

TMap NEXT® in Scrum—How do you do that?

In this book, we demonstrate how TMap can be integrated with the scrum approach to form one integrated agile approach.

Experience has taught us that testing is not only an extremely important activity in a scrum approach. It has also stimulated our view that testing should be fully integrated in this approach in order to be as agile as possible. In this book, we explain our vision and translate this to concrete applications. In this context, we regard testing not as a process alongside the scrum approach but rather as an integral part of the approach.

As a valuable appendix, this book also contains a short supplement written by Arie van Bennekum—chairman of the Agile Consortium International and co-author of the *Agile Manifesto*—with the title ‘Agile testing, what can be borrowed from DSDM?’



Leo van der Aalst is an experienced IT consultant, at both national and international level. He has developed plans and services for the configuration of test organizations and agile tests. In addition, he is the co-author of the point-of-view paper on TMap® in Agile environments, and the TMap NEXT® for result-driven testing and TMap NEXT® Business-Driven Test Management books.



Cecile Davis is a test consultant and is specialized in (the improvement of) agile test processes. In addition, she is an experienced scrum master in agile projects. She is a certified agile tester trainer, co-author of the point-of-view paper on TMap® in agile environments, and was a co-author of the TPI NEXT® book.

ISBN 978-90-75414-64-6



< 9789075 414646 >



TMap NEXT® in Scrum

Effective testing in Agile projects

Leo van der Aalst and Cecile Davis

TMap NEXT® in Scrum



Leo van der Aalst and Cecile Davis



TMap NEXT® in Scrum

TMap NEXT[®] in Scrum

Effective testing in Agile projects

Leo van der Aalst and Cecile Davis



Sogeti Nederland B.V.
2013

- TMap NEXT is a registered trademark of Sogeti Nederland.
- DSDM, Dynamic Systems Development Methodology is a trademark of DSDM Corporation.

Colophon

© 2013 Sogeti Nederland B.V., Vianen

Editing and type setting LINE UP boek en media, Groningen

Cover design Jan Faber

Cover photo With thanks to FC Grenoble Rugby

Illustrations Leo van der Aalst



ISBN 978 90 75414 64 6 (book), 978 90 75414 65 3 (ePub)

No part of this publication may be reproduced or replicated and/or made public (regardless of the intention) through print, photocopying, microfilm, sound track, electronic resources or through any automatic retrieval system or in any other way without prior written permission from Sogeti Nederland B.V.

Contents

Foreword

by Nijs Blokland 7

Foreword

by Arie van Bennekum 9

- 1 Introduction 11**
- 2 Target group, scope and reading instructions 15**
 - 2.1 Reading instructions 15
 - 2.2 Acknowledgements 17
- 3 Lean, Agile and Scrum 19**
 - 3.1 Lean 20
 - 3.2 Agile 22
 - 3.3 Scrum 25
 - 3.3.1 Scrum approach 25
 - 3.3.2 Scrum process description in a nutshell 31
 - 3.3.3 Supporting techniques 32
- 4 Vision on testing in Agile 35**
 - 4.1 Use the Agile Manifesto as the starting point 36
 - 4.2 The test process must be integrated in the Agile approach 37
 - 4.3 Find the right balance by making conscious choices 39
 - 4.4 Use the strength of the four TMap NEXT essentials 40
- 5 TMap NEXT and Scrum 41**
 - 5.1 The four TMap essentials and Agile/Scrum 42
 - 5.1.1 Adaptive 42
 - 5.1.2 Business-driven test management 42
 - 5.1.3 Complete toolbox 43
 - 5.1.4 Structured test process 44
 - 5.2 The TMap lifecycle and Scrum 44
 - 5.3 The TMap activities and Scrum 47
 - 5.3.1 Planning 48

- 5.3.2 Control 54
- 5.3.3 Setting up and maintaining infrastructure 56
- 5.3.4 Preparation 57
- 5.3.5 Specification 58
- 5.3.6 Execution 59
- 5.3.7 Completion 61
- 5.4 From TMap *and* Scrum to TMap *in* Scrum 62
- 5.5 And what about ...? 63
- 6 Scrum and TMap NEXT 67**
 - 6.1 Testing in Sprint 0 68
 - 6.1.1 Process set-up 69
 - 6.1.2 Definition of done (DoD), of ready (DoR), of shippable (DoS) 69
 - 6.1.3 Test strategy 71
 - 6.1.4 High-level estimation of effort 71
 - 6.1.5 Training 71
 - 6.1.6 Tools 71
 - 6.1.7 Communication 72
 - 6.2 Testing in the project and Sprint planning 72
 - 6.3 Testing in the Sprint 72
 - 6.4 Testing in the daily Scrum 73
 - 6.5 Testing in the Sprint review 74
 - 6.6 Testing in the Sprint retrospective 74
 - 6.7 Scrum-of-Scrums 74
 - 6.8 Scrum and TMap in one overview 76
- References 79**
- Supplement**
 - Agile testing, what can be borrowed from DSDM? 81
- Index 89**
- About Sogeti 93**

Foreword

by Nijs Blokland

One of the basic ideas for the development of the TMap was that a solution had to be found to the increasing need to detect errors in the early stages of a process and to prevent these wherever possible. One response was to standardize testing, with a clear shift of the testing procedure toward the front of the classical waterfall method.

TMap was developed and ubiquitously adopted into the test world. The method has turned out to be very flexible, in view of the relatively few structural adaptations that have been implemented over the last 25 years. Of course, there have been alterations as a consequence of new technological possibilities and the broadening of the scope toward the front of the V-model. This shift had been foreseen by the TMap developers and had been embedded in the basis of TMap. But it was only with its development into TMap NEXT and business-driven test management that it was further elaborated.

When the *Agile Manifesto* was published, it formed a good impulse to further elaborate the dormant ideas. Over the past few years, Cecile Davis and Leo van der Aalst in particular have provided guidance to TMap NEXT users on how to perform tests in an agile environment. Their inexhaustible passion for both the test method and working with agile has now resulted in this book. An end has been put to constant doubt regarding the qualitative and quantitative test effort invested in scrum teams. The original movement to initiate test and quality measures as close to the source as possible has been firmly established here. Supported by a clear vision of this swing, which has far-reaching consequences for the discipline of testing, the authors of this book have risen to the challenge and placed TMap NEXT at the forefront of this major shift.

It's the result that counts, and that is also the case here. The result will be a clear enhancement of the quality of the IT product to be delivered. It is a shift in quality to which the IT world is entitled and for which users have been longing for quite some time.

TMap NEXT® in Scrum

I wish all TMap NEXT users lots of inspiration and success, especially with the use of this book in everyday practice.

Nijs Blokland

Vice President

Global Service Line Testing of Capgemini & Sogeti

Foreword

by Arie van Bennekum

In mid-2010 I made a choice. After standing in the wings watching the developments of agile, I decided it was time to immerse myself in the ongoing activities. Having written the *Agile Manifesto* in February 2001, I was an agile coach, project manager and facilitator for over 16 years. I also co-authored pieces for the new releases of DSDM, the method that connects me to agile and which I introduced during the SnowBird session. In 2007 I took a sidestep. That was the time that scrum had explicitly arrived on the scene among the developers but, apart from that, it was quieter on the development front than it had been in the 1990s.

On my 'return', it was evident what needed to be done. The word 'hype' is perhaps somewhat irritating, but there really was a lot going on around agile at that time. After the advent of eXtreme Programming, shortly after the publication of the *Agile Manifesto*, it was scrum's turn, although DSDM was widely used in the United Kingdom and on the European continent. The quantity of agile applications was enormous, as were the various interpretations and misperceptions.

This was most noticeable during the agile conference in Salt Lake City in 2011, where the tenth anniversary of the *Agile Manifesto* was celebrated. Many people wrestle with matters such as the acceptance of the solution by the end users, how to make what the end users really need, and looking for ways to involve the end users more extensively. DSDM still offers answers, but what should be done with the fact that other methods, scrum in particular, are currently dominating the software development sector?

There is still a strong need for agreement and attunement. There must be agreement on what the ultimate solution should be and what it can bring the organization. And there must be attunement between the people who will be using the solution and people who know what the solution should be doing once it is has been installed. In addition, the periphery of the project also has to be dealt with. It will expect certain things of the user, especially proof. Paying attention to testing is indispensable in this context.

TMap NEXT® in Scrum

For this reason it is good to know that Cecile and Leo have taken the trouble to close this gap. There are undoubtedly people who would have done this differently, or prefer another form, or perhaps have a different opinion. In my opinion they have taken a wise step. Immerse yourself in Cecile and Leo's book and you will discover that what it contains is not theory but a method whose value has been demonstrated in real-life practice. It may well be something for you. In fact, the chances are high.

Arie van Bennekum

Co-author of the Agile Manifesto

Chairman of the Agile Consortium International

www.agilemanifesto.org

www.agileconsortium.net

1

Introduction

Many people have the impression that agile projects are chaotic, unorganized and uncontrolled. However, nothing could be further from the truth. If discipline and structure are lacking, not every agile project will be successful. Due to prejudice, even within one's own organization, a proven structured test approach is occasionally simply discarded in agile projects.

But a structured test approach also benefits agile projects:

- It gives insight into and advice about any risks that may arise in relation to the quality of the system under test.
- Defects can be found and tracked at an early stage, providing a better insight into the root cause of the defect.
- Defects may be prevented from arising.
- While testing tasks still remain on the critical path, delays should have fewer consequences.
- Test products, such as test cases for example, can be reused.
- The test process is transparent and controllable.
- The automation of test cases can be pulled earlier into the project.

In the implementation of an agile approach, organizations find it difficult to gain a good overview of which parts of their current test approach can be reused, and which cannot.

For this reason, it happens all too often that the organization decides not to adopt any component at all. However, taking this approach means that the benefits described above cannot be realized.

Lack of footholds

The four values and twelve principles of the *Agile Manifesto* [AMF, 2001] say nothing concrete about a specific approach to system development or testing. An agile approach, such as scrum for example, scarcely provides a foothold to reach a method for integrating testing and for revealing the consequences for ‘professional testers’. In addition, real-life practice shows that the meanings of and the relations between lean, agile and scrum are not equally clear to everyone. It will be no surprise that the integration of a test and scrum approach does not always run smoothly.

TMap NEXT and Scrum

TMap NEXT [TMapNEXT, 2006] is a test method that consists of four essentials, seven phases and, as the basis, fifty-three activities. An important essential is the adaptivity of TMap. This enables TMap to be applied in a flexible way in any random context, thus making it suitable for almost all situations. In order to be able to apply TMap well in a certain situation, it may be necessary to alter, remove or supplement some activities and techniques. We understand that it is sometimes troublesome to keep a good overall view of the situation. That is why this book demonstrates how TMap can be integrated with the scrum approach to become a whole agile approach in which testing is integrated and not just part of it.

Vision

Experience has taught us that testing is not only an extremely important activity in a scrum approach, but has also led us to believe that testing must be fully integrated with this approach in order to be as agile as possible. In this book, we explain our vision and translate it to concrete applications. Thus, we regard testing not as a process running parallel to, but rather as an integral component of, the scrum approach.

Please keep in mind that both scrum and TMap are merely approaches that attempt to support the project team delivering a project on time, on quality and on budget. An approach can be adopted without any adjustment into a one-to-one structure, or can be taken as a guideline that is regularly re-aligned. In the first case, chances are that it will not work perfectly on all fronts, as all projects are different, and the approach will become a tight straitjacket that will eventually irritate. The second application requires more initial effort but it provides a tailor-made flexible framework, geared to a changing world.

Of the many scrum variants with different concepts, one variant in particular has been chosen here: that of Schwaber and Sutherland [DGS, 2011], because this is the one most frequently used and it provides a good basis to elaborate on, taking account of new insights. Where we deviate from Schwaber and Sutherland, we believe that the modified approach is an improvement, based on our real experiences.

All the suggestions in the book will probably have to be adapted to comply with your own specific situation and project requirements. However, we assume that, with this book and an explanation of our vision of testing in scrum, we can help you along the path to efficiency.

2

Target group, scope and reading instructions

The book is primarily intended for everyone who fulfills or is going to fulfill a testing role in an agile (particularly scrum) project and wishes to apply TMap NEXT there. If you do not have a role as a tester, but nevertheless would like to learn how lean, agile, scrum and TMap NEXT are mutually related, this book will also be of great use to you.

The book does not deal with the reasons why an agile approach should or should not be implemented in an organization, and which points of concern should be covered. We assume that you have chosen or will choose the approach, and you wish to know how you can integrate testing with that approach in order to work in the most agile way.

Neither does the book explain the TMap NEXT theory extensively. We take for granted that you already possess that knowledge, or you will acquire it from the TMap NEXT book [TMapNEXT, 2006].

2.1 Reading instructions

Chapter 1 'Introduction' contains a justification of this book, while Chapter 2 comprises the reading instructions, a reading tip, and acknowledgements.

Chapter 3 describes the relationship between lean, agile and scrum, and our vision of lean, agile and scrum, so that every reader of this book has the same point of departure.

The *Agile Manifesto* has a neutral attitude to testing. In order to connect testing to the *Agile Manifesto* we have formulated a test vision—Chapter 4, ‘Vision of testing in Agile’—that consists of four values, just like the manifesto itself [TAE, 2010]. This vision enables you to integrate testing into an agile approach.

Chapter 5, ‘TMap NEXT and Scrum’, forms the heart of the book. This chapter takes its reasoning from TMap NEXT and is certainly interesting to readers who know TMap. First, the relationship between the four TMap NEXT essentials and agile/scrum are outlined. Then there is a description of how the seven TMap phases form an agile entity with the scrum approach. Subsequently, an account is given of how the testing activities dovetail with scrum pursuits in each phase, and of the relationship with the scrum products. The chapter concludes with a number of deliberations such as: what is the role of the test manager in a scrum team and how should we evaluate test levels in a sprint?

Much of what you read in Chapter 5 is also described in Chapter 6, ‘Scrum and TMap NEXT’. But, in contrast to Chapter 5, Chapter 6 explains testing from a scrum approach and is, as such, interesting to readers who are already familiar with scrum and wish to read about this particular approach to the execution of test activities. In order to avoid repetition, Chapter 6 regularly refers to sections in Chapter 5—the heart of this book.

A worthwhile appendix to this book is presented in the supplement, ‘Agile testing, what can be borrowed from DSDM?’, in which our guest author Arie van Bennekum gives his view.

Reading tips

Specific interest in the various chapters will differ according to the target group. To assist you in choosing which chapters are relevant to your activities, we hereby include some reading tips.

We differentiate several target groups:

- A** You have a testing role—or you have been asked to design tests—in a scrum project, but you have little knowledge of scrum.
- B** You have a testing role—or have been asked to design test—in a scrum project and you have scrum expertise.
- C** You are interested in our vision on how to integrate testing with an agile approach.

D On the basis of your educational background, you are interested in the discipline of testing.

No	Chapter	A	B	C	D
Ch1	Introduction	√	√	√	√
Ch2	Target group, scope and reading instructions	√	√	√	√
Ch3	Lean, Agile and Scrum	√		√	(√)
Ch4	Vision of testing in Agile	√	√	√	√
Ch5	TMap NEXT and Scrum	√	√		(√)
Ch6	Scrum and TMap NEXT		√		(√)
Suppl	Agile testing, what can be borrowed from DSDM?	(√)	(√)	(√)	(√)
Explanation of table: √ = useful to the relevant target group to study the chapter thoroughly. The other chapters can be studied if desired (√).					

In the supplement entitled ‘Agile testing, what can be borrowed from DSDM?’, Arie van Bennekum presents his view, which is probably interesting to all target groups.

If you become more interested in this fascinating topic, you can consult several references that have been summarized in the literature list.

2.2 Acknowledgements

The authors wish to take this opportunity to thank everyone who has contributed to the content of this book. We thank in particular our guest author Arie van Bennekum and our co-authors Rob Baarda, Julya van Berkel and Bert Linker.

In addition, we express our gratitude to Nijs Blokland and Arie van Bennekum for their inspiring contributions.

The following people have provided much-appreciated input in the form of reviews: Nebosja Bojic, Sander Dollé, Frank Goorhuis, Christiaan Hoos, Sander Maas, Rik Marselis, René Roelands, Marija de Roo Jankovic, Ewald Roodenrijs, Ben Visser and Guido Wester. We thank Michiel Rigterink for the process supervision in the publication of this book, Ken

TMap NEXT® in Scrum

Brennock for reviewing the English translation, George Hall, and Peter ten Hoor and Minke Sikkema of *LINE UP boek en media*.

The book would not have been possible without the support of the management team of Software Control. In particular, we wish to thank Marco van den Brink and Hans Kapteijns, who gave us the leeway needed to write this book.

We have worked on this book with great enthusiasm and we are convinced that the integration of TMap NEXT® with a scrum approach in an agile way will represent a valuable addition to the agile and test world.

Leo van der Aalst
Cecile Davis

Vianen, 2013

6.8 Scrum and TMap in one overview

This chapter has demonstrated how the test activities are incorporated into the scrum approach. These are integrated with the scrum approach in a natural way so that testing is not a separate process with its own plans and activities, but is rather an integral component of the scrum approach. For a total overview of this situation, see Figure 27. The activities can also be carried out by other team members—with the exception of the team member(s) with the test role. Please note that, in the total overview, you can act in an adaptive way. Various activities are probably not relevant for your project or they may be executed at some other time, or you may have organization-specific activities. That is fine, the model is thus easily adapted to the situation within your own organization or project.

sprint 0	project planning	sprint planning
Formulation of DoD (and/or DoR, DoS)	Determine product risk of each backlog item and record it on the (story) card (input for planning poker, assigning story points)	Determine test strategy (test intensity and test design technique) for each backlog item
Make agreements about the inclusion of which test levels to include in the sprint (incorporate in DoD)	Evaluate backlog items and communicate obscurities with product owner	Place rows from the test strategy table as tasks on the scrum board (input for estimation of time)
Determine high-level product risk and project test strategy (input for project planning)	Set up test infrastructure as a technical product backlog item and add to product backlog (optional)	
Make high-level estimation of test effort (input for project planning)		
Training for test knowledge and/or test skills		
(Begin to) set up the test infrastructure including tools		
Set up testware management (include in DoD)		

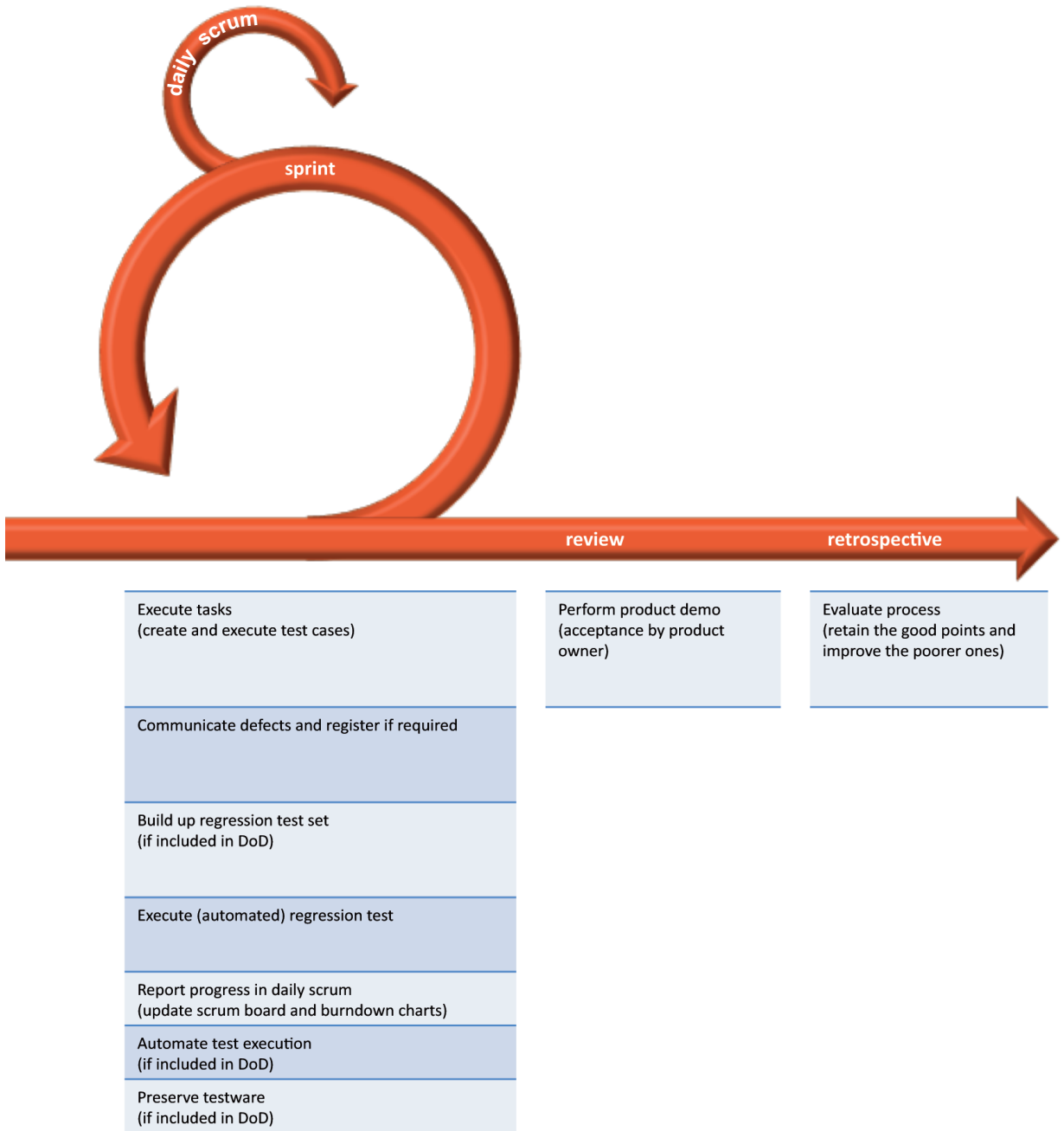


Figure 27. Total overview of test activities in the Scrum approach