

Sascha Hoffmann *Editor*

# Digital Product Management

Frameworks—Tools—Cases

 Springer



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ISBN 978-3-658-44275-0      ISBN 978-3-658-44276-7 (eBook)  
<https://doi.org/10.1007/978-3-658-44276-7>

Translation from the German language edition: “Digitales Produktmanagement” by Sascha Hoffmann, © Springer Fachmedien Wiesbaden GmbH, ein Teil von Springer Nature 2023. Published by Springer Fachmedien Wiesbaden. All Rights Reserved.

This book is a translation of the original German edition “Digitales Produktmanagement,” 2nd edition, by Sascha Hoffmann, published by Springer Fachmedien Wiesbaden GmbH in 2023. The translation was done with the help of an artificial intelligence machine translation tool. A subsequent human revision was done primarily in terms of content, so that the book will read stylistically differently from a conventional translation. Springer Nature works continuously to further the development of tools for the production of books and on the related technologies to support the authors.

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The registered company address is: Abraham-Lincoln-Str. 46, 65189 Wiesbaden, Germany

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## Preface to the Second Edition

Digitization is drastically changing the world in which we live. The internet, smart-phones, and in recent years the Internet of Things, which is the extension of physical goods with additional digital functionalities, are constantly creating new digital products and services for us. With Apple, Alphabet (Google), Microsoft, Amazon, and Meta, the five most valuable companies now all come from the digital industry. And in addition to the big tech giants from Silicon Valley, countless other digital companies and start-ups with innovative business models are pushing into the market worldwide. As a result, traditional companies are also forced to digitally transform in order to continue to play a relevant role in the future.

The development of digital products, such as websites, apps or software in general, has thus become a core function in companies. At the same time, the way in which the development of digital products is carried out has changed significantly in recent years. No longer is there a process of working through a once established requirements catalog and project plan. Instead, an agile approach has been established to ensure a market-oriented, i.e., user-centered product development.

The agile development of digital products not only changes the way developers work. It also implies a new kind of product management. The active management of products is nothing new in itself: it has been a fixed component in business literature for decades, for example in the form of product policy in marketing. And the profession of a product manager has also existed for a long time. In the digital context, however, the range of tasks of product managers sometimes differs significantly from the primarily commercially oriented, “classic” one. Their area of responsibility ranges from the initial identification of new product ideas and the validation of their user and company potential, through the specification of requirements and the control of their implementation, to the sustainably successful further development of digital products. So product management is not just about economic optimization, but also about the technological feasibility of digital products that are really desired from the user’s point of view—and for which there is a willingness to pay.

A product manager is holistically responsible for the setup and further development of “his” product. This is particularly evident in the agile Scrum framework, where the role as

“Product Owner” is explicitly provided—a designation that is sometimes also used in companies that organize their digital product development with other agile methods.

Product managers have a very responsible and versatile position in their companies, for which they must obtain a broad knowledge of methods and a great amount of interpersonal sensitivity. Product managers are sought after in the market. Due to a largely missing institutionalized education and the simultaneously very diverse requirements, the demand exceeds the available supply of qualified product managers by a multiple. Companies try to close this gap, among other things, by training communicative software developers or IT-affine business people internally to become product managers. This is where the present book comes in, describing how digital product management is used in a contemporary and successful manner.

Since the publication of the 1st edition of this book in 2020, the digital transformation of our world has continued to gain momentum. Current trends or hypes, such as the metaverse or the ever-widening application of artificial intelligence, suggest a continually growing importance of digital product management.

It is time for a 2nd edition of the book on digital product management. Most of the authors from the 1st edition are back with their updated contributions. In addition, further experts have joined with new contributions. As a result, the book has not only grown significantly in size compared to the 1st edition, but now offers both experts and beginners even more comprehensive insights into digital product management.

In the first article, I initially provide a basic classification of digital product management. To do this, the central agile product management concepts as well as selected methods and tools are presented. This gives beginners a practical overview of what to expect in the world of digital product development.

The further contributions each address a specific topic from digital product management and provide an in-depth overview. They range from strategic basics, through very operational questions, to the personal development of product managers and their interaction within product organizations.

Inken Petersen’s article discusses how a user-centered product vision can be developed within a team and subsequently become truly present in everyday business life.

Christian Becker explains in his article why it is particularly important for agile product organizations to have a product strategy, what distinguishes a good strategy, and how it can be determined.

In her contribution, Cansel Sörgens explains in detail the popular Objectives & Key Results framework, which can be used to break down a long-term product strategy into typically quarterly defined goals. Among other things, she describes how meaningful OKR sets are defined and what organizations should consider when introducing OKR.

Dominik Busching and Lutz Göcke then explain how the product strategy and objectives manifest in a concrete Product Roadmap. They discuss the advantages and disadvantages of different types of roadmaps and highlight the factors that make a Product Roadmap successful.

The contribution by Philip Steen and Alexander Hipp illustrates how important intensive Product Discovery is in order to understand the truly relevant user problems and to develop promising solution ideas based on this understanding.

Before the identified solutions are directly added to the Product Roadmap, their viability should still be validated. Anna Wicher describes in her contribution which aspects to consider and which tools can be usefully employed in this process.

Tim Adler reports in his contribution to Product Delivery, which small and large challenges arise in the actual product development in everyday life, and gives concrete tips that make the everyday life of a product manager easier.

Following this, Markus Andrezak explains in his contribution how omnipresent—and at the same time challenging—the demand for ever-increasing growth is for product managers, who are not only responsible for new development, but also for the successful further development of “their” products.

Rainer Gibbert points out that the further development of existing digital products can not only be difficult, but often also comes with resistance from their users. He describes how to reduce reservations about product changes and why sometimes just waiting and enduring can be a solution.

In another article, I explain how a market-relevant development of digital products can be ensured through A/B testing, what statistics are underlying, and what needs to be considered in the practical implementation.

Patrick Roelofs subsequently provides important advice on how to transform from a good to an outstanding product manager by shifting the focus from pure method and tool knowledge to a holistic view.

A particularly important skill of successful product managers is to make good product decisions, especially when the validation of product ideas does not yield clear results. For this, a deep “sense” for a product and its target group is indispensable. How this so-called Product Sense can be developed is explained by Robert Schulke and Nikkel Blaase in their contribution.

Experienced product managers often take on leadership responsibilities in product organizations. In his contribution to Product Leadership, Tobias Freudenreich explains how product managers can use the tools of lateral leadership to become effective within their product teams, and how superiors in product management can empower their product teams, rather than commanding them.

Product management always also means interface management with different stakeholders in a company. This is often not free from conflicts and personal sensitivities. Precisely for this reason, a good and trustful alignment is key as Arne Kittler shows in his contribution.

Following this, Petra Wille describes how others can be convinced of one’s own product plans through skillful storytelling. Among other things, she discusses why stories have a great power of persuasion, what makes up a good story, and which kind is particularly suitable in which circumstances.

The development of digital products is teamwork. A particularly important person of trust for a product manager should be the Scrum Master. Jan Köster and Florian Meyer describe how a good, and trustful collaboration between Scrum Master and Product Owner can evolve, from which the entire product team benefits.

In her second book contribution Inken Petersen explains how important a good user experience is to the success of a digital product and she provides practical advice on how the interaction between product managers and UX experts can be successful.

Jan Martens also focuses on cross-functional collaboration, by raising awareness for numerous pitfalls that can lead to misunderstandings in the collaboration between product managers and data analytics experts in companies.

Michael Schultheiß, David Gehrke, and Lutz Göcke describe in their contribution, what characteristics successful product organizations generally exhibit, what types of organization are typical, and what needs to be considered during the transformation of a product organization.

In conclusion, Stefan Roock explains which agile frameworks are particularly promising in which phase of a product organization and can scale agile working methods within a company, thus rounding off the consideration of digital product management.

The book would not have been successful without extensive support. My special thanks go first and foremost to my co-authors, without whose great commitment alongside their actual professions the book would never have been created. In addition, I thank Stella Ruthe and Leon Sebening, who thoroughly formatted the contributions and proofread them. I would also like to express my gratitude to Imke Sander from Springer-Gabler-Verlag for the uncomplicated cooperation and careful editing.

And finally, a big thank you to my family, who supported me during the many evenings and weekends it took to bring the book to a successful conclusion in its second, significantly expanded edition.

In her second book contribution, Inken Petersen explains how important a good user experience, that is, a positive usage experience of a digital product, is for its success, and she provides practical advice on how the interaction between product managers and UX experts can be successful.

Jan Martens also discusses cross-departmental collaboration, sensitizing to numerous pitfalls that can lead to misunderstandings in the collaboration between product managers and data analytics experts in companies.

Michael Schultheiß, David Gehrke, and Lutz Göcke describe in their contribution what characteristics successful product organizations have overall, what types of organization are typical, and what to consider when transforming a product organization.

Finally, Stefan Roock presents, based on this, which agile frameworks are particularly promising in which phase of a product organization and can scale agile working methods within a company, thus rounding off the consideration of digital product management.

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On behalf of all authors, I wish you much joy in reading the contributions and success in applying the insights to your own work and experience world. Supplementary notes on the book and exciting news about digital product management can be found at [www.digitales-produktmanagement.de](http://www.digitales-produktmanagement.de).

Hamburg  
in May 2023

Sascha Hoffmann

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# Contents

<b>1</b>	<b>Introduction to Digital Product Management</b> .....	<b>1</b>
	Sascha Hoffmann	
1.1	Product Management vs. Project Management .....	1
1.2	Basics of Agile Product Management .....	5
1.3	Digital Product Development According to Scrum .....	12
1.4	Digital Product Development with Kanban .....	22
1.5	Other Agile Methods in Digital Product Management .....	26
	References .....	27
<b>2</b>	<b>User-Centered Product Visions</b> .....	<b>31</b>
	Inken Petersen	
2.1	What is a Product Vision? .....	31
2.2	Why a Product Vision is Needed .....	33
2.3	How to Recognize a Good Product Vision .....	34
2.4	Tools for Creating a Good Product Vision .....	35
	2.4.1 The Vision Statement .....	35
	2.4.2 The Product Vision Board .....	35
	2.4.3 The Product Vision Template .....	36
	2.4.4 The Visiontype .....	37
2.5	The Vision Workshop .....	38
	2.5.1 The Right Preparation .....	38
	2.5.2 The Workshop .....	39
	2.5.3 After the Workshop .....	40
2.6	How to Recognize that the Product Vision is Working .....	41
2.7	A Brief Outlook at the End .....	42
	References .....	42

<b>3</b>	<b>Product Strategy—The Foundation of Product Management</b> . . . . .	45
	Christian Becker	
3.1	Introduction . . . . .	45
3.2	What is Product Strategy? . . . . .	46
3.3	The Importance of Product Strategy . . . . .	47
3.4	The Elements of Product Strategy . . . . .	48
3.4.1	The Product Playing Field . . . . .	48
3.4.2	The Starting Point . . . . .	50
3.4.3	The Future Factors . . . . .	51
3.4.4	The Goal. . . . .	52
3.4.5	The Path . . . . .	54
3.5	The Formation Process of the Product Strategy. . . . .	54
3.6	The Operationalization of the Product Strategy. . . . .	57
3.6.1	The Alignment Gap . . . . .	57
3.6.2	The Effects Gap . . . . .	58
	References. . . . .	58
<b>4</b>	<b>Implementing and Validating Product Strategy with Objectives and Key Results (OKR)</b> . . . . .	59
	Cansel Sörgens	
4.1	What are Objectives and Key Results about? . . . . .	59
4.2	What Problems does the OKR Framework Solve? . . . . .	61
4.3	How are Objectives and Key Results Defined? . . . . .	62
4.3.1	Mid-term Strategic Goal . . . . .	63
4.3.2	Objective . . . . .	64
4.3.3	Key Results . . . . .	66
4.4	The OKR Cycle . . . . .	68
4.4.1	Workshop for OKR Definition. . . . .	68
4.4.2	OKR Alignment Workshop . . . . .	70
4.4.3	Initiative Planning . . . . .	71
4.4.4	OKR Check-ins . . . . .	72
4.4.5	Strategy Check-ins . . . . .	73
4.4.6	OKR Reflection . . . . .	73
4.4.7	Strategy Review . . . . .	75
4.4.8	OKR System Reflection. . . . .	75
4.5	OKR Introduction . . . . .	76
4.6	OKR Architecture . . . . .	79
4.6.1	Dynamic Networks Instead of Strict Cascading . . . . .	79
4.6.2	Types of OKR Teams . . . . .	80
4.7	Roles in the OKR Process . . . . .	81
4.7.1	Executives . . . . .	82
4.7.2	Team Members. . . . .	82

4.7.3	Internal OKR Agents .....	83
4.8	Principles of OKR .....	83
4.8.1	Finding the right balance between Top-down and Bottom-up .....	83
4.8.2	Do not link OKR with Performance Management.....	84
4.8.3	Do not use OKR for Everyone and Everything .....	84
4.9	Final Thoughts .....	85
	References.....	85
<b>5</b>	<b>Product Roadmaps .....</b>	<b>87</b>
	Dominik Busching and Lutz Göcke	
5.1	Classification of Product Roadmaps .....	87
5.2	Types of Product Roadmaps .....	88
5.2.1	The “Classic”: The Feature-Based Roadmap.....	89
5.2.2	Thinking from the End: Goal-Oriented and Outcome- Driven Roadmaps.....	89
5.2.3	Packed in Boxes: Theme-Based Roadmaps.....	91
5.3	The Benefits of Product Roadmaps .....	91
5.4	The Risks of Product Roadmaps .....	94
5.4.1	Risks for Stakeholder Management.....	94
5.4.2	Risks for Product Development .....	95
5.5	Success Factors for Product Roadmaps .....	97
5.5.1	Problem Focus Instead of Solution Focus .....	97
5.5.2	Short Review and Update Cycles.....	98
5.5.3	Avoiding Pseudo-Accuracy and Artificial Deadlines.....	98
5.5.4	Not less, but better Communication.....	99
5.5.5	From Product Strategy and Vision to Roadmap.....	100
5.5.6	Prioritizing Data-driven and Coordinating with Stakeholders .....	100
5.5.7	Different Representations for Different Target Groups .....	101
5.6	Product Roadmaps for Hardware or IoT Products.....	101
5.6.1	Hardware versus Software Development.....	102
5.6.2	Requirements for Hardware Roadmaps .....	102
5.6.3	Roadmaps for IoT Products .....	103
5.7	Conclusion .....	104
	References.....	104
<b>6</b>	<b>Product Discovery.....</b>	<b>107</b>
	Philip Steen and Alexander Hipp	
6.1	Goals of Product Discovery .....	107
6.2	Basic principles of a Product Discovery .....	110
6.2.1	Outcome Orientation .....	110
6.2.2	User Centricity and Problem Focus .....	111

6.2.3	Iterative and Experimental Approach . . . . .	111
6.2.4	Interdisciplinarity . . . . .	112
6.3	Manifestations of a Product Discovery . . . . .	113
6.3.1	Project-based Discovery . . . . .	113
6.3.2	Continuous Discovery . . . . .	114
6.4	Frameworks for Structuring a Product Discovery . . . . .	114
6.4.1	Design Sprint . . . . .	115
6.4.2	Product Kata . . . . .	116
6.4.3	Opportunity Solution Tree . . . . .	117
6.5	Product Discovery Toolbox . . . . .	118
6.6	Practical Tips for Implementing a Product Discovery in the Company . . . . .	120
6.6.1	Consequences of a Focus on Product Delivery . . . . .	121
6.6.2	Potential Pitfalls in Implementing Product Discovery . . . . .	121
6.6.2.1	External Control of Product Teams . . . . .	122
6.6.2.2	Output Instead of Outcome . . . . .	122
6.6.2.3	No Regular Exchange with the User . . . . .	122
	References . . . . .	123
<b>7</b>	<b>Validation of Product Ideas in the Market . . . . .</b>	<b>125</b>
	Anna Wicher	
7.1	Why Validation? . . . . .	125
7.1.1	What Will This Be About? . . . . .	126
7.1.2	How Long Does Such a Validation Usually Take? . . . . .	127
7.1.3	What Kind of Team Do I Need for Validation? . . . . .	128
7.2	Research—Where do We Start? . . . . .	128
7.2.1	Hypotheses—What are We Assuming So Far? . . . . .	129
7.2.2	Market Analysis and Target Group Definition—What are Our Initial Assumptions Based On? . . . . .	130
7.2.3	Qualitative Research—What does the target group say? . . . . .	131
7.2.4	Quantitative Validation—How Many Are There? . . . . .	132
7.2.5	MVP Definition and Resource Requirements—What Do We Need for Testing? . . . . .	133
7.2.6	Design vs. Technology—Where is the Focus in Creating an MVP? . . . . .	135
7.3	Prototyping—What are We Building Now? . . . . .	136
7.3.1	Test Plan & Feature Definition—What Do We Want to Know and What Do We Need For It? . . . . .	137
7.3.2	UX and UI—What Should the MVP Look Like? . . . . .	140
7.3.3	Development—How and with Which Technology Will the MVP Be Implemented? . . . . .	141
7.3.4	Team—Who is Building This? . . . . .	141

7.3.5	Time Estimate—How Long will It Take? .....	142
7.4	Testing—How Do We Get the Numbers? .....	143
7.4.1	Launch & Marketing Plan—Who will test the MVP? .....	143
7.4.2	Pivot—Everything New Again? .....	144
7.4.3	KPIs & Business Plan—Are We Making Money Now? .....	145
7.5	And What Happens Next? .....	145
	References .....	146
<b>8</b>	<b>Product Delivery</b> .....	<b>147</b>
	Tim Adler	
8.1	Let’s Get Started .....	147
8.2	What You Need Before You Start .....	149
8.2.1	MVP vs. MLP .....	149
8.2.2	Documenting Features .....	149
8.2.3	First, Make It “Pretty”—Preparing the Design .....	149
8.3	Knowing in Advance What It Will Cost .....	152
8.3.1	Classic Project Management FTW .....	152
8.3.2	An Idea of Team Size .....	153
8.3.3	Time and Cost Estimation .....	153
8.3.4	What to Do If It’s Too Expensive or Too Slow? .....	155
8.4	Setting Up the Toolbox .....	156
8.4.1	Even More Preparation, Seriously? .....	156
8.4.2	Choosing a Name .....	157
8.4.3	Preparing the Backlog .....	157
8.4.4	Setting up a Sprint Board .....	159
8.5	Running a Marathon .....	161
8.5.1	Choosing Sprint Length .....	161
8.5.2	Meetings, Meetings, Meetings ... are the Sprint .....	161
8.5.2.1	Sprint Planning .....	162
8.5.2.2	Daily Standup .....	164
8.5.2.3	Sprint Review .....	166
8.5.2.4	Retrospective .....	167
8.5.3	Are We Still on Schedule...? .....	167
8.5.4	... And If Not, How Do We Get Back “On Plan”? .....	168
8.6	Little Helpers in Everyday Life .....	168
8.6.1	Developers Call for “Refactoring!” .....	168
8.6.2	Customer Support Warns of “Bugs!” .....	169
8.7	That’s It .....	170
<b>9</b>	<b>Growth</b> .....	<b>171</b>
	Markus Andrezak	
9.1	Everyone Wants Growth .....	171
9.2	How Long Does Growth Take? .....	174

9.2.1	Henry Ford and the Model T .....	175
9.2.2	The iPhone .....	176
9.2.3	Digital “Growth Miracles” .....	176
9.3	Growth Happens in Two Phases. ....	178
9.4	Growth Models .....	181
9.4.1	The Hockey Stick .....	181
9.4.2	The 3-Horizon Model .....	183
9.4.2.1	Horizon 1 .....	183
9.4.2.2	Horizon 2 .....	184
9.4.2.3	Horizon 3 .....	186
9.4.2.4	The Interplay of Horizons .....	186
9.5	What Do We Need to Master to Achieve Growth? .....	187
	References .....	188
<b>10</b>	<b>Product Changes</b> .....	<b>189</b>
	Rainer Gibbert	
10.1	Resistance to Change .....	189
10.2	Why Changes are Rejected .....	191
10.2.1	Users (Mostly) Don’t Care About Design .....	191
10.2.2	Users Love Routines .....	192
10.2.3	Users Like Familiarity .....	192
10.2.4	Users Tend Towards the Status Quo .....	193
10.2.5	Users Prefer What They Already Own .....	193
10.2.6	Users Fear Loss of Control .....	193
10.3	Creating Acceptance for Change .....	194
10.3.1	Change Not As an End in Itself .....	194
10.3.2	Accompanying Changes in a User-Centered Manner .....	194
10.3.3	Make Changes Testable for Users in Advance .....	195
10.3.4	Let Users Choose .....	196
10.3.5	Prefer Incremental Changes .....	197
10.3.6	Communicate Changes and Make Them Appealing .....	197
10.3.7	Patience and Perseverance .....	198
10.4	Conclusion .....	199
	References .....	200
<b>11</b>	<b>A/B Testing in Digital Product Management</b> .....	<b>203</b>
	Sascha Hoffmann	
11.1	Introduction .....	203
11.2	Basics of Hypothesis Formation .....	205
11.3	Statistics in A/B Testing .....	206
11.4	A/B Testing in Practice .....	207
	References .....	208

<b>12 Product Management Understood Holistically</b> .....	211
Patrick Roelofs	
12.1 The Tasks of the Product Manager .....	211
12.1.1 Result Dimension 1: User Satisfaction with the Product .....	212
12.1.2 Result Dimension 2: Commercial Success of the Product .....	213
12.2 The Product Manager as a Proactive Relationship Manager .....	214
12.3 The Product Manager as an Outstanding Communicator .....	215
12.4 The Product Manager as a “Decision Maker” .....	216
12.4.1 Clearly Formulated Goals .....	217
12.4.2 Maximum Transparency (“Connecting the Dots”) .....	217
12.4.3 Necessary Escalations .....	218
12.5 The Product Manager as a Supplier of Answers .....	219
12.6 The Product Manager as a Clear-Thought-Provider .....	220
References .....	222
<b>13 Product Sense</b> .....	223
Robert Schulke and Nikkel Blaase	
13.1 Introduction .....	223
13.2 What is Product Sense? .....	224
13.3 The Importance of Product Sense .....	225
13.4 How Product Sense Can Be Developed .....	226
13.4.1 Building Empathy .....	226
13.4.2 Strengthening Product and Domain Knowledge .....	228
13.4.2.1 Basic Product Knowledge .....	228
13.4.2.2 Specific Domain Knowledge .....	229
13.5 Product Sense Quick Start .....	229
References .....	230
<b>14 Product Leadership</b> .....	233
Tobias Freudenreich	
14.1 Lateral Leadership .....	235
14.1.1 Lateral Leadership through Communication .....	235
14.1.2 Lateral Leadership through Power .....	237
14.1.3 Lateral Leadership through Trust .....	238
14.1.4 The Interplay of Communication, Power, and Trust .....	239
14.2 Disciplinary Leadership .....	240
14.2.1 Clear Structures .....	242
14.2.2 A Clear Goal Corridor .....	242
14.2.3 Competent Product Managers .....	245
14.2.4 Strong Product Teams .....	248
14.2.5 Interdisciplinary Leadership .....	249
14.2.6 Final Considerations .....	252
References .....	252



<b>15 Alignment</b> .....	255
Arne Kittler	
15.1 Why is Alignment Important in the Context of Modern Product Development? .....	255
15.1.1 Alignment Creates Trust .....	256
15.1.2 Alignment Helps to Avoid Waste of Resources .....	256
15.1.3 Alignment Helps to Make Decisions .....	257
15.2 Who Should a Product Manager Actively Align With? .....	258
15.3 In Which Contexts is Alignment Particularly Important? .....	258
15.4 When Should Systematic Alignment Ideally Take Place? .....	259
15.5 What Approaches Help in Alignment? .....	259
15.5.1 The Right Conversation Partners in the Right Order .....	259
15.5.2 Sensible Constellations and Methods for Active Alignment. ....	260
15.6 Important Questions to Clarify in the Context of Alignment. ....	260
15.6.1 Initial Situation from the User’s Perspective .....	261
15.6.2 Vision from the User’s Perspective .....	261
15.6.3 Hypotheses .....	261
15.6.4 Input—and Roles .....	262
15.6.5 Output—and Boundaries .....	262
15.6.6 Outcome—and Limits .....	263
15.7 Identify Conflicts and Bring Them to Resolution .....	263
15.8 Alignment in Practice: “Auftragsklärung” at XING .....	265
15.8.1 Origin and Development of the Mission Statement. ....	265
15.8.2 Essential Artifacts and Common Practices .....	265
15.8.3 Introduction, Application and Misunderstandings .....	267
15.9 Limits of Sensible Alignment .....	267
References .....	268
<b>16 Product Evangelizing and Storytelling</b> .....	269
Petra Wille	
16.1 Why Storytelling is Important in Product Management .....	269
16.2 Why Our Brains Love Stories .....	271
16.3 What Stories can Achieve in a Professional Context .....	273
16.3.1 Elements of a Good Story .....	273
16.3.2 Stories are the Perfect Design Tool .....	274
16.4 How to Conceive and Tell Good Stories .....	275
16.4.1 What Does all This Have to do With Product Management? .....	275
16.4.2 Overcoming the Fear of the Blank Page .....	278

---

16.5	How to Anchor the Message Sustainably . . . . .	279
16.6	My Conclusion . . . . .	282
	References . . . . .	282
<b>17</b>	<b>Product Owner and Scrum Master . . . . .</b>	<b>285</b>
	Jan Köster and Florian Meyer	
17.1	More than a Role Model from a Framework . . . . .	285
17.2	How Good Collaboration Can Succeed . . . . .	286
17.2.1	Start with Why . . . . .	287
17.2.2	Shared Visions . . . . .	288
17.2.3	Trust . . . . .	289
17.2.4	Agile Principles . . . . .	290
17.2.5	When do we Stop? . . . . .	290
17.2.6	Why do you do it that Way? . . . . .	290
17.2.7	Be Partners . . . . .	291
17.2.8	Shared Rituals . . . . .	291
17.2.9	Your PDCA Cycle . . . . .	292
17.2.10	Leading through Why and Transparency . . . . .	293
17.2.11	Leading through Attitude . . . . .	294
17.2.12	Shared Leadership . . . . .	294
17.3	What's Next? . . . . .	295
17.4	Learning Teams . . . . .	296
	References . . . . .	297
<b>18</b>	<b>Understanding User Experience . . . . .</b>	<b>299</b>
	Inken Petersen	
18.1	The Importance of a Positive User Experience . . . . .	299
18.2	The Iterative UX Design Process . . . . .	300
18.3	The Core Disciplines in the User Experience Field . . . . .	302
18.3.1	The UX Designer . . . . .	302
18.3.2	The Visual Designer . . . . .	303
18.3.3	The User Researcher . . . . .	303
18.4	The Different Types of UX Teams . . . . .	304
18.4.1	The Classic UX Team . . . . .	304
18.4.2	The "UX Team of One" . . . . .	304
18.4.3	The Hybrid "UX & Visual Design Team" with Separate User Research Dimension . . . . .	305
18.5	The Best Organizational Form . . . . .	305
18.6	The Right Amount of UX . . . . .	306
18.7	The Future of UX . . . . .	307
	References . . . . .	308

<b>19</b>	<b>Data Analytics</b> .....	309
	Jan Martens	
19.1	Introduction .....	309
19.2	Roles and Organizations .....	310
19.3	The Pitfalls .....	310
19.3.1	The Feel-Good Analysis .....	310
19.3.2	The Justification Analysis .....	311
19.3.3	The Symptom Analysis .....	311
19.3.4	Simple Questions, Complex Answers .....	312
19.3.5	Overconfidence .....	313
19.3.6	Narcissism .....	313
19.3.7	Simply Wrong .....	314
19.3.8	“Not Significant” .....	315
19.3.9	Too Demanding .....	315
19.3.10	Lack of Distance—Sunk Costs .....	316
19.3.11	Too Little Data .....	316
19.4	Conclusion .....	317
<b>20</b>	<b>Product Organizations</b> .....	319
	Michael Schultheiß, David Gehrke and Lutz Göcke	
20.1	What is a Product Organization? .....	319
20.2	Five Features of Successful Product Organizations .....	320
20.3	Structures, Processes, Employees .....	321
20.3.1	Structure .....	321
20.3.2	Processes .....	326
20.3.3	Employees .....	328
20.4	Product Organization Archetypes .....	332
20.5	Change and Adaptation Processes .....	333
20.5.1	Transformation into a Product Organization .....	334
20.5.2	Transformation Within a Product Organization .....	334
20.6	Conclusion .....	335
	References .....	335
<b>21</b>	<b>Choosing the “Right” Agile Framework for the Company</b> .....	339
	Stefan Roock	
21.1	Introduction .....	339
21.2	The Appropriate Framework for the Agile Pilot .....	341
21.2.1	Scrum vs. Kanban .....	342
21.2.2	The Thing About Beliefs .....	342
21.2.3	Agile Approach in Startups vs. Corporations .....	343

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21.3	Agile Work in Entire Product Development .....	344
21.3.1	Minimize Dependencies .....	344
21.3.2	Managing Dependencies .....	345
21.3.3	Platforms .....	347
21.3.4	Caution with Top-Down Standardization.....	348
	21.3.4.1 Resistance from Employees .....	348
	21.3.4.2 Loss of Agility.....	349
21.3.5	Keep the Tools Away from Me.....	349
21.4	Agile Work throughout the Company .....	349
21.4.1	Autonomy and Alignment .....	350
21.4.2	Adaptable Structure .....	351
	21.4.2.1 Market Contact Through External References ...	352
	21.4.2.2 Company Adaptation with Sociocracy 3.0 .....	353
21.5	Summary .....	355
	References.....	356

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# Introduction to Digital Product Management

# 1

## Classification and Basic Concepts

Sascha Hoffmann

### Abstract

The introductory article first addresses the fundamental differences between a classic, project-based and an agile development of digital products, highlighting the advantages of the agile approach. Afterwards, the individual phases of digital product development are explained. These range from the product vision and the derivation of a suitable product strategy, to the identification of the “right” products or product features from a market perspective within the framework of a product discovery, to the actual product development, the product delivery. Subsequently, Scrum, as the dominant agile development framework in practice, is explained in detail. Kanban, another very popular framework, is then described, before finally providing an overview of hybrid forms and other further developments of agile methods for digital product development.

## 1.1 Product Management vs. Project Management

The development of digital products (apps, websites or software solutions in general) was predominantly carried out in the traditional project form for a long time, by dividing the development process into individual phases to be completed one after the other. This approach is particularly associated with the **waterfall model** (Fig. 1.1).

In the waterfall model, a precise definition of the product characteristics to be developed takes place at the beginning of the development project. For this purpose, the

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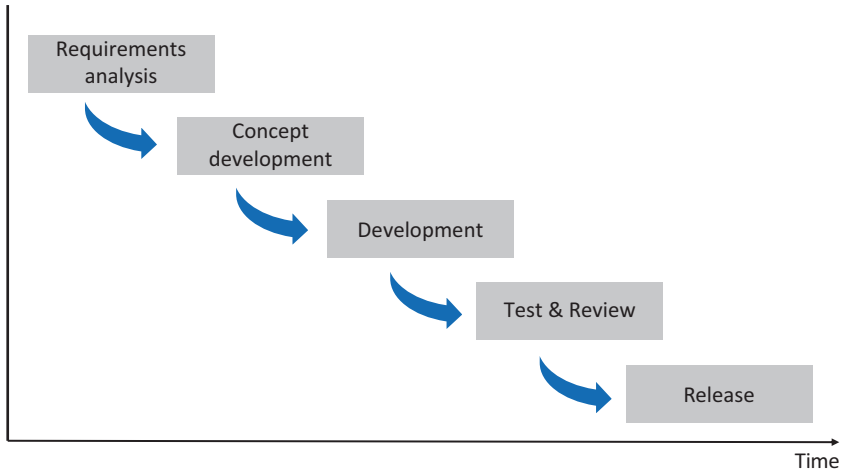
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S. Hoffmann (ed.), *Digital Product Management*,  
[https://doi.org/10.1007/978-3-658-44276-7\\_1](https://doi.org/10.1007/978-3-658-44276-7_1)

1



**Fig. 1.1** Schematic process of a waterfall-like product development. (Source: Own illustration)

requirements of the targeted user group and possibly other relevant stakeholders of the new product are collected in detail during an analysis phase. Once this phase is completed, the specifications for the digital product to be developed are derived in the planning or conception phase and are written down in a detailed requirement catalog (specification sheet). This serves as requirement specifications for the developers. Subsequently the actual programming starts in the development phase, which can last several months or even years for larger projects and is often divided into sub-phases (design, implementation, etc.). Once the development is fully completed, a test or review phase usually follows before the product is launched, during which it is checked whether the product has been implemented without errors and according to the client’s specification sheet. If this is the case, the product is handed over to the client or taken live (released) in the final project step (Laudon et al. 2016).

A development project in the traditional project management sense is considered successful as soon as all content requirements have been implemented within the given time and budget framework, i.e., the required **output** has been delivered. In product management, on the other hand, a product is only considered successful when it is accepted by the users and leads to the desired behavior change (**outcome**), through which the company expects a positive effect on its (monetary) success indicators (**impact**).

- ▶ An excellent description of what a product is in the sense of product management is given in the current Scrum Guide:

“A product is a tool to deliver value. It has clear boundaries, known stakeholders, clearly defined users or customers. A product can be a service, a physical product, or something more abstract.” (Schwaber and Sutherland 2020)



Whether the intended behavior change actually occurs, however, is uncertain. Especially because, presumably, environmental and market conditions are subject to constant change. This is often described as **VUCA**. This acronym stands for Volatility, Uncertainty, Complexity, and Ambiguity and describes the difficult conditions under which people or organizations must make decisions (Mack et al. 2015).<sup>1</sup>

In product management, the aim is to minimize the risk of developing a product that does not meet market needs. It is consciously acknowledged that no one can predict on the basis of a supposedly good product idea alone that a product will be successful later on. This is especially true in today's dynamic and complex times. Product ideas are therefore always "bets" that still need to prove themselves as correct.

The supposed planning security of traditional project management often turns out to be a delusive certainty. Even the most detailed specifications at the beginning of a product idea can only be imprecise and incomplete. Market changes, technical innovations, changes in laws, etc., regularly lead to changes in the requirements for the product to be developed during the development process. However, in traditional project management, this is only noticed at the end when the product is not accepted by the market or, for example, due to changes in regulations in the meantime, cannot go live at all. In the worst case, this means that the development project has to start all over again, by starting with a new analysis of the changed requirements.

In digital product management, on the other hand, it is accepted that not all parameters are known at the beginning of a software development project and thus new requirements can be added during development, and originally assumed ones can change or even be dropped. According to the **Cynefin Framework** by David Snowden (2000), this is a complex problem situation where cause-effect relationships are not yet clear at the beginning (see the Cynefin Framework in the context of digital product management in detail in Chap. 17 by Jan Köster and Florian Meyer).

In contrast to classical project management, with **agility a different kind of digital product development** has been established in product management. This means that a product is developed incrementally along the entire development process and regularly obtains feedback from stakeholders, especially the later users, to validate that the pursued solution constantly meets the actual requirements and needs of the market. The result of each feedback loop directly influences further product development (Fig. 1.2).

---

<sup>1</sup>As a variation of VUCA, the world is now also characterized with the acronym **BANI**, which stands for brittle, anxious, non-linear, and incomprehensible. Both concepts describe the challenge of being successful in a rapidly changing environment. While the VUCA model emphasizes the complexity of decisions and consequences of actions, the BANI model assumes increasingly chaotic and thus unpredictable influencing factors, especially in connection with exponential technological progress (Cascio 2020).



**Fig. 1.2** Schematic process of agile product development. (Source: Own illustration)

The agile approach in digital product management is not entirely new: For example, Tom Gilb (1988) developed a model called “Evolutionary Project Management” in the 1980s, which anticipated many basic principles of agile development. Similarly, Kent Beck (2000) developed the Extreme Programming (XP) methodology in the 1990s, which already included agile concepts such as Test-Driven Development (TDD) and Continuous Integration (CI).

In 2001, the **Manifesto for Agile Software Development** ([www.agilemanifesto.org](http://www.agilemanifesto.org)) was written, which serves as conceptual framework for modern digital product development. It established four fundamental values and derived twelve principles on how digital products should be developed.

► The four fundamental values of the Agile Manifesto are

1. Individuals and interactions over processes and tools.
2. Working software over comprehensive documentation.
3. Customer Collaboration over contract negotiation.
4. Responding to change over following a plan.

Beck et al. (2001)

The primary goal is to provide a working product that is truly accepted in the market. To achieve this, a close, trustful cooperation with the customers or the internal stakeholders of a company and obtaining market feedback are necessary. Therefore the basic prerequisite is a sincere willingness to be open to requirement changes in the development process at all times (Cagan 2018).

Of course, this does not mean that agile development proceeds without a plan or structures. However, these are not an objective in themselves, but are only used if they contribute to improving product development.

- ▶ “The Agile movement is not anti-methodology [...]. We embrace modeling, but not in order to file some diagram in a dusty corporate repository. We embrace documentation, but not hundreds of pages of never-maintained and rarely-used tomes. We plan, but recognize the limits of planning in a turbulent environment.” (Beck et al. 2001, p. S.)

While projects are usually implemented with temporary, project-specific teams, digital product management prefers to work with long-term responsible teams (Dedicated Teams) that are responsible for a specific product or product area (Neuberger 2018). To give these product teams real “ownership” for their product or the user problem to be solved, their members should be allowed to organize themselves, work in an inspiring environment, and ensure through personal conversations that there is maximum transparency within the team regarding the project goals, the current status quo, and the derived requirements. In addition, the team should regularly reflect on its processes and behavior in order to continuously improve its collaboration and ensure technical excellence (Epping 2011; Beck et al. 2001).

For the concrete implementation of agile product development, different frameworks or methods have been developed, which are all based on these fundamental agile principles.

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## 1.2 Basics of Agile Product Management

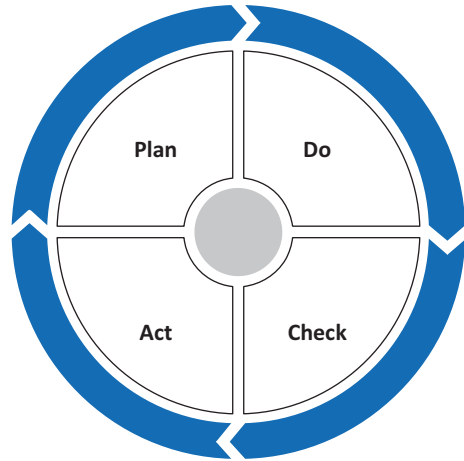
Regardless of the individual framework or the specific method, the general goal is to release working software on the market as early and regularly as possible. Therefore, digital products are developed incrementally, i.e., in consecutive versions, to integrate market feedback into further product development. Thus, the forecast accuracy of a subsequent market success can be increased and the risks in product development can be controlled better (Cagan 2018).

The first product increment released to the market is often referred to as a **Minimum Viable Product (MVP)**<sup>2</sup> and should focus on the most necessary product features in order to incorporate real market feedback into further product development as early as possible (Krasadakis 2019; Gibbert 2014a).

---

<sup>2</sup>There are also different definitions of a Minimum Viable Product. For example, Eric Ries and Steve Blank (2011) refer to the first official product increment as a Minimal Marketable Product (MMP). According to Ries, however, there may already be other MVPs before this, which are not released, but are “only” tested as prototypes in user tests, etc.

**Fig. 1.3** The PDCA cycle.  
(Source: Based on Deming 1982)



This approach corresponds to the validated learning from the **PDCA cycle**, which dates back to the work of Walter Sheward and William Deming from the 1930s. This is a concept for continuous improvement of products or processes in organizations. The cycle consists of four steps: planning (Plan), execution (Do), checking (Check), and deriving measures (Act), see Fig. 1.3.<sup>3</sup> In the planning phase, goals and measures are defined, which are implemented in the execution phase. In the checking phase, the results are analyzed and evaluated, after which necessary adjustments or improvements are made in the last step and the cycle starts anew (Deming 1982, on the PDCA cycle, see also in detail Chap. 17 by Jan Köster and Florian Meyer).

- ▶ “Your minimum viable product is comprised of the least amount of functionality necessary to solve a problem sufficiently such that your customer will engage with your product and even pay for it, if that’s your revenue model.” (Cooper and Vlaskovits 2013, p. 173)

“If you are not embarrassed by the first version of your product, you’ve launched too late.” (Reid Hoffman 2017)

Generally there is a person in the product organization who focuses on the market success of the product. Their job title is usually Product Manager or Product Owner.<sup>4</sup>

The **product manager** determines the features of the product, specifies them, and ensures that the developers implement the product as best as possible. They are not only

<sup>3</sup>In their book “The Lean Startup”, Eric Ries and Steve Blank (2011) condensed the four-phase PDCA cycle into a three-phase Build-Measure-Learn cycle, which is widely used in the startup scene today.

<sup>4</sup>Actually, the Product Owner role only exists in Scrum, but the title is also used in product organizations that no longer (or never did) work according to Scrum.

responsible for new product development, but rather have the task of successfully managing the product throughout its entire lifecycle. Thus they have a holistic view from the perspectives of economics, technology, and above all market or user needs on their (digital) product, see Fig. 1.4. To be successful in this focal position, the product manager regularly exchanges information with the other stakeholders of the product to understand their wishes or requirements (Cagan 2018; Neuberger 2014).

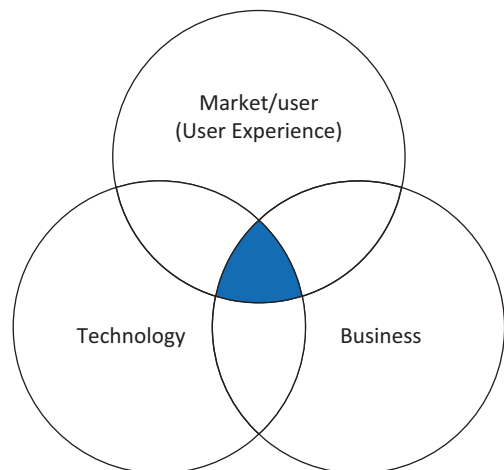
To develop a product in a targeted manner, the product manager should establish a vision for the product. In the **product vision**, the core value of the future product is described by roughly outlining the central product features and formulating a motivating goal pursued with the development of the product (for the product vision, see in detail Chap. 2 by Inken Petersen).

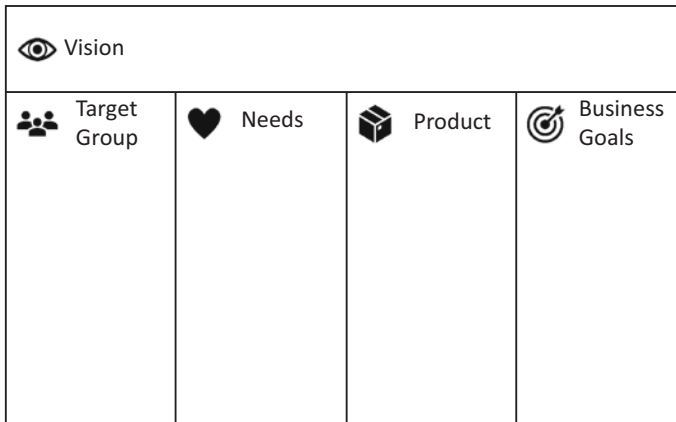
In order for the product to receive the necessary resources and positive attention within the company, it is of enormous importance that the product vision is supported by the entire company. To achieve this, the product team should develop the product vision in close coordination with the other stakeholders. In addition to other formats, the **Product Vision Board** is a good vehicle that can be used to visualize the product vision and thus transport it into the company (Fig. 1.5).

On the Product Vision Board, the basic idea is formulated in a concise sentence as a vision statement. In addition, the target group that the product is intended to address is specified, and their wishes and needs that are to be addressed with the product are outlined. In the “Product” section, around three or five most important characteristics of the product to be developed are then written down, that satisfy the needs of the target group better than other possibly already existing solutions on the market. Finally, the revenue model for the company is listed (Pichler 2014).

True to the saying of the legendary ice hockey player Wayne Gretzky “I skate to where the puck is going to be, not where it has been”, the product vision sets the

**Fig. 1.4** The responsibility spectrum of a product manager. (Source: Based on Eriksson 2011)





**Fig. 1.5** Product Vision Board. (Source: Adapted from Pichler 2014)

direction and as part of the **product strategy**, it must be determined how the product organization should get there. The product strategy therefore sets the concrete goals and the path to them (for more on product strategy, see Chap. 3 by Christian Becker).

In an agile, user-centered product development, both the goals and the derived path to them initially only represent **hypotheses** (“bets”). It must therefore be checked whether there are really users in a sufficiently large number who want the planned product, so that an economic success can be expected for the company. In order to reduce uncertainties in product development as quickly as possible, the basic assumptions about the so-called **Product-Market-Fit** must be validated early on. These relate to the actual needs of the target group, the economic assumptions but also the technical feasibility of the development (Cagan 2016).

Especially for larger, fundamental new product developments, a separate **discovery phase** is initiated before the actual product development (for more on product discovery, see Chap. 6 by Philip Steen and Alexander Hipp). In practice, the challenge often lies in making it clear to management that the discovery phase is open-ended. This means that during the discovery, it may turn out that the product idea is not as brilliant in the eyes of the target group as thought, or the market opportunities are smaller than originally assumed. It may also turn out in the discovery phase that no technical solution can be found for the identified user problem that is economically viable for the company (Cagan 2007).

- ▶ While it is normal for pharmaceutical companies that a large part of drug innovations turn out to be not marketable during the discovery phase, this way of thinking is much less common in the digital industry. There, instead of a real, open-ended product discovery, unfortunately, only a concretization of the original product idea is often made—a circumstance that raises the question of how honestly agility is lived in companies and which can certainly backfire in the further course of product development or at the latest at the product launch (Gibbert 2013).