must be stated that a broad vision of the motivations and key factors in implementing ISO 20000 has been offered in this study, by means of comparing it with other standards.

A large number of answers were received, and, because of the population that was sampled for the survey, the data are highly reliable. The first conclusion concerns the motivations for implementing ISO 20000. It can be concluded that external motivations are key in the decision to initiate the process of implementing a standardised service management system. In other words, motivations related to service users, image and competition are primary.

Regarding the implementation process through which those who manage to achieve certification pass, the importance of the human factor, in the form of management, and especially staff, involvement must be mentioned. The strong relationship between ISO 20000 and ITIL also seems to be foremost for those that implement the standard, although this could be seen as a weakness when ISO 20000 is implemented in other sectors beyond IT.

This relationship with other standards becomes particularly pertinent when we see that more than half of the companies with ISO 20000 certification also have ISO 9001 and/or ISO 27001 certification, mostly in an integrated management system. 35% have ISO 14001 certification, half of them integrated. Clearly, this high percentage of companies with other certifications allows us to define two types of organisations according to their experience or relationship with other standardised management systems. Without doubt, this study is a reflection of a certain moment in time, of a norm that is still very young. Consequently, the findings reported here can serve as a reference for future developments in this field.

In any case, the last conclusion is, in fact, that this is an open area of research and knowledge and it is hoped that this small contribution, along with others, will serve as a springboard for future advances that will allow us to continue to widen our knowledge of the field of service management and standardisation.

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