Embrace Risk!

An agile approach to risk management

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Foreword

Risk is an inherent aspect of the pursuit of reward and few tasks involve one without the other. Although the agile community has always acknowledged risk, it has been less clear about how to manage it, let alone manage it in an agile manner. Agile methodologies are, however, more than equipped to tackle the risks that arise in projects in an effective and efficient manner. Accustomed to defining risk in purely negative terms, agile practitioners may fail to perceive the opportunities that naturally arise in their projects or the capacity of their methodologies to exploit them.

This publication surveys the nature and perception of risk management in the agile community and provides a brief introductory overview of the principles and practices of agile risk management. Further information concerning this topic together with a full calendar of IARM events can be found at http://institute.agileriskmanagement.org/.

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Introduction

Agile came to prominence during the 1990s as a movement within the software development industry, that was born of the perception that difficulties with existing IT processes were rooted in an over allegiance to rigid plan-driven practices and command-and-control structures. Inspired by agile and lean thinking within the manufacturing industry, the IT industry responded with its own unique interpretation of these practices culminating in the formulation in 2001 of the Agile Manifesto, which articulates four central tenets and twelve principles of software development. Since then, agile has become mainstream and established as a formal project management approach. Whilst many agile methodologies have been designed to cater specifically for the engineering or product development environments found in IT (e.g., Scrum, XP, SAFe), others, have taken a broader view of general project and portfolio management at the enterprise level (e.g., DSDM/AgilePM). Which approach is best suited for an organization is as much as a question of culture and maturity as it is of technique or methodological approach.

Advocates of agility promote the notion that change should be embraced and seek to balance planning and control with execution and feedback. Accordingly, agile projects exhibit features of adaptive planning, open communication amongst heterogeneous stakeholders, emergent behaviour within self-organizing teams and a culture of openness and learning. These attitudes can present new challenges for managers more accustomed to command-and-control environments, in terms of the leadership of agile teams, the management of project portfolios and the understanding and treatment of risk.

The agile approach revolves around iterative development and incremental delivery of solutions based on a cyclical model, with well-defined techniques and practices. Iterations are usually fixed timeboxes of two to three weeks, delimited by planning and retrospective review activities, wherein each day commences with a stand-up meeting of all project members. Throughout the iteration, considerable focus is maintained on establishing feedback loops and demonstrating working solutions. In addition, there is a pronounced tendency to reduce overheads to a minimum, in order to focus instead on sustainable value creation.

Whilst there is a prevailing attitude within the agile community that its practices tackle risk, much of this relies on the belief that risk can be contained and better understood within short term iterative cycles. Moreover there is a framing of risk around the notion of change and technical implementation, at the cost of other sources of risk, resulting in at best an implicit management of risk. This suggests that risk can at best be implicitly managed without any clear notion of when, or how, to engage in risk treatment activities.

Understanding Risk

Risk is uncertainty that has an impact on project objectives in either a positive or a negative manner. The fact that not all uncertainty is either relevant or negative, is summed up in the analogy that whilst a horse race may well be uncertain it only becomes a risk once a bet is placed, the outcome of which may result in losses (threat) or winnings (opportunity).

In order to manage risk it is therefore necessary to not only understand the project objectives, but also the project context and risk environment. The project context determines how risk is to be interpreted and the primary drivers of risk (e.g., regulatory, technology, business), whereas the risk environment reflects what constitutes acceptable levels of risk (e.g., dispensations for research and development activities). Together these help assess the risk profile of a project in terms of the wider attitude towards, and tolerance of, risk within the organisation. This enables management to compare projects on a risk basis and to balance risk and reward.

"Whilst a horse race may well be uncertain, it only becomes a risk once a bet is placed."

Why Risk Management Matters

Management of risk is important, since few project activities promise rewards without entailing some degree of risk. It is telling that whilst project team members can often tell what it is they are working on, how important their tasks are and what constitutes completion, they are seldom able to articulate the implications of their work with regard to managing risk. Recognising and assessing threats (negative risks) and opportunities (positive risks) and determining appropriate steps to treat them, are therefore essential in order to balance risk and reward within a project. Monitoring the effectiveness of risk management by tracking how risks are managed, ensures feedback into the process and allows all involved to learn from mistakes and improve the overall risk management process.

Failure to adequately address risks within a project can lead to:

- Inability to make informed risk and reward decisions.
- Failure to identify appropriate risk response strategies based on risk exposure.
- Lack of oversight in risk monitoring leading to ineffective or inefficient treatment of risks.
- Poor understanding of when to engage in risk activities.

Finally, project risk management needs to be understood in terms of enterprise risk management if an "island mentality" is to be avoided. The capacity of an organization to absorb losses or to exploit opportunities, together with the alignment of personal, project and enterprise risk attitudes and tolerances, must all be taken into consideration. Indeed, social and cultural influences on risk management constitute an important, but often neglected, aspect of the analysis and treatment of risk within the organization.

Extending the agile mantra of “embrace change”, agile risk management encourages practitioners to “embrace risk”.

Agile Risk Management

Agile risk management is concerned with the identification, assessment, prioritization, treatment and monitoring of project risks in a manner consistent with agile principles and practices. It considers not only threats (negative risks) but also opportunities (positive risks) in the context of the enterprise attitude towards risk and employs its own techniques and practices to inform decision making to balance risk and reward. Extending the agile mantra of “embrace change”, agile risk management encourages practitioners to “embrace risk”.

Agile risk management is founded on the following principles:

- **Transparency**: Make visible and accessible all risk artefacts used to understand, communicate and manage risks within the project.
- **Balance**: Establish clarity about the nature and distribution of risk and reward throughout the project.
- **Flow**: Ensure that risks do not inhibit the project and that the agile process itself is capable of withstanding perturbations arising from risk.

Application of the agile risk management process involves establishing an understanding of the nature of risk facing a project and adapting the existing agile process to better cater for risk management risks. The agile risk management process (see Figure 1) comprises of the following stages:

- **Understand project objectives, context and risk environment**. This stage is about achieving an understanding of the environment in which the project operates. This is a necessary prerequisite to frame risk management practices and assist in clarifying the relevance of risk within the project and in relation to the organization (e.g., the need for risk dispensations).
- **Risk Scoping. Identify Risk Drivers and Appetite**. By scoping the project risk drivers, the primary sources of risk and the institutional attitude towards and tolerance thereof can be established and communicated in a clear manner. This ensures the foundations for alignment of personal and institutional attitudes towards risk-reward behaviour.
- **Risk Tailoring. Embed Risk Management in Agile Process**. The dynamic view of agile process being employed is charted in order to determine the most appropriate positioning of risk management activities (e.g., risk identification workshops at the start of an iteration and risk retrospectives at the end). In light of the risks facing a project, additional measures may also be proposed (e.g., application of specific agile techniques to tackle risk).
- **Risk Management**. **Identify Analyse, Manage and Monitor**. This encompasses the operational aspects of risk management within the project albeit imbued with an agile character (e.g., use of risk modified Kanban boards to visualize the distribution of risk and reward, tagging of activities to indicate the application of an agile technique in order to treat risk and, communal ownership of risk artefacts).

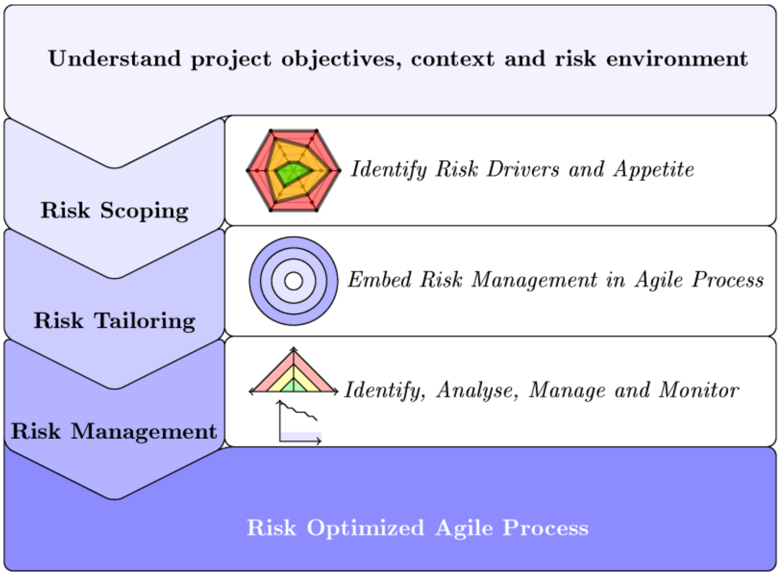


Figure 1: Agile Risk Management Process. Copyright © 2013 Alan Moran. All Rights Reserved.

The result is a risk optimized agile process that empowers the project team to explicitly understand, articulate, manage and track risks as they arise in the project. The application of the agile risk management process to a variety of agile methodologies including Scrum, XP, DSDM, SAFe and DAD has been described in the literature.

Agile risk management employs a variety of artefacts to assist in the visualization of risk tolerance, tailoring of agile processes, distribution of risk and reward and the tracking of progress towards managing risk. Combined these ensure that project members and stakeholders are always in a position to assess the risk of the project activities, enabling them to pose the right questions and react in a timely manner to changes in their risk landscape.

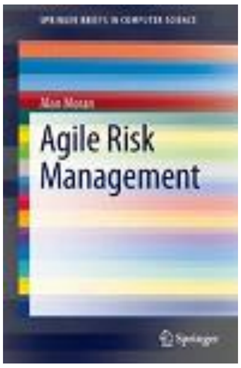
- **Risk Driver Map**. Scaled depiction of key sources of risk on which risk threshold levels are marked, against which the risk profile of a project can be displayed.
- **Agile Chart**. Dynamic view of the agile process being employed that helps frame risk tailoring measures, appropriate to the risk environment of the project.
- **Risk List**. Variation of the traditional project risk register adapted to the circumstances of agile projects.
- **Risk Pyramid**. Traditional mapping of risk response strategies based on risk exposure, to enable the project team to identify appropriate initial responses to risks. From a social and cultural perspective this is important since it is at this point in risk management that these views have their strongest influence.
- **Risk modified backlog or Kanban**. Visualization of the distribution of risk and reward within the project, based on traditional agile tracking devices, that enables the project team members to critically assess the risk management process.
- **Risk Burndown**. Visual tacking of progress towards the tackling of project risks and indicator of project systemic risk.

Benefits

The benefits of agile risk management include the following:

- Improved capacity to manage project uncertainties that would otherwise threaten revenues or impede efforts to exploit opportunities that arise within projects.
- Enhanced communication of the nature and sources of risks facing projects within the organization, leading to an improved culture of awareness and understanding of the need to balance of risk and reward.
- Better alignment of project and enterprise risks that promote the transfer of lessons learned between projects of similar scope and complexity.
- Empowerment of project teams, enabling them to accept responsibility for the identification analysis, prioritization, treatment and monitoring of risks within their projects.
- Appreciation for the social and cultural influences on risk management, (e.g., risk compensation effects) particularly in environments where these can play a dominant role (e.g., geographically dispersed teams).
- Ability to extend and enhance existing investments in agile methodologies (e.g., Scrum, XP, DSDM, SAFe, DAD) by tailoring and embedding risk management practices into daily activities.

Further Information



Agile Risk Management (Springer Verlag)

This work is the definitive guide for IT managers and agile practitioners. It elucidates the principles of agile risk management and how these relate to individual projects. Explained in clear and concise terms, this synthesis of project risk management and agile techniques is illustrated using the major methodologies such as XP, Scrum and DSDM. Available on Amazon and through all book stores.

For further information concerning the principles and practices of agile risk management, including a full calendar of training events, please contact the Institute for Agile Risk Management:

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The Institute for Agile Risk Management (IARM) is a Swiss based institution that exists to promote the principles and practices of agile risk management in the context of agile project management and the agile enterprise. It undertakes research and provides training in association with its network of third parties in the agile and academic communities as well as in the private sector. For further information concerning the institute please refer http://institute.agileriskmanagent.org/