

IPMA Young Research Award Winner 2010

Alexander Kock

Alexander Kock was awarded the IPMA Young Researcher Award 2010 for his research "Innovativeness and Innovation Success". The objective of the research project was to explore the performance impact of the innovativeness of new product development (NPD) projects. In particular, this research investigated how different dimensions of project success are affected by the interplay of different innovativeness dimensions (such as technological, market, organizational, and environmental innovativeness). The research framework was tested using a quantitative meta-analysis of existing literature and a quantitative longitudinal study of NPD projects.



Results suggest that process and structural changes in the organization and its environment are notoriously underestimated and present the biggest implementation barriers. Therefore, a continuous assessment of innovativeness at the beginning and during the development process helps to address possible implementation barriers early-on. Pursuing projects with high innovativeness for its own sake should be avoided because risk and complexity will increase disproportionately. Rather, portfolio managers should try to strike the right balance when selecting new product proposals in order to achieve a risk-optimized project portfolio. Further, managers should not set operational goals too narrowly for more innovative projects because it might lead to rejection or termination of innovative projects that otherwise could have led to successful new products.

The research was part of his PhD at the Chair of Technology and Innovation Management, Technische Universität Berlin, Germany. Today, Alexander is a post-doctoral researcher at the Technische Universität Berlin, where he investigates the challenges and success factors of managing complex project landscapes and innovation systems.

IPMA Outstanding Research Contribution 2010

Mladen Vukomanovic

Mladen Vukomanović is a research and teaching assistant at University of Zagreb, Faculty of Civil Engineering. He was involved in two research projects which have resulted in circa 30 publications, among which one is a text book. He has participated in many international conferences and has held three keynote speeches. He leads an IT project for developing software for construction management: GALA and a research project: Business Excellence in the Construction Industry in Croatia. From 2009 he obtains the function of the managing editor of international scientific journal: *Organization, Management and Technology on Construction*.



This research has, for the first time, integrated EFQM Excellence model and the Balanced Scorecard into one integral framework. The framework helps companies in evaluating competitive surroundings, finding the best practice, defining areas of improvement; selecting strategy aligned KPIs, communicating KPIs to lower levels and initiating strategic control. These features have been found extremely important for fast changing environments (especially during the recession period) and represent a new concept in managing

organizations. Although the research results (gained from 34 middle and large construction companies) have justified original EFQM presumptions (criteria weights), they also have identified areas that need some further improvement (in Consultant and Investor type organizations). This represents a step forward because whilst in previous studies EFQM was validated only through semi-structured surveys (or similar methods), this research validated the EFQM model through EFQM self-assessment results of the construction industry in South East Europe. The awarded research was a part of Mladen's PhD studies at University of Zagreb, Faculty of Civil Engineering, Croatia.

IPMA Outstanding Research Contribution 2010

Jürgen Stadt

Jürgen Stadt was awarded the IPMA Outstanding Research Contribution for his research on "Redesigning a project-oriented organization using complex systems perspective and soft systems methodology approach" which was part of his PhD undertaken at the Skema Business School, France. The research was aimed at understanding the problematic situation of a public housing provider so as to be able to constantly adapt and learn in an ever growing complexity. The results reveal that the activation of the learning cycle is feasible as well as desirable but jeopardized by politics and power.



This emphasises the need for leaders in the public domain to better understand social systems as well as their behaviour which calls for some kind of adaptation within the educational system. The results also demonstrate that the discipline of project management should further develop towards an equal appreciation of hard as well as soft systems thinking which emphasises a critical systems thinking approach. The research project was managed by means of three different research phases whereby each part of the process was informed by the analysis of the preceding one, thus creating a documented learning process.

IPMA Outstanding Research Contribution 2010

Can Ersen Firat

Can Ersen Firat was awarded the IPMA Young Researcher Award 2010 for his research on "Advanced Line of Balance (ALoB) in model-based scheduling in residential building projects." The objective of the research project was to find out how a location-based scheduling technique such as Advanced Line of Balance (ALoB) can be used as a scheduling method in model-based master scheduling in building construction. "Model-based" scheduling is a computer aided scheduling technique that automatically processes information retrieved from information models and creates a dynamic scheduling platform. Model-based master



scheduling can be performed by integrating Building Information Modeling (BIM) and Advanced Line of Balance (ALoB) with the input of an interactive planner. Hence, this project addresses the use of a scheduling technique i.e., a location-based scheduling such as Advanced Line of Balance (ALoB). The primary objective is to introduce a methodology that can be used to set up the master schedule of a residential building project based on a building information model and to refine this master schedule such that it satisfies the conditions in a particular project. The proposed methodology involves setting up a "model-

based” schedule by using Advanced Line of Balance (ALoB) and using historical company specific data to adjust it. It is also aimed to investigate the relationship between 4D modeling and model-based scheduling.

There is a need for more profound research investigating ways to minimize planner’s input into the first draft master schedule. Attempts to automate schedule has recently been in the agenda of some researchers and increasing interest from the industry has been observed. However, what is missing is a clarified and abstract representation i.e., process model of the scheduling itself. Project managers exert only limited control over the quality of work schedules. However, a semi-automated model-based master schedule that is adjusted by project manager input can be a viable alternative to existing practice. Human and computer model interaction can be used to form a scheduling culture that makes use of a master schedule adjusted later by a project manager. Hence the results of this research enhances project management by creating an effective planning discipline based on information technology tools and pushes construction project management into a revolutionary professional platform that combines IT and experience. Decision making in construction project management is expected to improve tremendously in terms of quality and speed through the combination of innovative project management skills and IT tools.

This research is excellent because the results address the growing interest towards location-based scheduling in Europe and the U.S. as well as integrating location-based scheduling with current state-of-the-art in 4D modeling and BIM. The research is also valuable because it is a joint collaboration between a Finnish and a U.S. university, supervised by two pioneer professors in the field of location-based scheduling i.e., Prof. Juhani Kiiras of Aalto University School of Science and Technology in Helsinki and Prof. David Arditi of Illinois Institute of Technology in Chicago. It is also (co-)supervised by Dr. Kalle Kähkönen from VTT, Technical Research Centre of Finland. This research has significant practical implications since it is supported by Skanska, one of the biggest contractors in the world. The research results are consistently tested in Skanska’s production processes. Because the primary objective of this research is to improve process models, the results address one of the biggest gap in production in construction.

This research was part of the doctorate work of the corresponding young researcher undertaken at the Department of Structural Engineering and Building Technology in Construction Management and Economics (Aalto/CME) unit, Aalto University School of Science and Technology, Helsinki, Finland. The title of the research work is “Novel model-based (master) scheduling in building projects”. Today, Ersen holds a position as a researcher in CME at Aalto University, Finland.