



Managing Open Innovation in SMEs

The concept of open innovation has become a very popular topic during the last decade, with an increasing number of small- and medium-sized enterprises (SMEs) embracing open innovation practices to gain a competitive advantage. With the majority of publications focusing on large firms, open innovation in SMEs has received scant attention from both scholars and practitioners. This book seeks to correct this imbalance by providing an in-depth study for both business managers and graduate-level students. Using rich, in-depth case studies from successful companies, it examines different approaches to managing open innovation in order to develop practical guidelines for implementation. It also highlights important differences between open innovation strategies in SMEs and large companies. Its findings will be of use to those studying or working in innovation management, open innovation, small business management, and entrepreneurship.

PROF. DR. WIM VANHAVERBEKE is a professor at the University of Hasselt and visiting professor at ESADE Business School and the National University of Singapore. He has published articles in several international journals and is the co-editor of two books on open innovation together with Henry Chesbrough and Joel West. He is a dedicated open innovation researcher collaborating with different partners in universities and companies around the globe. He established the European Innovation Forum with Henry Chesbrough in 2012. He is a frequently invited speaker at leading international conferences and an adviser for several globally operating companies. He was recognized by the International Association of Management of Technology (IAMOT) as one of the top fifty authors of technology and innovation management from 2008–2012.

Managing Open Innovation in SMEs

WIM VANHAVERBEKE

University of Hasselt, Belgium

ESADE Business School, Spain

National University of Singapore, Singapore



CAMBRIDGE
UNIVERSITY PRESS

Cambridge University Press & Assessment
978-1-107-07302-9 — Managing Open Innovation in SMEs
Wim Vanhaverbeke
Frontmatter
[More Information](#)



Shaftesbury Road, Cambridge CB2 8EA, United Kingdom
One Liberty Plaza, 20th Floor, New York, NY 10006, USA
477 Williamstown Road, Port Melbourne, VIC 3207, Australia
314–321, 3rd Floor, Plot 3, Splendor Forum, Jasola District Centre, New Delhi – 110025, India
103 Penang Road, #05–06/07, Visioncrest Commercial, Singapore 238467

Cambridge University Press is part of Cambridge University Press & Assessment, a department of the University of Cambridge.

We share the University's mission to contribute to society through the pursuit of education, learning and research at the highest international levels of excellence.

www.cambridge.org

Information on this title: www.cambridge.org/9781107073029

DOI: 10.1017/9781139680981

© Wim Vanhaverbeke 2017

This publication is in copyright. Subject to statutory exception and to the provisions of relevant collective licensing agreements, no reproduction of any part may take place without the written permission of Cambridge University Press & Assessment.

First published 2017

A catalogue record for this publication is available from the British Library

Library of Congress Cataloging-in-Publication data

Names: Vanhaverbeke, Wim, author.

Title: Managing open innovation in SMEs / Wim Vanhaverbeke, Hasselt Universiteit, Belgium.

Description: Cambridge, United Kingdom; New York, NY: Cambridge University Press, 2017. |

Includes bibliographical references and index.

Identifiers: LCCN 2017003647 | ISBN 9781107073029 (hardback) |

ISBN 9781107421332 (pbk.)

Subjects: LCSH: Small business – Management. | Technological innovations – Management. | Diffusion of innovations – Management. | Strategic alliances (Business)

Classification: LCC HD62.7.V365 2017 | DDC 658.5/14–dc23

LC record available at <https://lcn.loc.gov/2017003647>

ISBN 978-1-107-07302-9 Hardback

ISBN 978-1-107-42133-2 Paperback

Cambridge University Press & Assessment has no responsibility for the persistence or accuracy of URLs for external or third-party internet websites referred to in this publication and does not guarantee that any content on such websites is, or will remain, accurate or appropriate.

Contents

<i>List of Figures</i>	<i>page</i>	ix
<i>Foreword</i>		xi
<i>Acknowledgments</i>		xv
1	Open Innovation in SMEs	1
1.1	Why Should Managers of Small Firms Embrace Open Innovation?	1
1.2	Why Is Open Innovation Different in Small versus Large Companies?	6
1.3	Modeling Open Innovation in SMEs	8
1.4	How This Book Is Structured	12
2	Business Model Innovation in SMEs	16
2.1	Business Model Innovation in SMEs to Sidestep the Commodity Trap	16
2.2	The Role of the Initial Business Concept or Vision	18
	Case Study 1: Devan Chemicals	25
2.3	Innovate Beyond Products and Services: The Relevance of the Experience Economy for Innovating SMEs	30
	Case Study 2: Curana BVBA	32
	Case Study 3: DNA Interactif Fashion	40
2.4	Different Ways SMEs Can Create Value	45
2.5	Key Takeaways	49
3	A Dynamic View of Business Model Innovation	52
3.1	Stepwise Discovery of New Business Models	52
3.2	The Process of Discovering New Applications	57
	Case Study 4: The Innovacelli at Dingen's Barometers & Clocks	59

vi	<i>Contents</i>
3.3	Diversify or Not? 66
	Case Study 5: Jaga: Creativity and Open Innovation with an Anthropological Flavor 68
3.4	Building and Exploiting Reputation and Brand 75
3.5	Key Takeaways 78
4	How SMEs Create and Capture Value through Open Innovation 80
4.1	How Do SMEs Create Value through Open Innovation? 80
	Case Study 6: PRoF: Open Innovation in a Large Customer-centric Consortium 89
4.2	Capturing Value in Open Innovation 93
4.2.1	How Can Open Innovation Boost Profitability? 93
4.2.2	Specific Strategies to Capture Value 95
	Case Study 7: Quilts of Denmark: NASA Technology for a Healthy Sleep 100
4.3	Key Takeaways 106
4.3.1	Open Innovation as an Integral Part of Business Model Innovations 106
4.3.2	Creating Value 106
4.3.3	Capturing Value 108
5	Managing Innovation Networks 110
5.1	Managing Innovation Partners and the Innovation Network 110
5.1.1	Finding and Selecting the Right Partners 110
5.1.2	Support and Discipline Partners 112
5.1.3	Active Management of Innovation Networks or Managing by Rules 114
5.1.4	Activate the Innovation Network 115
5.1.5	Open Innovation = Open Communication 117
5.1.6	Balancing Internal and External Management 118
5.1.7	Cost Control of Joint Innovation Projects 119
5.1.8	Managing Tensions and Problems in the Network 120
5.1.9	Innovation Networks Change and Might Not Last Forever 121

<i>Contents</i>	vii
5.2 Managing Intellectual Property in Open Innovation	123
5.3 Key Takeaways	126
5.3.1 Managing Open Innovation Partners and Networks	126
5.3.2 IP Management	128
6 How Can Startups Collaborate with Large Companies?	130
6.1 What Are Startup–Corporate Partnerships?	132
6.2 Why Would a Startup Want to Partner with a Corporation?	133
6.2.1 Support	133
6.2.2 Association	134
6.2.3 Ability to Test	135
6.2.4 Learning Opportunities	135
6.2.5 PR Exposure and Brand Recognition	135
6.3 Why Would a Corporation Want to Partner with a Startup?	136
6.3.1 Finding a Solution	136
6.3.2 Innovating Externally and Internally	137
6.3.3 Company Stage	137
6.3.4 Relevant Technology/Product	139
6.3.5 Communication	140
6.4 How Are Corporations Finding Suitable Startups to Work with?	141
6.5 What Should Startups Be Looking for in Corporate Partnerships?	142
6.6 How Can Startups Negotiate with Large Firms?	144
6.7 Key Takeaways	147
7 Two Examples of How SMEs Collaborate with Large Companies	150
7.1 Collaborating with Large Companies	150
7.2 Isobionics: Turning a Large Firm’s Unused Technology into a Business	152
Case Study 8: Isobionics	162
7.3 The AirFryer: A Large Company Creating Value Based on a Small Firm’s Technology	165
Case Study 9: Philips AirFryer	172
7.4 Key Takeaways	176

viii	<i>Contents</i>
8	Working Effectively with Innomediaries 180
8.1	Open Photonics: An Open Innovation Intermediary in the Photonics Industry 180
8.2	SensoDx and the Use of Optics in Point-of-Care Diagnostics 185
8.3	FuelUp: Matching Startups and Large Companies 187
8.3.1	The Business Offering 187
	Example 1: FuelUp Works with VNCI to Find Startups to Facilitate Open Innovation 189
	Example 2: FuelUp Partnering with Startups 190
8.3.2	Some Lessons for Startups That Intend to Partner with Corporations 191
8.4	Key Takeaways 191
9	Epilogue: How to Apply Open Innovation in Your Company 194
9.1	Wake Up! Be Aware of the Need to Change! 194
9.2	The Quest for Business Model Innovation 195
9.3	Open Up! The Need for External Resources 197
9.4	The New Imperative: Manage Your Partners 198
9.5	Working with Large Companies: A Special Breed of Open Innovation 200
9.6	Working with Innovation Intermediaries 202
9.7	Get Started! 203
	<i>Notes</i> 205
	<i>Index</i> 221

Figures

1.1	The wake-up, open-up imperative	<i>page</i> 2
1.2	A framework to understand open innovation in SMEs	9
2.1	A sample of Devan's wide product range	30
2.2	The B"Lite, an injection-molded mudguard with sandwich composite insert	38
2.3	A sample of Curana's products	38
2.4	The MagIQ, the new bike fixology of Curana	39
3.1	Stepwise business model innovation at Curana	53
3.2	The Innovacelli barometer	63
3.3	The Play Radiator	72
3.4	The Heatwave	73
3.5	The Uchronia project at the Burning Man festival 2006	74
4.1	The structure of the PRoF consortium	93
4.2	The PCM microcapsules as solution for a functional quilt	105
4.3	TEMPRAKON	105
7.1	Isobionic's valencene development	165
7.2	Philips AirFryer	175
8.1	The open innovation process of Open Photonics	183

Foreword

Open innovation is a hot topic these days. Yet, if you had done a Google search on the term in 2003, you would not have found any useful responses. Today that Google search would return hundreds of millions of responses. Open innovation has gone from nowhere to everywhere in just over a decade.

Open innovation is based on the fundamental idea that useful knowledge is now widespread throughout society. No one organization has a monopoly on great ideas, and every organization, no matter how effective internally, needs to engage deeply and extensively with external knowledge networks and communities. An organization that practices open innovation will utilize external ideas and technologies as a common practice in its own business (outside-in open innovation) and will allow unused internal ideas and technologies to go to the outside for others to use in their respective businesses (inside-out open innovation).

What evidence is there that open innovation actually works? Many individual companies such as Procter & Gamble have proudly proclaimed their success with their version of open innovation called Connect and Develop.¹ Another consumer products firm, General Mills, analyzed sixty new product introductions in a twelve-month period. The company found that products that had a substantial open innovation component outsold the ones that did not by more than 100 percent.² In the industrial sector, a recent study of 489 projects inside a large European manufacturer found that projects involving significant open innovation collaboration achieved a better financial return for the company than those that did not.³

At the level of the economy, a number of studies employing the Community Innovation Survey have found that organizations with more external sources of knowledge achieve better innovation performance than those with fewer sources, controlling for other factors.⁴

A recent survey of 125 large firms also found that firms that employed open innovation were achieving better innovation results.⁵

However, all of this evidence comes from *large organizations*. There has been much less work done on whether and how open innovation might work in small and medium enterprises (SMEs). This is why Professor Wim Vanhaverbeke's book is so necessary and so useful. It beautifully fills a huge gap in the world of innovation studies.

Readers will find this book, like so much of his other work, filled with useful examples, thoughtful arguments, and convincing evidence. Open innovation really does work differently in SMEs. As Vanhaverbeke explains, SMEs lack the resources to have extensive project portfolios or elaborate innovation processes with stage gates. Instead, SMEs innovate project by project, in response to often severe competitive pressures.

And innovation in SMEs is inseparable from business model innovation. This is an important insight, both academically and practically. Academically, it contributes to an ongoing debate about whether open innovation should be conceptualized as a process that includes a business model or not.⁶ It is an important practical insight, because SME leaders and entrepreneurs will be far more successful if they explicitly incorporate business model innovation into their thinking about open innovation. And those who work with SMEs will have greater success if they examine the business model of the SME, along with its technology and capability.⁷

Vanhaverbeke also provides some nice examples that show that open innovation (and business model innovation) is not simply for technologically intensive industries. SMEs in decidedly nontechnological industries have found open innovation to be quite useful, and indeed vital, to their ongoing success. This is another important finding that will be of great academic and practical interest.

SMEs are an increasingly important part of the economy in virtually all the Organisation for Economic Co-operation and Development (OECD) countries. Whether it is research and development (R&D) spending, or patents granted, or jobs created, SMEs are at the forefront of many if not most advanced economies. This book should be of great interest to scholars and even many managers in companies of all sizes. Policymakers also will need the insights in this book as they seek to advance the complex economies of the twenty-first century.

With that said, let me conclude by stating that this is a book I have long awaited, and I am truly glad that it is now available to us all.

Henry Chesbrough
Adjunct Professor,
UC Berkeley Haas School of Business;
Professor of Information Systems,
ESADE Business School, Ramon Llul University;
Honorary Visiting Professor,
Lappeenranta University of Technology, Finland

Acknowledgments

This book is the result of eight years of research on open innovation in small firms. It has been a wonderful journey, rich as a source of new insights in open innovation management. The field research for the book also brought me into contact with many interesting companies and managers whom I deeply respect for the work they have done. I wrote this book with the intention of combining the practical and the theoretical so that both SME managers and academics find it useful to read.

The conception of the book started when I was working on a report about “Open Innovation in SMEs” commissioned by the Flanders District of Creativity (FDC). I developed the report for Vlerick Business School with the help of Stijn De Zutter and Ine Vermeersch. The report was published in 2011 and I thank Jan Bormans, at that time Valorisation Manager at FDC, for the support during and after the writing of the report and for granting permission to publish this book, which is partially based on the same research. I’m also indebted to University of Hasselt for granting me the title of Research Professor: this offered me the opportunity to free sufficient time to explore open innovation in small firms and to write this book. I received continuous support from Piet Pauwels, Dean of the Faculteit Bedrijfseconomische Wetenschappen (BEW), and my colleagues Nadine Roijackers and Bart Leten. Special thanks go to Usman Muhammed, who has been very helpful in discussing different chapters of the book and in helping me with interviews and transcripts. I have also been fortunate to be a visiting professor at ESADE Business School and the National University of Singapore (NUS). ESADE was one of the first business schools in Europe to fully support open innovation. Alfons Sauquet and Jonathan Wareham, the previous and the current deans, have consistently supported my research in open innovation. ESADE is also a great environment in which to teach open innovation and to discuss it with other open innovation scholars. At NUS, I had the privilege of

knowing Professor Chang Chieh Hang, founding Executive Director of the Institute for Engineering Leadership and head of the Division of Engineering & Technology Management at NUS. As a truly visionary person, he inspired me to develop my own approach about open innovation.

As this book highlights the significance of open innovation, it is no surprise that my own understanding of open innovation in small firms has progressed through my interaction with other scholars. I am very grateful to Henry Chesbrough of the Haas School of Business (University of California, Berkeley), who is also a colleague at ESADE. We have published two books and several articles together in the thirteen years we have known each other. He has been very influential in my understanding of the organizational and management implications of open innovation and has been one of the strongest supporters of my research on open innovation in SMEs. I thank him and Esteve Almirall for timely criticism as the writing of the book moved forward. Without their support and comments, the book would not have developed into its current shape. Next, I would like to thank my coauthors on previous articles on open innovation in SMEs: Vareska Van de Vrande, Sabine Brunswicker, Nadine Roijackers, André Spithoven, Jeroen De Jong, and Maurice De Rochemont. Alfredo De Massis, Federico Frattini, Mattia Bianchi, Alberto Di Minin, Cristina Rossi, Helen Fogg, and Massimo Colombo all served as interesting sounding boards for better understanding innovation in small firms. One of the core themes of this book is that open innovation in small firms is essentially linked to entrepreneurship and business model change. Chris Tucci, Joel West, Christoph Zott, Alex Osterwalder, and Yves Pigneur have all deepened my appreciation for business model innovation. Steve Blank, Eric Ries, Saras Sarasvathy, Rita McGrath, and Ian MacMillan were my main sources of inspiration to link open innovation to entrepreneurship in small firms.

Another critical source of information for this book has come from the managers of the small (and large partnering) firms I have interviewed. They were early adopters of open innovation and my many hours of talks and discussions with them forced me to unlearn open innovation as it had been traditionally developed for large companies and to transform the framework to make it relevant within the context of small firms. At DNA Interactif Fashion, I was able to witness how a radically new business model in the fashion goods industry required

years to take shape but finally launched successfully. Interviews and discussions with Dirk Ghekiere, owner and manager of DZine, and Huub Fijen, owner and manager of DNA Interactif Fashion, were real eye-openers. Another “champion” in business model innovation and open innovation management is Dirk Vens, owner and director of Curana. We have been in touch regularly for years now and our discussions about new business model challenges are always truly inspiring. Jan Van Hecke, Coordinator of PRoF-Projects and owner and managing director of Boone Wallbeds International, and Piet Verhoeve, now director of the ICON program at iMinds / IMEC took their time to explain the subtle way in which PRoF, a large innovation consortium in the healthcare sector, could be managed so effectively. Patrice Vandendaele, at that time CEO and R&D Manager of Devan Chemicals but now General Manager of ATSEA Technologies, discussed how Devan as a micro-company became a technology leader in the textile chemical business. Søren Løgstrup and Hans Erik Schmidt, both cofounders of Quilts of Denmark, shared their experiences in successfully developing and launching the first functional quilt. Jan Kriekels Jr., owner, CEO, and Art Director of Jaga, was perhaps the most difficult one to understand because he thinks as an anthropologist rather than as a manager, but it is great to see that even anthropological concepts may lead to effective management practices. Finally, I’m grateful to Paul Dingens, owner and CEO of Dingens Barometers and Clocks, for sharing with me a case of a company facing problems despite a successful open innovation project in the high-end barometer business. His story shows that open innovation is a necessary condition, but not a sufficient one, for commercial success.

This book also explores how small and big companies can work together. Godwin Zwanenburg, now Director of Procurement Engineering, Kitchen Appliances at Philips, and Marjolein Oyen-Driessens, Senior Director, Consumer Marketing, Kitchen Appliances, Philips Consumer Lifestyle, explained how a large firm can commercialize technology developed by a small company. Rhinus Broxterman, a corporate scientist in the Chemistry & Catalysis area at DSM, and Toine Janssen, founder and CEO of Isobionics, shared their views on how a startup can commercialize a technology that has been abandoned by the large firm. I am furthermore indebted to Jason Eichenholz, CEO and cofounder of Open Photonics, who explained how his intermediary offers specific benefits for small firms in search

for good applications of photonics. Finally, I would like to thank Ally van der Boon and Marianna Faynshteyn of FuelUp – respectively cofounder and Sales Manager, and Marketing Manager – for their help in writing Chapter 6 and in providing a clear description of how FuelUp is matching startups with large companies.

I dedicate this book to my beloved wife, Veerle, and our three teenagers – Astrid, Barbara, and Amadeo – who have given me their unre-served support throughout the process of writing and finishing the book. The field research, the case studies, and the book took more time than originally expected, and I’m grateful for their understanding about letting me finish the job.