
Agile SW Entwicklung
Scrum – Einführung
Sommersemester 2017

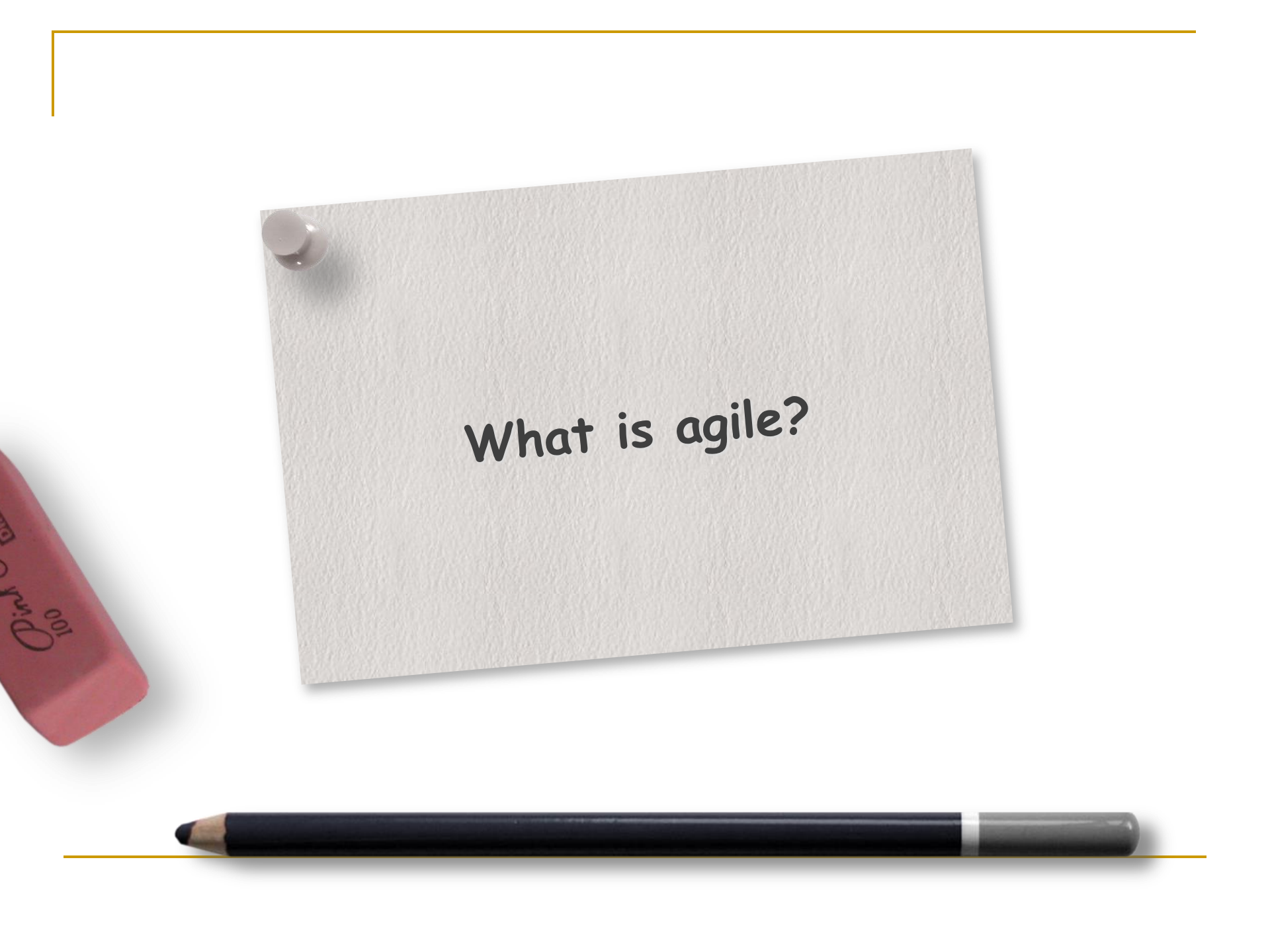
Prof. Adrian Müller, PMP, PSM-1, CSM

Hs Kaiserslautern

phone: +49 631/3724-5329 <http://www.hs-kl.de/~amueller>

Inhalte

- Agile Modelle
 - Manifesto
 - Übersicht
 - Scrum Übersicht
 - Rollen:
 - product owner
 - scrum Master
 - scrum Team
 - Aufgaben der Rollen
 - Daily scrum, review, retrospective
 - „grooming“ product backlog
 - Sprint
 - sprint planning
 - sprint backlog
 - Release Planning
 - Planning Poker
 - Release Plan
 - Velocity
 - Burndown Chart
 - Release Burndown Bar
 - Eigenschaften
 - Skalierung
 - Referenzen
-



What is agile?

Lean Management



Black Magic

Black Magic II



Warum funktioniert "klassische" Planung so schlecht?

■ Parkinson's Law

- Work will fill the amount of time allotted to complete it

■ Student Syndrome

- Work will not begin until the latest possible opportunity

Um ein Projekt zeitlich "vor die Planung" bringen zu können müssten die Entwickler eines tun: tasks schnellst möglich starten.

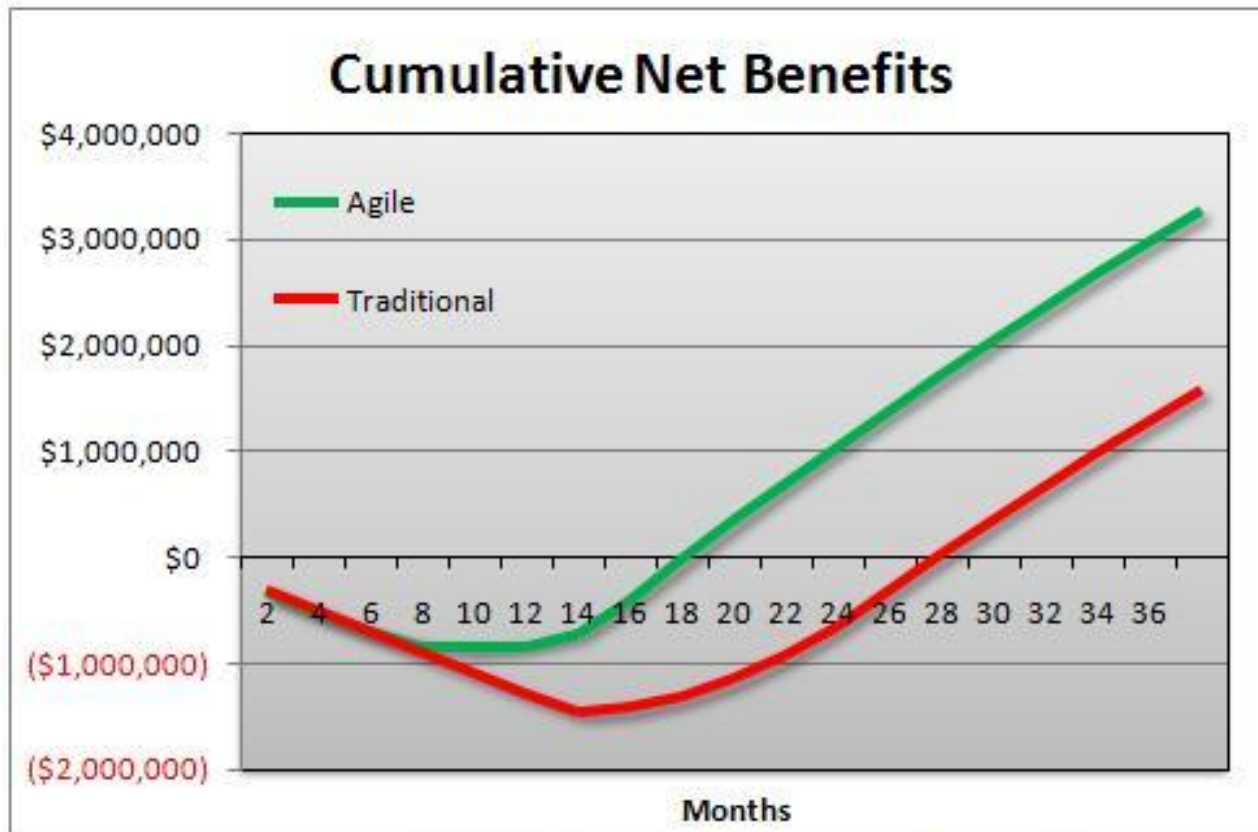
Klassische Pläne zeigen errechnete, optimale Start und Ende - Zeitpunkte

Task Name	Duration	Start	Finish	Predecessors
[-] Create Locate Request	8 days	Fri 3/24/06	Tue 4/4/06	
Analyze	1 day	Fri 3/24/06	Fri 3/24/06	
Design	2 days	Mon 3/27/06	Tue 3/28/06	3
Develop	2 days	Wed 3/29/06	Thu 3/30/06	4
Test	2 days	Fri 3/31/06	Mon 4/3/06	3
Fix bugs	1 day	Tue 4/4/06	Tue 4/4/06	6

In Wirklichkeit warten wir ab und fangen einen task erst an, wenn wir fühlen, dass noch genügend Zeit da ist, um ihn abzuschließen



Agile vs. Traditional: cash flow



	Savings	Traditional	Agile
Year 1 ROI	8%	0%	52%
Year 2 ROI	18%	82%	185%
Year 3 ROI	26%	186%	280%
Payback (months)		26	18
NPV	\$481,261	\$1,884,172	\$3,595,280

Evaluierung: Einsatz Agiler Methoden

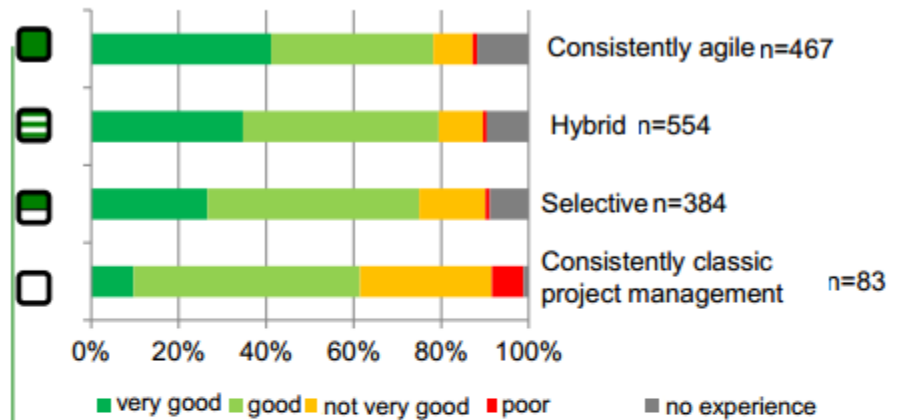
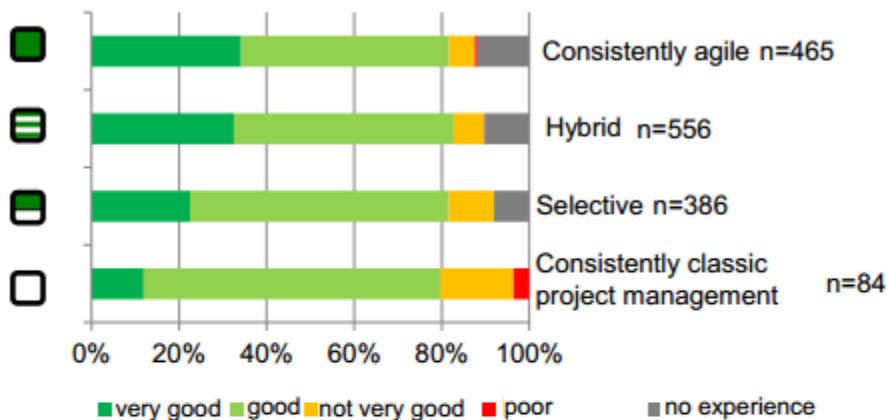
Quelle: „Status Quo Agile 2014“, Prof. Komus, HS Koblenz

http://www.lpva.lt/cms/files/lpva/resources/4362_2014.07.23_Agile_tyrimas.pdf (offline since 2016)

All Groups

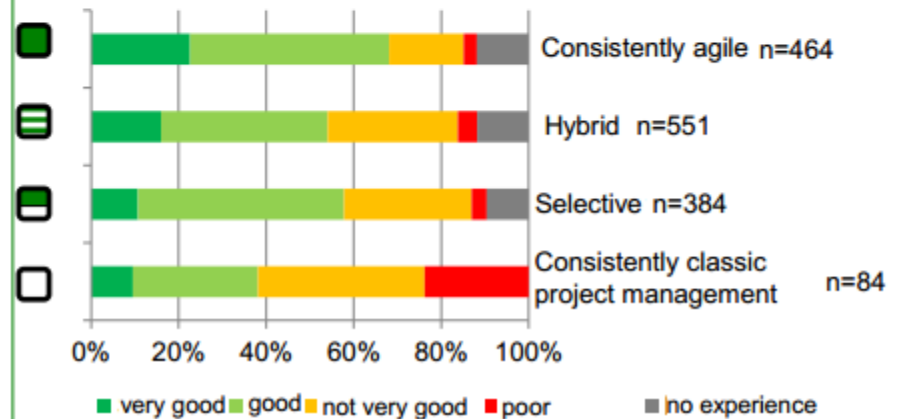
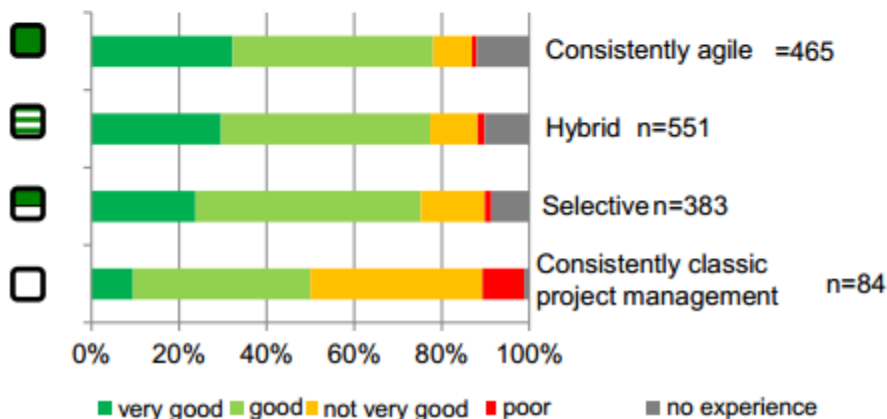
Quality of results

Teamwork



Employee motivation

Adherence to schedule



Manifesto for Agile Software Development

We are uncovering better ways of developing software by doing it and helping others do it. Through this work we have come to value:

- Individuals and interactions over processes and tools
- Working software over comprehensive documentation
- Customer collaboration over contract negotiation
- Responding to change over following a plan

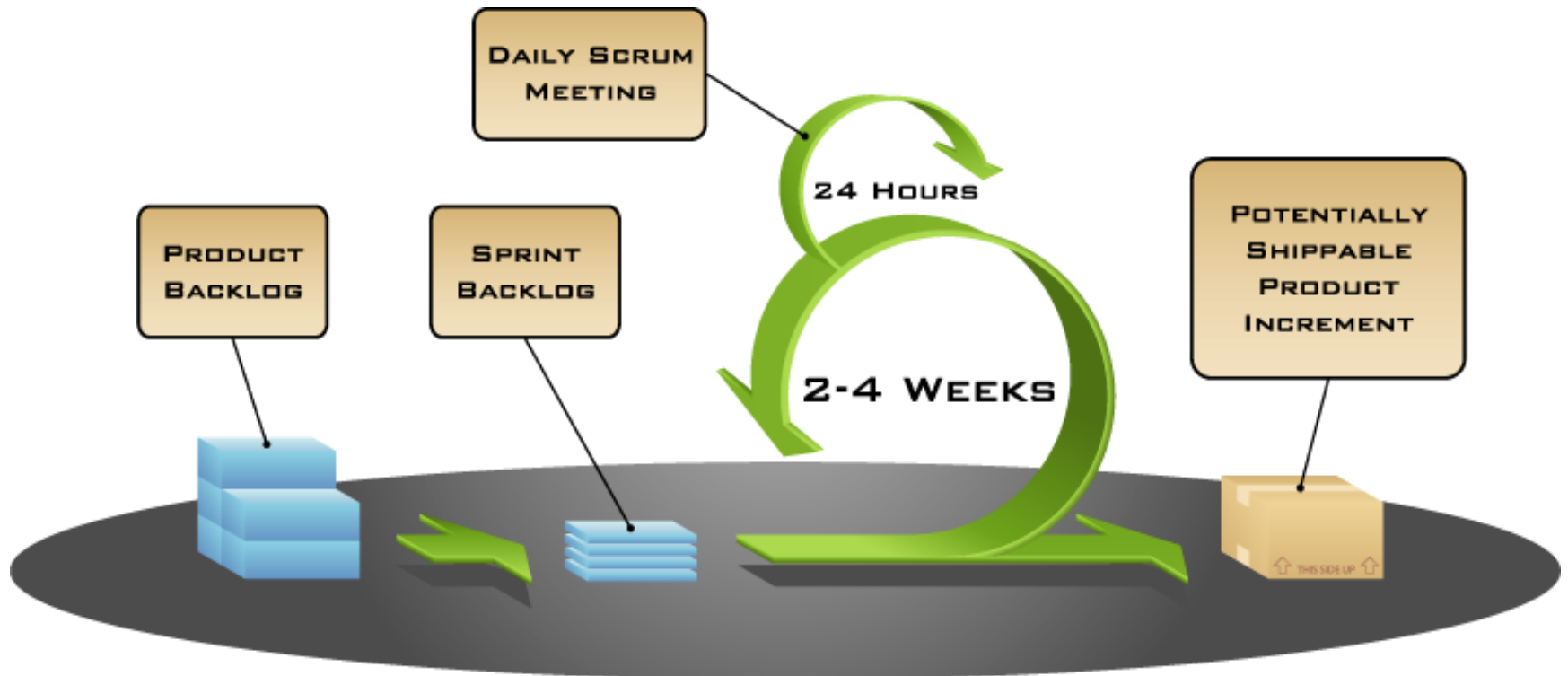
That is, while there is value in the items on the right, we value the items on the left more.

Kent Beck	James Grenning	Robert C. Martin
Mike Beedle	Jim Highsmith	Steve Mellor
Arie van Bennekum	Andrew Hunt	Ken Schwaber
Alistair Cockburn	Ron Jeffries	Jeff Sutherland
Ward Cunningham	Jon Kern	Dave Thomas
Martin Fowler	Brian Marick	



Scrum - Überblick

Quelle: Mountain Goat Software



Scrum framework

Roles

- Product owner
- ScrumMaster
- Team

Ceremonies

- Sprint planning
- Sprint review
- Sprint retrospective
- Daily scrum meeting

Artifacts

- Product backlog
- Sprint backlog
- Burndown charts

Scrum framework

Roles

- Product owner
- ScrumMaster
- Team

Ceremonies

- Sprint planning
- Sprint review
- Sprint retrospective
- Daily scrum meeting

Artifacts

- Product backlog
- Sprint backlog
- Burndown charts

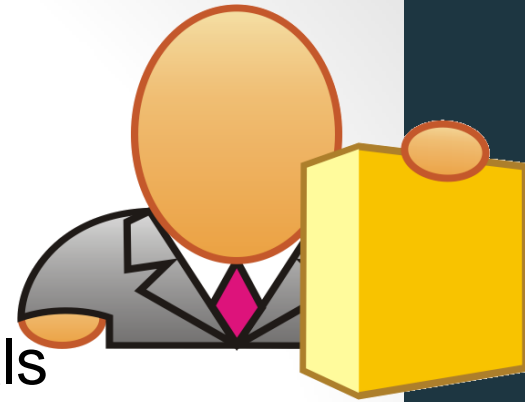
Scrum Team

- Self-organizing
- Cross-functional with no roles
- Seven plus or minus two
- Responsible for committing to work
- Authority to do whatever is needed to meet commitment
- Membership should change only between sprints



Product Owner

- Decide on release date and content
- Monitors the project against its stated goals and financial vision.
- Sets development schedule by prioritizing backlog
- Can be influenced by committees, management, customers, sales people, but is the only person that prioritizes
- Works with others to estimate items on Product Backlog
- Eliminates confusion of multiple bosses, different opinions, and interference
- Accept or reject work results



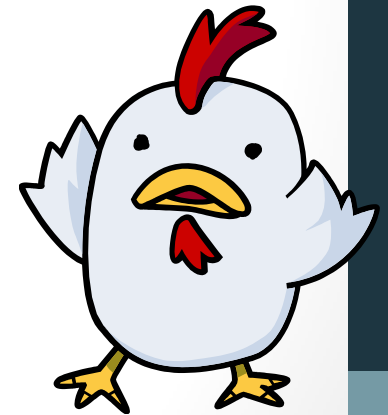
Scrum Master

- The **Scrum Master** is responsible for
 - enacting Scrum values and practices
 - shielding the team and removing obstacles
 - support the Product Owner
 - representing management to the project
- See Ian, The Scum Master @ <http://www.youtube.com/watch?v=P6v-I9VvTq4>



Chickens & Pigs

- Members of Scrum Team are known as **Pigs** because they are **committed** to delivering Sprint Goal
-
- People who are **involved** but not dedicated to the project are known as **Chickens** - they attend Scrum meetings as observers



Scrum framework

Roles

- Product owner
- ScrumMaster
- Team

Ceremonies

- Sprint planning
- Sprint review
- Sprint retrospective
- Daily scrum meeting

Artifacts

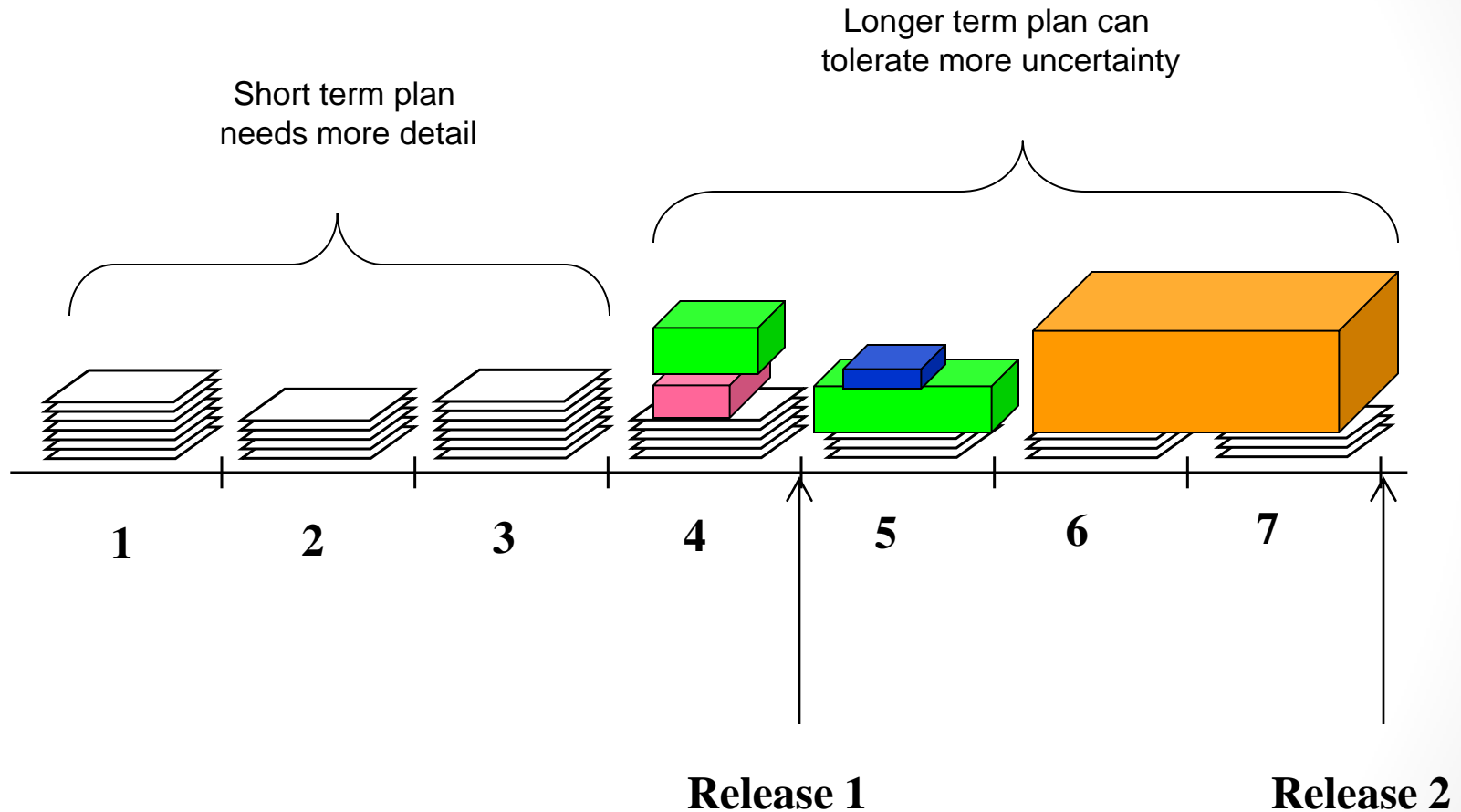
- Product backlog
- Sprint backlog
- Burndown charts

Product Backlog: Einträge

As a vacation planner, I want to see photos of the hotels so that I can get an impression of its style and quality.

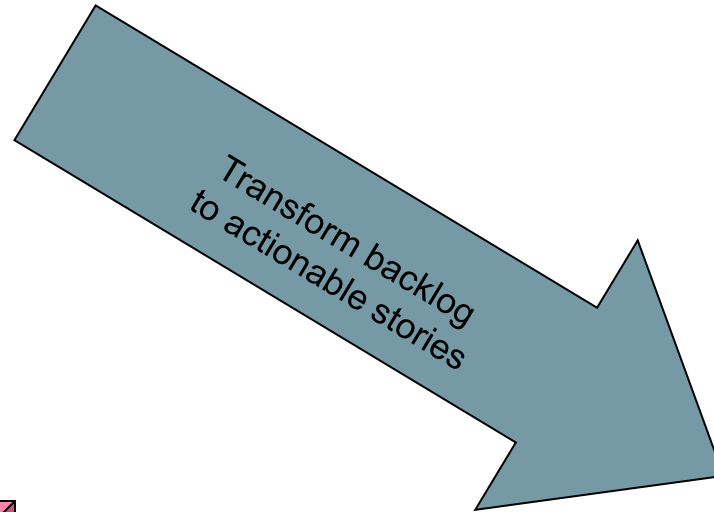
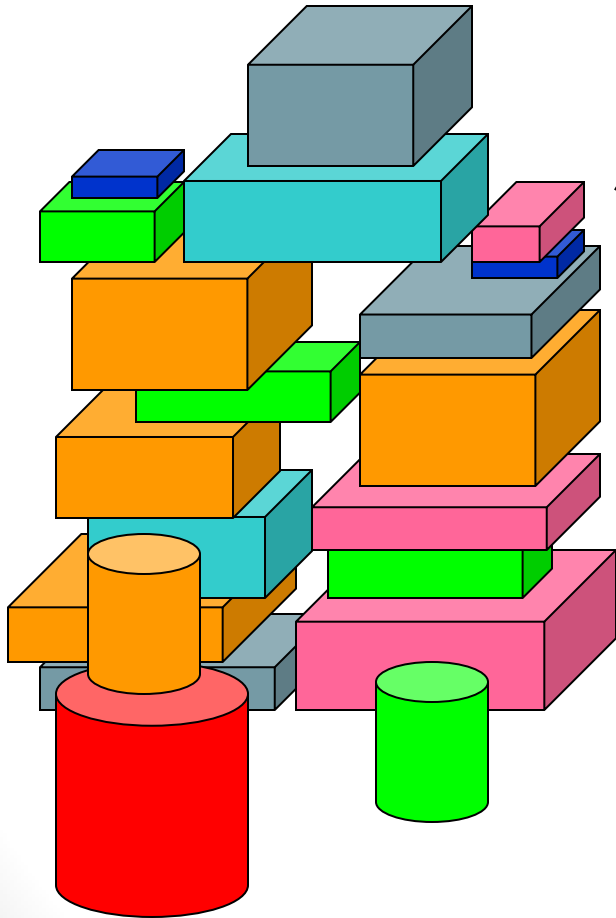


Product Backlog



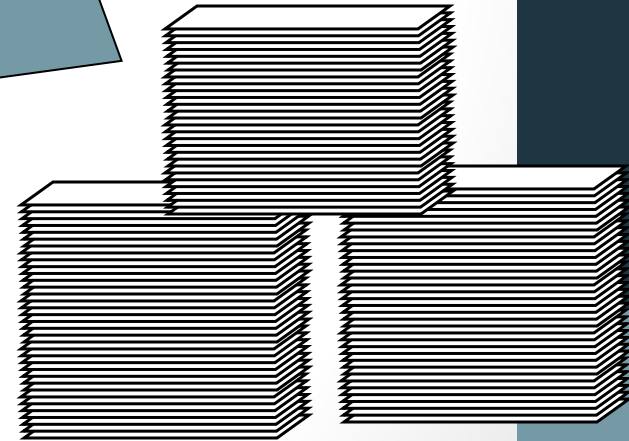
Stories Refine the Product Backlog

Backlog items come in many shapes and sizes



Transform backlog
to actionable stories

Stories are small,
and only come in
a few sizes



Sprint Planning – Teil 1

Quelle: <http://www.muehlemann.com>



A sample product backlog

Backlog item	Estimate
Allow a guest to make a reservation	3
As a guest, I want to cancel a reservation.	5
As a guest, I want to change the dates of a reservation.	3
As a hotel employee, I can run RevPAR reports (revenue-per-available-room)	8
Improve exception handling	8
...	30
...	50

Jobwechsel



Story Points

Quelle: Mike Cohn

Die häufigste Schätzeinheit in agilen Teams

Basis ist eine Kombination von Größe und Komplexität der Arbeit

Es gibt keine definierte Grundeinheit , aber

- Eine 10-point user story wird vermutlich doppelt so lange dauern wie eine 5-point story
- Die Einheiten können addiert werden. Das gilt für Zeitschätzungen nicht!

A sample product backlog

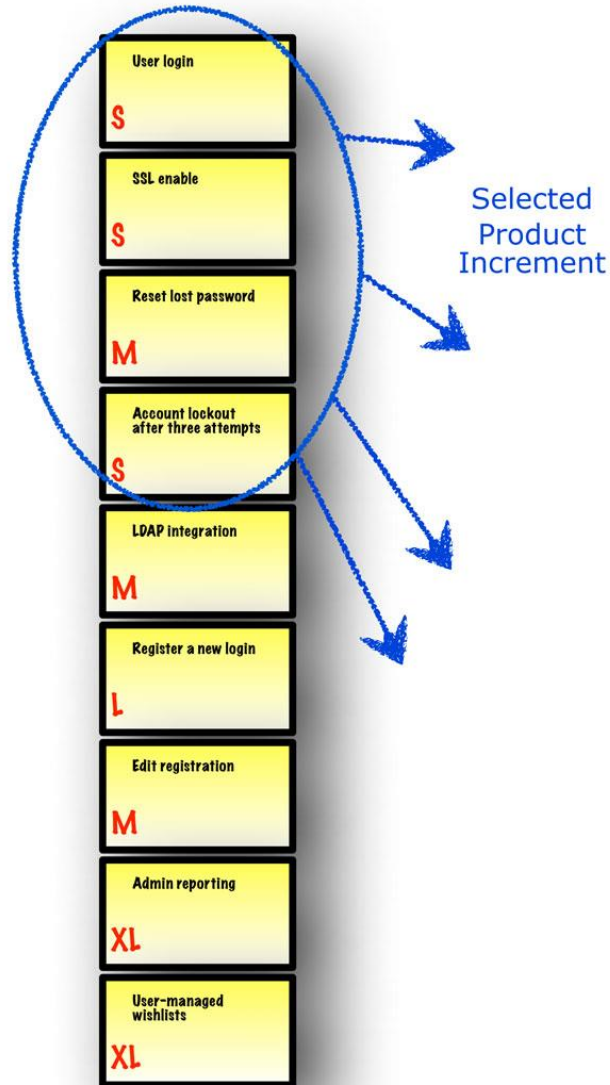
Backlog item	Estimate
Allow a guest to make a reservation	3
As a guest, I want to cancel a reservation.	5
As a guest, I want to change the dates of a reservation.	3
As a hotel employee, I can run RevPAR reports (revenue-per-available-room)	8
Improve exception handling	8
...	30
...	50

Sprint Planning – Teil 2

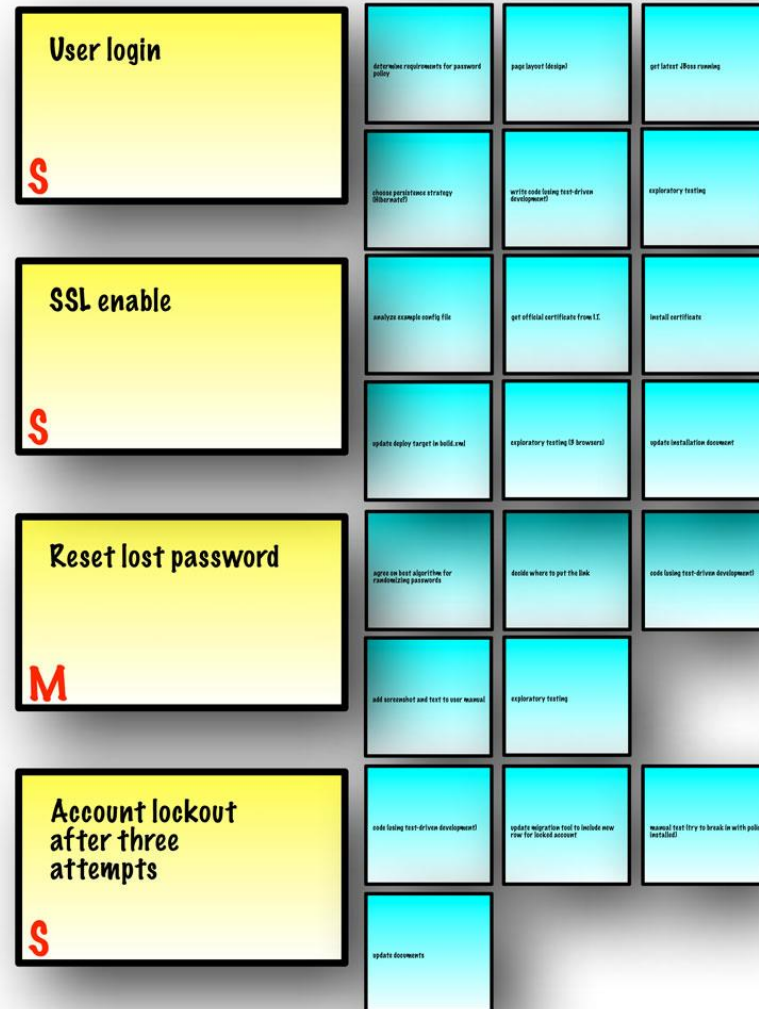
Quelle: <http://www.muehlemann.com>



Product Backlog



Sprint Backlog



Generic Taskboard: Track by Story

Quelle: <http://www.mountaingoatsoftware.com/taskboard.php>

Story	To Do	Tests Ready	In Process	To Verify	Hours
A user can... 5	Code the ... 8 Code the ... 5 Test the ... 6	X	Code the ... SC 6 Code the ... DC 4	Code the ... LC 2	31
A user can... 2	Code the ... 8 Code the ... 5				13
A user can... 3	Code the ... 3 Code the ... 6	X	Code the ... MC 4		13

Number of story points

Number of hours left

Real Taskboard:

Track by Story

Quelle: <http://www.mountangoatsoftware.com/taskboard.php>



Daily Scrum, Sprint Ausführung

Sprint Ausführung

Daily Scrum



Daily 15 minute status meeting

Team **stands** in a circle facing each other

For synchronization not problem solving!

Each team member answers 3 questions:



Everyone answers 3 questions

1

What did you do yesterday
to achieve the sprint goal ?

2

What will you do today?

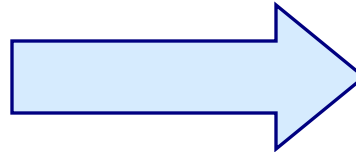
3

Is anything in your way?

Zusammenfassung:

Was sind die Einheiten im Product- vs. Sprint Backlog?

Product Backlog (Stories)		
Iteration 1	As an investor, I want to...	3
	As an investor, I want to...	5
Iteration 2	As an investor, I want to...	5
	As a visitor I want to...	1
	As an investor, I want to...	2
Iteration 3	As a visitor I want to...	3
	As a visitor I want to...	3
	An investor I want to...	2



Sprint Backlog (Tasks)	
Define test cases	4
Code UI	8
Code middle tier	12
Code stored procedures	12
Automate tests	6

Hours

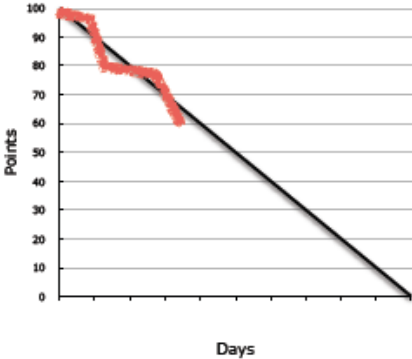
Story Points or
Ideal Days

No work in progress

To Do:	Doing:	Done!
<div style="background-color: #4CAF50; color: white; padding: 5px; border-radius: 10px; display: inline-block;">Kaizen</div>	<div style="border: 1px solid black; background-color: #ADD8E6; padding: 5px; width: fit-content; margin: 5px auto;">Daily Clean Code</div>	
<div style="background-color: #A52A2A; color: white; padding: 5px; border-radius: 10px; display: inline-block;">Buffer 3</div>	<div style="border: 1px solid black; background-color: #ADD8E6; padding: 5px; width: fit-content; margin: 5px auto;">Sales Support 3pts</div> <div style="border: 1px solid black; background-color: #ADD8E6; padding: 5px; width: fit-content; margin: 5px auto;">Marketing Demo 5 pts</div>	<div style="border: 1px solid black; background-color: #ADD8E6; padding: 5px; width: fit-content; margin: 5px auto;">Fix Bug 2 pts</div> <div style="border: 1px solid black; background-color: #ADD8E6; padding: 5px; width: fit-content; margin: 5px auto;">Fix Bug 2 pts</div> <div style="border: 1px solid black; background-color: #ADD8E6; padding: 5px; width: fit-content; margin: 5px auto;">White Paper 5 pts</div> <div style="border: 1px solid black; background-color: #ADD8E6; padding: 5px; width: fit-content; margin: 5px auto;">Customer Downfall 13 pts</div>
<div style="border: 1px solid black; border-radius: 15px; padding: 5px; display: inline-block;">Deposit</div>		
<div style="border: 1px solid black; border-radius: 15px; padding: 5px; display: inline-block;">Migration Tool</div>		
<div style="border: 1px solid black; border-radius: 15px; padding: 5px; display: inline-block;">Backend Login</div>		
<div style="border: 1px solid black; border-radius: 15px; padding: 5px; display: inline-block;">Backend User Admin</div>		

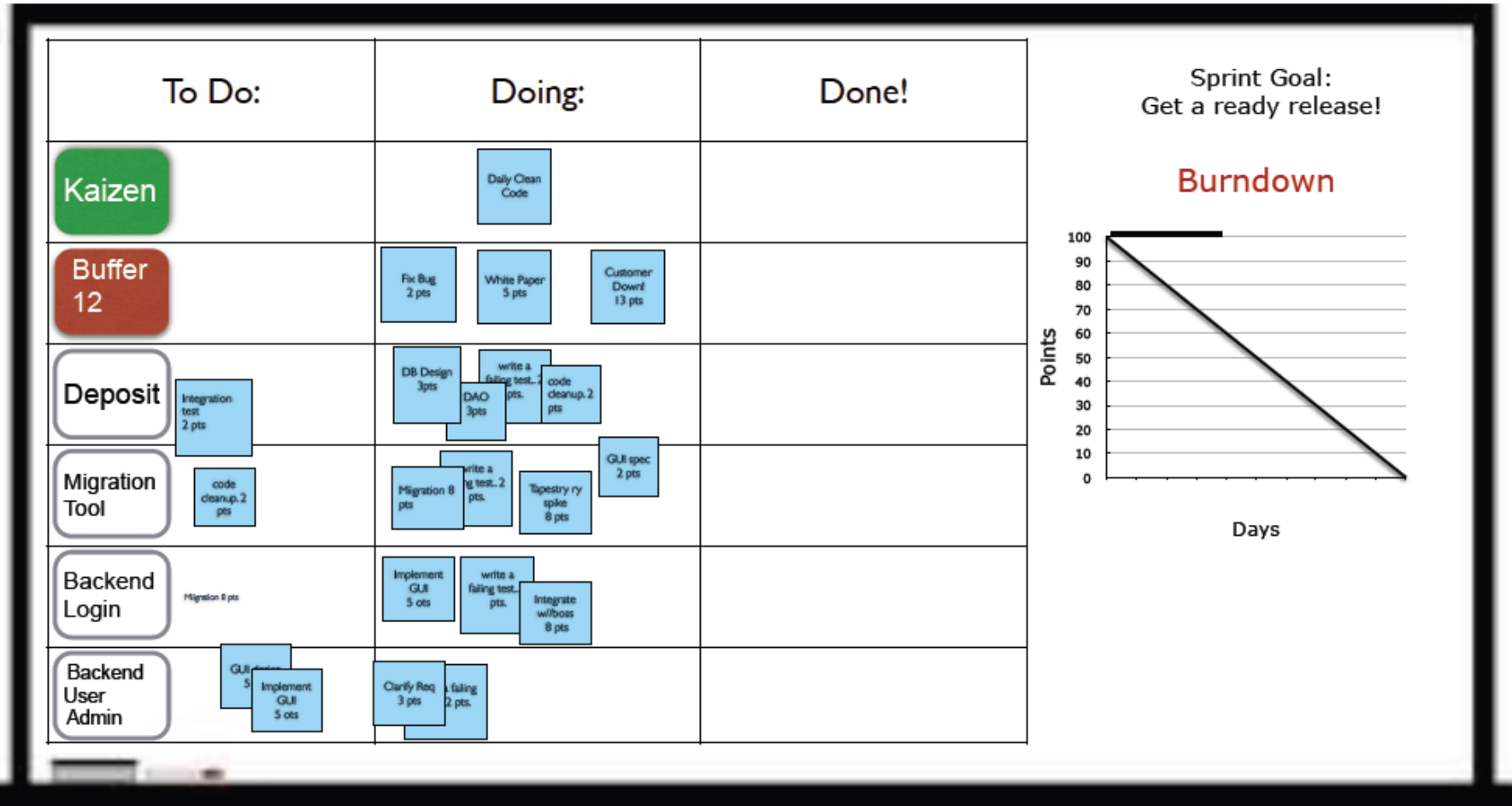
Sprint Goal:
Get a ready release!

Burndown

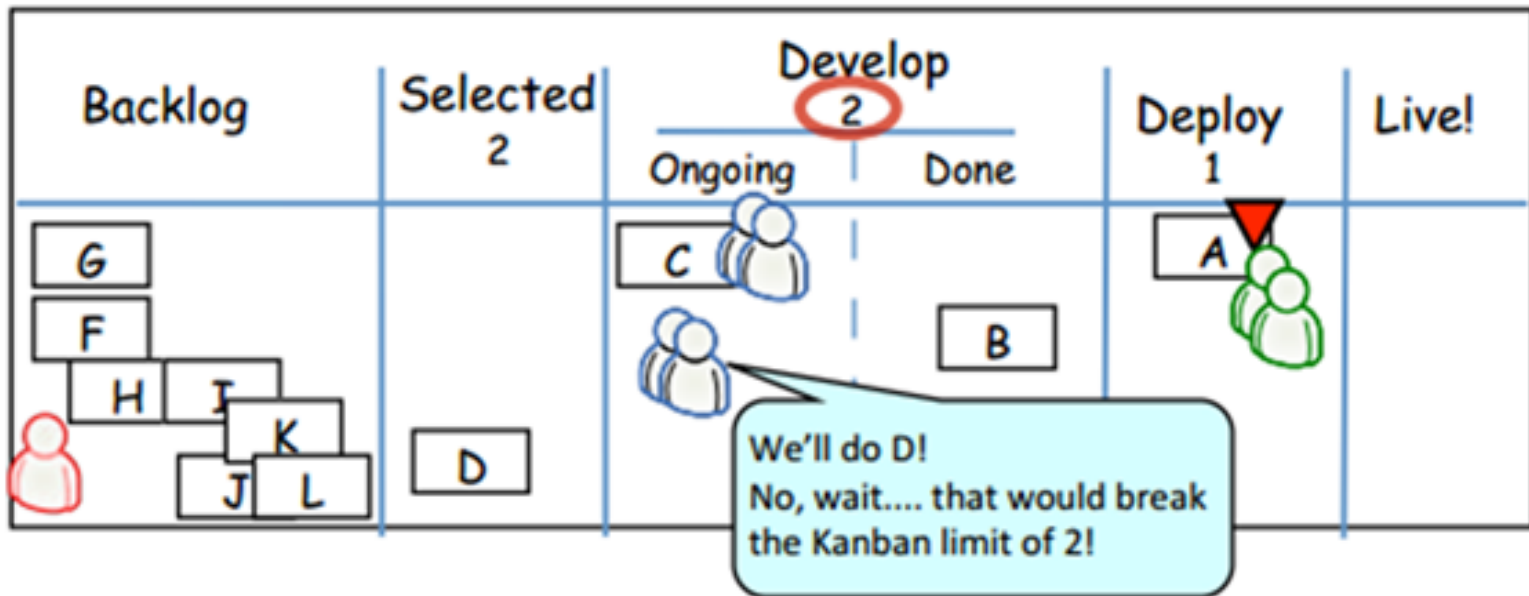


Taskboard Exercises

Too many stories in progress

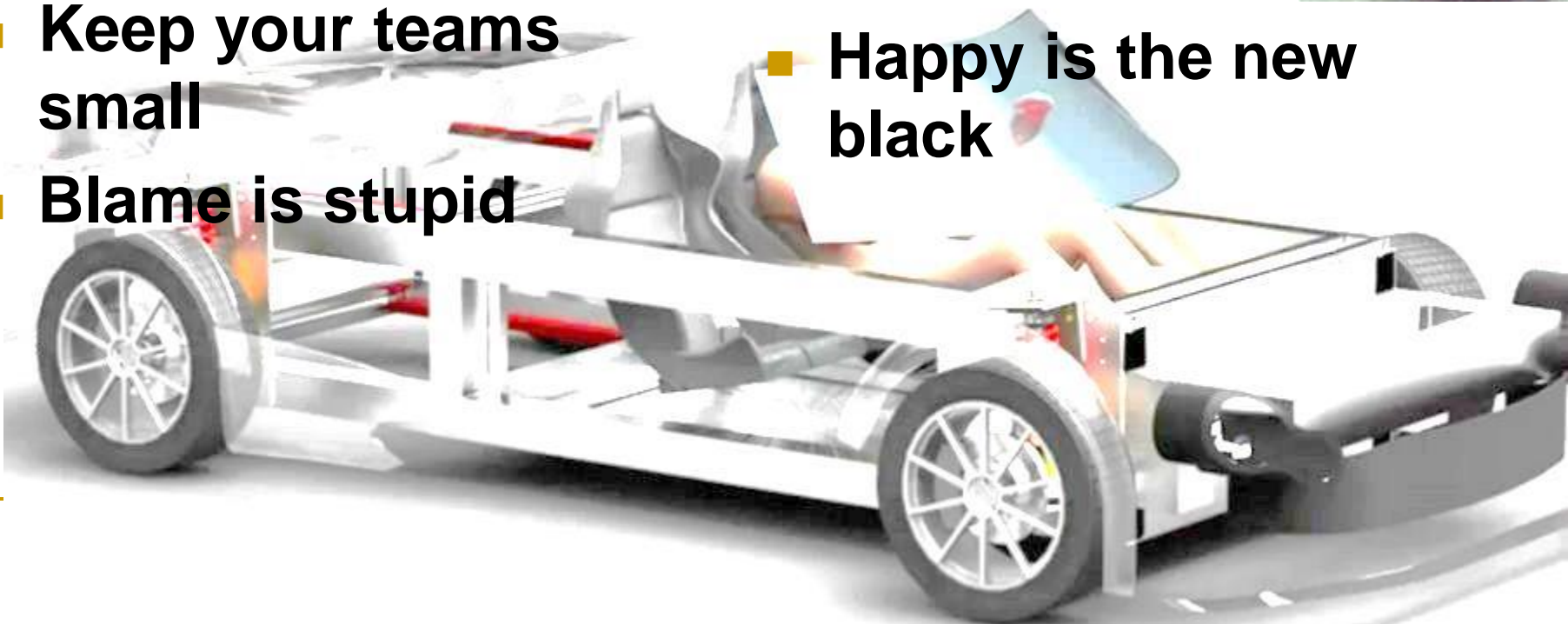


Ein Vergleich: Kanban



„Scrum in der Praxis“

- 20% percent of the features, 80% of the value
- Change or die
- Keep your teams small
- Blame is stupid
- Half Done is not done
- No heroics, no assholes
- Happy is the new black



Quellen

- „**Agile Softwareentwicklung**“, W-G. Bleek; H. Wolf, dpunkt Verlag, 2008
- „**Objektorientiertes Testen und Testautomatisierung in der Praxis**“, Uwe Vigenschow, dpunkt Verlag, 2004
- „**Extreme Programming explained**“, Kent Beck, Addison-Wesley, 2000
- „**Refactoring: Improving the Design of Existing Code**“, Martin Fowler, Addison-Wesley, 1999
- „**Java Extreme Programming Cookbook**“, Eric M. Burke & Brian M. Coyner, O'Reilly, 2003
- „**Scrum - The Art of Doing Twice the Work in Half the Time**“, Jeff Sutherland, Crown Business, 2015
- “**Fully Distributed Scrum: Linear Scalability of Production between San Francisco and India**“, Sutherland, Jeff; *Agile Conference, 2009. AGILE '09*

Quellen „Case Studies“

- Benefield, Gabrielle; *Rolling out Agile in a Large Enterprise*, Proceedings of the 41st Hawaii International Conference on System Sciences, 2008.
- Bright, Peter; *How Microsoft dragged its development practices into the 21st century*, [www.arstechnica.com](http://arstechnica.com), 2014, <http://arstechnica.com/information-technology/2014/08/how-microsoft-dragged-its-development-practices-into-the-21st-century/>.
- Green, Peter; *Adobe Premiere Pro Scrum Adoption: How an agile approach enabled success in a hyper-competitive landscape*. 2012, <http://blogs.adobe.com/agile/files/2012/08/Adobe-Premiere-Pro-Scrum-Adoption-How-an-agile-approach-enabled-success-in-a-hyper-competitive-landscape-.pdf>

Online Quellen

- <http://www.scrumguides.org/> In 30 Sprachen, zum Download und online verfügbar
- <https://www.scrum.org/About/All-Articles/articleType/ArticleView/articleId/724/Scrum-Update-2013>
Änderungen im Scrum Update 2013 gegenüber der Fassung von 2011
- <https://www.scrum.org/Resources>
Zentrale Stelle für Informationen
- <http://www.xprogramming.com>
- <http://www.extremeprogramming.org>
- <http://www.pairprogramming.com>
- <http://www.martinfowler.com>
- <http://www.refactoring.com>

Videos

- Jeff Sutherland
 - Zur Grundidee von Scrum <http://www.youtube.com/watch?v=O7cA1q0XwhE>
 - Best practices for scrum <http://www.youtube.com/watch?v=jQULZDTDG8Q>
 - Was ist das product backlog review in Scrum (pull principle):
<http://www.youtube.com/watch?v=iwkb56GQg9Q&feature=related>
 - Fallstudien (auch: Google, Google ad word)) von XP und Scrum Projekten: Hyperproductive Distributed Scrum Teams (Google tech talks)
<http://www.youtube.com/watch?v=Ht2xclJrAXo> 0:53'
 - Scrum Tuning: Lessons learned from Scrum implementation (Google tech talks)
http://www.youtube.com/watch?v=9y10Jvruc_Q 1:00'

- Mike Cohn: Agile Estimation (Google tech talks)
 - Bay XP Meeting Part 1: Agile Estimation, Mike Cohn
<http://www.youtube.com/watch?v=fb9Rzyi8b90> 1:02'
 - Bay XP Meeting Part 2_ Agile Estimation_ Mike Cohn
<http://www.youtube.com/watch?v=jeT0pOVg0EI> 0:32,

- Martin Fowler
 - Agile's adaptive nature and the people-first orientation
<http://www.martinfowler.com/articles/newMethodology.html>

Anhang:

Zusammenfassung und Wiederholung

- Vgl. auch:
<http://scrumreferencecard.com/scrum-reference-card/>