# Agile Service Management with Scrum

On the way to a healthy balance between the dynamics of developing and the stability of managing the information provision

Bart de Best

Edited by Louis van Hemmen

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# You must learn from the mistakes of others. You can't possibly live long enough to make them all yourself.

Sam Levensen

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## An important sprint forward

Service management, as charted in recent years, focuses on services. Most important is that the (end) user is adequately served. One of the aspects that plays an important role in service is the functionality offered by applications. Crucial is that this functionality and quality seamlessly match the business processes of the user. This issue has been recognized since the 80's of the last century.

Through the use of case-tools, natural language simulations and prototyping, we now, by 2017, have found a new way of developing with Agile and Scrum's principles. In short, cyclical successes, along with the user, come to functionality that is desired / required. Even better: the most required functionality is first developed, thus making the essence visible to the user.

Well, then the question is: how does service management fit in? In response to this question, Bart carefully analysed the service management processes in order to find the central question which risks should be managed to deliver service in accordance with the Service Level Agreement (SLA) norms. This risk management is then depicted on Scrum's best practices. Based on this, he describes the recommendations for successful collaboration between management processes and an Agile development process, such as Scrum.

Finally, he acknowledges that not only the agile development process must be in order to meet customer expectations, but also the service management processes must be reduced to the actual essence: providing added value to the customer. At this point, Bart concludes this book with his vision to consider service management in an extremely agile manner and shape it by means of the requirement based process design concept.

With great pleasure I have taken note of the contents of this book. As an editor, it was a great challenge for me to keep the content on the one hand and barely enough, and on the other hand to provide an adequate response to a broad spectrum of common questions in the market on how to deal with service management in relation with the development of Scrum. And the result is there, a book that has been spelled out, yet suitable for different types of readers. Hopefully, as a reader, you will experience the exposures as useful and useful in your practice.

The practice is very obstinate, especially in the field of Scrum! If you have other or additional experiences with service management in cooperation with Scrum, we would love to hear from you!

Louis van Hemmen BitAll b.v.

### **Foreword**

From time to time, there has been a major change in the way we look at our development and service management processes. Besides the methods also the means and the people also change. The rising of thinking in Agile terms is not new, but bringing into practise of Scrum and Kanban in this area has been a huge escape in recent years.

Many organisations are now orientating themselves to this innovation, which often means that one wants to do something with such innovation, but exactly what is not clear. Other organisations have already begun with Scrum or Kanban but have not yet arrived in a stable phase, with this innovation crystallized and secured. In particular, the interface between development and service management is a green field.

With this book, I want to share my experiences with you. The book has an Agile structure. This means, for example, that it describes 'barely enough' what I want to transfer. I'm assuming in this book that you already have service management models in place. I do not explain them. I also assume that you already have some knowledge of Agile techniques. Because in the world of Scrum and Kanban many terms are used in different ways. This book gives an overview of these terms.

After the introduction, I first describe the three biggest bottlenecks that I signalled in the market. In short, these are the administrative inability caused by immaturity of the new system development processes, failure to achieve the intended return on investment due to the lack of metadata and finally, the problem to integrate solutions in complex information systems and chains of information systems. Then I give the definitions and describe the concepts used in this book.

The solution to these problems is in my view in analysing the risk control we know from the service management processes. In the past, these may not always be as effective and efficient, but are still valid. Whether these controls are now deployed in the service management processes or in an Agile development process, does not matter. As long as these controls are effectively and efficiently used, the identified bottlenecks can be prevented or resolved.

Before thinking about a solution, it is important to realize that not all innovative developments have to be realized with Scrum or other Agile developments. There are good reasons to tackle certain developments Agile and the others just through a classic (iterative) waterfall. For those developments that you want to pick up through an Agile approach, it's important that you first depict the Agile development process on your organisation. This can be achieved through a blueprint approach. It allows you to properly map the scope of the Agile development process and design the interface with other service management and development disciplines. I have included a general picture in this book.

Next, I describe the controls of service management processes that are relevant in the context of Scrum and other Agile approaches. Per control, I then describe the possible measure in the Agile development process. This will manage the three main bottlenecks and, moreover, many others.

Finally, in this book, I refer to my book 'Quality Control and Assurance', which states that a service management organisation only provides truly added value when all Agile service management processes are based on the concept of requirement based process design. This means so much that no functionality in a service management process is formed if this is not ratified by a stakeholder. In this way, we can also get the sting out of the argument that service management processes are bureaucratic and do not yield value to the customer.

For example, in the last chapter of this book, there are three cases that describe how in practice the relationship between Agile system development and service management can be shaped.

Of course, the list of risks and countermeasures described in the book is not complete. You can help me to supplement this by responding to this book and sharing your experiences with me, which I can be include in a subsequent edition of this book.

# **Appendix A, Scrum self-assessment**

## 1. Introduction

This appendix describes the self-assessment to determine the maturity of the Scrum development process. This chapter describes the scope, purpose, design and operation of self-assessment. The following chapter contains the assessment questions.

## 1.1 Scope

The successful setting up of a Scrum development process is mainly human work. The team organizes itself. Nevertheless, there are generic aspects to recognize in such a Scrum process. The work done by the team can be divided into maturity stages. Getting a Scrum development process working properly is not a sinecure, especially when the Scrum teams have to share information with each other and therefore have to coordinate the implementation. It takes a lot of time and perseverance to get the team to an effective and efficient implementation and to hold it. The drafting of a plan of approach for the design of the Scrum development process is therefore an important tool.

A useful approach here is to divide the plan of action into a number of phase plans, with each phase filling in a certain maturity level of the Scrum development process. To determine whether a level is reached, a yardstick must be used. The self-assessment can be used for this purpose. The self-assessment contains a number of questions for each level of maturity, on the basis of which it can be determined to what extent the Scrum development process meets the maturity level.

The questionnaire can be used by the Scrum master in the form of a self-assessment and by an auditor in the form of an audit questionnaire. The structure of the questions is kept the same as the ITIL v2 self-assessment, as published on the OGC website [http: OGC]. However, the questions are more detailed, because they are provided with help questions. Section 4.2.6 of this book describes how to complete this assessment. This appendix also contains only assessment questions per maturity level.

## 2. Scrum self-assessment

## 2.1 Level 1, Preconditions

Q#	Questionnaire	Y/N	M/O
Q1.0/1	Has a Scrum team been set up that creates new information systems and / or changes to it, based on an Agile approach?		М
	Q1. Which scrum teams are that?		
	Q2. Which (type of) applications are included?		
Q1.0/2	Have you identified the customers for your development services?		0
	Q1. Which customer group do you recognize?		
	Q2. Are all customers assigned to a product owner?		
	Q3. In which document are the provided services described?		
Q1.0/3	Has the interface been identified with the customer?		0
	Q1. What may a customer request, e.g. features / stories / service requests et cetera?		
	Q2. Is this interface also identified e.g. the product owner or the service desk?		
	Minimum score to reach this level is: 'Y' for all ('M') questions plus one 'Y' for the ('O') questions.	N	lo

Table A-1, Assessment level 1.

2.2 Level 1.5, Management intention

Q#	Questionnaire	Y/N	M/O
Q1.5/1	Is the purpose and benefits of the Scrum development process spread throughout the organisation?  Q1. How can this be recognized?		₫
Q1.5/2	Are there control data defined to make the Scrum process measurable?  Q1. Is the backlog controlled by the product owner?  Q2. What is the reliability of the scheduling of entries on the product backlog?		0
Q1.5/3	Are there any agreements regarding the sprint lead time and the amount of story points that are processed in a sprint?  Q1. How is it directed and reported?		0
	Minimum score to reach this level is: "Y" for all ('M') questions plus one 'J' for the ('O') questions.	N	lo

Table A-2, Assessment level 1,5.

2.3 Level 2, Process functionality

Q#	Questionnaire	Y/N	M/O
Q2.0/1	Are responsibilities assigned to the various Scrum development process activities (formally endorsed and is this known in the organization)?		M
	Q1. Who is the product owner and who is the Scrum master? Q2. Are the roles, responsibilities and competencies of these roles described?		
Q2.0/2	Has the scope of the Scrum development process been determined in terms of products and services?  Q1. Which products are supported?  Q2. What services are recognized?		М
Q2.0/3	Are there any mechanisms for monitoring the lead time of entries on the product backlog and the sprint backlog?  Q1. How does monitoring take place and how is this reviewed?		M
Q2.0/4	Are all feature requests from the customer verified for applicability and authorization?  Q1. How do you determine what a customer has rights to?		M
Q2.0/5	Do you have a procedure for handling the feature request from application to implementation?		М
Q2.0/6	Do you have a mechanism to improve the Scrum process (sprint retrospective at the end of a sprint)?  Q1. How do you deal with that?  Q2. Who governs it?		0
Q2.0/7	Do you have a mechanism for implementing continuous integration, regression testing and continuous deployment?		0

Q#	Questionnaire	Y/N	M/O
	Q1. Which mechanism is used, for example, a DTAP street? Q2. Has a complete flow been defined, such as integration, regression testing and deployment?		0
	Minimum score to reach this level is: 'Y' for all ('M') questions plus one 'Y' for the ('O') questions.	ľ	OV

Table A-3, Assessment level 2.

2.4 Level 2.5, Internal integration

Q#	Questionnaire	Y/N	M/O
Q2.5/1	Do you compare the delivered deliverables with the original (non) functional requirements?		A
	Q1. Do you register requirements, for example, in the format of a user story?		
Q2.5/2	Do you have a mechanism to reuse or update the (non) functional requirements for an application in case of a new increment?		М
	Q1. Do you determine the impact of a feature based on existing requirements?		
Q2.5/3	Do you use regression tests based on the requirements to determine whether the functionality and quality that have not been changed still meet the set requirements?		0
	Q1. Is there a relationship between requirements on the one hand and acceptance criteria and test cases on the other hand?  Q2. Is there a check in the DoD to determine whether the required requirements are met?		
	Minimum score to reach this level is: 'Y' for all ('M') questions plus one 'Y' for the ('O') questions.	N	o

Table A-4, Assessment level 2,5.

# 2.5 Level 3, Products

Q#	Questionnaire	Y/N	M/O
Q3.0/1	Are the standard acceptance reports regularly created and submitted to stakeholders?		M
	Q1. Which acceptance test types are recognized (FAT, User Acceptance Test (UAT) or Performance Stress Test (PST))? Q2. Will this be managed?		
Q3.0/2	Is the Scrum team's service explicitly defined and agreed including service levels and service norms?		0
	Q1. Where are these recorded and managed?		
Q3.0/3	Are the products and services recorded in a CMDB?		0
	Q1. Is there an administration of CIs in order to determine the impact and the risk of the requested feature requests?		
	Minimum score to reach this level is: "Y" for all ('M') questions plus one 'Y' for the ('O') questions.	N	lo

Table A-5, Assessment level 3.

2.6 Level 3.5, Quality assurance

Q#	Questionnaire	Y/N	M/O
Q3.5/1	Are the standards and other quality criteria applied by the Scrum team documented? Q1. Is there a determination of the DoD?		M
Q3.5/2	Are the team members of the Scrum team adequately trained?  Q1. Which employees?  Q2. What courses?		M
Q3.5/3	Does the organisation design and review the Specific, Measurable, Acceptable, Realistic, and Time-Based (SMART) goals for the Scrum development process and are the improvement points managed?  Q1. What goals are recognized (functionality, quality and maturity)?		0
Q3.5/4	Does the organisation use any tools to support the Scrum development process?  Q1. Which tools for continuous integration? Q2. Which tools for continuous deployment? Q3. Which tools for the regression tests?		0
	Minimum score to reach this level is: "J" for all ('M') questions plus one 'Y' for the ('O') questions.	N	lo

Table A-6, Assessment level 3,5.

2.7 Level 4, Management information

Q#	Questionnaire	Y/N	M/O
Q4.0/1	Do you provide management with information about service targets and current performance?		М
	Q1. What service norms are identified and what are you reporting? Q2. How do you report on the progress of feature requests and (epic) user stories? Q3. Are measures taken to correct service norm deviations? Q4. Can the product owner initiate organisational changes?		
Q4.0/2	Do you provide management with information about trends in velocity and service level shortcomings?		М
Q4.0/3	Do you provide management with information about standard services?		0
Q4.0/4	Do you provide management with information about number of requests for new services or changes to existing services?		0
	Minimum score to reach this level is: "Y" for all ('M') questions plus one 'Y' for the ('O') questions.	N	lo

Table A-7, Assessment level 4.

2.8 Level 4.5, External integration

Q#	Questionnaire	Y/N	M/O
Q4.5/1	Does the product owner involve the service level manager and availability manager when setting up service norms?		M
Q4.5/2	Does the product owner consult the service delivery and support processes such as capacity management and financial management during the negotiating of service levels and service norms?		М

Q#	Questionnaire	Y/N	M/O
Q4.5/3	Does a central risk and impact analysis take place through a change management process in case there are heterogeneous features (more Scrum teams involved)?		0
	Minimum score to reach this level is: "Y" for all ('M') questions plus one 'Y' for the ('O') questions.	No	

Table A-8, Assessment level 4,5.

# 2.9 Level 5, Customer interface

Q#	Questionnaire	Y/N	M/O
Q5.0/1	Do you check with the user whether the activities performed by the Scrum team adequately meet the needs of the business?		M
Q5.0/2	Do you check with the users if they are satisfied with the offered services?		₹
	Q1. How do you check this?		
Q5.0/3	Do you actively monitor the trend in customer satisfaction?		M
Q5.0/4	Do you use the information from customer satisfaction surveys in your service improvement agenda?		
	Q1. How do you use the information?		
Q5.0/5	Do you monitor the perception of the customer regarding the services offered to them?		M
	Q1. How do you monitor the perception of the customer?		
	Minimum score to reach this level is: 'Y' for all ('M') questions.		o

Table A-9, Assessment level 5.

# **Appendix B, Literature list**

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Table B-1, Literature list.

# **Appendix C, Glossary**

The Scrum and Kanban concepts are not included in this list because they are already described in Chapter 3. The terms with an underscore are references to terms that are also defined in this appendix C.

Term	Explanation
ASL	ASL is a framework for application management. This model describes how application management can be implemented based on operational, tactical and strategic management processes.
Balanced scorecard	The balanced scorecard is a control model depicting critical success factors and performance indicators in four perspectives, namely: the financial perspective, internal perspective, innovation perspective and customer perspective. This control model is used by many companies to monitor the chosen strategy.
BiSL	Business information Services Library, is the first and only public standard for functional management and information management. BiSL explains the processes and activities necessary to send information from user and business options. It is a coherent framework, focusing on both operational, tactical and strategic processes, as well as mutual relationships (definition www.ITSMF.nl).
CAB	The Change Advisory Board is an advisory body within the Change Management process. In the CAB, change requests are authorized, scheduled and released for production.
CFIA	The Component Failure Impact Analysis is an analysis technique that links a ICT service to the ICT components involved. On the basis of this, weak spots in the ICT infrastructure can be found and countermeasures can be taken.
Change Management	Change management is the implementation of changes in the ICT infrastructure in such a manner that disturbances in ICT services as a result of changes are prevented or minimized.
CRAMM-analysis	A CRAMM analysis is performed to determine the risks of a product or service. The threats and vulnerabilities are based on the product or service concerned. A countermeasure must be devised of any identified risk.
Generic Acceptance Criteria	Generic acceptance criteria are the requirements that the service management organisation imposes on the ICT products and ICT services to be used. The generic acceptance criteria are based on the critical success factors of the service management organisation's service management processes.
	These acceptance criteria are called "Generic Acceptance Criteria" because they are information system independently defined. They can even be defined organisation independently by choosing a commonly used reference model like ITIL.
ITIL	ITIL is a set of best practices focused on managing ICT infrastructures.
Critical success factor	A critical success factor is a factor that affects the extent to which the goal of a process is achieved.
Measurement requirements	An acceptance criterion should indicate how to determine whether the information system complies with the acceptance criterion.
Performance indicator	A performance indicator is a means that makes a critical success factor measurable. A performance indicator must be able to assign a norm and a measurement unit.

Term	Explanation			
RACI	Responsible, Accountable, Consulted and Informed (RACI) is a way of making tasks, responsibilities and powers of a process clear. This is also called RASCI, with the 'S' for Supportive '.			
Review	The term has two meanings in this book:  • a way of accepting;  • a way to verify whether a process is correct implemented and performed.			
RFC	1	Change (RFC) is a change request to get a new em or change an existing one.		
SLA	and the ICT ser	A Service Level Agreement (SLA) is an agreement between a customer and the ICT service provider about the ICT services to deliver in terms of quantity, quality and cost.		
Specific Acceptance Criteria	Specific acceptance criteria are the requirements that the user organisation imposes on the ICT products and ICT services to be used. The specific acceptance criteria are based on the critical success factors of the user organisation's business processes. These acceptance criteria are called "Specific Acceptance Criteria" because they need to be determined by organisation and even by product.			
SMART	Specific	A concrete and clear target with described results.		
	Measurable	The desired results are measurable in terms of, for example, time, cost and / or other quantitative criteria.		
	Acceptable	The goal is acceptable and achievable in both the eyes of the one who determines the target as the one who has to achieve the target. The 'A' also stands for 'Accountable', someone must be responsible for the intended purpose.		
	Realistic	The target is realistic (achievable) and relevant given the environment / circumstances within which the goal is to be achieved.		
	Time-bound	The goal is to measure progress towards the goal in terms of milestones and time.		
SPOF	A Single Point of Failure is component in a system that is causing potential disturbance. The intended solution of a SPOF is to double the relevant component. A SPOF analysis therefore includes the analysis of single-run components in a system.			
Test case	A test case describes what needs to be tested. Both logical and physical test cases are recognized. The logical test case describes 'what' to be tested, the physical describes 'how to be tested'.			
Test scenario	A collection of test cases that are related to each other. For example, a test scenario that is defined for a use case.			

Table C-1, Glossary.

# **Appendix D, Abbreviations**

Abbreviation	Meaning
ALM	Application Lifecycle Management
ASL	Application Services Library
BiSL	Business information Services Library
CAB	Change Advisory Board
CI	Configuration Item
CIA	Confidentiality, Integrity and Availability
CCTA	Central Computer Telecommunications Agency
CEMLI	Configuration, Extension, Modification, Localisation, Integration
CFIA	Component Failure Impact Analysis
CI	Configuration Item
CIA	Confidentiality, Integrity, and Accessibility
CMDB	Configuration Management DataBase
CMM	Capability Maturity Model
CMS	Configuration Management System
CRAMM	CCTA Risk Analysis and Management Method
CRC	Cyclic Redundancy Check
CSI	Continual Service Improvement
DAP	Dossier Agreements and Procedures
DevOps	Development & Operations
DML	Definitive Media Library
DoD	Definition of Done
DSDM	Dynamic Systems Development Method
DTAP	Development-, Test-, Acceptance- and Production environment
EPD	Electronic Patient Dossier
ETL	Extract Transform Load
EVO	Evolutionary Project Management
FAT	Functional Acceptance Test
FiFo	First in First Out
FTA	Fault Tree Analysis
ICT	Information & Communication Technology
IT	Information Technology
ITIL	Information Technology Infrastructure Library
ILM	Infrastructure Lifecycle Management
LCM	LifeCycle Management
CEMLI	Configuration, Extension, Modification, Localisation, Integration
NFR	Non Functional Requirement
OGC	UK Office of Government Commerce
OLA	Operational Level Agreement
PBI	Product Backlog Item
PID	Project Initiation Document

Abbreviation	Meaning
PRINCE2	PRojects IN Controlled Environments
PST	Performance StressTest
RACI	Responsible, Accountable, Consulted and Informed
RASCI	Responsible, Accountable, Consulted, Supportive and Informed
RFC	Request For Change
ROI	Return On Investment
RFC	Request for Change
RPO	Return Point Objective
RTO	Return Time Objective
RtV	Route to Value
SaaS	Software as a Service
SAFe	Scaled Agile Framework
S-CMDB	Software Configuration Management DataBase
SIP	Service Improvement Programme
SKMS	Service Knowledge Management System
SLA	Service Level Agreement
SMART	Specific, Measurable, Realistic, Accountable and Timely
SPoC	Single Point of Contact
SPoF	Single Point of Failure
SQL	Structured Query Language
SQP	Service Quality Plan
TDD	Test Driven Development
UAT	User Acceptance Test
UC	Underpinning Contract
VSM	Value Stream Mapping
WIP	Work In Progress
XP	eXtreme Programming

Table D-1, Abbreviations.

# **Appendix E, Websites**

Reference	URL
htpp Dialogueincubator	http://www.dialoguesincubator.nl/wp-content/uploads/2011 /06 /Scrum.pdf
http Blog	http://blog.coryfoy.com/2011/07/recreating-Scrum using-kanban-and-explicit-policies/
http Blogspot	http://abcdsliithswkprojects.blogspot.nl/2013 08 01 archive.html
http Fastlane	https://blog.codecentric.de/en/2014/07/devops-product- ownership/#more-23866
http IBM	http://www.ibm.com
http Netobjectives	http://www.netobjectives.com/blogs/real-differences-between-kanban-and-Scrum.
http OGC	http://www.cabinetoffice.gov/
http Onion	https://myAgilemind.wordpress.com/2011/10/28/what-does-the-planning-onion-mean-to-you/
http Scrumallicance	http://www.Scrumalliance.org/why-Scrum
http Wiki	https://nl.wikipedia.org/wiki/Agile-softwareontwikkeling#Agile-methoden

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## **About the author**



Bart has been active in ICT since 1985. He worked primarily with the top 100 of Dutch business and government organisations. He has acquired experience in different roles within all aspects of system development, including operations for 12 years. After that, he focused on the subject of service management. Currently, as a consultant, he is active in all aspects of the knowledge management cycle of service management, such as training ICT managers and service managers, advising service management organisations, improving service management processes and outsourcing (parts of) service management organisations. He graduated at both the HTS and University level in the management field.

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- External Spec Sheet (ESS)
- Internal Spec Sheet (ISS)
- Service Quality Plan (SQP)
- Service Improvement Program (SQP)

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