Dissemination and Impact of PMI®’s
Sponsored Research Program
2000-2013

EXECUTIVE SUMMARY

March 2014
BACKGROUND
Since its inception in 1997, PMI has invested an estimated $18M in supporting academic research conducted by an array of scholars in educational and research institutes globally. At times, part of the funding for the research program has been earmarked for research grants of specific interest to PMI and, therein, the wider PM community. In 2000, PMI hosted its first Research Conference in Paris France, and also initiated the Sponsored Research Grant Program (SRP), administered by the Academic Resources Department. The annual funding cycle begins with the publication of the RFP in February and closes with funding decisions in November. Between four and eight new research grants have been awarded each year (Appendix A). Given the more than decade-long record of sponsorship and resulting reports since the inception of the grant program, Academic Resources wanted to document the dissemination of SRP research findings and their impact on the profession at large. This is the purpose of the study whose findings are reported here.

DEFINITIONS
The following terminology is used in this report:

Book = a written compilation of research findings either as a hard back edition, or a monograph. The term does not include working papers or white papers.

Co-researcher = an investigator in the sponsored research study not acting as the lead researcher and/or co-authors on any communication element. “Co-principal investigator” and “co-PI” are used interchangeably with the term “co-researcher” in this report.

Electronic = media elements such as blogs, webinars, dedicated URL websites, CD-ROMS or other means of transmitting data electronically.

Element = a citation proxy for any type of communication of findings from the sponsored research, be it oral, print or electronic in nature.

Investigator = a lead or co-researcher on a PMI-sponsored research grant

Lead = the sole or senior researcher on a PMI funded study or communication element. "Principal investigator" and "PI" are used interchangeably with the term "lead" in this report.

Open Press = any public domain newspaper or bulletin which might have been used to communicate research findings.

Trade Publication = includes journals, magazines, bulletins, newsletters or other, generally non-refereed, media associated with professional associations, societies, affiliates or chapters in project management or related fields.

SRP - refers to the PMI Sponsored Research Program, a program of the PMI’s Academic Resources Department that provides grant funding to scholars in universities globally who conduct research on various cutting edge projects in the field of project, program and portfolio management, using the project/program/portfolio as the subject or context of the research.
PURPOSE
This study was designed to document the:
- Dissemination of research findings via various communication elements from 2000 to 2012.
- Impact of funding on the SRP investigators’ career and future research activities.
- Application of:
  - The research on the practice of PM with specific evidence of such impact.
  - Other PM research on the practice of PM with specific evidence of such impact.
  - The research of scholars outside the mainstream PM community on the practice of PM with specific evidence of such impact.

METHODOLOGY
The mixed methodology used in this study combined quantitative and qualitative data collection methods in two phases. First, a data abstracting form was developed to transpose defined data items from CVs obtained from the pool of researchers. Next, in-depth questionnaires were emailed to the population, and, as necessary, follow-up interviews were conducted with both PIs and co-PIs to capture the perceptions of entire research teams. The intent was to include the population of projects listed in the August 2012 PMI Academic Resources Program Summary Report of Published & Active Projects through the end of 2012, including completed research in the PMI publications queue. The study was conducted between January and July, 2013.

RESULTS
“The development goes two ways. Research informs and influences PM practices, and practice is being studied as part of this research – so practice is influencing research.” [AK]

This report documents the dissemination and impact of research findings from all PMI sponsored research from 2000 through 2012 including completed projects in the current (2013) PMI publication queue. Information was obtained on 45 of the 46 funded projects (97.8%). Owing to non-response, 62 of the possible 84 researchers (73.8%) were used for analysis.

<table>
<thead>
<tr>
<th>Respondent Cohort Calculation</th>
<th>84 = total no. PMI-funded researchers</th>
<th>(-) 2 deceased</th>
<th>(-) 23 non-respondents</th>
<th>(+) CVs for 3 of 5 non-respondents</th>
<th>Final respondent cohort for analysis = 62 (73.8%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>46 = total no. PMI-funded studies</td>
<td>Studies with a deceased team member had living co-researchers</td>
<td>(-) 4 non-respondents</td>
<td>(+) CVs for 3 of the 4 studies with non-respondents</td>
<td>Final study cohort for analysis = 45 (97.8%)</td>
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The findings show that 708 individual communication elements were associated with these projects including books, book chapters, refereed journal articles, university and pen press publications, electronic communications, trade press publications, invited and proffered presentations. A total of 1273 citations as lead or co-authors represented these 708 communications.¹

Journal articles and presentations represented the highest number of citations. Articles appeared in 49 different journals across a wide spectrum of disciplines and fields (e.g. management, engineering, human resource management, organizational psychology, systems and information technology), the majority of which were non-PM related. However, PM-focused journals ranked in the top five most frequently cited:

- Project Management Journal
- International Journal of Project Management
- International Journal of Managing Projects in Business
- IEEE Transactions on Engineering Management
- Journal of High Technology Management Research

There were 218 invited presentations using results of research sponsored by PMI, including plenary and keynote addresses as well as workshops and panel presentations. The 102 venues in which these presentations took place included 29 business and government agency meetings, 31 events sponsored by academic institutions and 42 professional conferences/symposia. These venues were distributed across a wide-range of countries in all four PMI geographic regions.

Researchers summarized their project results via proffered presentations in 54 different venues in these same categories. Not surprisingly, most proffered presentations took place at academic conferences, the most frequent of which were the Annual Meeting of the:

- Academy of Management (AOM)
- European Academy of Management (EURAM)
- European Group on Organizational Studies (EGOS)
- IPMA World Congress (IPMA)
- International Conference on Management of Technology (ICMT)
- International Research Network on Organizing by Projects (IRNOP)
There were also 56 different PMI related events where presentations were made, including chapter meetings, Global Congresses, PMI Research Conferences and workshops, and PMI regional office and Global Executive Council sessions. Researchers discussed their research results at PMI chapter meetings in the countries listed in the table below.

<table>
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<tr>
<th>REGION</th>
<th>COUNTRY</th>
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<tbody>
<tr>
<td>North America</td>
<td>Canada, USA</td>
</tr>
<tr>
<td>EMEA</td>
<td>Germany, Norway, Sweden, The Netherlands</td>
</tr>
<tr>
<td>Asia Pacific</td>
<td>Australia, India, Japan, New Zealand</td>
</tr>
<tr>
<td>Latin America</td>
<td>Brazil</td>
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</table>

The majority of lead researchers and co-researchers believed that PMI funding had advanced their careers with promotions and other accolades, and a majority of the PMI and IPMA Research Achievement Award recipients over the years were those recognized for their PMI funded research efforts. More than 60% of respondents in this study cited PMI funding as a steppingstone to other research funding sources, particularly from government entities.
Dissemination of Research through University Teaching

More than 80% of researchers used findings from the SRP projects in their pedagogy at both the graduate and undergraduate level. Respondents named more than 50 universities in all PMI-designated geographic regions where PMI-sponsored research results are known to have been used in their educational programs. As expected, most of them are located in North America or Europe. Findings were included in a wide variety of courses taught at these universities. We have not tracked the use of the SRP project findings in courses taught by non-funded academics since there is no standardized way to collect these data. Thus, while we cannot enumerate the population of students/young professionals exposed to the content of PMI’s research project outcomes in all university programs, it is fair to say that they are reaching a substantial audience, largely via the researchers who conduct the studies.

Respondents cited more than 60 course titles in which material from PMI-sponsored research projects were included, ranging over a number of thematic areas including, but not limited to courses on:

- Complexity
- Leadership
- Project teams
- Human resource management
- Strategy
- Change Management
- Estimation and cost
- Scheduling
- Program Management
- Sustainability
- Project performance
- Organizational capability

Among the degree programs named as including courses with sponsored research content were:

- BA/BS
- Executive MBA
- Master of Science in Information Technology
- Master of Science in Project Management
- MBA in Technology Management
- PhD
Impact on Project Management Standards
Respondents also noted that PMI-funded research findings are reflected, in varying degrees, in project management standards including the PMI® Portfolio Management Standard, PRINCE2, the APM Handbook, GAPPS and several national standards (Norway) for large infrastructure projects. A sample

**PMI.** “[The] monograph [The project portfolio change management process in dynamic environments] became part of The Standard for Portfolio Management (risk chapter).”

**APM.** “Post-Project Reviews to Gain Effective Lessons...” work (and to a certain extent the Governance Frameworks for PPD & Estimation) come in, for example[s] the APM Project Risk Analysis & Management Handbook.” (N.B. the APM Handbook is, in effect, a UK standard).

**GAPPS.** “Research on sponsorship has provided the basis for development of performance based standards for project sponsors by the Global Alliance for Project Performance Standards.”

**ISO.** “There is a new ISO standard for project governance under development... I would expect... [the] report [Governance Frameworks for PPD & Estimation] to be part of the basis for that standard.”

Impact on Practice
It is challenging to measure the impact of academic research in general and PMI-funded research, in particular, on practice. The realistic challenges are too numerous to mention. However, the respondents in this study generally stay abreast of the literature and many engage in consulting activities that bring them in to direct contact with organizations and practitioners. Some of the organizations that have used results of the SRP research include: Booz Hamilton, Siemens, Schlumberger and IBM.

Below are listed selected areas where respondents cited instances where either their PMI funded research or the research of others were applied in the practice of PM. Questions were asked in regard to respondents' observations of both the general impact of academic research on the practice as well as the bearing that individual PMI-funded projects have had in an applied sense. These citations clearly point to the visible, important, and sustained influence of academic research on PM practice. Examples include:

**General Impact**
“The analysis of project management research in the allied disciplines reveals an explosion of popularity and strong interest in project management research. “

“I can see that academic insights in the fields of Systems Engineering, Decision Making and Leadership are being put to practice. “

**Project Teams**
“Presentations have ... been put on websites of the organizations ... [and] at some large group events teams have been putting our interventions into practice.... About twenty project teams, together responsible for more than $1 billion in Infrastructure projects, listened to a presentation of our findings and subsequently took the opportunity to discuss within the team how to apply these insights. And our PMI monograph has been asked for regularly by practitioners from the PM field.”

**Early Warning Signs**
“Early Warning Signs in Complex Projects... did identify a major gap between current practice and what should be considered best practice. [It has] influenced a lot of Norwegian municipalities and regional governments .... Others have started studies (in Norway) on the subject of detecting and acting on early warning signs since the report.”
Human Resource Management

“The HRM research is having the biggest indirect impact. Research is continuing and...will change the way HRM is done in project-oriented organizations.... The results of this research have been cited by many other researchers addressing HRM in PBOs.... I see many more companies adopting career paths and structured project management training and expertise.”

PMOs

“Major changes in PM practice influenced by recent research have been seen in the emphasis on using the PMO to disseminate, monitor and control the use of project management best practices. Also, [the growing] use of Project Portfolio techniques to make sure that the right projects are being executed as well as a stronger awareness of the strategic value of projects.”

“...our research on PMOs had an impact. When I started to work on PMOs, all available literature was from consultants saying there are 3-4 models of PMOS. Actually, it is no...[longer] the discourse. Context is now of major importance and PMO change is not always associated with “wrong.” We can see some impacts of our research on PMOs in... practices such as “there is no one single model” and the crucial role of context.”

Sustainability in Projects

“In the course of the Sustain[able] PM research, we conducted “demonstration” case studies with practice projects. Two of the three projects really worked with the improvements we had developed with them.”

Value of Project Management

“The Value project has had...serious impacts on the profession and practice of both research and project management.... The Value results really opened up discussion about the need to tailor project management to the organization and began the discussion of organizational enablers of project management. In many ways this moved project management from a discussion of a tool set to be bought and implemented to the level of a management innovation that has implications at all levels of the organization.... I also do 3-5 webinar presentations on research every year to audiences as large as 800.”

Leadership and Governance

The Selling work [Selling Project Management to Executives] was some of the first work to suggest that project managers needed to ensure that they understood and spoke management and business as well as project management to be successful. PMs are using the Selling monograph to improve their ability to influence senior executives and to improve project sponsorships. I can’t necessarily share the names of these companies as at least some and maybe most consider their investments in using this research to be a source of proprietary improvement in strategic resources. I am continually astounded by how many consulting organizations in particular are still very interested in the insights from the Selling study.

“The leadership research has had the biggest direct impact. The emotional intelligence of project managers is now recognized as critical [and] it is now widely accepted that different types of project require the project manager to have different emotional profile.”

“There is a lot of interest in the topics of leadership and governance .... I get invited all over the world, from Tokyo, to India, to NASA in the US to speak about Leadership in Project Management, and I am asked by Universities all over the World to supervise PhD work on governance. My book on project governance was for one month the bestselling book at Gower publishing and scores highest at amazon.com among all project governance books.”
Strategy

“Discussions in PM training and workshop sessions resulted in frequent agreements on these ‘strategic alignment’ concepts and the need for senior management to pay attention to such alignment.”

“The issue of project strategy is now a wide-spread...issue.

Strategic alignment between sponsors and projects is now generally accepted. It wasn’t before this research. [RE: Translating corporate strategy into project strategy]

CONCLUSION

The PMI Sponsored Research Program began in 1997 largely as the altruistic recognition of the importance of research to the growth and success of the profession. That investment has proven to be both wise and fruitful. While the precise number of individuals exposed to research findings over the years is unknown, the breadth of over 700 different communication elements—in some cases, in publications with very large circulation—suggests that the effort has been successful. While minimal overt impact has occurred on PM standards, it is apparent that this is not a function of the quality or importance of the research to the practice of PM as much as it is the means by which standards are created. Yet, the results of this study clearly show that PMI-Sponsored research has influenced the way PM is practiced. The funding has also spawned a large number of new research areas, attracted scholars from allied disciplines, and changed the way the profession approaches practice, particularly in regard to soft skills, leadership, organizational (enterprise) PM and the clear understanding of the importance of aligning not only PM to the strategy of the business but equally the project manager to the type of project he or she will execute.

Relative to soft skills, the results are particularly noteworthy given the output of five workshops in Europe and the US conducted by the PMI Academic Department five years ago (2008-2009), which brought together academic administrators and corporate executives to identify disconnects between formal PM education and workplace needs. Executives, no matter the regional location of their organizations, agreed that training in “soft skills” competencies were lacking in the university-trained, project management employee pool. They acknowledged that graduates were well-prepared in technical aspects of running projects, but believed that soft skill competency was critical to performance. As a subject taught by scholars whose teaching draws upon the results of academic research, project management has been enhanced by the outcomes of PMI funded research in terms of knowledge production which has trickled down to practice.

As this report suggests, important changes to the teaching and practice of project management over the last two decades have occurred based, in part, on the results of PMI’s sponsored research.

In the Pipeline

There are currently ten research projects in progress. In addition, six research proposals have been funded and will commence in Q1 2014. These research projects are listed in Appendix B.

Appendix A: Sponsored Research Titles 2000-2013

Appendix B: Research in Progress, and Newly Funded Research

$^1$ The difference between 708 communication elements and the 1253 citations results from the fact that multiple authors are often represented in these communications such that one chapter might be cited by 5 or 6 PIs/co-PIs resulting in more “citations” (the 1273) than there are actual communications (the 708).
APPENDIX A

Sponsored Research: Published Titles 2000-2013

2002
Quantifying the Value of Project Management
William Ibbs, Justin Reginato

Selling Project Management to Senior Executives: Framing the Moves that Matter
Janice Thomas, Connie Delisle, Kam Jugdev

Frontiers of Project Management Research
Dennis Slevin, David Cleland, Jeffrey Pinto

2004
Translating Corporate Strategy into Project Strategy: Realizing Corporate Strategy through Project Management
Peter Morris, Ashley Jamieson

2005
Project Categorization Systems
Lynn Crawford, J. Brian Hobbs, J. Rodney Turner

Patterns of Effective Project Management in Virtual Projects: An Exploratory Study
Deepak Khazanchi, Ilze Zigurs

Innovations: Project Management Research 2004
Dennis Slevin, David Cleland, Jeffrey Pinto

2006
Professionalization of Project Management: Exploring the Past to Map the Future
Bill L. Zwerman, Janice L. Thomas, Susan Haydt

The Human Side of Project Management: Leadership Skills
Qian Shi, Jianguo Chen

Middle Managers in Program & Project Portfolio Management: Practices, Roles & Responsibilities
Tomas Blomquist, Ralf Müller
Choosing Appropriate Project Managers Matching their Leadership Style to the Type of Project
J. Rodney Turner, Ralf Müller

2007
Post-Project Reviews to Gain Effective Lessons
Terry Williams

The Human Side of Project Leadership
Zvi Aronson, Peter Dominick, Patricia Holahan, Thomas Lechler, Ann Mooney, Richard R. Reilly, Aaron J. Shenhar

Linking Project Management to Business Strategy
Aaron Shenhar, Dragan Milosevic, Hans Thamhain, Dov Dvir, Michael Poli

Human Resource Management in the Project-Oriented Organization
Rodney Turner, Martina Huemann, Anne Keegan

2008
Software Cost Estimation Through Market Trading: An Exploratory Study of a New Tool for Project Management
Donald Berndt, Joni Jones - funded by the College of Performance Management

Researching the Value of Project Management
Janice Thomas, Mark Mullaly

Situational Sponsorship of Projects and Programs: An Empirical Review
Lynn Crawford, Kaye Remington, Terry Cooke-Davies, Brian Hobbs, Les Labuschagne

Impact on Project Management of Allied Disciplines:
Trends and Future of Project Management Practices and Research
Young Hoon Kwak, Frank T. Anbari

2009
Exploring the Complexity of Projects:
Implications of Complexity Theory for Project Management Practice
Svetlana Cicmil, Lynn Crawford, Terry Cooke-Davies, Kurt Richardson
Understanding Decision Making within Distributed Project Teams  
Mario Bourgault, Nathalie Drouin

Governance Frameworks for Public Project Development and Estimation  
Terry Williams, Ole Jonny Klakegg, Ole Morten Magnusson

2010

Emotional Intelligence and Projects  
Nicholas Clarke, Ranse Howell

Learning for Success  
Peter M. Storm, Chantal Savelsbergh, Ben Kuipers

Earned Value Management: A Global and Cross-Industry Perspective on Current EVM practice funded by the College of Performance Management  
Lingguang Song

Early Warning Signs in Complex Projects  
Ole Jonny Klakkeg, Bjørn Andersen, Terry Williams

The Mindset for Creating Project Value  
Thomas Lechler, John C. Byrne

The Project Management Office (PMO): A Quest for Understanding  
Brian Hobbs, Monique Aubry

2011

Project Managers as Senior Executives: Volume I – Research Results, Advancement Model, and Action Proposals  
Jean Pierre Debourse, J. Rodney Turner, Russell D. Archibald, Guru Prabhakar

Project Managers as Senior Executives: Volume II – How the Research Was Conducted: Methodology, Detailed Findings, and Analyses  
Jean Pierre Debourse, J. Rodney Turner, Russell D. Archibald, Guru Prabhakar

Identifying the Forces Driving the Frequent Changes in PMOs  
Brian Hobbs, Monique Aubry

Aspects of Complexity: Managing Projects in a Complex World  
Terry Cooke-Davies
What Enables Project Success: Lessons from Aid Relief Projects
Derek H.T. Walker, Paul Steinfort

Increasing Project Flexibility: Preparing for the Unknown in the Concept Stage
Serghei Floricel, Sorin Piperca, Marc Banik

Refining the Knowledge Production Plan
Serghei Floricel, John L. Michela, Mark George, with Line Bonneau

2012
Cultural Imperatives in Perceptions of Project Success and Failure
Udechukwu Ojiako, Stuart Maguire, Maxwell Chipulu, Terry Williams, Vital Anantatmula, Vachara Peansupap, Jonah Agunwamba, Caroline Mota, Kim Soo-Yong, Paul Gardiner

Procurement and Supply in Projects: Misunderstood and Under Researched
Douglas Macbeth, Stuart Humby, Ken James, Terry Williams

Contextualization of Project Management Practice and Best Practice
Brian Hobbs, Claude Besner

Governance and Communities of PMOs
Monique Aubry, Ralf Müeller, Johannes Glucker

Best Industry Outcomes
Terry Cooke-Davies, Lynn Crawford

Team Learning in Projects: Theory and Practice
Chantal Savelsbergh, Peter Storm

The Project Portfolio Change Management Process in Dynamic Environments
Brian Hobbs, Yvan Petit

Stress and Performance in Health Care Project Teams
François Chiocchio, Paule Lebel, Pierre-Yves Therriault, Andrée Boucher, Carolyn Hass, François-Xavier Rabbat, Jean-François Bouchard

Effectiveness in Project Portfolio Management
Peerasit Patanakul, Audrey Curtis, Brian Koppel

Project Management and Sustainable Development Principles
Ronald Gareis, Martina Huemann
Project Management and Organizational Change
Lynn Crawford, Anat Hassner Nahmias & Alicia Aitken

Published in 2013 (Not included in study)
Building Options in the Project Front-End: Integrating Strategy, Execution and Option Fees
Nuno Gil

The Silver Lining of Project Uncertainties
Thomas G. Lechler, Ting Gao, Barbara Edington

International Development Projects: Peculiarities and Managerial Approaches
Ruggero Golini, Paolo Landoni

Project Management Implementation as Management Innovation: A Closer Look
Janice Thomas, Stella George, Svetlana Cicmil
APPENDIX B

Research in Progress and Newly Funded Research

2011
Global Perspectives on Project, Program, and Portfolio Management in Government
Young Hoon Kwak

2012
The Project as a Tool of Policy Implementation: The Role of Project Management in Health
Jill Owen, James Connor, Henry Linger

Visuals Matter! Understanding the Impact of Visuals on Project and Portfolio Decisions
Joana Geraldi, Mario Arlt

Rethinking Project and Program Stakeholder Management
Martina Huemann, Pernille Eskerod

Project Management for Artists and Creative Endeavors
Barbara Edington

Collaborative Project Procurement Arrangements
Derek H.T. Walker, Beverley M. Lloyd-Walker

What is there to share? – On the problems of sustained expertise in project-based organizations
Karin Bredin, Cecilia Enberg

2013
Organizational Enablers for Project Governance
Ralf Müller, Jingting Shao

A Typology Framework for Virtual Teams
Padhraic Ludden, Ann Ledwith

Development Paths of Project Managers
Liselore Havermans, Peter Storm, Chantal Savelbergh

Project Management for Ambidexterity: Investigating Process Choices in the Fuzzy Font End of New Product Development
Antonie J. Jetter
Establishing a Theoretically Sound Baseline for Expert Judgment in Project Management
Paul Szwed, Irving Susel, Kate McLaren

Project Management as a Dynamic Collaborative Social Practice: Collaborative Innovation Revisited
Roula Michaelides, Jeanne Dorle, Elena Antonacopoulou

Community engagement strategies during the construction phase of controversial projects
Melissa Teo

High-performance capital project front-end: a design commons approach
Nuno Gil

Scaling Agility: Adapting Agile Principles to Large Projects in Large Organizations
Yvan Petit & Brian Hobbs

Translational Science and Its Effects on Organizational Structure and Program Management
Dorothy Kirkman, Kevin Wooten, Alix Valenti