A New Maturity Model for Project Risk Management in the Automotive Industry

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ABSTRACT
The purpose of this article is to present a new maturity model for the assessment and ongoing management of project risk management capability in the automotive industry. The research design is based on a multi-project case study analysis in a major German automotive company. The approach is qualitative and inductive, using 12 in-depth interviews with major stakeholders in the project management function in the company to provide data for the construction of the initial maturity model. This model is then verified and refined via an on-line survey and three follow-up interviews. The findings provide material for the construction of a new maturity model that can be used for the assessment of project risk management capability and as a tool for on-going monitoring and improvement. The model is structured around four dimensions of risk management – identification, assessment, allocation and appetite – and has four maturity stages – rudimentary, intermediate, standardised and corporate. The model is based on a detailed analysis of in-depth interview material in a specific industry sector. It can be used as a basis for similar research in other industries. The model adds to existing risk management maturity models and is unique in being specific to the automotive industry. It can be used by risk and project managers, and can also be adapted to other industry sectors.

KEYWORDS
Centricity, Maturity Model, Project Risk Management, Risk Identification and Assessment, Risk Management, Risk Ownership and Appetite

1. INTRODUCTION
The management of risk is an integral part of the project management process and project failure remains an area of considerable concern in contemporary project management literature (McClure, 2007). Comprehensive risk management increases the probability of project success, and recent empirical studies show a significant positive relationship between project risk management and project outcomes (Jen, 2009). Risk management has become a significant element of some of the most widely deployed industry standard methodologies, yet there is no universally agreed method for managing risk; and, in part because of this, there have been some attempts to suggest more flexible and creative approaches to risk management (Bollinger, 2010).

Project risk management is a fundamental discipline in most industry sectors and can be defined as the process that dynamically minimizes risk levels by identifying and ranking potential risk events, developing a response plan, and actively monitoring risk during project execution (Zwikael & Ahn, 2011). It has implications for the effectiveness of the project management process itself, and for the management and communication of knowledge that is an inherent part of that process. Several organizations have developed industry specific formal policies and supportive analytical
tools. Application of integrated risk management methods can support early risk identification and assessment, thereby improving project outcomes and avoiding delays and cost overruns (Zayed, Amer, & Pan, 2008).

Practitioners and researchers agree on the potential of risk management concepts and methods to improve the likelihood of project success in practice (Bannerman, 2008; Aloini, Dulmin, & Mininno, 2012; Martínez Lamas, Quintas Ferrín, & Pardo Froján, 2012). This research focuses on the development of a new maturity model for the assessment, monitoring and management of project risk capability in the automotive industry, specifically in a European context. The maturity concept first appeared in business and management literature in the 1980s and has become a mainstream concept for assessing organizational capability, and is thus appropriate for the study of risk management in a corporate setting. The following section explores relevant literature in this field, followed by a detailed explanation of the research methodology employed, and how the initial model was developed. It also then discusses how data from the in-depth interviews was analyzed, and how the initial maturity model was verified. Section 4 applies the model to one in-company project as an illustration of how the model can be used, in a manner that can be built upon by other researchers and practitioners. The final section draws together key themes covered in the article and assesses the contribution to research and practice.

2. LITERATURE REVIEW

2.1. The Key Dimensions of Risk

Risk identification is often viewed as the starting point for risk management in projects and is considered to be the most influential risk management activity for project outcomes (de Bakker, Boonstra, & Wortmann, 2012). It is recognized by many project managers as one of the key areas in need of improvement in complex projects (Harrett, 2013). The risk identification process was therefore seen as a key element of the maturity model. Holzmann (2012) views risk management as comprising five main activities, encompassing risk identification, risk assessment, risk allocation, and risk control. Other authors (Bannerman, 2008; Harwood, Ward, & Chapman, 2009) see risk appetite or treatment as an important dimension for overall risk management. This research combines elements drawn from these sources to focus on four main dimensions of risk management: risk identification, risk assessment, risk allocation and risk appetite; and it does not see risk in a purely negative context, but also recognises the potential of positive risks or opportunities.

Risk identification is the process by which the project team detects prospective events which might affect the project and documents their characteristics (Holzmann, 2012). Risk identification is considered to have the highest impact on the effectiveness of project risk management and involves the detection and classification of all known and - as far as is possible - unknown, risks, thus producing the foundation upon which the overall risk management process can be established (Chapman, 2001). Risk identification is also perceived as the most influential risk management activity (de Bakker, Boonstra, & Wortmann, 2011; de Bakker et al., 2012), and particularly in complex projects is seen as an area in need of improvement (Harrett, 2013).

There is a clear link in the extant literature between risk identification and the “risk as a subjective construct” concept. The identification of risk as a subjective phenomenon coincides with its creation – the risk exists only once the stakeholder has identified it. However, as Khan and Burnes (2007) put it, whether one views risk from a subjective or objective standpoint, the key question for organisations is: how can risk be managed? Risk identification can be performed in a number of ways, such as filling in questionnaires, consulting experts or available documentation from previous projects, doing brainstorming sessions, or conducting interviews.

The concept of centrivity can also be applied to risk identification, and the other dimensions of risk discussed below. Centrivity in a managerial context can be defined as the mind-set or attitude
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