

## Project risk management methodology for small firms



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Received 15 January 2013; received in revised form 17 May 2013; accepted 23 May 2013

### Abstract

We present a project management methodology designed for small businesses (SMEs), who need to run projects beyond their normal operations. These projects are critical to the survival of these organisations, such as the development of new products to adapt to the market or new legislation, management system implementations, etc. Very frequently, the managers of these projects are not project management professionals, so they need guidance to have autonomy, using minimal time and documentation resources. The risk management method outlined in this paper is based on extensive research with a large number (72) of Spanish companies. This new methodology considers the factors that are usually neglected by SMEs; i.e., project alignment with the company's strategy and results management. The methodology, based on project risk management, includes simple tools, templates and risk checklists with recommended actions and indicators. For validation it was tested in five different types of real projects (innovation, management systems and ICT implementation) of industrial and service companies with different characteristics.

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**Keywords:** Small firms; Project risk management methodology; Strategic risks

### 1. Introduction

Small and medium enterprises (SMEs)<sup>1</sup> represent a very important part of the European economy, as they are the major

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<sup>1</sup> The new SME definition established by the European Economic Community in 2008 sets the following criteria for a company to be defined as SME:

SME thresholds	Staff	Turnover	Balance sheet
Micro enterprise	<10	<2 MEuros	<2 MEuros
Small enterprise	<50	<10 MEuros	<10 MEuros
Medium-sized enterprise	<250	<50 MEuros	<43 MEuros

It is interesting to note that even though it is obligatory to respect the thresholds referred to computing staff, an SME may choose to meet either the turnover limit criterion or the balance sheet; it does not have to meet both and can exceed one of the two and still be considered an SME.

source of jobs, create entrepreneurial spirit and innovation and, therefore, are essential to promote competitiveness and employment (European Commission, 2008). SMEs generate 66.7% of employment in the European Union, employing over 90 million people (Eurostat, 2011).

SMEs are companies with limited resources due to their size; therefore they must overcome great difficulties to cope with new projects. Besides, the need to open foreign markets, market evolution, legislation changes, management modernisation, etc. make it necessary for many small organisations to undertake projects. Projects are the main tool for change in these companies, and are often undertaken beyond their usual activities. They also tend to be internal and managed by unskilled staff. Small businesses do not generally use the most recognised standards in project management (i.e., PMBoK, PRINCE2R, ICB); in some cases due to ignorance, and in others due to their relative complexity it compared to the normally reduced size of SME's projects.

The aim of this paper is to present a project risk management methodology designed specifically for these situations, and

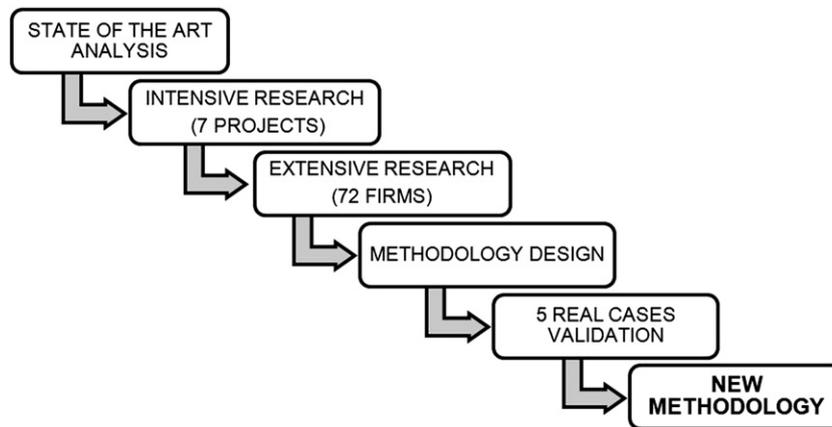


Fig. 1. Investigation phases.

successfully tested on five real projects. The methodology followed in this research is presented schematically in Fig. 1. After a literature review, with the collaboration of seven SMEs, a diagnosis of their needs was completed and the required tool characteristics were defined (Marcelino-Sádaba and Pérez-Ezcurdia, 2010). Based on these findings and with the collaboration of another 72 companies, we designed a methodology for such projects' risk management. This methodology was refined and validated experimentally with five new real projects' management. The criteria to choose both companies and projects, were to cover the widest possible range of companies (three micro, one small and one medium companies), and project types (an R + D project, an ISO standard implementation, an ERP implementation, an innovation project documentation and a document management system).

## 2. Literature review

In most cases, companies' growth in general, and SMEs in particular, is accomplished through projects. These projects should enable, through innovation, meeting the objectives, for which it is necessary to face new challenges and look for tools that facilitate this process (Retrato de las Pyme, 2011). However, SMEs have great difficulties in implementing projects, especially when it comes to raising capital, or seeking access to new technologies (Galindo Lucas, 2004).

The size of the company can be considered a key factor in business development, conditioning its behaviour (Fariñas, 1994; Rogers, 2004; Servicio de estudios del Consejo Superior de Cámaras de Comercio, n.d), since it is often necessary for companies to be larger in order to carry out certain investment policies, internationalisation, innovation or human capital. Therefore, smaller companies are the ones less likely to survive, especially in their early years.

The relation between firm size and innovation constitutes a highly relevant research topic and a controversial one, with an open-long-lived debate (Lee et al., 2010; Revilla and Fernandez, 2012). There is a large number of empirical studies which have reported positive, negative or even insignificant relationships between firm size and its decision to innovate (Kemp et al., 2003;

Klomp and Van Leeuwen, 2001; Loof and Heshmati, 2002, 2006). The main reasons for such ambiguous findings might be attributed to industry-specific characteristics (Hashi and Stojic, 2013).

It is not evident that larger firms are always better than SMEs in innovation. SMEs may have a strong capacity for innovation but often they lack the resources and knowledge to manage the whole innovation process by themselves. Although SMEs tend to have a higher R&D productivity than larger firms there is still much debate about the innovativeness of SMEs (Lee et al., 2010; Tomlinson and Fai, 2013). Currently, several publications have considered the importance of SMEs' access to corporate networks that help them overcome their limited resources and technology, thus, allowing greater technological opportunities (Chesbrough, 2003, 2007; Tomlinson and Fai, 2013).

In 2011, in Spain, 73% of the SMEs and 84% of the large firms carried out I + D activities executing 50.2% of the managerial expense in innovation (COTEC, 2012). Nevertheless, comparing the Spanish innovative SME percentage with other OCDE countries, it is possible to observe that Spain ranks first opposite to countries considered as models such as USA (16.8%), Germany (11.01%) or Japan<sup>2</sup> (6.29%). As EUROSTAT innovation statistics (2012b) indicates, the proportion of European innovative enterprises by size class (2008–2010) is very different according to the studied country reflecting the different structures of each domestic economy. Note that large enterprises tend to innovate more than SMEs and that large enterprises (with 250 or more employees) were more likely to have brought product innovations to market than either medium-sized enterprises (50 to 249 employees) or small enterprises (10 to 49 employees) (EUROSTAT, 2012a).

There is abundant information on project management and risk management, but there are few references on project management in small and medium organisations and small project management. According to Pérez-Ezcurdia and Marcelino-Sádaba (2012), there are major differences between small and large companies; which makes project management methodologies not applicable in all

<sup>2</sup> Japan does not include firms of less 50 employees.

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