

Patricia Sandmeier

Customer Integration in Industrial Innovation Projects

GABLER EDITION WISSENSCHAFT

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With a foreword by Prof. Dr. Oliver Gassmann

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Bibliographic information published by the Deutsche Nationalbibliothek
The Deutsche Nationalbibliothek lists this publication in the Deutsche Nationalbibliografie;
detailed bibliographic data are available in the Internet at <http://dnb.d-nb.de>.

Dissertation Universität St. Gallen, 2006

1st Edition 2008

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© Betriebswirtschaftlicher Verlag Dr. Th. Gabler | GWV Fachverlage GmbH, Wiesbaden 2008

Editorial Office: Frauke Schindler / Anita Wilke

Gabler Verlag is part of the specialist publishing group Springer Science+Business Media.
www.gabler.de



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Cover design: Regine Zimmer, Dipl.-Designerin, Frankfurt/Main

Printed on acid-free paper

Printed in Germany

ISBN 978-3-8349-1035-6

Foreword

The fact that customers can be a major source of innovation is well known. Research traditions on user-driven innovation have received a lot of attention since the first research attempts in the early 80s. With today's trend of opening up the internal innovation process, innovation actors are no longer restricted to R&D or cross-functional internal teams but include external partners as well. Open innovation and open R&D models are means to manage the increased technological complexity and customer demands in the global market place. The roles of customers are no longer restricted to passive consumers whose latent requirements need to be identified. Instead they have become an active and important part of the innovation process. Von Hippel's 'Democratizing innovation' is today's mantra, but how are we to integrate customers in the innovation process and how can such a process be managed?

Patricia Sandmeier analyzes how companies can establish a continuing transfer of customer knowledge to the innovator. She draws on more than 22 European companies and her analytical framework for the case analysis is based on the rather new approach of Extreme Programming (XP) in the software industry. While this approach and the underlying agile project management practices have received a high acceptance among software engineers, the concept is less known in the 'hardware world' of new product creation.

The in-depth analyses of industrial firms, Hilti and Buechi, and technical service firms, IDEO and Tribecraft, demonstrate how such a process works in practice. The approach of this work is new and has many implications for R&D management: Derived from the XP approach, Patricia Sandmeier proposes decentralized customer-centered innovation cells as a new form of organizing an industrial R&D department. This kind of management includes bottom-up resource attraction instead of the traditional functional top-down resource allocation in R&D. R&D becomes more of a knowledge broker where creativity of customers are used and multiplied for new product creation.

This is a convincing book for reflective practitioners and scholars in the field of user innovation. The proposed framework shows how the democratization of innovation (von Hippel, 2005) can be managed by integrating customers in industrial product innovation. I hope for a wide distribution of Sandmeier's work and wish all companies employing these concepts the best of success.

Prof. Dr. Oliver Gassmann
Institute of Technology Management
University of St. Gallen

Preface

This book—based on my doctoral thesis—is a result of my work at the Institute of Technology Management at the University of St. Gallen (ITEM-HSG), Switzerland and the University of New South Wales (UNSW), Australia where I had the opportunity to broaden my professional and academic experience.

With the completion of the thesis, there are many people to whom I owe a great deal of thanks. My first and foremost gratitude goes to Prof. Dr. Oliver Gassmann, Director of the ITEM-HSG, for supervising my thesis, constantly providing me with constructive feedback and freedom of action. Furthermore, I would like to thank Prof. Dr. Roman Boutellier from the Swiss Federal Institute of Technology Zurich (ETHZ) for the co-supervision and his valuable contributions and advice. I wish to extend thanks to Prof. Dr. Pam D. Morrison for making my research experience at UNSW possible and enjoyable. I also owe a great debt to the Swiss National Science Foundation which provided me with generous financial support during my time in Sydney.

The foundation for this book are approximately 150 interviews and discussions I had with experts from practice and academia. In this context, I would like to thank Dr. Christoph H. Wecht, Nadia Jamali, Patrick Widler, Dr. Carmen Kobe, Rafael García, Dr. Andreas Bong, Dr. Ernst Freydl, Daniel Irányi, Sabine Vögler, Dr. Martin Jud, Prof. Dr. Ian F. Wilkinson, Richard Wenk, Peter Frank, Peter Schleiffer, Esther von Ziegler and Dr. Ellen Enkel. I also would like to thank my student researcher, Michael Vogel, for assisting my work.

I thank my colleagues and friends with whom I had a very good time. I am especially grateful to Dr. Javier Perez-Freije, Dr. Emma Po Yee Wong, Yimin Huang, Dr. Vinh Q. La, Stefan Leuenberger, Patricia Deflorin, Dr. Maike Rathje, and Alexander Conreder for their joyful support at various stages and their creative ideas. Special thanks go to Torsten von Bartenwerffer for his endeavors supporting my work all the way. I would also like to express my gratitude to Sophie Haag for her friendship and for providing cheerful emotional encouragement.

Last but certainly not least, I am sincerely grateful to my parents, Isabelle and Walter Sandmeier, for supporting me during this great journey.

Patricia Sandmeier

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List of Abbreviations

A&QC	Analysis and Quality Control
AG	Public company (German: <i>Aktiengesellschaft</i>)
B2B	Business-to-business
BU	Business unit
CAD	Computer-aided design
cf.	Compare (Latin: <i>confer</i>)
CMM	Capability Maturity Model
CTO	Chief Technology Officer
Ed.	Editor
Eds.	Editors
e.g.	For example, for instance (Latin: <i>exempli gratia</i>)
et al.	And others (Latin : <i>et alii/alia</i>)
ETH	Swiss Federal Institute of Technology Zurich (German: <i>Eidgenössische Technische Hochschule</i>)
FEM	Finite element method
IC	Integrated circuit
i.e.	That is to say, in other words (Latin: <i>id est</i>)
ISO	International Standards Organization
MIT	Massachusetts Institute of Technology
MLP	Market and performance profile (German: <i>Markt-Leistungs-Profil</i>)
NASA	National Aeronautics and Space Administration
NB&T	New Business and Technology
NIH	Not invented here
NIR	Near infra red
No.	Number
NPD	New product development
qtd.	Quoted
R&D	Research and Development
R&Di	Research and Discovery
TQM	Total Quality Management
TTM	Time to money
U.S.	United States
XP	Extreme Programming