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Approaches and Theories

Chapter 1
Coping Better with the Project’s Unknown Unknowns: New Competences for Overcoming Uncertainty in Projects
Yvonne Gabriele Schoper, HTW Berlin, Germany
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Abstract
It is the goal of management to overcome and delete uncertainty. Uncertainty is seen as an obstacle and threat for successful management. However, projects are full of uncertainty. Successful project management therefore aims to overcome and ideally delete uncertainty as far as possible. In project management, uncertainty and risk are often used synonymously. Current project management methodology contains only techniques to manage risk in projects. The assessment of risks is based on the precondition of stable conditions and the idea that the influencing parameters are known, assessable and calculable. Since more than 2,000 years it is the aim of the Western cultures to master the nature by natural sciences and mathematics. In the last three centuries of Modern Philosophy the perspective developed that analytical scientific know how (episteme) and technical skills (techne) can master any kind of complexity and risk. The third traditional Aristotelian competence, the practical wisdom (phronesis) however was perceived as not acknowledgeable.

Chapter 2
Integrating Sustainability into Project Risk Management
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Abstract
One of the developments that changed today’s business environment is the increased concern about the sustainability, or unsustainability, of our society. Silvius and Schipper (2014) identify a growing number of publications that study the impact of sustainability on project management. One of the ‘impact areas’ they identify is the identification and management of risk in the project. This chapter discusses the main concepts of sustainability and their implications for project risk management. The main findings are that the integration of the concepts of sustainability imply (1) A broader identification and considering of risks, expanding the orientation on risks to include also environmental and social perspectives and to consider the full life-cycle of the project’s deliverable, impact and resources. (2) Inclusion of (potential) stakeholders in a transparent process of project risk management. And (3) Adopting a social, communicative, approach to risk management, as opposed to the calculating, rational approach.

Chapter 3
Project Risk Management - A Chinese Perspective

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Abstract

Any project is a kind of unique assignment and has something new and unknown that can cause uncertainties and result in losses or earnings. Therefore, Chinese people need to manage all changes and risks of projects and they need to do two main tasks in project risk management. The first task is to reduce the uncertainties of projects through collecting and processing information. The second task is to decrease the losses and increase the earnings caused by project risks. Chinese believe project risk management is the core work and the key to successful projects. Chinese have their own ideas, attitudes and methods for project risk management because of their different history and culture. Chinese trust that only people can really add some values to projects through project change and risk management because certain things of projects are unchangeable and cannot add any more value to projects.

Chapter 4
Systemic Risk Management: A Practice Approach to the Systemic Management of Project Risk

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Abstract

Risk management is a practice. It consists of activities which ought to be focused and integrated. This chapter argues for a systemic practice of project risk management. It shows what can be done with a systemic approach to improve risk management on different levels in different ways, and how systems thinking meets the challenges of increasing project complexity and the embedded risks. First, the benefits of a systemic perspective on projects in observing and describing actually and possibility be are explored, to provide a wider range of perspectives on the project itself and alternative ways to detect risk. The second part discusses why it is critical to establish risk management as an independent key practice in projects. A third part is concerned with proposing elements of risk management as a distinct project within projects, projects to detect, to mitigate and to fix risks.
Chapter 5
Challenge or Potential? Risk Identification in the Context of Sustainable Development
Martina Huemann, WU Vienna University of Economics and Business, Vienna, Austria
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Abstract
The chapter describes the importance of balancing risk reduction and “taken risks” and what role a holistic risk identification plays in the context of Sustainable Development (SD). It provides a theoretical background on SD, Risk Management and the Environmental Impact Analysis (EIA). It discusses the implementation of SD in the EIA as one example for a holistic risk identification. The link between SD and risk management is discussed and the identified learning potentials for further developing traditional risk identification methods are explained. A risk identification explicitly considering SD as well as considering project and stakeholder risks is presented within a case study. The case study project is Engineering, Procurement and Construction of a wind park farm in Brazil from the supplier perspective. Based on SD both, the risks of the project as well as the risks of the project stakeholders are considered. Whereby the chapter shares the risk identification as such as well as the process for which a systemic board constellation was applied.

Chapter 6
Easier Identification of Risks and Uncertainties with Project Risk Constellations
Ursula Kopp, University of Applied Sciences Upper Austria, Austria

Abstract
Although various tools are available to support the risk management process, difficulties are encountered when project risk management is carried out in practice. It occasionally seems difficult for project managers to grasp the whole complexity of a project, identify the essential risks and react accordingly. The aim of this chapter is to introduce a tool that can help managers identify project risks, learn about their dynamics within the project and, consequently, formulate better ideas of how to address the risks. Project Risk Constellations are the spatial representations of explicit and implicit knowledge of the relationships, orders, hierarchies, dependencies and communication patterns of a project. They provide multi-dimensional and multi-layered information and reveal deeply rooted mechanisms. They quickly enable project managers to better understand the dynamics of their project, the intended and unintended impacts, ambiguities as well as project risks and uncertainties.

Chapter 7
Value-based Project Risk Management Process for Professionals
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Abstract
This chapter is about to provide an instantly applicable integrated project risk analysis method, which tracks the probabilities of the occurrences of harmful events perceived by the owners from the conceptual phase to the end of the project. The chapter follows a threefold structure. First, the paper provides a revised integrated project risk assessment framework enhancing the conventional risk category-based methods. Second, the minimum requirements of the owners are clarified to acquire the main goal of project risk assessment and to identify the harmful events jeopardizing this goal. Third, the widely known risk assessment procedures are revised, and a methodology for taking and selecting proper risks is provided. Finally, a new valuation approach to the monitoring phase is introduced, which is able to capture the current market value of the project based on the data of the risk management and controlling system.

Chapter 8
On Using Monte Carlo Simulations for Project Risk Management

Cristiana Tudor, Bucharest University of Economics, Bucharest, Romania
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Abstract
This chapter covers the essentials of using the Monte Carlo simulation technique (MSC) for project schedule and cost risk analysis. It offers a description of the steps involved in performing a Monte Carlo simulation and provides the basic probability and statistical concepts that MSC is based on. Further, a simple practical spreadsheet example goes through the steps presented before to show how MCS can be used in practice to assess the cost and duration risk of a project and ultimately to enable decision makers to improve the quality of their judgments.

Chapter 9
Managing Risks in the Innovation Projects in the Services Sector: A Case Study for the Mobile Communication

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Abstract
The purpose of this chapter is to provide a review on the similarities and/or the heterogeneity of the innovation taxonomy that could be found in the economic domain highlighting that in the specialized literature different terms are used for the same type of technical change and innovation and the same term is used for different types of innovation. This classification ambiguity represents a challenge when comparing different studies. Schumpeter (1939) highlights how technical knowledge is acquired both through invention and innovation. A detailed review of the innovation taxonomy in an economy of innovation will be provided. Taxonomy of innovation in the technology management is also provided. An analysis of the innovation projects characteristics in service industry is presented, as the basis for a proposed framework for managing risks. A case study for the Romanian mobile communication industry using data provided by specialized publications is presented at the end of the chapter.

Chapter 10
The Internalization of Attention at 28,000 Feet - Revisiting the K2 2008 Disaster

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Abstract
In this paper we argue that the ‘process’ approach to developing reliable organizational performance, although powerful, is insufficient for increasingly complex environments. We offer the alternative perspective of ‘mindfulness-based’ reliability, and use the K2 mountaineering tragedy of 2008 as a case in which this can be explored. This was the worst mountaineering disaster in history, in which 11 climbers lost their lives. Through extensive analysis and detailed interviews with survivors, we identify the underlying reasons and behaviors that can create ‘mindlessness’. Although this is an extreme example, we then explain how the issues can be valuable for managers in less extreme environments and synthesize a model of the organizational behaviors and cultural attributes that may be developed to support organizational mindfulness.

Section 3
Perspectives

Chapter 11
Risks in Project Marketing
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Abstract
The process by which people and organizations can communicate with other stakeholders to win their support has been called project marketing. There are three types of organization involved in projects and project management. There is the project itself, a temporary organization. It needs to engage with stakeholders during project delivery. There are contractors which need to win new business, to interest clients in the services that they can provide and in work from those clients. Finally there is the investor, who needs to gain the interest and support of a large number of stakeholders for the investment the project will make. The service dominant logic dominates project marketing. It is essential to work with other stakeholders, creating networks, doing with rather than unto, to deliver mutually beneficial results. The opportunity that arises from effective project marketing is winning the support of other stakeholders. The risk is that they will not engage with the project, and there can be several causes of that depending on the nature of the marketing being done.

Chapter 12
Educating Project Managers to Deal with Project Risks: Improvement of the Educational Programmes Design by using Curriculum Management Systems
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ta-Nicoleta Bodea, Bucharest University of Economic Studies, Centre for Industrial and Services Economics, Bucharest, Romania
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Augustin Purnus, Technical University of Civil Engineering, Bucharest, Romania
Maria-Iuliana Dascalu, University Politehnica of Bucharest, Romania

Abstract
During the last years, the development of the project risk management competencies became a ubiquitous objective for education and training in project management due to the increasing constraints which companies face on the implementation of their projects. Alignment to the professional standards and usage of innovative methods in designing and delivery of instruction represent common requirements that education and training providers should consider and fulfill. The authors examine the main challenges in addressing project risk management subject in the education programmes and identify how these challenges could be dealt by using curriculum management systems. In order to implement the identified improvements, the authors propose an innovative architecture for a curriculum management system, which can be adopted by those universities interested in developing competencies-based programmes in project management. Some preliminary results are presented and discussed.

Chapter 13
Using a Knowledge-Based Approach for Fostering the Use of Risk Management in Construction Projects
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Larissa Rubio, Pontificia Universidad Católica de Chile, Santiago, Chile

Abstract
A knowledge-based system to promote the application and improvement of risk management in construction projects is proposed in this chapter. It is well known that the lack of project risk management has several negative consequences in construction projects. In many construction projects in developing countries, the application of risk management is very limited if at all. In a study in Chile, it was found that one of the main limitations for the application of risk management is the lack of knowledge, which is a key factor in realizing and improving risk management in construction projects. The system proposed here includes a maturity model for assessing risk management capabilities, a module of improvement for reducing maturity gaps, and also, a knowledge base that supports project’s risk management and has the ability to acquire knowledge from historical projects experiences. It is anticipated that the risk management system will be the base for the development of effective risk management capabilities in organizations and companies that will adopt this approach.

Chapter 14
Project Portfolio Risk Management: Managing Risk in Case of Investment Portfolio
Nicolae Postăvaru, Technical University of Civil Engineering of Bucharest, Romania
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Abstract
The overall performance of a project portfolios doesn’t rely on the successful implementation of the largest or complex projects, but on how the entire group of projects is managed. In most cases organizations don’t have sufficient funds to implement multiple projects in a certain time interval and turn to sponsors in order to implement them. Depending on each sponsors’ conditions for funding the project the organization has to create a prioritization scheme for accelerating, delaying or abandoning certain projects. The chapter focuses on managing projects and project portfolios risk in regard to sponsor conditions for funding projects, how these
conditions together with technical and contractual risks generate new risks that affect the performance of the portfolio. The chapter concludes with recommendations on how to mitigate risks by developing specific methodologies for managing both financial and technical risks.

Chapter 15
Financial Risk Management: An Introduction
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Abstract
The present paper intends to serve as an introduction into the financial risk management universe. It starts with the basic assumption that performance of an organization is inseparable from the risks it is facing. Any organization should have in place the necessary tools to identify, assess and constantly measure the risks it is exposed to. The paper focuses in defining the basic principles in creating a viable risk management framework that keeps track of three major categories of identified financial risks: market risk, credit risk and liquidity risk. Emphasis is put on the models to measure these types of risks but also on the tools an organization can use in order to reduce them. The second part of the paper is dedicated to recent events that shaped and shocked financial markets and illustrate the consequences faced by organizations when risks are not properly assessed and the risk management models in place are based on dangerously unrealistic notions.

Compilation of References

About the Contributors

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