A Systematic Review of Innovative Software Project Management

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Abstract. *Nowadays, innovation is one of the keys to success in organization and project management has become an important way to improve it. Innovative Software Projects (ISP) have a high level of uncertainty and complexity, so we need a specific approach to manage those threats. This paper presents a systematic literature review of Innovative Software Project Management (ISPM), helping to identify the factors that affect ISP and their management such as tools, techniques, processes, practices, organizational capabilities and IT assets; and how managers can prepare themselves for the challenges of their innovative projects. This paper aims to contribute to the improvement and success of project management in organizations.*

1. Introduction

OSLO (2005) defines innovation as either a new or significantly improved product (good or service) or process. It can be a new marketing method or a new organizational method in business practices (managerial method).

Innovation and projects aimed at innovation development, that can be a new product, process or service, they should be on the executive diary, along with the understanding of the business environment changes and the action plan needed to respond to, or influence these changes [Marinho et al 2013].

A large number of perspectives emerge from the literature to explain why companies have difficulty in managing the various uncertainty sources associated with converting innovations into innovative companies. Understanding the innovative project characteristics and the uncertainty nature that permeates them is critical for developing appropriate management practices [O'Connor and Rice 2013].

Thus, the scope of the research is to investigate the software projects management when innovation is present in product, process, technology or management. We have adopted the term *Innovative Software Project Management* (**ISPM**) to represent it.

This study is part of a broader research that aims to investigate **ISPM**, the factors influencing, related management practices and how it can fostering innovation in order to support and improve organizational performance.

Systematic Literature Review (**SLR**) provides ways to implement comprehensive and not biased literature reviews, making their results have scientific value as mentioned by Travassos and Biolchini (2007). SLR aims to present a fair assessment of a research topic, using a reliable, accurate and auditable methodology [Kitchenham 2007].

To meet the research objective, a SLR was conducted to identify what factors affect ISPM. In a previous ad-hoc review the following factors were found that affect the project management (PM), which are: tools, techniques, processes, practices, organizational capabilities and IT assets. This paper presents this SLR and its findings.

Besides this introductory section, the paper is structured as follows: In section 2 we describe the method adopted for our SLR; section 3 presents the research results and characterizes the selected studies, including publication details and quality information; in section 4 we present the results for each research question and discuss our key findings and section 5 contains the conclusion.

2. Systematic Literature Review

This section describes the course of each step in the methodology used to carry out this study. A SLR starts with the protocol definition which specifies (i) the research questions and (ii) search strategies that were used to conduct the review. According Kitchenham (2007), besides the reasons and objectives of the research the following should be part of the protocol: (iii) criteria for inclusion and exclusion of primary studies; (iv) procedures for assessing quality of the selected studies; (v) data extraction strategy and (vi) synthesis method.

As defined in the research protocol, the SLR process was composed in five phases: (1) Search, (2) First Selection - 1S, (3) Second Selection - 2S, (4) Data Extraction & Quality Assessment - DE & QA and (4) Data Synthesis - DS. Systematic Review steps and phases are going to be presented in the following subsections.

2.1. Research Questions

This SLR sought to answer the following three research questions (**RQs**) to identify what factors affect ISPM, as shown in Table 1:

Table 1. Research Questions

	Research Question
RQ1	Which tools and techniques can support ISPM?
RQ2	Which processes and practices are adopted in ISPM?
RQ3	Which is the relation between organizational capabilities and IT asset with ISPM?

After defining the research questions, the search strategy was detailed as described in the following subsections: search terms, search strings and data sources.

2.2. Search Terms

As a recommendation, the identified key terms were searched in the singular and plural. To achieve this variation the asterisk was used (*), which is accepted in many digital libraries and allows one to reference several variations of a word by the symbol. Table 2 shows each term and synonyms grouped and related with the identifier "OR".

Table 2. Search terms grouped

	Search term
T1	("Innovation" OR "Innovative" OR "Novelty");
T2	("Software Project Management" OR "Management of Software Project*" OR "Managing Software Project*" OR "Software Project Organization" OR "Organization of Software Project*" OR "Organizing Software Project*");
T3	("Tool*" OR "Technique*" OR "Method*");

T4	(“Process*” OR “Practice*” OR “Methodolog*”);
T5	(“Organizational Capabilit*” OR “Organisational Capabilit*” OR “Organizational Factor*” OR “Organisational Factor*” OR “IT Asset*”);
T6	(“Software Project* Innovation” OR “Innovation Software Project” OR “Software Innovation Project” OR “Innovation in Software Project” OR “Software Project* Innovative” OR “Innovative Software Project” OR “Software Innovative Project” OR “Software Project* Novelty” OR “Novelty Software Project” OR “Software Novelty Project”).

2.3. Search String

According Kitchenham (2007), the strings are constructed from the questions structure and sometimes adaptations are necessary according to the specific needs of each database. Thus, the search strings were generated from the key terms combination and synonyms using OR and AND, and possible peculiarities of digital libraries and registering any adaptation whenever it was necessary. Due to the string length limitation of some search engines, four strings were created as listed in Table 3.

Table 3. Search strings

	Search string
ST1	T1 AND T2 AND T3
ST2	T1 AND T2 AND T4
ST3	T1 AND T2 AND T5
ST4	T1 AND T6

2.4. Data Sources

Searches of the primary studies can be performed on digital libraries. For a SLR this is not enough and other sources can also be searched. Experts in the research theme can be consulted to indicate other appropriate sources. The sources selection criteria are: (i) availability to consult the papers on the web; (ii) presence of search engines using keywords; and, (iii) importance and relevance of sources. [Kitchenham 2007]

Thus, using search strings, the data sources adopted for searching the studies were: (1) Scopus; (2) Elsevier ScienceDirect; (3) Wiley Online Library; (4) IEEEXplore Digital Library; (5) Springer Link and (6) ACM Digital Library.

Other sources were initially considered potential for the search: Google, Google Scholar and InspecDirect. However, those were subsequently excluded from the sources list because they were not present in significant SLR; either because they have not been recommended by experts or were already indexed by any of the listed sources.

2.5. Search Phase

After defining the research questions and search strategy, the **Search phase** started. The adopted process is described below:

- Assisting the review process the StArt tool (State of the Art through Systematic Review) was used; developed by the Laboratory of Research on Software Engineering (LaPES), it belongs to the Computing Department of the Federal University of São Carlos (DC / UFSCar) - [StArt 2015];
- The search was conducted from 1995 to 2014;
- Two researchers performed searches to identify potential primary studies, according to the search strategy described in the previous subsections;

- Each researcher produced a studies list. Both lists were recorded in StArt, which helped us eliminate repeated studies (exactly the same titles) and consolidate them, resulting in a complete and unified studies list.

Once potential primary studies had been obtained, they needed to be analyzed in **Selection Phase** to have their relevance analyzed. In order to assist the studies analysis, we described the criteria for inclusion and exclusion in protocol (www.innovativesoftwarepm.org/slr-ispm-up-to-2014/studies).

2.6. Selection Phases

From the complete unified studies list, the **1S** phase began. The selection process of the primary and secondary studies is described below:

- By reading the title and abstract (if necessary), the researchers excluded studies that were clearly irrelevant to the issues investigated;
- Each researcher selected a list of potential primary studies. Both lists were then compared and a single candidates list was agreed by them. If there was any disagreement on the inclusion or exclusion, the study was included.

From the unified list of potential primary studies, the **2S** phase started.

- The researcher read the introduction and conclusion, analyzing the criteria for inclusion and exclusion and produced the list of candidate studies;
- During this phase, each researcher conducted secondary searches based on references found in the primary studies and snowball technique. All secondary studies were registered in a candidate list;
- The selected studies list was produced by the researchers agreement, including primary and secondary studies;
- Studies excluded were updated in StArt informing the exclusion criteria.

Once selected studies had been obtained, they needed to be analyzed in the **DE & QA** phase. In order to assist the studies analysis, the protocol at www.innovativesoftwarepm.org/slr-ispm-up-to-2014/protocol presents the quality criteria and study type. The following subsection presents the extraction process.

2.7. Data Extraction & Quality Assessment Phase

From the selected studies list the **DE & QA phase** was carried out, as described below:

- All selected studies (papers) were read in full for the **DE & QA**;
- The researchers analyzed the inclusion and exclusion criteria for each paper. Papers that have failed on the inclusion criteria were excluded and updated in StArt, informing the exclusion criteria;
- For each included paper, its data was extracted through quotes. All quotes were recorded on a specific form. At the same time, its quality assessment was carried out in accordance with the quality criteria.

2.8. Data Synthesis Phase

From the quotes list and quality assessment forms, the **DS** phase began. This process is described below:

- The data extracted (quotes) were organized in spreadsheets and tables in StArt. From those, the analyzes, comparisons and synthesis were done;
- Factors such as tools, techniques, processes, practices and organizational capabilities were identified and extracted from the papers to answer each research question, i.e., their relation with ISP and their management.

3. Results

The SLR was performed as planned in the protocol. This section describes an analysis of the results of each step performed.

3.1. Searched and Selected Studies

In the **Search phase**, 5,282 hits were found. A total of 2,455 papers were identified as duplicate, leaving 2,827 papers for the selection phase. Figure 1 shows the number of papers found per engine and phase (A) and excluded per criteria and phase (B).

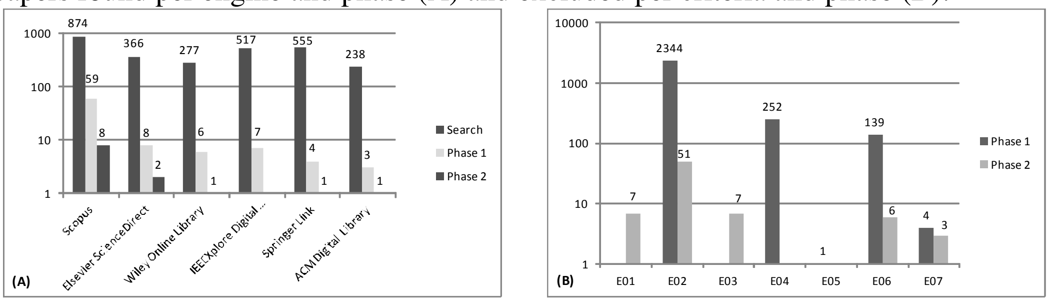

Figure 1. Paper selected per engine (A) and excluded per exclusion criteria (B)

As result of the **first selection phase**, **87** papers were selected to the list of potential primary papers. A total of 2,740 papers were excluded, as shown in Figure 1B.

In **the second selection phase**, only **13** papers were selected to the next phase. A total of 74 papers were excluded, as shown in Figure 1B. Each researcher conducted secondary searches and **7** secondary papers were selected. Thus, a total of **20** papers were selected for the next phase.

3.2. Quality Studies and Data Extracted

During the quality assessment, the papers were assessed by the inclusion and exclusion criteria, the quality criteria, the study type, the score and the level.

The **20** papers were assessed and **three** were eliminated because research questions were not answered. Therefore, **DE & QA** were performed in **17** papers and produced **103 quotes and 144 evidences**, i.e., some quotes had more than one evidence. The **Appendix A** shows these papers and their complete references.

3.3. Data Synthesis

In the synthesis phase, all quotes were analyzed and all research questions were answered. For proposing this paper, we analyzed quotes that have only direct evidences to answer the questions.

We found 34 quotes and 41 evidences that answered directly the research questions. The second research question was answered by the largest number of papers

(13) and other questions were answered by 3 papers each. Two papers answered more than one question. The paper [PE14][1] had shown evidences for answering RQ2 and RQ3. While [PE20] had shown evidences for answering RQ1 and RQ2.

Several relevant pieces of information about the final papers were extracted. The Figure 2A shows the papers distribution by engine. It can be noticed that the engine that returned more accepted papers was Scopus. We should state that it was the first to be executed, resulting in a large number of repeated items when the searches were conducted in other engines. Another point to state is that the secondary search returned 7 papers in the selection phase, only one was excluded for not answering any RQ.

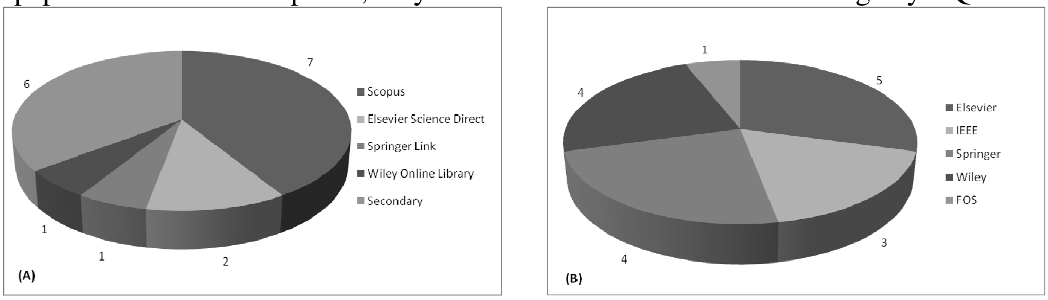

Figure 2. Final papers per engine (A) and publisher (B)

In the distribution by engines, Scopus had achieved a wide advantage, however, when we consider the items by publisher there is a reasonable balance between the top four: Elsevier, IEEE, Springer and Wiley, as shown in Figure 2B.

4. Discussion

Unfortunately, our review did not identify any previous SLR about ISPM, then this work can be considered the first SLR about the theme, in which we found 17 studies directly or indirectly related to this domain.

This section discusses our results and findings about factors that affect ISPM, followed by research questions and the findings for research and practice implications as well as emerging contributions. Eventually, we discourse about the limitations of this SLR.

4.1. Innovative Software Project Management

Before we discuss the answers to the research questions, it is interesting to present some evidence found during this review. Filippov and Mooi (2010) paper was eliminated in the extraction phase, for not answering the research questions. However, as found in other papers, it contextualizes the relevance of this study. Some interesting information was found in this paper. The authors present the importance of project management and innovation for the organization as well as the close connection between innovation and projects:

> *"...project management has become a distinctive way to manage business activities nowadays."*
>
> *"...the role of innovation and technology in the corporate change, growth and profitability. It is unsurprising that development of innovation is often run as a project."*

[1] Citations highlighted as [PE*] are studies included and their complete references are available in Appendix A.

The authors defined innovation projects as:

> *"Therefore, an innovation project revolves around certain criteria (and should include at least one of them): • aimed at development of an innovative (new) product or service (product or service innovation); • employ innovative methods and approaches (process innovation); • lead to improvement of innovative and learning capabilities of the project executor (organisational innovation); • be realised in a close interaction with the project owner (user innovation)."*

Finally, it was shown the need to manage innovative projects differently from conventional projects:

> *"Innovation is the exploration and exploitation of new ideas and recombination of existing knowledge in the pursuit of sustained competitive advantage. Besides, both innovation and R&D projects by their nature differ from conventional projects. Thus, there is a need to examine the Innovation Project Management (IPM) as a distinctive area of managing innovation in projects, using the tools and methods of the project management."*

Confirming this thought, [PE07] and [PE20] emphasize the need for specialized management for innovation and [PE18] highlights the implementation difficulty:

> *"A major challenge therefore for conducting these large projects is the need to manage unbounded and non-linear risks reflecting the high level of uncertainty and complexity that arise over the course of a large and innovative project." [PE07]*
>
> *"Innovation projects distinguish from conventional projects primarily, by a greater degree of uncertainty and risk, and they cannot be managed in the same way as conventional projects." [PE20]*
>
> *"Managers have identified insufficient innovation as a crucial problem, however, successfully implementing good innovation management practices is difficult." [PE18]*

4.2. Which tools and techniques can support ISPM?

As stated in the previous subsection, innovative projects require new ways to manage them, since it is necessary to include more creativity when compared with standard processes. Moreover, the traditional project management tools are not often useful in managing innovation projects [PE20].

The paradigm of complexity supports innovation because there is a strong link between chaos and creativity [Luna et al 2014]. Innovation projects are not structured, their future is uncertain, and the usual tools for conventional project management are not often useful in this context. In the group of tools and techniques, [PE20] suggests using two factors to support the ISPM: the inclusion of fuzzy numbers in the project planning phase to reduce uncertainty and the application of analytical Risk Breakdown Matrix. As in the following quotes: *"Complexity theory advocates inclusion of fuzzy numbers..."*

> *"... during the calculations of a fuzzy critical way, so it supports the application of fuzzy PERT method with a view to avoiding subjective evaluation of activity duration by the project manager." [PE20]*
>
> *"... in project planning phase for reducing uncertainty. Risk Breakdown Matrix can be solution for risk management of innovation projects." [PE20]*

Papers [PE02] and [PE11] discuss the use of social media as a platform to foster innovation. Factors such as Crowdsourcing and Semantically-enhanced platform drive innovation through communication and collaboration. The use of collective intelligence enables problem solving, as well as knowledge generation. Innovation knowledge must be modeled through ontologies improving open innovation management. As shown below:

> *"Social software (crowdsourcing) is characterized as communication tools and interaction tool. …. Management support and promoters are one of keys in social computing success" [PE02].*
>
> *"The main idea behind this new platform (semantically-enhanced) is to model innovation related data by means of ontologies. ... improved open innovation management system has then been built by leveraging the formal underpinnings of ontologies and by applying semantic techniques and methods." [PE11]*

We agree that the use of techniques to reduce uncertainties and tools to promote innovation through problem solving and generating collaboratively knowledge can support ISPM.

4.3. Which processes and practices are adopted in ISPM?

In the group of processes and practices, we found evidence of several factors adopted to favor ISPM. These factors can be categorized as processes and practices but for better comprehension we categorize such factors as: models and approach.

In the category of models and approaches [PE05] presented the Helical model that focuses on innovative and creative solutions, it also suggests experimentation, continuous customer feedback and prototyping. The application of this model suggests the creation of a more effective approach to the ISPM as shown in the evidence below:

> *"The resulting so-called Helical Model offers an improved development methodology that is likely to be of value for new-technology projects in volatile product and service development environments that require: Rapid, high-quality development; Innovative and creative solutions via experimentation; Continual improvement to specifications via high levels of customer feedback and responsiveness to the internal and external environments.". [PE05]*

Another model was found in [PE07], where the need for a new approach is presented in ISPM: *"A major challenge therefore for conducting these large projects is the need to manage unbounded and non-linear risks reflecting the high level of uncertainty and complexity that arise over the course of a large and innovative project"*. This new approach suggests the use of some practices, as mentioned below:

> *"... we were able to find the development of new project management techniques within these atypical projects. These techniques (careful and elongated up-front planning, exploration of identified innovation-points, and proper integration of innovation point sub-projects), though developed out of necessity, helped facilitate the unique management challenges encountered on these highly-innovative projects. (Black swan projects)". [PE07]*

[PE08] analyzed the software process models in embedded development context. It presents a matrix that supports the appropriate model selection for each project reality. Three realities relative to our study subject were identified: (i) underestimation of project size, complexity, novelty; (ii) research-oriented development; and (iii) new, immature software technology. Among the suitable models presented there are the

Spiral model, feature-driven development (FDD) and adaptive software development (ASD), such as shown in the following quote:

> *"**Table A1** (Underestimation of project size, complexity, novelty)*
>
> ***Evolutionary models:*** *• Spiral model (risk-driven iteration): The spiral model tackles the most uncertain areas first. Each new cycle is assessed. New estimate of the project complete day is needed.*
>
> ***Agile methodologies****: • Feature-driven development (FDD): New estimate of the project-complete day is needed, if features are just bigger and more complex than estimated. The planned features should be small (no more than 2 weeks effort); • Adaptive software development (ASD): Extreme projects are by nature uncertain. Everybody must understand that from the beginning. Reevaluation and replanning will be done after each cycle when more is learned." [PE08]*

Research on Agile approach to project management has received great attention. [PE08] states that the Agile approach is right for innovative projects. As shown in the preceding paragraph, [PE08] indicates that among software process models, the FDD and ASD are classified as Agile methodologies.

> *"The modern business pressures and technology advances often require responsive last-minute changes in the product contents. New agile software process models address such aspects." [PE08]*

Other studies reinforce the appropriateness of the Agile approach when projects involve a high degree of uncertainty, requiring creativity, innovation and flexibility, as shown below:

> *"...agile project management approach is intended before all to the creative, innovative projects, such as research projects or new innovative product development projects or even process improvement projects. All such projects are characterized by high level of uncertainty, unclear project goals or incomplete and unpredictable requests, for which it could be assumed that will be significantly changed during the course of the project..." [PE12]*
>
> *"... which develop innovative products, the results evidence the feasibility of adopting an agile method with simple and flexible techniques to plan and control projects despite their perception. Their projects are developed locally, which involves uncertainties and dynamic work requiring creativity, innovation, and flexibility. In this context, the method has contributed to improve their project results." [PE15]*

As result, [PE15] presents the Iterative and Visual Project Management Method (IVPM2), based on APM principles as described in the literature.

Lastly, [PE16] presented three practices which together represent a neo-realistic approach to project management, based on a reflective experience to organizing projects: *"…neo-realistic project management: lagomized project management, organic integration, and Systems Emergency Wards. These management innovations add to the understanding of the role played by project management in complex systems development"*.

In the processes and practices category several factors that can favor ISPM were observed. Some have already been mentioned in the previous paragraphs: experimentation, prototyping, lagomizing, organic integration and systems emergency ward. [PE14] investigated which factors have significant impact on the innovation capacity of companies. To allow creativity, some processes were presented: collaboration, idea generation and deal with multifunctional teaming. To foster human resource leveraging the skills, expertise and knowledge, some practices were presented: training, rewarding and following the technological developments, as shows bellow:

> *"... sustained new software development requires the creation of organizational processes and structures, which enable collaboration and the establishment of clear linkages between product development and overall organizational strategy. Success in today's global market depends on the initiatives an organization takes to encourage individuals of applying their knowledge".*
>
> *"Software development is a complex and multifunctional process. While different functions depend on one another's expertise and resources to complete innovation tasks, they differ in professional training, in sub external environment, and in roles and responsibilities in the innovation process. Therefore cooperation among organizational functions is crucial for the creation of profitable and timely new software products".*
>
> *"... software development is an intellectual activity that requires creative problem solving during the application of innovation processes, methodologies and tools. Therefore people management ... includes finding new ways in which to leverage the skills, expertise and knowledge of programmers and system developers during the product development process. For example training, rewarding for generating ideas and following the technological developments by journals, congress, fairs...".*

These evidences contributes to understand that innovative projects need specific processes and practices to foster creativity and idea generation to deal with uncertainties and complexity projects through agile, collaborative and flexible management as ISPM.

4.4. Which is the relation between organizational capabilities and IT asset with ISPM?

Organizational capabilities (**OC**) are one of the factors which affect the ISPM. [PE01] describes it as: *"Capabilities are organizational resources that have potential to generate value for a firm [15]. They comprise an intricate mix of knowledge, skills, routines, technologies and values"*. Complementing this definition, [PE17] includes: *"…the ability to develop new technologies, products and processes*" as **OC**.

To succeed in ISPM, the organization should promote the generation of ideas by their ability to deal with innovative behavior, supported by organizational capabilities. [PE14] states that to succeed in NPD (New Product Development) an organization needs a structure that allows sharing and decision making, as shown in the quote below:

> *"…create the most appropriate structure and work within these structures that effectively coordinate the NPD process, facilitate the sharing of information and other scarce resources across functional areas, and provide mechanisms for decision making and conflict resolution"*

[PE17] considers appropriated an organic flexible and informal structure in the organization. These capabilities showed improvement to accommodate the novelty (innovation), as shown in evidence below:

> *"... it is necessary to adapt their existing routines and processes to fit the new conditions demanded by turnkey and outsourcing projects. In both cases, a more organic, flexible and informal style of organisation emerged to accommodate the novelty, task diversity and scale of the projects undertaken."*

Although the factors addressed by this research question are in the group of Organizational capabilities and IT assets, the studies found in this review did not identify any evidence that IT assets affect ISPM.

We believe that promoting generation of ideas by creating an adaptable and flexible framework for an innovative project can support ISPM.

5. Conclusion

This paper presented a systematic review of innovative software project management. Innovation is one of the keys to success in organizations and various approaches to project management do not consider the impact that innovation has on them. Innovative Software Projects (ISP) have a high level of uncertainty and complexity, so we need a specific approach to manage these threats. The project manager faces a dilemma: how to manage software projects and not stifle innovation. The adoption of an innovative software project management (ISPM) can be a determining factor in project success.

Several factors can impact on software project success. Our findings show that some tools, techniques, processes, practices and organizational capabilities have a direct impact on innovative software projects and their management. The management of these factors and identification of what type of innovation is present on the project can affect the ISP success.

Finally, our findings contribute to the software project management in two ways. Firstly, the systematic review results provide a better understanding of the challenges of dealing with innovation in software project management to the academic community thus, they show gaps in the area that may be good opportunities for future research. Secondly, how to deal with innovation, the factors which affect ISPM and that can support practitioners and researchers in identifying relevant challenges and developing solutions for projects, making use of the best practices that have been tested by other primary studies in experimental and industrial environments.

The scope of the research is limited to software projects. The research results cannot be generalized. However, the management of some factors identified here could impact on the success of other types of project. As future works, empirical studies should be conducted to assess the adoption and integration of factors presented in this review.

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Appendix A: Studies included in this review

As a matter of length, Table 4 depicts only studies directly cited in this paper. See the entire list, and references, about the studies included in this review at: www.innovativesoftwarepm.org/slr-ispm-up-to-2014/studies.

Table 4. Final Papers

	Reference
PE01	Bannerman, P. L. (2013) "Barriers to Project Performance", In Proceedings of the 46th Hawaii International Conference on System Sciences (HICSS '13). IEEE Computer Society, 4324-4333.
PE02	Afridi, A. H. (2012) "Workflow engineering for crowdsourcing in project management towards a human-computers services", In Engineering, Technology and Innovation (ICE), 18th International ICE Conference on. IEEE.
PE05	Deakins, E., and Dillon, S. (2005). "A helical model for managing innovative product and service initiatives in volatile commercial environments", In IJPM, 23(1), 65-74.
PE07	Wu, W. W., Rose, G. M., and Lyytinen, K. (2011). "Managing Black Swan Information Technology Projects", In System Sciences (HICSS), 44th Hawaii International Conference on (pp. 1-10). IEEE.
PE08	Kettunen, P., and Laanti, M. (2005). "How to steer an embedded software project: tactics for selecting the software process model", In Information and Software Technology, 47(9), 587-608.
PE11	Rodríguez-García, M. Á., Valencia-García, R., Alcaraz-Mármol, G., and Carralero, C. (2014). "A Knowledge-Based Platform for Managing Innovative Software Projects", In On the Move to Meaningful Internet Systems: OTM 2014 Workshops (pp. 309-318). Springer Berlin Heidelberg.
PE12	Spundak, M. (2014) "Mixed Agile/Traditional Project Management Methodology-Reality or Illusion?", In Procedia-Social and Behavioral Sciences, pages 939—948, Elsevier.
PE14	Davies, A. and Brady, T. (2000) "Organisational capabilities and learning in complex product systems: towards repeatable solutions", In Research Policy, pages 931—953, Elsevier.
PE15	Conforto, E. C., & Amaral, D. C. (2010). "Evaluating an agile method for planning and controlling innovative projects", In Project Management Journal, 41(2), 73-80.
PE16	Berggren, C., Järkvik, J., and Söderlund, J. (2008). "Lagomizing, organic integration, and systems emergency wards: innovative practices in managing complex systems development projects", In Project Management Journal, 39(S1), S111-S122.
PE17	Koc, T. (2007) "Organizational determinants of innovation capacity in software companies", In Computers & industrial engineering, pages 373—385, Elsevier.
PE18	Moe, N. B., Barney, S., Aurum, A., Khurum, M., Wohlin, C., Barney, H. T., and Winata, M. (2012). "Fostering and sustaining innovation in a fast growing agile company", In Product-Focused Software Process Improvement (pp. 160-174). Springer Berlin Heidelberg.
PE20	Dodevska, Z., and Mihic, M. (2014). "Theory of complexity and innovation projects", In Proceeding of the XIV International Symposium (SymOrg 2014), p 1460. Faculty of Organizational Sciences. University of Belgrade.