Table of Contents

The Power of Scrum

In the Real World

For the Agile Scrum Master,

Product Owner, Stakeholder and Development Team

By

Paul VII

© 2012 by Paul VII

Published by

PASHUN PUBLISHING

A division of

Pashun Consulting Ltd.

PO Box 36033

London

England

www.pashunconsulting.com

Introduction

Way back when this book was just an idea, it was very important to me that it was more than just a scrum theory book. There are three practices that have consistently helped others understand why scrum is a worthwhile framework to use:

1. Explaining the scrum rules clearly
2. Being as concise as possible in my explanation (but poking fun every now and again of course)
3. Explaining <u>how</u> these scrum rules can help to make projects a success

The last point, for me, is in some ways the most important reason why I became a scrum master, and why I felt passionate enough to write this book. I feel that it is important for us to understand what makes each scrum rule so powerful. That way we can have confidence that scrum is not just another marketing stunt, but an easy to understand framework for running successful projects.

Whether you are a scrum master, product owner, team member, business stakeholder or simply someone who wants to understand what makes scrum tick, this book is for you.

- Part I: an overview and recap of the scrum rules and practices
- Part II: a more detailed look at the power of scrum with real world tips and experiences from blue chip companies

Every chapter includes:

1. A concise, clear explanation, giving you a firm foundation in scrum
2. Nuggets of knowledge based on real industry experience
3. A brief insight into everyday situations that you won't find in every scrum book

So where does this experience come from? Has it been tried and tested? What evidence is there to back up the text? Well let's kick off with a little history of who I am.

I write this text as a certified scrum master with experience in international blue chip companies dating back to 1999. That experience includes leading projects for the BBC, General Electric, Oracle, BSkyB, HiT Entertainment (responsible for Angelina Ballerina, Bob the builder and other titles that you love watching with your kids or siblings but won't admit to) and Razorfish. These roles have all involved leadership on a wealth of mobile, internet TV and web software projects. I have played the role of scrum master and in the earlier years, of team lead and technical lead. I have had the privilege of running projects and rolling out working practices in market leading organisations from start to finish.

My career began before agile and scrum methods were widespread in the industry and this gave me the benefit of leading and working on projects using non-agile methodologies such as PRINCE 2 and waterfall. For this reason, I have seen both sides of the story and can give good reasons why I ended up on the scrum side of it. Having used both agile and non-agile variants, I can honestly say that the scrum framework, when fully understood and used as its creators intended, has been the most successful framework for delivering a quality product. At the same time it gives ambitious businesses the flexibility to change requirements as needed in this modern world.

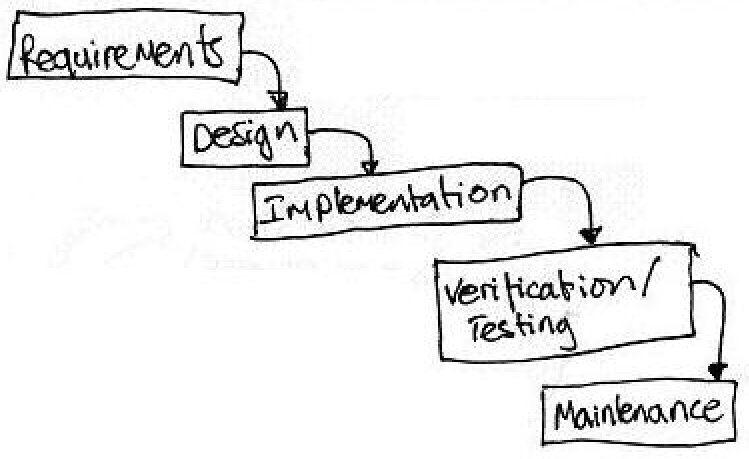
Based on this experience, rest assured that I appreciate the deadlines, requirements challenges, technical complexities and learning challenges that projects throw up with or without the scrum framework. I also see how this can apply to people at all levels, from the developer to the executive to the average person who has heard about scrum before and wants to know how it can help them to organize projects.

The principles of Scrum are simple to understand, but the real challenge comes when helping others to understand and trust such a simple framework to deliver quality products, maximise return on investment and still be fun at the same time (yes, really!). So how can a framework be so simple, yet so powerful? How can it save failing projects and carve structure out of chaotic projects, even in complex blue chip companies? Well let's get straight into the next chapter and all will become clear. Then you can start to put this knowledge to practice. Enjoy!

PART I

Scrum In a Nutshell

Chapter 1. The World Before Agile and Scrum



The Waterfall Model

Although the scrum framework can be used to deliver any type of project, it is most often used to manage software development projects. It is well-known that many such projects use what is known as the waterfall model to organise and deliver. This process consists of upfront contiguous phases. The requirements (or analysis) phase in which an analyst will usually gather the requirements for the product, the design phase in which the code and other artefacts are planned or modelled, the implementation phase where the designs are put into practice to build the product, the testing phase where testers make sure that the product meets the requirements to a high degree of quality and then finally the product is released to the public. After the product is released there is on-going support and maintenance in a live environment which can also be considered a phase (albeit a continuous one).

As the diagram shows, this process flows neatly from one phase to another like a waterfall (and believe it or not, that’s where the name “waterfall” came from). The waterfall model has been seen as an industry standard process for running software projects for decades and on first glance it makes perfect sense. However, there are some fundamental flaws with this method.

If the requirements change after the requirements phase, then this has a knock on effect to the other phases. Therefore, the launch date becomes more difficult to hit. On top of that, the bulk of the defects and issues are not usually found until the test phase. This often delays launch, since more time is needed to fix bugs. How could you ever forecast exactly how many defects you will find? You cannot exactly, and so this situation usually leads to overtime, low moral and a last-minute scramble towards the end of the project. It is possible that a piece of software sitting on your tablet, phone or computer, has also been developed this way. Don't you feel sorry for the teams?

Most (if not all) people who work on software projects would agree that requirements rarely (if ever) remain fixed for the long-term. This means that either the process is interrupted to add requirements (causing annoyance and delays to the team), or that the business agree not to make any requirements changes. This is not an amiable solution, since change is often a reaction to market conditions and is often a good thing. Changing requirements can increase the business' return on investment, which usually has a good knock on effect for the company and employees. In practice, the former situation is usually the case, as businesses will usually aim to change requirements and worry about the problems later. However, neither situation is good, and in the end everybody involved in the project wants the best possible outcome. It builds everyone's self-esteem to see quality work in the public domain as opposed to a "software nightmare".

On top of these factors, the waterfall method has to deal with other obstacles (as any development method would) such as unclear requirements, unrealistic deadlines and inaccurate estimates. Even the number and calibre of people working on the project can change. A common culprit is known as "people pinching". Skilled team members can start off working on Project A, then due to either new priorities or “gentle pressure” from other project managers, key people are poached by Project B. This reduces the ability to deliver Project A on time or to the scope agreed. In business, things can change rapidly, so change management is always key to success.

After decades of projects being run using the waterfall model, it was clear that many companies were facing these issues and some changes were needed to manage change keep projects running smoothly.

In scrum, these (and other) issues are known as impediments or blockers. Collectively, these blockers can cause chaos on projects if allowed to, and make the experience “less than a pleasure” shall we say. Recognising these blockers, a group of thought leaders joined forces to create new, iterative, “agile” methods of working. One such method was scrum.

The Birth of Agile

The term “agile” is one that is often used and misused in the software development industry. Given that agile is so closely related to scrum, let us nail down exactly what agile means and how it is relevant in the context of scrum.

By the end of the 1990s there was a broad consensus of ‘thought leaders’ who recognised the short falls of waterfall (no pun intended) software development. Many of them founded their own new ‘iterative’ methods of software development. Iterative development is fundamentally different from waterfall. As opposed to upfront phases with lots of upfront requirements gathering, iterative methods contain mini phases of requirements, design, implementation, testing and delivery within a number of weeks. This allows the business to release a few features early and make some return on investment. They also get to discover potential issues early and change requirements far more often. Working in iterations also allows the project to react to “people pinching” through periodic re-planning.

Many of these iterative methods were also lightweight, since their founders believed in performing the simplest task possible to solve any given problem. Contrary to popular belief, before the term agile was coined there were already many such methods (of which scrum was one) such as XP, DSDM, crystal and FDD.

In the year 2000, seeing the range of iterative and lightweight methods, a group of industry thought leaders named the Object Mentor Group, called a meeting at Snowbird Ski Resort in Utah. In short, each invitee agreed on a consensus of principles that were common to all of them. This consensus was named the Agile Manifesto and reads as follows:

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.

This manifesto was accompanied by a set of principles, agreed to by all.

Our highest priority is to satisfy the customer through early and continuous delivery of valuable software.

Welcome changing requirements, even late in development. Agile processes harness change for the customer's competitive advantage.

Deliver working software frequently, from a couple of weeks to a couple of months, with a preference to the shorter timescale.

Business people and developers must work together daily throughout the project.

Build projects around motivated individuals. Give them the environment and support they need, and trust them to get the job done.

The most efficient and effective method of conveying information to and within a development team is face-to-face conversation.

Working software is the primary measure of progress.

Agile processes promote sustainable development. The sponsors, developers, and users should be able to maintain a constant pace indefinitely.

Continuous attention to technical excellence and good design enhances agility.

Simplicity--the art of maximizing the amount of work not done--is essential.

The best architectures, requirements, and designs emerge from self-organizing teams.

At regular intervals, the team reflects on how to become more effective, then tunes and adjusts its behaviour accordingly.

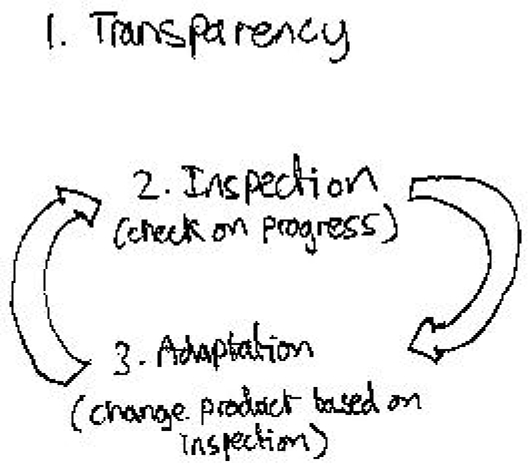
The detail of each of these principles is beyond the scope of this book, but needless to say, through this agreement the term agile was born.

In summary, agile is not an alternative to scrum, but an umbrella term for a set of methodologies and frameworks that share a manifesto and a set of principles. Scrum is one such framework.

Chapter 2. Introducing Scrum

In Ken Schwaber and Jeff Sutherland's (two of the original founders of scrum) Scrum Guide, they describe scrum as

"a framework for developing and sustaining complex products"


1. Transparency
2. Inspection (check on progress)
3. Adaptation (change product based on inspection)

Scrum consists of self-organising, cross-functional teams. Simply put, this means that the teams consist of a group of people who each have different areas of expertise but work together for the same outcome. A project manager does not control them, since their expertise empowers them to make decisions collectively.

The teams work in iterations, which allows the business the flexibility to change their requirements but still gives the development team the certainty it needs to deliver a working piece of the product. This is one key thing that makes scrum powerful.

Scrum takes its name from the analogy to rugby where a team work together in a chaotic environment to keep control of a ball. This can be compared to a team working together in a chaotic environment to keep control of a project.

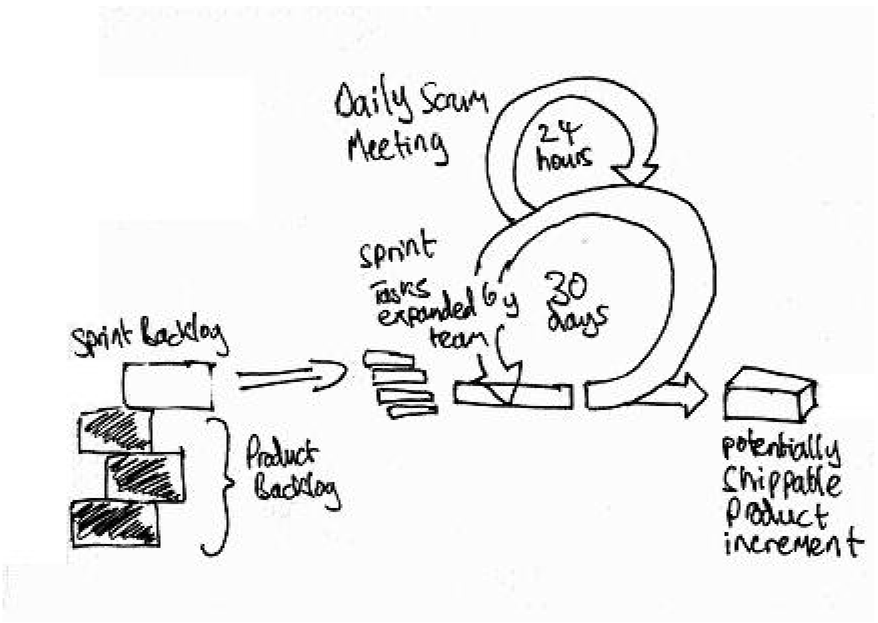
Scrum Theory

"History repeats itself, unless you do something about it!"

Scrum is based on empirical process control theory. The idea is very simple so do not let the name worry you. It consists of three principles: transparency, inspection and adaptation. The idea is that the scrum team, agree to be transparent (honest) in all that they do on the project.

Being transparent means that functionality is not ‘done’ until it meets the development team’s definition of done. Transparency builds trust between the team members. Once the team have agreed on transparency, they agree to consistently check up on progress (inspection) and make improvements based on what they have seen (adaptation). These can be improvements in practices, sticking to values, communication or otherwise. This is powerful stuff in industry, the ability to consistently inspect and adapt. In that way they are improving time and time again before, during and after the release of a product. This is something that was not possible with the waterfall model of development.

Scrum Skeleton



The scrum skeleton is a very quick and easy way to explain the process to someone, so I will use it to explain the process to you.

On the left side of the skeleton, we see the product backlog, which is nothing more than a list of all the features (and their acceptance criteria) that the business desires for the product. A subset of that backlog, called the sprint backlog is taken on by the team, broken down into tasks, and worked on in an iteration called a sprint. A sprint is a period of time less than thirty days in length and in that time, the team work on their tasks until they develop a working increment of the product.

Remember those mini phases of the waterfall I described earlier? Well this is where it all takes place. There is some requirements gathering and specification update before the sprint, then design, implementation and testing. Above the large sprint circle, you will see a smaller circle. This represents the fact that every day the team meet to inspect on progress and adapt their plan for the day in a daily scrum meeting. At the end of a sprint, the potentially shippable increment of the product is delivered. The business can review the increment in a sprint review and then release the new feature(s) to the world if they so wish.

The team then discuss (transparently) their progress during the sprint in a sprint retrospective (inspect) so they can improve (adapt) on things that need improvement or retain things that are going well. The cycle then begins again and repeats until the product owner has nothing more to add to the product backlog.

The scrum skeleton demonstrates the simplicity and power of scrum as a mini factory, churning out shippable features each sprint.

Scrum Team Roles

Scrum simplifies projects down to only three roles. Remember? One of the benefits of this framework is keeping things simple. The three roles are:

- The scrum master
- The product owner
- The development team

These three roles form the scrum team.

The Scrum Master

The scrum master's purpose is to understand the scrum rules and practices, remove any impediments or blockers to the team delivering and to help the team to understand how to self organise and work in a scrum manner. The scrum master facilitates for the scrum team wherever it makes sense to do so. The scrum master is your go-to guy in terms of how the scrum framework should operate, and this applies to anyone in the organization.

The scrum master usually understands how to aid the product owner in maximising return on investment from the business and he helps the team to work together to be as productive as humanly possible and deliver a shippable increment of the product.

The Product Owner

The product owner is responsible for creating requirements on behalf of the business. He prioritises based on business needs and is responsible for managing the product backlog, which is the list of all the features that the business requires in the finished product. The product owner is responsible for making decisions that maximise return on investment and for making priority calls or trade-offs to maximise the product's value.

The Development Team

The team are responsible for building a potentially shippable product increment in each sprint. Scrum is clear that there are only three roles in the scrum team. It does not go into the specifics of all of the different possible knowledge experts within the development team, because the idea is that if push came to shove, team members would collaborate to perform tasks outside of their role to deliver the product.

The development team are self-organising and collaborative, as well as skilled in whatever is needed to deliver the project. For example, in a typical technical project you might have developers, graphic designers, and user experience specialists working together in a sprint to create a product increment.

One key difference between scrum and many other frameworks is that the development team are explicitly experts in their field as opposed to controlled resources. They look to the scrum master for coaching, guidance and the removal of impediments. They look to the product owner for clear requirements, prioritisation and trade off calls.

Development Team Size

One important fact that is often overlooked, is the optimum size of the team. Scrum teams are usually small because it helps them to be more cohesive, and communicate efficiently. The optimum size is seven plus or minus two (in other words, between five and nine). This is not a number that just materialised over a chat in the local bar. It is based on experience of thought leaders who have been doing team based work for years. From my experience, having tried and tested these team sizes, I can stand by them as numbers that create highly productive teams. However, as you know, there is no substitute for common sense in these cases.

Time-boxes (Events) and Rules

You may not be familiar with the term ‘time-box’. A time-box is a period of time dedicated to a specific event in scrum. In the new scrum guide, the term time-box has been renamed ‘event’, but as the term ‘time-box’ is prevalent at this time, I will continue to use it.

Part of the scrum master's role is to carry out time management very strictly. This means beginning and ending meetings and sprints on time and helps the team to maximise their productivity.

Scrum has a number of time boxes and I will outline them briefly, as there is far more detail on them in the remainder of this book. It is the scrum master’s role to organise and facilitate all of these events:

Sprint

A sprint is a period of time less than four weeks in length, during which the team build a shippable increment of the product.

Sprint Planning Meeting

The team plan the work that they will do in the upcoming sprint. The meeting lasts no more than four hours for a two-week sprint. There are two halves to the meeting, the “what” and the “how”. In the first half of the meeting, the product owner presents the list of features that he would like the team to deliver from the product backlog. He explains them and the team ask questions. Eventually they pick the features they believe they can commit to in the sprint. In the second half of the meeting, the team break the stories into tasks and estimate them. In this way, they design their work and decide how they will build the product increment. They may adjust and negotiate which stories they can commit to with the product owner but finally they will make a commitment for the sprint.

Daily Scrum

This is a daily meeting, lasting no more than 15 minutes. One by one, each development team member answers the following questions (asked by the scrum master): What did you do yesterday? What do you aim to do today? do you have any impediments to delivery? The scrum master takes note of any impediments and aims to resolve them as quickly as possible. Anyone else at the daily scrum remains silent so that the meeting can be as productive as possible for the team. Any issues can be discussed afterwards.

The sprint backlog and sprint burn-down should be visible to draw attention to the team's progress or any impediments (see definitions in this chapter).

Sprint Review

This meeting is held at the end of each sprint and allows the team to demo the increment of the product to the product owner and stakeholders. The stakeholders ask questions and make suggestions to the product owner. The product owner makes notes to adapt the backlog if necessary based on suggestions or the output from the demo.

Sprint Retrospective

This is a meeting held after the review and before the next sprint. One by one, each team member answers the questions: “What worked in this Sprint?” and “What could be improved in the next sprint?”. This is a chance for the team to inspect and adapt. It generates continuous improvement.

Each of these events has a specific purpose and these are the only set of events that scrum defines in order to deliver a project.

Release Planning Meeting

The release planning meeting is mentioned in the first revision of The Scrum Guide. The purpose of this, is for the product owner to present a subset of features from the backlog and the team to agree what looks feasible to deliver in terms of scope or a release date. This, however, is not a commitment. Usually, after three to four sprints the team set a velocity (pace at which they work). This can be used to calculate how many features are likely to be completed by the release date (for date driven projects), or when the scope is likely to be delivered (for scope driven projects). See my section on release planning for more information.

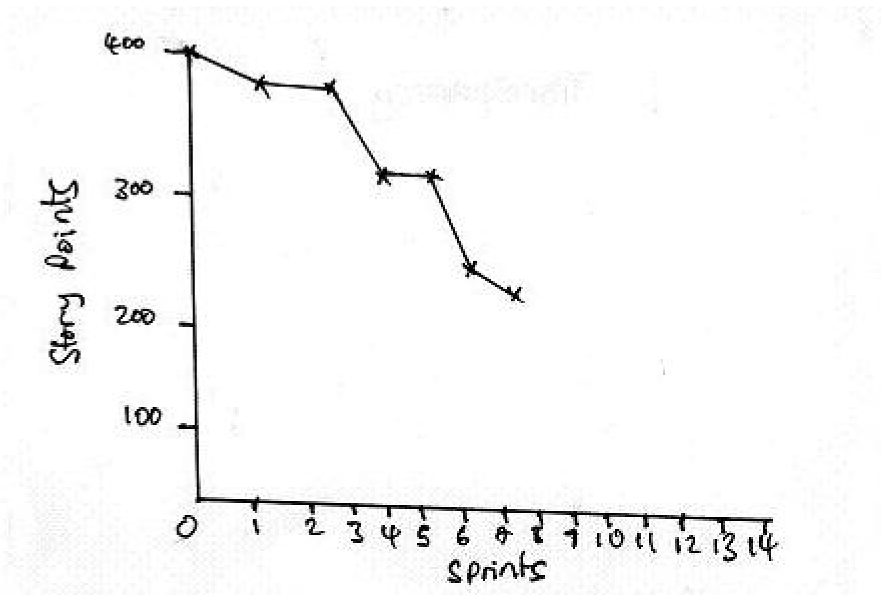
Artefacts

Product Backlog

The product backlog is a list of all the features that the product owner would like to see in the finished product. This list constantly evolves and changes over time. The product owner maintains the backlog and works with the business stakeholders to form requirements. He also works with the team to get suggestions, technical input and estimates.

Since a product backlog contains features that apply to the lifetime of the whole product (as opposed to the release), a number of features that the product owner would like to release is referred to as a release backlog.

Monitoring the Progress of a Release – The Release Burn down

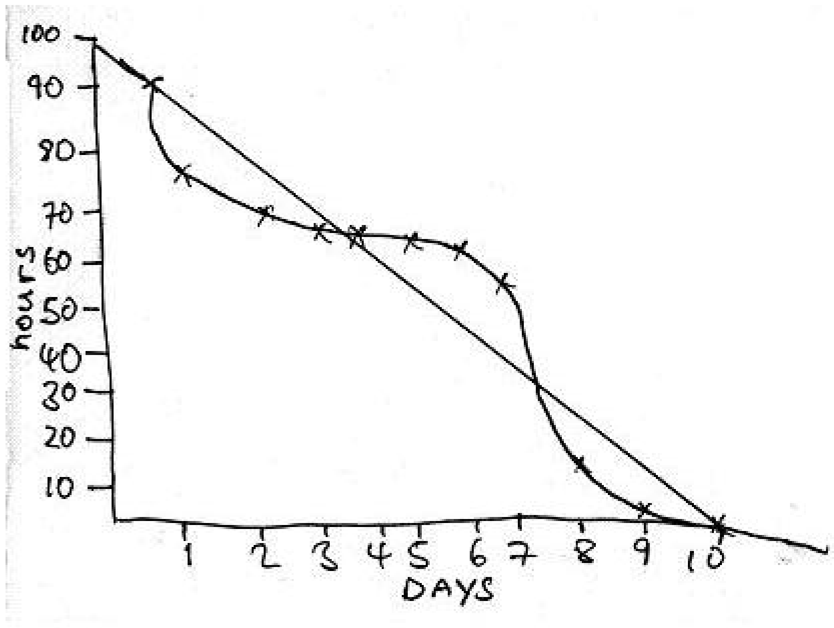


The release burn down is a common method of monitoring progress towards the release of a product. It shows the number of story points and sprints remaining till launch. Simply put, the burn-down makes it easy to see if a project is on track, since a line (or chart) tracks progress and if all is on track the line will be on or very close to it's diagonal guide line.

Sprint Backlog

The sprint backlog is the set of items that the development team will work on in a sprint to deliver an increment of functionality. It is a selection from the product backlog, initially picked by the product owner but finally committed to by the development team. It consists of features, tasks and their estimates.

Monitoring the Progress of a Sprint - Sprint Burn down



As with the release burn down, the sprint burn down helps the scrum team monitor progress within a sprint. The vertical axis usually shows 'hours' or 'number of tasks' and is related to the number of tasks remaining in the sprint

Backlog. The horizontal axis shows the number of days in the sprint. A line track's the team's progress (number of hours of tasks done each day) and ideally this should be a constant number resulting in zero hours of tasks left at the end of a sprint. As with the release burn-down, the line tracking progress should as closely as possible mirror the guiding line.

Shippable Product Increment

This is a piece of functionality delivered by the team at the end of each sprint. It should be potentially shippable and meet the team's definition of 'done' agreed at the start of the project.

Each of these artefacts either has the purpose of helping us to build a product, helping us to track the products in terms of progress or is the actual outcome of the team's work. We will explore them in more detail on the chapters to follow.

ommended%2C+must+read%29+http%3A%2F%2Fwww.
pashunconsulting.co.uk%2Ffree_scrum_ebook.html

FURTHER READING

Paper back version: http://amzn.to/WfjaNv

Kindle Version (to find out why you don't need a kindle to read a kindle books – click on this text):

http://amzn.to/TK23DL

All books by this author:

http://www.amazon.com/gp/search/ref=as_li_qf_sp_sr_il_tl?ie=UTF8&camp=1789&creative=9325&index=aps&keywords=paul vii scrum&linkCode=as2&tag=httpwwwpashun-20

Such as:

1. Scrum, The Complete Overview and Guide (Boxset)
   This and the 3 books below in a cost effective box set.

2. Selling Scrum to the Business: 72 Reasons Why Scrum Works

For solid proven facts to help you understand scrum or for use in the industry to convince others on the benefits of scrum in your business.

3. The Scrum Checklist

For a quick, printable, list of things to remember in order to boost the productivity of your teams and business.

4. Scrum of Scrums

For a solid overview of how to scale scrum in an organisation and synchronise multiple scrum teams.

Thanks Again! If you are interested in upcoming **online training** then email

info@pashunconsulting.co.uk