

## **IPMA Outstanding Research Contribution 2008**

### **Impact on Project Management of Allied Disciplines**

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#### **Theoretical foundation**

There has been a long debate within the management academic community as to whether “project management” is a practice or an academic discipline. In the engineering side of the world where the tools and techniques of project management have been applied and implemented successfully, the answer to this question is yes, it is an academic discipline. The civil engineering field has construction engineering and management disciplines where students learn and implement planning, managing, and controlling engineering construction projects. The industrial engineering field applies quantitative methods to manufacturing systems analysis and production planning and scheduling to achieve effective productivity. However, when it comes to the business and management field, business scholars appear puzzled and unconvinced of the notion that project management is an academic discipline. The origin, history, and evolution of project management and its academic background, foundations, and underlying theory have been debated and studied only to a limited extent from the management field’s academic perspective and supporting literatures are greatly lacking. There has been some studies among project management researchers to identify and rethink project management (Winter & Smith, 2006), but the results were conceptual in nature, and the research did not transfer the message outside of the project management field to the broader management academic audience.

This study investigated project management research from the perspective of its relationship to allied disciplines in the management field. By exploring, identifying and classifying top management journal articles related to project management research in its allied disciplines, the origin, evolution and trends of project management research in the management field were revealed. This study specifically investigated project management research in allied disciplines from the management academy’s perspective by not observing project management research trends from the perspective of the project management community. The goal of this research was to better understand project management from the perspective of the management world and the trends of specific disciplines and to provide compelling arguments that project management is a legitimate academic discipline.

#### **Research results achieved**

##### ***We identified eight allied disciplines of project management:***

Based on extensive literature reviews, we believe that the following eight disciplines encompass all major management areas relevant to project management (PM):

- Operations Research, Decision Sciences, Operation Management and Supply Chain Management (OR/DS/OM/SCM),
- Organizational Behavior and Human Resources Management (OB/HR),
- Information Technology and Information Systems (IT/IS),
- Technology, Innovation, New Product Development and Research and Development (TECH/INNOV/NPD/R&D),
- Engineering-Construction, Contracts, Legal Aspects and Expert Witness (EC/CONTRACT/LEGAL),

- Strategy, Integration, Portfolio Management, Value of Project Management and Marketing (STRATEGY/PPM),
- Performance Management, Earned Value Management, Project Finance and Accounting (PERFORMANCE/EVM), and
- Quality Management, Six Sigma, and Process Improvement (QM/6SIGMA/PI).

***We selected 18 top management and business journals for in-depth analysis:***

We reviewed the Financial Times list of the top 40 journals (FT 40) and selected all journals that have relevance to PM. We found 16 such journals. We added 2 more journals for completeness.

These 18 journals are:

Academy of Management

- AOM Perspectives/Executives
- AOM Journal
- AOM Review

INFORMS

- Operations Research
- Management Science
- Organization Science
- Information Systems Research
- Interfaces

Practitioner

- Harvard Business Review
- California Management Review
- Sloan Management Review
- Long Range Planning

IEEE Engineering Management Society

- IEEE Transactions of Engineering Management

Other Journals

- Journal of Operations Management
- MIS Quarterly
- Strategic Management Journal
- Administrative Science Quarterly
- Journal of Small Business Management

***We analyzed past, current and future trends of project management research trends as follows:***

We analyzed articles published in the 18 top management and business journals between the 1950s and June 2007 that addressed project management in the eight allied disciplines. Based on the 537 papers that we investigated, we coded each paper in up to three disciplines (categories). In some cases, papers were coded for only one or two categories. Based on this coding scheme, we identified and analyzed 980 total occurrences in the 537 papers using the eight allied disciplines.

***Analysis of 18 Management and Business Journals***

- Overall, there is a strong, positive publications trend of project management related research in all selected 18 journals. Regression analysis shows a strong, positive upward trend in

project management research publications in the allied disciplines. Publications related to project management research in the allied disciplines in the selected 18 journals started to increase substantially beginning in 1980s. In fact, over 80% of the papers were published after 1980. By the 1990s, project management related papers had appeared in every journal on the list.

- The top four journals (IEEE Transactions on Engineering Management, Management Science, Long Range Planning, and Harvard Business Review) published more than 50% of the total papers related to project management.

### ***Analysis of Allied Disciplines***

- We have seen an explosion of popularity and strong interest in project management research starting in the 1980s, and the trends are likely to continue in the future. There are more occurrences of project management in the allied disciplines in papers published in the selected 18 journals starting in the 1980s (19%), and continuing into the 1990s (30%) and the 2000s (31%) showing a greater interest in project management research in the allied disciplines.
- Ranking of occurrences of the eight disciplines from the most to the least appeared subjects over the last 50 years is:
  - STRATEGY/PPM (30%)
  - OR/DS/OM/SCM (23%)
  - OB/HRM (13%)
  - IT/IS (11%)
  - TECH/INNOV/NPD/R&D (11%)
  - PERFORMANCE/EVM (7%)
  - EC/CONTRACT/LEGAL (3%)
  - QM/6SIGMA/PI (2%)
- STRATEGY/PPM, TECH/INNOV/NPD/R&D, IT/IS, and PERFORMANCE/EVM are the four disciplines that show large increases in occurrences in publications and are expected to continue to have strong upward trends in publication of project management related research in the foreseeable future. These four areas represent the disciplines in which scholars' research interests are currently focused and appear to have great research potential in the future.
- Occurrences in publication of project management related research in the areas of OR/DS/OM/SCM and OB/HRM peaked during the 1990s and the occurrences have slowed down in the 2000s. These two disciplines are two of the origins of project management, and it seems that research output in these areas have matured with a possible continuing downward trend for OR/DS/OM/SCM in the future.
- EC/CONTRACT/LEGAL and QM/6SIGMA/PI did not really gain any momentum in occurrences of research output from the management research community. It is important to note that these two areas are having great success in publication in relevant journals in their fields, but appear to struggle when it comes to publication in top management journals. Because of the practical nature of these two disciplines, it seems that the management scholars' community is strongly resisting acceptance of these two areas as mainstream management research.

### ***Survey and Face to face Interview***

A survey using the World Wide Web was conducted to explore the impact on project management of trends in the allied disciplines. The purpose of the survey was to collect academicians' and practitioners' perceptions of the trends, impact, and challenges relevant to project management. We asked the respondents to reflect on their best understanding of the availability and impact of research in the allied disciplines on project management applications by decade starting from the 1960s to the 2000s and into future. We also asked several important open-ended questions to collect and analyze respondents' views on trends in the allied disciplines and their impact on project management in the past as well as their predictions of the future of project management. All responses were kept anonymous to obtain unbiased and honest responses.

We also conducted face-to-face and telephone, in-depth interviews to collect thoughts from project management scholars and practitioners concerning trends in the allied disciplines and their potential impact on the future of project management.

The thoughts collected in the survey of the project management community and the interviews provided valuable insights in identifying trends in the allied disciplines and their impact on the future of project management, as well as the opportunities, challenges, and obstacles that are likely to persist or materialize in the future.

Results of the survey showed generally that there is a growing trend in terms of both availability and impact of research and applications in the allied disciplines related to project management. These findings were validated through the face-to-face and telephone, in-depth interviews.

Survey respondents indicated that OB/HR, TECH/INNOV/NPD/R&D, STRATEGY/PPM, and OR/DS/OM/SCM were the four disciplines that respondents perceived as low on availability of related knowledge and low on impact related to project management. This could be interpreted as these four disciplines still have potential for more research (availability) and could have potential for greater influence (impact) in the future.

PERFORM/EVM and EC/CONTRACT/LEGAL were the two areas that respondents perceived as high in availability of related knowledge, but low on impact related to project management. This could be interpreted as there is plenty of related information available currently; however, the impact on project management is low.

QM/6SIGMA/PI and IT/IS were the two areas that were in the high availability and high impact quadrant. This could be interpreted that these two areas are the hot fields in project management currently.

Survey respondents indicated that there was no discipline with low availability and high impact.

### ***Gap Analysis between the 18 Management and Business Journals and Project Management***

- It is likely that research being published in management and business top journals may be setting the trends of impact on project management and its allied disciplines in the future.
- There are interesting differences between the perceptions of the project management community and the actual research publications trends of allied disciplines in the 18 top

management and business journals. Rankings of occurrences/availability of the two sets of data contradict each other substantially. We do not believe that there is anything wrong with the results or data. Analysis of the results clearly shows that research interests and publications in top management and business journals and the availability of actual knowledge and information from the project management community's perspective are different. This is because the project management community relies on various sources of information besides top management journal articles. These sources may include other publications, books, conference presentations, and training seminars.

- There is visible divergence between the impact on project management of the eight allied disciplines from the perspective of the project management community and the number of occurrences in publications in the top management and business top journals. In particular, none of the allied disciplines with high availability in the selected journals was indicated to have high impact on project management, which may highlight areas for relevant research and publications in areas of high current interest to the project management community. These observations may also highlight for management academic researchers and editors of the top management and business journals areas in which further knowledge needs to be developed and disseminated to support the dynamic and growing discipline of project management and which will be viewed to have particular relevance in the project management community.

#### ***Future of Project Management's Allied Disciplines***

- Despite the inherent limitations on analyzing and forecasting the future of the eight disciplines related to project management, analysis indicates that STRATEGY/PPM, OB/HR, IT/IS, PERFORMANCE/EVM, and TECH/INNOV/NPD/R&D would have more availability of knowledge and information and have greater impact in the future. Analysis also shows that OR/DS/OM/SCM would have more availability in knowledge and information but the impact will remain the same in the future.
- The project management research trend of shifting from OR/DS/OM/SCM to OB/HR has possibly reached its peak.
- IT/IS will continue to provide enhanced tools for project management, and will have a high impact in the future. As the IT/IS discipline matures, project management tools and techniques will continue to become available more widely, which will make it easier to implement project management principles.
- PERFORMANCE/EVM and related methods for measuring project performance will grow rapidly particularly due to governmental regulations requiring systematic cost/schedule evaluation in managing government projects.
- STRATEGY/PPM and QM/6SIGMA/PI should have a growing impact on project management, as business strategies are developed and quality is measured and analyzed to plan and implement effective project management. For many organizations, the biggest gains that they see come from adapting and implementing STRATEGY/PPM and QM/6SIGMA/PI.
- TECH/INNOV/NPD/R&D and PERFORMANCE/EVM are poised to make major breakthroughs given the recent organizational interest and growing institutional determination on achieving project success.

- OR/DS/OM/SCM, PERFORMANCE/EVM, IT/IS, and TECH/INNOV/NPD/R&D will work together to deliver tools and techniques to allow the “science” of planning, scheduling, and cost control to function in a real project delivery environment.

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### **Key publications related to this research**

- Kwak, Y.H. and Anbari, F.T. (2008). *Impact on Project Management of Allied Disciplines: Trends and Future of Project Management Practices and Research*, Project Management Institute, Newtown Square, PA. ISBN: 9781933890456.
- Kwak, Y.H. and Anbari, F.T. (2008). “Project Management Research Trends of Allied Disciplines,” *Proceedings of PMI Research Conference 2008*, Warsaw, Poland, Project Management Institute.
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- Kwak, Y.H. and Anbari, F.T. (2009). “Availability-Impact Analysis of Project Management Trends: Perspectives from Allied Disciplines,” *Project Management Journal*. *In Press*.
- Anbari, F.T. and Kwak, Y.H. (November, 2008). “Is there a Future for Project Management in the Allied Disciplines?” *IPMA 22nd World Congress on Project Management*, Rome, Italy, International Project Management Association (IPMA).