

Foreword

In an increasingly globalized and competitive world, scientists have to face extremely complex research questions, rapidly changing technologies and an exponential growth of knowledge. Against this background, it becomes more and more unlikely that a single individual, research group or organization possesses all of the knowledge required to conduct research projects itself. Hence, collaborative R&D projects with other individuals or groups represent an important way of sourcing external knowledge. In this context, knowing and understanding the drivers and barriers of knowledge sharing becomes an absolute prerequisite for the success of any collaborative effort. This holds all the more true for research-intensive fields, such as the natural sciences or engineering. While industrial R&D in these fields often emphasizes the “D” and focuses on incremental innovations (e.g. improving the efficiency of production facilities), academic institutions emphasize the “R”, concentrating on basic research activities. Academia can thus aid in the search for new inventions and provide important stimuli for developing radical innovations.

While the importance of academic institutions as ‘engines of growth’ in knowledge-driven economies is no longer disputed, surprisingly few studies have taken into account the perspective of academic scientists. Instead, almost all of the existing works investigating knowledge sharing in collaborations examine the topic from industry’s point of view. Benjamin Niedergassel’s dissertation addresses this white spot in research on technology and innovation management. Specifically focusing on academic scientists in the chemical and biological sciences, he extends the scope of research into the academic domain. Drawing on social exchange theory and building on a meta-analysis of empirical studies, Benjamin Niedergassel presents a well-developed and comprehensive framework of hypotheses.

He tests these hypotheses using one of the first large-scale surveys regarding collaborative activities of German university professors. Employing multivariate statistics to a dataset of 600 responses, Benjamin Niedergassel is able to provide empirical evidence for many of the hypothesized relationships. The distinction between tacit and explicit knowledge offers a differentiated view, emphasizing that knowledge needs to be understood as a multidimensional construct in organizational research. Overall, his findings allow for a better understanding of knowledge sharing processes in collaborative research projects. Each of the identified enhancers and inhibitors of knowledge sharing offers potential points of action for academic as well as industrial scientists to improve their collaborative efforts.

This work's theoretical and practical relevance has been confirmed at international conferences and in leading journals, such as *Technovation*. Parts of this work have been presented at the R&D Management Conference in Ottawa (Canada), the International Conference on Management of Technology in Orlando (USA), or the International Society for Professional Innovation Management (ISPIM) Conference in Vienna (Austria). A subsequent study that has been inspired by this work's results has been awarded the "Knut Holt Best Paper Award" at the 3rd ISPIM Innovation Symposium in Quebec City (Canada). I hope that this publication will see the broad dissemination and considerable recognition that it deserves, both in the research community as well as in practice.

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