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# Project Management Best Practices for Projects that Introduce Innovative Processes

CAPSTONE REPORT

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**Abstract**

Project management and innovation management are critical competencies for organizations that are seeking to gain a competitive advantage. This annotated bibliography surveys literature that addresses project management best practices for projects that introduce innovative processes. It provides information to project managers, program managers, and business executives regarding: (a) lessons learned on the implementation of innovation in organizations, (b) managing change in organizations through projects, and (c) challenges and best practices in managing projects with innovative deliverables.

*Keywords:* change management, business process management, innovative projects, innovation management, organizational change, and project management.

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## Introduction to the Annotated Bibliography

### Problem

The need for innovation is a topic of great interest to many businesses as they seek to gain a competitive edge in the near and long term (Gardner, 2009, p. xiii). Chen and Muller (2010) assert that innovation is a capability that leads to increased growth, profitability, and competitiveness. The definition and source of innovation in the business context can vary (Schilling, 2013, p. 18). One definition of innovation is "the practical implementation of an idea into a new device or process" (Schilling, 2013, p. 18). Innovation can help companies differentiate their product lines and increase their profit margins, or decrease costs by improving business processes (Schilling, 2013, p. 1). Schilling (2013) states that product innovations manifest as the goods and services that businesses create, and points to Toyota's development of the Prius hybrid as an example of an innovative product. Process innovations are changes to the ways businesses make a product or deliver a service (Schilling, 2013). Examples of innovations targeted towards improving business processes include the Electronic Recording Method of Accounting (ERMA) in the banking segment that replaced manual transaction processing, and Magnetic Ink Character Reading (MICR) that helped automate check processing (Gardner, 2009). These process innovations made it possible for the banking industry to handle the huge increase in transactions as a result of the growth of their customer base and core products (Gardner, 2009).

The fostering of innovation within businesses is a well-known and highly-researched topic (Besner & Hobbs, 2008, p. S123). Organizations that do not embrace innovations are at a distinct disadvantage (Lucas & Goh, 2013). Kodak's inability to adopt the disruptive new innovation of digital cameras led to the dissolution of the company in a Chapter 11 bankruptcy

(Lucas & Goh, 2013). Blockbuster and Hollywood Video suffered similar fates by failing to embrace the on-demand Internet streaming service model for entertainment rentals, eventually falling to rival Netflix, a firm that was more nimble in embracing a change in their delivery model to adapt to new technology models and market demand (Kaplan, 2012).

Projects that are initiated to implement products and processes involving high levels of innovation have not been the subject of research as often as innovation management (Besner & Hobbs, 2008). Despite the benefits that can accompany innovation within businesses, efforts to implement innovation can cause issues with the employees that are grappling with the changes innovation may bring (Khazanchi, Lewis, & Boyer, 2007. p. 871). Specific issues facing project managers of projects whose scopes include the implementation of innovative workplace practices include high levels of project complexity, frequent lack of project definition, pressure to complete the projects in a short time frame, and the need to work with diverse teams formed by joining cross-functional, multidisciplinary teams (Besner & Hobbs, 2008). Since product and process innovations contribute to increased business performance, Besner and Hobbs (2008) recommend the study of projects with highly innovative deliverables in high-performing companies to obtain a body of best practices that reduce the potential issues and increase the potential benefits (p. S123).

**Purpose**

The purpose of this annotated bibliography is to present literature that identifies project management best practices in projects that introduce innovative processes that are associated with high-performing organizations (Besner & Hobbs, 2008). Literature is presented that defines innovation in the context of new organizational processes, products, and services; this larger scope of reference subjects is adopted as a means of gleaning relevant information that can

inform projects that only focus on innovative processes. Sources are identified that illustrate the benefits and competitive advantages that result from the successful introduction of innovations within organizations. Literature is presented that provides lessons on the implementation of innovation in organizations and the general challenges associated with the organizational changes that occur. Sources that describe and provide examples of best practices in organizational change management are presented in recognition of the fact that the introduction of innovative processes in an organization requires organizational change management (Lampel, Honig, & Drori, 2014). Additionally, literature is presented that identifies project challenges that accompany the introduction of these innovations, as well as project management best practices for recognizing, avoiding, and addressing the challenges.

**Research Question**

What key project management best practices for projects that introduce innovative processes are associated with successful project outcomes and high performing organizations?

**Audience**

The target audience for this annotated bibliography is project managers or program managers working in organizations with high levels of innovation projects. This study uses the term "innovation project" as defined by Besner and Hobbs (2008): "…a project that produces a new product or that involves a new concept or a new technology" (p. S123). Besner and Hobbs (2008) hypothesize that managing innovation projects is different than managing projects with standard deliverables and content and may require more experienced project managers who are capable of applying established project management practices in a targeted way (Besner & Hobbs, 2008). Project managers with more experience will benefit to a greater extent from the literature in this annotated bibliography than less seasoned project managers as a result.

Business executives who manage innovation to achieve growth and profitability and product managers who introduce innovative products will also benefit from the literature in this annotated bibliography. With a greater understanding of the level of resources and techniques required for innovation project success, both business executives and product managers will have a more realistic view during the planning and scope creation phase of innovation projects.

**Search Report**

**Search strategy**. The UO Libraries website is the primary source of cited material for this study. The following search terms are used to start the search for relevant material:

- managing projects with innovative deliverables;
- best practices for managing projects with innovative deliverables;
- innovative project contexts;
- organizational change management in innovative projects;
- implement innovative business process improvement concepts;
- applying organizational change management best practices to innovative project deliverables;
- change management strategies;
- factors affecting implementation outcomes; and
- assist end-users in adapting to process innovations.

These search terms return a large volume of articles and books. To help narrow the list of references, the search terms are narrowed to combinations of the terms that are most relevant to the problem. More concise combinations of the following terms are used, using no more than three search terms at a time. Generally accepted terms are discovered during scans of the

available literature (Besner & Hobbs 2008) and are added to the combinations of search phrases to yield several relevant results. When searching in Science Direct, the recommended articles section on the left hand navigation also generates articles that are relevant and add to the list of sources.

**Search terms.** The final list of search terms is made up of the following:

- managing innovative projects;
- managing research and development;
- innovation management;
- change management and projects;
- program management and innovation; and
- business process management.

**Search engines and databases.** The selected articles are all from peer-reviewed journals. They are housed on the following databases:

- Business Source Complete;
- Elsevier;
- JSTOR Arts and Sciences IV;
- Proquest Social Science Journals;
- IEEE Xplore Journals (IEL);
- ebrary Academic Complete
- Elsevier SD Pergamon;
- ebrary Academic Complete;
- Proquest Social Science Journals; and
- Science Direct.

**Information evaluation criteria.** Literature sources for this study are selected from a narrow range of studies that combine the fields of project management and innovation, and project management and change management. Project management applies to all organizations, but preference is given to those sources that focus on businesses. All literature sources in this study are evaluated for authority, timeliness, quality, relevance and bias (Center, 2014).

***Authority*.** The criteria for authority that are applied to the selection of articles include finding authors that hold professional credentials such as the project management professional (PMP) certification from the Project Management Institute (PMI). Authority is also identified when an author has multiple citations by other authors and publication of additional articles in related areas of study.

***Timeliness.*** Literature published in the last ten years between 2006 and 2016 is given preference due to the evolving nature of innovation and change management practices.

***Quality.*** Source quality is evaluated based on the usage of correct grammar, spelling and punctuation. In addition, sources that apply a logical step-by-step examination of the subject and evidence clarity of argument with supporting facts are given priority (Center, 2014).

***Relevance.*** Studies are selected that pertain to the primary subjects of the annotated bibliography: (a) innovation management, (b) project management, (c) change management, and (d) organizational behavior.

***Bias.*** Sources that have clear academic purpose with multiple points of view presented are given priority. Articles that support only one point of view are not accepted. In addition, sources from authors who are selling a related product or service are avoided.

**Documentation approach.** The Zotero standalone research tool is used to capture relevant references and store them in a Zotero database, referred to as the library. The Zotero library is divided into folders with the three categories of sources in the Annotated Bibliography: (a) Lessons on the implementation of innovation in organizations, (b) Managing change in organizations through projects, and (c) Challenges of and best practices in managing projects with innovative deliverables. When a relevant source is located in the UO Libraries, it is opened via the provided link. The Zotero software add-in button is clicked, saving the reference to the Zotero library. A copy of the source is retrieved and then attached to the source within the Zotero library. Once the source is added to Zotero, an APA formatted bibliography reference is produced by right clicking on the selected source in Zotero and selecting "Create bibliography from item". The source is then copied to the reference section of the literature review. Notes and searchable tags are also added in order to make locating items within the library easier. Sources in the Zotero library can be sorted according to creator, item type, date, year, publisher, publication, date added, date modified, attachments, and notes, which is useful to the author of this study in building the annotated bibliography. Clicking the title of the Zotero source entry links directly to the location of the reference on the Internet. This provides further reassurance that the reference will not be lost if the downloaded document is misplaced.

## Annotated Bibliography

This annotated bibliography includes 15 key references; each reference contains (a) a complete bibliographic citation, (b) an abstract provided by the publisher, and (c) a summary that reviews the information provided and the relevancy to this study and the targeted audience. The ideas that are presented in the summaries are extracted from the text of the articles, and belong solely to the author cited in the reference.

### Lessons on the Implementation of Innovation in Organizations

**Gardner, J. A.** (2009). *Innovation and the future proof bank: A practical guide to doing different business-as-usual.* Hoboken: Wiley [Google Books version] Retrieved from https://books.google.com/books?id=dXoYuInfkP0C&printsec=frontcover&source=gbs_ge_summary_r&hl=en&output=reader

**Abstract.** Innovation, the conversion of the new to business as usual, is a very special business process. It is the business process able to reprogram all others. Creating the practices that make this process work is a key challenge for all in financial services that are worried about responding to the future. When an institution can identify things that are outside its present practices and convert them, production line style, into products, processes, cultural changes, or new markets, it will never be outpaced by internal or external change again. The institution becomes "Future Proof". This is a book about those practices in banks. It explains, using examples from institutions around the world, what it takes to create an innovation culture that consistently introduces new things into undifferentiated markets and internal cultures. It shows how banks can leverage the power of the new to establish unexpected revenue lines, or make old ones grow. And it provides advice on the social and political factors that either help or hinder the

germination of the new in banks. Moreover, though, this is a book about the science of innovation in a banking context. Drawing from practices already highly developed in financial services—managing portfolios of assets to mitigate risk—it explains how practitioners can run their innovations groups like any other business line in the bank one that delivers a return on investment predictably and at high multiples of internal cost of capital.

**Summary.** This book analyzes innovation and how it contributes to the long-term success of firms in banking. Gardner offers specific examples of how banks have innovated in the past 150 years in order to survive and grow. The author maps out several processes that inform best practices for managing innovation. Innovative products and processes are prone to failure, and Gardner states that failure should be embraced as part of the nature of innovation. According to Gardner, it is critical to learn from the failures that occur and make sure that they are realized before the project is fully executed.

The book also explores the impact that innovations have on end-users. Innovations demand changes from end-users and change is often difficult to accept. The stages of the end-user adoption process of innovative products and processes include: (a) *knowledge*, the understanding of the product or process; (b) *persuasion*, the forming of positive and negative views of innovation; (c) *decision*, activities that lead to the actual choice to adopt; (d) *implement* in which the innovation is put to use; and (e) *confirm* in which affirmation is sought that the decision to adopt the innovation was correct. This book is useful to the study because it identifies common challenges associated with innovative products and processes and provides useful suggestions for managing the

challenges associated with end-user innovation adoption. It also provides support for the necessity of innovation in successful companies.

**Khazanchi, S., Lewis, M., & Boyer, K**. (2007). Innovation-supportive culture: The impact of organizational values on process innovation. *Journal of Operations Management, 25*(4), 871-884. http: //dx.doi.org /10.1016/j.jom.2006.08.003

**Abstract.** For managers, innovation is vital, but paradoxical, requiring flexibility and empowerment, as well as control and efficiency. Increasingly, studies stress organizational culture as a key to managing innovation. Yet innovation-supportive culture remains an intricate and amorphous phenomenon. In response, we explore how organizational values – a foundational building block of culture – impact a particular process innovation, the implementation of advanced manufacturing technology (AMT). To unpack this scarcely studied construct, we examine three-dimensions of organizational values: value profiles, value congruence and value–practice interactions.

**Summary.** In this empirical primary research study, the authors seek to expand the understanding of how the culture of an organization affects the ability to innovate. The authors assert that the management of innovation requires competing elements of flexibility and control. Flexibility is needed to allow for creativity and empowerment, and control is needed to focus innovation projects on achieving realistic goals. Innovation efforts within organizations cause disruption that alters relationships that span functional and occupational structures.

The study focuses on process innovation by surveying the implementation of advanced manufacturing technology (AMT) across 100 manufacturing plants. The study measured the level of three different cultural values that influence innovation: (a) value

profiles, (b) value congruence, and (c) value-practice interactions. Value profiles measure the extent to which flexibility and control are present in an organizational culture. Value congruence determines the level of agreement among members about what the cultural values are within an organization. Value-practice interactions demonstrate the level of consistency between the values of an organization and the actual practices that take place during business processes. The study develops hypotheses about the relationship between these cultural attributes and performance within an innovative business process and compares them to statistical results from surveys. Viewpoints presented in the study are supported by primary research and authoritative sources. This research contributes to the study by providing context for the general challenges posed by the introduction of innovative business processes as they relate to organizational culture.

**Lampel, J., Honig, B., & Drori, I.** (2014). Organizational ingenuity: Concept, processes and strategies. *Organization Studies, 35*(4), 465-482.

**Abstract.** In this introduction to the special issue we explore the main features of 'organizational ingenuity', defined as 'the ability to create innovative solutions within structural constraints using limited resources and imaginative problem solving'. We begin by looking at the changing views of the importance of ingenuity for economic and social development. We next analyse the nature of ingenious solutions. This is followed by a discussion of structural, resource and temporal constraints that face problem solvers. We next turn our attention to creative problem solving under constraints. We contrast 'induced' and 'autonomous' problem solving. The first arises when external stakeholders or top managers impose tasks that define problems for the individuals and groups that must solve them; the second arises when these individuals and groups recognize and

define the problems for themselves. We argue that in both induced and autonomous problem solving, individuals and groups that wish to act creatively confront two types of constraint. The first are ‘product constraints’ that define the features and functionalities that are necessary for a successful solution. The second are ‘process constraints’ that stand in the way of creative problem solving in a given organizational context. We argue that both types of constraints can lead to organizational ingenuity, but that dealing with process constraints is crucial for organizational ingenuity, and hence for sustaining organizational ingenuity more generally. We provide an overview summary of the articles in the special issue, and conclude with suggestions for future research.

**Summary.** This article presents a definition of ingenuity as it relates to process and product innovation within organizations. The authors focus on the term *ingenuity* as a method to define creative problem solving within institutional constraints. Structural, resource, and temporal constraints are defined and examined. Lampel, Honig and Drori assert that while constraints on these activities within organizations usually have negative connotations for innovation, constraints can be both negative and positive influences on the process of innovation. Constraints such as limits to the design of a particular product, or policies and procedures that slow decision-making can limit the potential of ingenuity. However, guidelines for product design can also free the innovator to focus on specific aspects of the design in order to arrive at a concise result. The findings of this study contribute to the intent of the annotated bibliography to identify challenges that accompany the introduction of these innovations.

**Lucas, H. C., & Goh, J. M.** (2013). Disruptive technology: How Kodak missed the digital photography revolution. *Journal of Strategic Information Systems, 18*(1), 46-55. http: //dx.doi.org /10.1109/EMR.2013.6693939

**Abstract.** The purpose of this paper is to analyze how a firm responds to a challenge from a transformational technology that poses a threat to its historical business model. We extend Christensen's theory of disruptive technologies to undertake this analysis. The paper makes two contributions: the first is to extend theory and the second is to learn from the example of Kodak's response to digital photography. Our extensions to existing theory include considerations of organizational change, and the culture of the organization. Information technology has the potential to transform industries through the creation of new digital products and services. Kodak's middle managers, culture and rigid, bureaucratic structure hindered a fast response to new technology which dramatically changed the process of capturing and sharing images. Film is a physical, chemical product, and despite a succession of new CEOs, Kodak's middle managers were unable to make a transition to think digitally. Kodak has experienced a nearly 80% decline in its workforce, loss of market share, a tumbling stock price, and significant internal turmoil as a result of its failure to take advantage of this new technology.

**Summary.** This article draws from Christensen's *theory of disruptive technologies* and adds to the concept by examining the change process that is necessary to implement a new technology. The *theory of disruptive technologies* states that investing in disruptive or innovative technologies is not a rational financial decision for senior managers. The reason is that successful companies have decision-making and resource-allocation processes that create efficiencies, but that naturally reject disruptive change. The authors

focus on the need for senior management and middle managers to convince others in their organization that change related to innovation is required. The struggle between those that support change and those that reject it is described by the following concepts: (a) dynamic capabilities, (b) core rigidities, and (c) management propensities. The authors present a case study and analysis of the Kodak Corporation and their struggle to adopt digital camera technology. Despite heavy investments in digital camera technology, Kodak was never able to capitalize on the change from film to digital photography and filed for Chapter 11 bankruptcy in 2012.

This article is useful to this study because it provides a framework for understanding the environmental and organizational phenomena in which innovative technologies fail to take root. In addition, it provides useful lessons on the context in which innovation can be implemented. The key lessons that relate to this study are (a) change depends on convincing management that a disruptive threat is serious, (b) long periods of success can lead core competencies to becoming core rigidities, (c) core rigidities and bureaucratic culture must be attacked in order to facilitate change. Senior and middle management are targeted for this study, as the lessons will be useful in creating a culture that can cope with change brought about by innovative products and processes.

**Managing Change in Organizations through Projects**

**Crawford, L., & Nahmias, A. H.** (2010). Competencies for managing change. *International Journal of Project Management, 28*(4), 405-412.

**Abstract.** Organisational changes are recognised as a specific project type that can benefit from the application of project management skills, tools and techniques.

Associated with this trend is evidence of rivalry in the marketplace between Project Managers and Change Managers concerning who should be managing business change. And these are not the only contenders. Corporate executives and senior managers, although they may engage the assistance of both Project Managers and Change Managers, generally see themselves as taking the leading roles in managing major organisational changes and transformations. As such, endeavours are most likely to take the form of programs, comprising multiple projects across the organization, Program Managers are seen by some as being most likely to be responsible for managing organisational change initiatives. This paper reports on research undertaken to explore the differences in approach and practice of Project, Program and Change Managers as a basis for determining the competencies required to effectively manage change initiatives.

**Summary.** This article provides a comparative analysis of competencies required of project, program, and change managers based on a review of project and change management literature. Competencies used in practice by project managers and change managers are then compared across three case studies of organizational change projects. Twenty-four competencies were identified encompassing: (a) knowledge, (b) skills, and (c) personal attributes that contribute to project management performance. The article provides a description of the typical training and educational backgrounds that both project managers and change managers have. Training for project management focuses on planning and control, and is supported by standards and guides provided by project management professional associations. Change managers have less representation from professional and representative bodies, and no certification process for change

management, but their knowledge base and practices are underpinned by a larger body of theory.

The project case studies were selected by the following criteria: (a) type of change, (b) number of staff influenced and (c) project expenditure. The authors also review the contextual factors that can affect the change management competencies required, the change activities that should be undertaken, and the most appropriate professional background for each type of project. Crawford and Nahmias offer a decision matrix that guides management in selecting the right mix of project managers and change managers and their associated skill sets. The decision matrix illustrates the two important contextual factors that should be considered when applying project and change management resources to change projects. These include *supportive culture and/or leadership* shown on the vertical axis and *degree of behavioral change required* shown on the horizontal axis. As supportive culture and leadership increase, the need for a strong change manager is lessened. As the degree of behavioral change required is increased, the need for a combination of strong project and change management is warranted.

Key competencies identified in the article include: (a) leadership, (b) stakeholder management planning, (c), project planning, (d) team selection, (e) team development, (f) communication, (g) decision-making and problem solving, (h) cultural awareness skills, and (i) project management skills. Change activities to be undertaken include: (a) changing behaviors and organizational culture to achieve goals, (b) preparation of users, (c) adjusting organizational structure (d) political diffusion, (e) impact analysis, (f)

selling the change, (g) champion schemes, (h) involvement in process analysis work and (i) training and education to affected staff.

This article is useful to this study because it offers guidance on the competencies required and the activities that should be carried out by project and change managers to successfully implement change projects. Senior management, project managers, and change managers are audience members that will benefit from this study.

**Gareis, R.** (2010). Changes of organizations by projects. *International Journal of Project Management, 28*(4), 314-327

**Abstract.** Permanent organizations, such as companies, divisions, profit and cost centres, as well as temporary organizations, i.e. projects and programmes, change. Different change types, namely organizational learning, further developing, transforming and radical re-positioning can be described by specific chains of processes. For performing change processes of permanent organizations projects and programmes can be applied. In the literature the differences between changes, processes, programmes and projects are not clearly defined and therefore also change management is not related appropriately to process, project and programme management. There exists a misperception regarding the relationship between changes and programmes (and projects). Changes are perceived to be managed within programmes (and projects) instead of perceiving programmes (and projects) as organizations to manage the changes. For the definition of change types, of change objects and for the description of changes an action research approach was applied. The author developed together with representatives of different client organizations models for change management and applied those as practical solutions for these organizations.

**Summary.** This study investigates how various change management approaches can be applied to different types of organizational change with the proper application of project management teams. Four case studies are examined utilizing documentation analyses, interviews, concept papers, workshops, presentations and publications. Gareis states that change holds a strategic dimension in which companies move from a current state to a future desired state. Change is a way to deal with the complexity in an organization's operating environment. The overall structure of an organization grows in complexity as it seeks to cope with the complexity in the environment. Various reasons for change, the stages that take place, and models for describing the types of change are reviewed.

The author notes that planning for successful change should apply certain criteria: (a) establish a sense of urgency, (b) create a guiding coalition, (c) develop a vision and a strategy, (d) communicate the change vision, (e) empower others to act on the vision, (f) plan for and create short wins, (g) consolidate improvements, and (h) anchor new approaches. The author describes categories of change types including organizational learning, further developing, transforming, and radical new positioning and suggests appropriate change management approaches. Chains of processes provide decision gates at the end of each process. The study is relevant to the annotated bibliography as it offers best practices in organizational change management in the framework of project management techniques.

**Hornstein, H.** (2015). The integration of project management and organizational change management is now a necessity. *International Journal of Project Management, 33*(2), 291-298. http: //dx.doi.org /10.1016/j.ijproman.2014.08.005

**Abstract.** Project management processes and the training of new project managers (PM) must consider the impact of organizational change on the success and failure of project implementations. The case for requiring project managers to be conversant with organizational change management (OCM) is made by the author by reviewing supportive literature. In addition, PM certifying agencies like PMI and IPMA are strongly encouraged to include education on OCM to the certification process for new PMs. Management of OCM impacts project success. OCM should be integrated into PM. Project success factors should include OCM. PMs should acquire OCM skills.

**Summary.** In this article, Hornstein asserts that projects initiated within organizations are frequently used as a way to initiate critical changes to the way organizations operate. Despite this, there is an emphasis placed on rote project process issues such as risk management, time management, and quality management, as opposed to social and psychological issues that are addressed in organizational change management (OCM) literature. The author reviews the current state of project management practices as developed by the Project Management Institute (PMI) and the Association for Project Management (APM). Critical success factors as defined by the current project management body of knowledge do not include OCM leadership practices including; (a) taking responsibility for success, and (b) getting stakeholders to accept and embrace change. Without the element of OCM incorporated into project best practices, project manager training, and critical success factors in projects, the level of resistance from employees who must adopt the change will increase and effect project success.

This article is useful to this study because it provides support for the inclusion of organizational change management practices in the already established project processes

that are most commonly used in organizational change initiatives and projects. The article suggests strongly that change is an inevitable outcome of project implementations, therefore the skill sets and competencies associated with the change management discipline should be incorporated into project management. Key lessons from this article include: (a) projects have the potential to catalyze change, (b) project success criteria should include human based factors, (c) the effect on an organization's social system should be considered in project management planning, (d) creating ownership and shared meaning through project management increases project success (e) change management processes should continue well after the project has been completed in order to assist end users in overcoming resistance to unfamiliar processes and technology.

**Kavanagh, D. & Naughton, E.** (2009) Innovation & project management – exploring the links. *PM World Today*, *11*(4), 1-7.

**Abstract.** If innovation was traditionally seen as technology-led, it now covers a much broader canvas. Innovation is possibly best defined as the exploration and exploitation of new ideas in pursuit of a competitive advantage. The pressure to be competitive drives innovation across the range of business practices, and, conversely, innovation is a key driver of competitive advantage. Innovation is not necessarily about big-bang, major breakthroughs. More often it is incremental and built on the day-to-day expertise of employees and their thorough knowledge of customers and competitors. For them, innovation is often about making non-technical adjustments that have significant customer impact with correspondingly little cost.

**Summary.** Kavanaugh and Naughton use a statistical approach to illustrate the ties between high levels of project management and high levels of innovation. Their unit of

analysis is a set of 37 nations in which project management and innovation ratings are available. They use the levels of project management certifications within each nation and compare them to the scores from the European Innovation Scorecard. The authors find a high correlation between levels of project management education and innovation, from which they infer that structured project management is a common and accepted way to implement innovation, which they also equate with high levels of organizational change. The article provides support for the premise in this study that project management drives innovational change, although further investigation of the linkages between the two is warranted.

**Lehmann, V.** (2010). Connecting changes to projects using a historical perspective: Towards some new canvases for researchers. *International Journal of Project Management, 28*(4), 328-338.

**Abstract.** Connecting changes to projects requires more than a statement. Conceptually, the management of changes as projects is a real challenge. A huge gap exists between conceptualizations in change management and in project management. The topic of communication represents a good example of this situation. Researchers who study organizational change all agree that communication is a key factor for success. But for some of them communication is a tool while for others communication creates changes. In project management, nearly the same situation occurs. Thus, to build up a relevant guide to manage changes as projects requires finding theoretical linkages and meaningful bridges between both fields. Using a historical perspective, this text attempts to structure the fields of project management and change management. This leads to a first canvas, revealing mineral and organic universes of projects and changes. Further interpretations

allow us to establish a second canvas: a guide is then proposed as a new conceptual frame for investigating the management of changes as projects and conducting new researches on change and project management.

**Summary.** This article sorts and then compares several categories of project management and change management approaches and then applies the principles of each to create a guide for managing organizational changes as projects with an emphasis on communication. A table is presented that compares what the author refers to as the *classical* school of change management to the *actual* school of project management. The variables compared include: (a) change definition terminology, (b) change management areas of focus, (c) principle actors, and (d) dominant principles of communication. In addition, a table is presented that compares what the author refers to as the *traditional* school of project management to the *renewal school* of project management. The variables compared include: (a) project definition terminology, (b) project management areas of focus, (c) principle actors, and (d) dominant principles in communication. A third table is then shown that distills the four described approaches to what the author describes as *mineral* and *organic* universes that apply to both project management and change management, and compares the similarities between the two.

The use of either the mineral or organic approach to managing change-based projects depend on several factors including; (a) project and change practitioners available in an organization, (b) the experience level of project and change practitioners involved, (c) the type of project being initiated, and (d) the type of change being initiated. This article is useful to this study because it reviews existing change and project management approaches and offers guidance to change-based projects that can be

applied, depending on the scenario an organization is experiencing.

**Challenges of and Best Practices in Managing Projects with Innovative Deliverables**

**Artto, K., Kulvik, I., Poskela, J., & Turkulainen, V.** (2011). The integrative role of the project management office in the front end of innovation. *International Journal of Project Management, 29*(4), 408-421. http: //dx.doi.org / 10.1016/j.ijproman.2011.01.008

**Abstract.** This research addresses management control in the front end of innovation projects. We conceptualize and analyze PMOs more broadly than just as a specialized project-focused organizational unit. Building on theories of management control, organization design, and innovation front end literature, we assess the role of PMO as an integrative arrangement. The empirical material is derived from four companies. The results show a variety of management control mechanisms that can be considered as integrative organizational arrangements. Such organizational arrangements can be considered as an alternative to a non-existent PMO, or to complement a (non-existent) PMO's tasks. The paper also contrasts prior literature by emphasizing the desirability of a highly organic or embedded matrix structure in the organization. Finally, we propose that the development path of the management approach proceeds by first emphasizing diagnostic and boundary systems (with mechanistic management approaches) followed by intensive use of interactive and belief systems (with value-based management approaches). The major contribution of this paper is in the organizational and managerial mechanisms of a firm that is managing multiple innovation projects. This research also expands upon the existing PMO research to include a broader management control approach for managing projects in companies.

**Summary.** The authors focus on the beginning phases of innovation projects and use four case studies and empirical data to analyze the management controls and project management office (PMO) arrangements in place at the organizations sponsoring the projects, as well as the relative effectiveness of these two factors. The front end of innovation projects is defined as the phase before any formal project management processes are started. Critical decisions about customer needs, target markets, and the key attributes of the deliverable are made in this stage. The front end of innovation projects offers the greatest opportunity to enhance innovative capabilities within companies. It is typically the most difficult and chaotic stage of an innovation project. The study offers guidance on the control mechanisms that managers should use and the organizational arrangements that can be established to effectively guide the front end of innovation projects. Project management offices (PMOs) and similar internal organizations serve a key role in the early stages of innovation projects. Less formal organizations can be effective in assisting with this stage by providing facilitators, innovation groups, idea management and innovation management software.

This article is useful to this study because it offers guidance on specific project management best practices that increase the likelihood of success with innovation projects. In addition, the article provides information on management structure and control and how they relate to success in innovative projects; key lessons are: (a) management control systems applied at the front end of innovation projects yield high quality new ideas, assist in developing these ideas into concrete business cases, and enable cross-functional coordination; and (b) PMOs are one way of integrating project management activities in innovative projects but not the only viable option available to

organizations. Other kinds of organizational bodies and tools that contribute to innovation project success include: (a) coaches or facilitators for generating opportunities or ideas, (b) innovation groups, (c) groups or boards for selection and decision-making, (d) coordinators for strategy and process implementation, (e) idea management software systems, (f) idea campaigns, and (g) specialized task forces for supporting executives and staff. Key best practices are: (a) leaders of innovation teams must apply additional effort to facilitate personal interaction when idea management software systems are used, and (b) active and energizing coaching is required with the use of creative workshops and idea campaigns in addition to project processes and controls. Management, specifically business executives, are audience members that are targeted for this study, and these lessons will be useful for those who are planning or currently engaging in innovation through projects.

**Besner, C., & Hobbs, B.** (2008). Discriminating contexts and project management best practices on innovative and noninnovative projects. *Project Management Journal, 39,* S123-S134. http: //dx.doi.org /10.1002/pmj.20064

**Abstract.** Managing an innovation project (i.e., a project that produces a new product or that involves a new concept or a new technology) is hypothesized as being different from managing projects that produce a standard product with low innovative content using few innovative technologies. If this hypothesis is true, different processes or more strict and extensive use of well-known practices will be required, and specific tools and techniques will be adopted to execute these processes. This article explores the use of 91 project management practices. The data set consists of 734 responses from experienced project managers and program directors. The article compares innovative project contexts and

practices with low innovative environments. Best practices are identified by examining which practices and contexts discriminate between high- and low-performing organizations. This article reveals that maturity in project management processes is strongly associated with a high project success rate for the entire sample. The participation of the project manager or program director during the front end of the project is shown to be one of the principal factors discriminating high-performing organizations delivering innovation projects. Availability of competent personnel as well as practices that enhance project definition also discriminate between high and low performers on innovative projects.

**Summary.** Besner and Hobbs state that innovation and projects are very closely tied due to the fact that they are both endeavors that seek to produce something new in the shortest period of time possible. The authors' intention is to describe the factors that contribute to the success of projects that have innovative deliverables. They utilize a survey of 753 project managers to create a study of established project management tools and practices within innovative and non-innovative contexts.

By comparing rates of project and organizational success within innovative and non-innovative projects, the authors conclude that there are consistent factors that contribute to success and specific tools that are used most frequently in innovative and non-innovative projects. Organizational factors typically present that are associated with successful innovative projects include (a) a greater availability of competent human resources, (b) managers with more authority over specific project variables, and (c) the use of program directors in lieu of project managers. Project management tools used more frequently in successful innovative projects include (a) concurrent engineering, (b)

requirements analysis, (c) configuration review, (d) work breakdown structure, (e) databases for cost estimating, (f) team development plans, (g) stakeholder analysis, (h) critical success factor modeling, (i) quality plans, and (j) updated business cases at phase gates. This article is useful for this specific research study because it provides guidance on frequently used best practices and organizational contexts that are associated with success in innovative projects.

**Blindenbach-Driessen, F.P., & Ende, J. van den**, Jan. (2006). Innovation in project-based firms: The context dependency of success factors. *Research Policy, 35*(4), 545-561. http: //dx.doi.org /10.1016/j.respol.2006.02.005

**Abstract.** Innovation management literature typically concerns functionally organized firms. In this paper we investigate innovation management in a different type of firm, the project-based firm. Project-based firms, such as engineering and construction companies, consultancies and system integrators, are service firms that solely execute projects for clients. We focus on new service development projects in these firms. Based on an in-depth study of six projects in four different firms, we develop hypotheses on differences between success factors for development projects in project-based firms and in functionally organized firms. Some of the success factors for functionally organized firms, as described in the literature, appear to be more important in project-based firms, others seem redundant. Our findings suggest that the specific structure and capabilities of project-based firms provide an explanation for these differences.

**Summary.** The article focuses on the success factors for six innovative projects within four project-based firms. Project-based firms differ from functional based firms in that they lack the formal coordination of activities within distinct departments, and their sole

existence is to engage in projects that produce complex solutions or products for their clients. This study concentrates on *development projects,* which create new products and services for a range of customers with the objective of commercializing the products or services. Development projects are aimed at innovation, as opposed to *business projects,* which are intended to provide solutions to businesses for their internal uses.

The authors investigate the success factors present within development projects, as well as the influence of specific behaviors, structures and capabilities of project-based firms on these success factors. The success factors are used as a baseline with which to compare the differences in approach from project-based firms and functional-based firms. The success factors as outlined in this article include: (a) planning and effective execution of work, (b) contingent approach to planning (c) tangible and intangible support from senior management, (d) effective use of cross functional team structure, (e) availability of relevant expertise, (f) strong project leadership, (g) existence of product champions available throughout the product life cycle, (h) persuasive external team communication, (i) customer involvement and feedback, (j) supplier involvement and feedback, (k) pre-development activities, (l) market research and testing, and (m) effective launch activities. A description of each success factor for all six projects is compared to the level of: (a) compliance with the factor observed, (b) observed contribution to project success, and (c) contextual differences between firms. The authors then provide a hypothesized relative contribution of each factor to the success or failure of each project. The authors of the article find that the organizational structure and experience level of firms engaged in innovation projects affects the approach that they adopt and the success factors that apply.

This article is useful to this study as it provides context for the success factors that affect the outcome of innovation projects that produce new products and services. Project managers and senior business managers are the targeted audience for this article, because project managers are both influenced by and have influence on the success factors, while senior business managers are in positions to influence the success factors that occur at an organizational level.

**Filippov, S., & Mooi, H,** (2009). Innovation project management: A research agenda *6th International Conference for Innovation and Management* (ICIM2009), Sao Paolo, 2009/12/08-10. Retrieved from http://collections.unu.edu/view/UNU:1214

**Abstract.** Originally developed in the mid-20th century, project management has become a distinctive way to manage business activities nowadays. Another important development is virtually universal recognition of 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. Yet, theoretically both project management and innovation studies have evolved over time as distinctively separate disciplines. In this paper we make an attempt to conceptualize the innovation project management and to specify the idiosyncratic nature of innovation projects as opposed to conventional projects. By doing so, we contribute to the nascent academic debate on the interplay between innovation and project management.

**Summary.** Filippov and Mooi present a literature review to the International Conference for Innovation and Management. The purpose is to mine the separate research areas of innovation management and project management to find common ground and contribute to a synthesis of these areas referred to as Innovation Project Management. The authors

review multiple research papers from established authors on the ties between project management and innovation. The authors provide the background and history of both innovation and project management research. Filippov and Mooi conclude that there are many implicit ties between the two disciplines, but not many research studies that directly address the connections between the two. The nascent nature of the field of innovation project study leads the authors to define the term "innovation project". The study asserts that an innovation project should include at least one of the following variables: (a) be aimed at development of an innovative (new) product or service; (b) employ innovative methods and approaches (process innovation); (c) lead to improvement of innovative and learning capabilities of the project executor (organizational innovation); or (d) be realized in a close interaction with the project owner (user innovation). The authors point out the high failure rate of both projects and innovation measures within organizations as a basis for further research. Filippov and Mooi lay the groundwork for further pursuit of the nascent field of innovation project management and call for structured research based on their definition of the problem. This article is useful for this specific research study because it elaborates on the nature of innovation project management and helps distinguish between the academic research on innovation and project management and define the ties between the two.

**Kapsali, M.** (2011). Systems thinking in innovation project management: A match that works. *International Journal of Project Management, 29*(4), 396-407.

**Abstract.** This paper discusses why conventional project management practices lead to the failure of publicly funded innovation deployment projects, and investigates how the use of systems thinking in project management can help projects be more successful.

Based on 12 case studies of two EU innovation policies, we provide evidence that by using systemic project management, which entails providing flexibility in planning, communicating and controlling activities, innovation projects are more successful. This research refutes previous theory that claims that we should formalize to manage complexity and uncertainty. The key finding is that systems thinking methods provide the flexibility to manage innovativeness, complexity and uncertainty in innovation projects more successfully. Suggestions for further research include suggestions of how to embed flexibility in project management methods using the constructs of equifinality and causal embeddedness.

**Summary.** Kapsali asserts that there is a lack of effective project management practice guidelines available for innovation projects, and that the use of systems thinking can provide frameworks that improve innovation project management outcomes. Systems thinking is presented as a comprehensive approach to analysis that looks at the way an organization's component parts connect and how an organization's systems develop over time and within the context of larger systems. The author first outlines the deficiencies in traditional project management methodologies in coping with novelty, complexity, and uncertainty within innovation projects. The study reviews twelve case studies in publicly funded innovation projects that applied traditional methods including (a) tight process control over project activities, (b) formalized communication processes, and (c) detailed planning. Despite applying these methods, the projects reported high levels of failure. Kapsali asserts that these methods are more suitable for predictable operational activities than innovation projects.

The uncertainty, complexity, and uniqueness of innovation project activities make traditional project control difficult, and deviation from plans probable. The author presents evidence that the lack of flexibility to manage boundary relations and operational change contributed to high rates of failure. The study suggests that the systems thinking concepts of equifinality and causal connectedness can provide methods to embed flexibility into innovation project management that will lead to higher project success rates. Equifinality is a measure of operational flexibility and causal connectedness is the effect of interactions between systems and actors within organizations. Key lessons are that operational flexibility and boundary management can be more significant in innovation project success than formalization and control systems. In addition, emphasis on output monitoring instruments (cost, time, and scope) lead to low performance and ceremonial performance instead of effectiveness and achievement of goals.

This article applies to this study because it provides: (a) background for current project management practices, and how they are applied to innovation projects; (b) a review of challenges that face project managers of innovation projects; and (c) evidence from case studies that provides support for a more flexible approach to innovation project management based on systems thinking frameworks. Project managers working with innovation projects are targeted for this study, as the lessons learned and specific best practices can be directly applied to improve project success.

**Lenfle, S**. (2008). Exploration and project management. *International Journal of Project Management, 26*(5), 469-478.

**Abstract.** Project management in academic studies tends to be regarded as an adequate solution to the problems raised by innovation. This paper sets out to question this tendency to equate projects and innovation, which, in our view, can lead to the improper use of projects to manage innovation. We argue that, in line with the work on project classification, a distinction should be made between the various types of design situations to which different types of projects are suited. Qualitative research on automotive telematics allows us to identify the management methods suited to the most innovative projects, i.e. exploration projects for which neither technologies nor customer requirements are known at the start of the project. We will show how these situations shake up traditional project management models and will propose five management principles adapted to this new situation.

**Summary.** Lenfe asserts in this article that there is little direct connection made in the literature between project management research and innovation management research. Lenfe conducts a qualitative research study and literature review to identify basic principles that lead to successful management of innovative projects. The author asserts that despite the connections many researchers have made between stringent project management approaches and innovation, the use of experts within organizations and the ability to meet the need for flexibility and adaptation during projects are more important to innovation project success. The research identifies several key principles that can be applied to innovation project management: (a) setting up a cross functional organization dedicated to completion of the innovation project, (b) action in the form of constant testing, (c) action plans within projects that are flexible and able to be changed as exploration and experiments provide new direction to the project, and (d) management

tools used must allow changes to the original objectives proposed. This article is useful to this study because it outlines the challenges associated with highly innovative projects, and the inadequacy of traditional project management practices in handling them. The authors provide principles that can inform best practices for managing projects with innovative deliverables.

## Conclusion

Innovation can be defined as "the practical implementation of an idea into a new device or process" (Schilling, 2013, p.18). The ability for organizations to create innovative products, services, and internal processes is critical to their near and long term success (Besner & Hobbs, 2008). Innovation enables companies to differentiate their product lines, increase profit margins, and decrease costs (Schilling, 2013). The primary method used to implement innovative products, services, and internal processes is projects (Kavanagh & Naughton, 2009). However, the tools and practices that have been developed for project management may not always be the best option for managing innovation projects (Kapsali, 2011). Not all projects are aimed at innovative deliverables and the set of tools and best practices applied to low innovation projects may not be as effective for those with higher levels of innovation (Besner & Hobbs, 2008).

This review of 15 references examines best practices in project management that lead to successful project outcomes for innovation projects. In addition, this study identifies the challenges and lessons learned in implementing innovation projects, and ways to recognize and address issues unique to innovation projects. The references are organized in three categories: (a) lessons on the implementation of innovation in organizations, (b) managing change in organizations through projects, and (c) challenges and best practices in managing projects with innovative deliverables.

### Lessons on the Implementation of Innovation in Organizations

Understanding the nature of innovation and the various ways that it is viewed within organizations is helpful in laying the groundwork for the exploration of lessons about the implementation of innovation. Gardner (2009) classifies innovation along two dimensions: (a)

the degree of novelty and (b) the relationship of the organization to the innovation. The degree of novelty can be separated into three categories: (a) breakthrough, (b) revolutionary, and (c) incremental (Gardner, 2009, p.13). Breakthroughs have few, if any, equivalents to compare to, are high risk and reward, and are highly unpredictable. Revolutionary innovations improve on prior options and offer significant improvements to existing products or processes. Incremental innovations make minor improvements to existing products or processes, are typically very specific to a particular organization's business process, and are low risk (Gardner, 2009). Gardner (2009) asserts that organizations react to innovations depending on whether they disrupt or sustain their current operations. If an innovation is disruptive to the organization's operations, the organization may reject the concept whether it as a viable business opportunity or not (Gardner, 2009). Lucas and Goh (2009) support this theory and analyze the case of Kodak Company and their failure to adopt digital photography into their business model as a prime example.

Organizational culture, values (Gardner, 2009; Khazanchi et al., 2007), and resource and policy constraints (Lampel et al., 2014) are factors that can impact end-user acceptance of innovation project implementations. Khazanchi et al., (2007) found that the organizational values of flexibility and control play key roles in enabling performance improvements brought about by innovation projects. Flexibility values illustrated by management encourage problem solving and commitment to adjusting final innovation project designs, which support high performance (Khazanchi et al., 2007). Paradoxically, Khazanchi et al. (2007) assert that control values can also be beneficial to innovation projects by providing stable routines that help workers surface and solve problems. The appropriate application of the two sets of values is key, and Khazanchi

et al. (2007) encourage managers "…to avoid viewing such values as conflicting, seeking instead to empower employees and to establish supporting policies and systems" (p. 882).

Lampel et al. (2014) reflect a similar paradox in their view of the role of constraints on innovation projects. Product constraints, in the form of clearly defined product requirements, were found to improve project outcomes because of their positive influences on clarity and focus (Lampel et al., 2014).

**Managing Change in Organizations through Projects**

Organizational changes are a natural outcome of the implementation of innovative projects (Hornstein 2015). Organizations in the process of implementing change typically rely upon projects; Kavanaugh and Naughton (2009) note "…project management is a set of techniques to effectively manage change" (p. 4). Projects that produce organizational change are becoming recognized as a distinct project type in the project management field (Crawford & Nahmias, 2010). However, Gareis (2010) states "in the project management literature changes are perceived to be managed within programmes (and projects) instead of perceiving programmes (and projects) as organizations to manage the changes" (p. 314). Recognition is growing in the project management and change management fields of study that there is significant overlap in the competencies and requirements of both disciplines (Crawford & Nahmias, 2010).

Despite the need to integrate the two fields, and the similarities they share, there is a gap in the roles that project and change managers perform and the tools and techniques that are employed in many organizations (Lehmann, 2010). Application of standard project management techniques may hinder creativity that is a key component of innovation (Kavanaugh & Naughton 2009). Lehmann (2010) advocates for a flexible approach, stating that iterations to the project

plan can be expected early in the project, and negotiations and compromises should be seen as positive and not as a sign of dysfunction. Hornstein (2015) posits that too much emphasis is placed on routine, traditional project practices such as risk management, time management, and quality management instead of organizational change management concerns (OCM), including social and psychological issues. Hornstein (2015) advocates for adding OCM training and leadership practices to the Project Management Institute's (PMI's) Project Management Body of Knowledge (PMBOK), asserting that the following concepts would improve the success rate of projects that initiate change: (a) taking responsibility for the success of projects (b) getting stakeholders to accept and embrace change, (c) planning for ways to mitigate the effects on an organization's social system, and (d) creating ownership and shared meaning through the project management process (Hornstein, 2015). Hornstein (2015) emphasizes that change management processes should continue well after the project has been completed, in order to assist end users in overcoming resistance to unfamiliar processes and technology.

Crawford and Nahmias (2010) support the theory that project and change manager competencies and training need to be combined in order to increase the success of projects that result in change and provide guidance on how to most effectively utilize existing project and change management professionals within organizations. They offer a decision matrix to assist senior managers in deciding what types of resources should be assigned to projects. The vertical axis represents *supportive culture and/or leadership* and the horizontal axis represents *degree of behavioral change*. Increased supportive culture and/or leadership lowers the need for change management and higher levels of required behavioral change increase the need for strong change management.

**Challenges of and Best Practices in Managing Projects with Innovative Deliverables**

Besner and Hobbs (2008) state "managing an innovation project [i.e., a project that produces a new product or that involves a new concept or a new technology] is hypothesized as being different from managing projects that produce a standard product with low innovative content using few innovative technologies" (p. S123). If this theory is correct, then different processes or broader and stricter use of standard practices will need to be employed, along with the use of specific tools and techniques (Besner & Hobbs, 2008). Fillippov and Mooi (2009) note "both innovation and R&D projects by their nature differ from conventional projects. Thus there is a need to examine Innovation Project Management as a distinctive area of managing innovation projects, using the tools and methods of project management" (p. 1). Additional researchers refer to *innovation projects* as being different from standard projects based on levels of increased complexity and uncertainty (Artto, Kulvik, Poskela, & Turkulainen 2011; Kapsali, 2011).

The authors cited in this study address the question of how best to approach innovation projects in different ways. Artto et al., (2011) studied the most effective organizational arrangements that contribute to innovation project management success. Besner and Hobbs, (2008) reviewed the project management tools that were used the most by experienced, successful project managers in innovation projects. Blindenbach-Driessen and Ende (2006) interviewed stakeholders and project managers of successful innovation projects and determined the success factors most closely associated with the projects. Lenfle (2008) conducted a qualitative research study to determine basic principles that lead to successful management of innovation projects.

Common themes found among the best practices include: (a) the need for flexibility (Kapsali, 2011; Lenfle, 2008), and a contingent approach (Blindenbach-Driessen & Ende 2006; Lenfle, 2008); (b) high quality project plans (Artto et al., 2011; Blindenbach-Driessen & Ende 2006; Lenfle, 2008), including requirements analysis (Blindenbach-Driessen & Ende 2006); (c) effective cross functional organizations that are dedicated to project completion (Artto et al., 2011; Blindenbach-Driessen & Ende 2006; Lenfle, 2008); (d) strong support from senior management (Blindenbach-Driessen & Ende 2006; Gardner, 2009); (e) availability of relevant experts (Blindenbach-Driessen & Ende 2006; Gardner, 2009); and (f) strong and experienced project managers (Besner & Hobbs, 2008; Blindenbach-Driessen & Ende, 2006).

**Summary**

Innovation management and project management are critical competencies for organizations seeking to effectively manage change and growth and improve financial performance (Filippov & Mooi 2009). However, projects and innovation initiatives have a high rate of failure (Filippov & Mooi, 2009). Projects with innovative outcomes have distinctive qualities that distinguish them from projects that have more routine goals (Besner & Hobbs, 2008). Projects with high levels of innovation generate change within organizations (Lehmann, 2010) and for product end-users (Gardner, 2009) that must be managed in order to produce successful project outcomes. Thorough examination of project and innovation management practices within organizations and application of appropriate and integrated project, innovation, and change management processes will yield improvements in stakeholder satisfaction levels and organizational performance (Lehmann, 2010).

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# Appendix

## Best Practices Associated with Innovative Projects and Project Management

### Key Best Practices for Innovative Projects

Artto, K., Kulvik, I., Poskela, J., & Turkulainen, V. (2011)

- management control systems applied at the front end of innovation projects yield high quality new ideas, assist in developing these ideas into concrete business cases, and enable cross-functional coordination; and
- PMOs can enable the successful integration of project management activities in innovative projects.

### Optional organizational bodies and tools that contribute to innovation project success

PMOs are one way of integrating project management activities in innovative projects but not the only viable option available to organizations. Other options include:

- coaches or facilitators for generating opportunities or ideas;
- innovation groups;
- groups or boards for selection and decision-making;
- coordinators for strategy and process implementation;
- idea management software systems;
- idea campaigns; and
- specialized task forces for supporting executives and staff.

### Key best practices for optional organizational bodies

- leaders of innovation teams must apply additional effort to facilitate personal interaction when idea management software systems are used; and

- active and energizing coaching is required with the use of creative workshops and idea campaigns in addition to project processes and controls.

Besner, C., & Hobbs, B. (2008)

**Organizational factors typically present that are associated with successful innovative projects**

- a greater availability of competent human resources;
- managers with more authority over specific project variables; and
- the use of program directors in lieu of project managers.

**Project management tools used more frequently in successful innovative projects**

- concurrent engineering;
- requirements analysis;
- configuration review;
- work breakdown structure;
- databases for cost estimating;
- team development plans;
- stakeholder analysis;
- critical success factor modeling;
- quality plans; and
- updated business cases at phase gates.

Blindenbach-Driessen, F.P., & Ende, J. van den, (2006)

**Success factors in innovation projects**

- planning and effective execution of work;

- contingent approach to planning;
- tangible and intangible support from senior management;
- effective use of cross functional team structure;
- availability of relevant expertise;
- strong project leadership;
- existence of product champions available throughout the product life cycle;
- persuasive external team communication;
- customer involvement and feedback;
- supplier involvement and feedback;
- pre-development activities;
- market research and testing; and
- effective launch activities.

Lenfle, S. (2008)

**Key principles that can be applied to innovation project management**

- setting up a cross functional organization dedicated to completion of the innovation project;
- action in the form of constant testing;
- action plans within projects that are flexible and able to be changed as exploration and experiments provide new direction to the project; and
- management tools must allow changes to the original objectives proposed.