

# Sprint 1: Background

Mikael Svahnberg\*

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\*Mikael.Svahnberg@bth.se

# 1 About this Sprint



This sprint presents a background to Agile and Lean. You will also start evaluating your current situation using Value Stream Mapping (VSM).

## 2 Sprint Goals

**Background:** The student will be familiar with the basic history of agile and lean software development, and the agile manifesto.

**Value Stream Mapping:** The student will conduct a Value Stream Map in their context, and through this get an understanding of the current state and which values are important in this context.

## 3 Readings

### 3.1 Book Chapters

- M. Cohn, “Succeeding with Agile”, chapters 1-4
- J. Rasmusson “The Agile Samurai”, chapters 1-2

### 3.2 Screencasts

- Agile & Lean history
- How was it before
- Agile & Lean history line
- Lean house
- What is agile
- Agile Manifesto

### 3.3 Articles

**Value Stream Map.** [Khurum et al. 2014] Khurum M., Petersen K., Gorschek T., Extending Value Stream Mapping Through Waste Definition

Beyond Customer Perspective, Journal of Software: Evolution and Process, in print (Note: Complementary material is available on the website, including templates for planning the value stream activity). DOI: 10.1002/smr.1647

**Value Stream Map.** [McManus 2005] McManus, H. L. (2005), Product Development Value Stream Mapping (PDVSM) Manual Release 1.0.

**Value Stream Map.** [Khurum et al. 2014, Appendix A] Appendix A from Khurum et al. 2014 above.

**Software Value Map.** [Khurum et al. 2013] Mahvish Khurum, Tony Gorschek, Magnus Wilson: The software value map – an exhaustive collection of value aspects for the development of software intensive products. Journal of Software: Evolution and Process 25(7): 711-741 (2013)

**Waste Measurements.** [Feyh 2013] Markus Feyh, Kai Petersen: Lean Software Development Measures and Indicators - A Systematic Mapping Study. LESS 2013: 32-47.

**Example.** [Staron & Meding 2011] Miroslaw Staron, Wilhelm Meding: Monitoring Bottlenecks in Agile and Lean Software Development Projects - A Method and Its Industrial Use. PROFES 2011: 3-16.

### 3.4 Further Reading

### OPTIONAL

**Value Stream Mapping.** [Mujtaba et al. 2010] Shahid Mujtaba, Robert Feldt, Kai Petersen: Waste and Lead Time Reduction in a Software Product Customization Process with Value Stream Maps. Australian Software Engineering Conference 2010:139-148.

**Identifying Bottlenecks.** [Petersen & Wohlin 2011] Petersen K., Wohlin C., Measuring the Flow of Lean Software Development, Software: Practice and Experience; vol. 41 no. 9; 2011.

## 4 Experiential Learning

### 4.1 TODO Assignment: Conduct a VSM

**Introduction:** To reflect upon the current way of working, and to constantly look for ways to improve this and reduce waste lies at the heart of agile and lean development. Many of the lean “tools” focus on process improvement in the small, but it is also important to look at the larger process. *Value Stream Mapping* is one of the more popular methodologies used for this purpose. In this assignment we augment the classic customer-focused value

stream mapping with a broader picture on software value, with the help of the software value map.

The intentions of this assignment are to:

- Train you in the value stream mapping methodology
- Make you reflect upon the values that you and other stakeholders have in the current process.
- Create a starting point with which you can start to identify wastes and possible improvements to your current process
- Create a “sandbox” that we will use in subsequent assignments to see the effects of different agile/lean frameworks on your current way of working.

#### 4.1.1 Tasks

1. Context Describe the context of your company. In particular, what is the domain you are working in, how does the market look like, how would you characterize your processes (“pure” agile, lean, balanced hybrids, primarily plan-driven with few agile practices, primarily agile with a few plan-driven practices, and argue why you classify your process as such. Describe your role in the organization, and put yourself into a context in terms of where you are in the overall value delivery process. Also, describe your process in terms of activities, draw it in a way that you would represent it without any specific notation requirements.
2. Purpose Define the purpose of the VSM activity from your organizational point of view.
3. Values Reflect on what values you would like to achieve based on the software value map.
4. Scoping Set the start and end-point of your value stream activity (e.g. only development activity, from user need to release, etc.) and define the customers of the scoped process.
5. Stakeholders Think about who is interested in the process from the executioner point of view, i.e. who would you need to be on board to realize your activity?

6. **Current State Map** Create a current state map of your processes. Note that you can use your own ways of representing the process, as existing notations are not well suited in illustrating iteration and parallelism of activities. It is important that the map is able to capture value adding and non-value adding time.
7. **Measure** In order to complement the map, measurements are often needed to objectify the analysis with respect to your defined goals and values. If you have data available in your company from which you can derive the measures to objectify your analysis, great. If you do not have that, think about how the measures/visualizations would most likely look for your company (e.g. do you have an even or discontinuous flow of work items through your process). You may also use expert assessments to create estimates for the different process steps.

#### **4.1.2 Scope and Level of Depth**

The level of detail of the value stream map may depend on the process and the complexity, as well as what you wish to achieve. A value map with less than five activities may be useful for initial reflections, but to have a deeper understanding you may benefit from drilling down further. Though, when having too many activities you may get lost in the details, missing the end-to-end perspective. The existing articles provide an idea of the level of detail that provided valuable insights in the existing cases.

#### **4.1.3 Note**

Please review subsequent assignments in this course before deciding on the scope, since you are going to use the output of this assignment when reflecting upon different agile/lean frameworks in them. If you set your scope too small or too large, this will become more difficult.

#### **4.1.4 Delivery**

Deliver your assignment via e-mail as a written report or a well-annotated set of presentation slides to the course managers.

### **4.2 TODO Update Backlog**

Based on what you have learnt in this sprint, update your Agile/Lean backlog accordingly. Specifically;

- Revisit the order of the course sprints. Are there any sprints you would like to do sooner or later?
- What can you take with you from this sprint into your own organisation?
- What do you need to learn more about?

Add and move items in your Agile/Lean backlog according to your needs and priorities.

## 5 Sprint Acceptance Tests

### 5.1 Background and History

You have completed this learning outcome when you have:

- Familiarised yourself with the origins and the history of agile and lean software development
- An overview of different agile and lean software development frameworks
- A shallow understanding of some of the more dominant agile/lean frameworks.

Review Questions

- Why did Agile and Lean start ?
- What is your interpretation of the Agile Manifesto ?
- How does “Manifesto” fit you organisation ?
- Would you say that your organisation is using any Agile or Lean method ?
  - If so, what would that be ?
    - \* If you were to take another method and use that, what would fit best your operation?
    - \* What would challenge your operation most ?

## 5.2 Assignment: Conduct a VSM

## CHECKPOINT

The Value Stream Mapping assignment is marked as Pass or Fail. The criteria for passing the assignment is that it is at least possible to use it for answering questions such as:

- What is the purpose of your value stream activity? What do you hope to achieve? Why?
- What are the values you would like to achieve? Why?
- Are the identified values sufficient so that it will not be a sub-optimisation to merely focus on this set?
- How do your values correspond to the values in the Software Value Map by Khurum et al?
- What are the start- and end-points of your intended value stream activity? Why these? How does a study of this part of the process fulfill your purpose?
- Is the scope of sufficient size so that the studied process actually influence the identified values?
- Is the scope of reasonable size so that it is possible, on this level, to track creation of the identified values? Will you be able to conduct the subsequent assignments or will your process become too large and complex?
- Who are your key stakeholders? What is a “win-condition” for them (i.e. what do you need to provide to make them happy)?
- Are there any agile or lean frameworks, or parts of them, that you are already using? Where? How? With what effect?
- How does the current process perform with respect to velocity, flow, etc.?
- What are the limitations to the current process when it comes to e.g. throughput or amount of incoming work?
- Is it possible to understand the process through which the value-adding/non-value-adding time was measured?
- Are the measures discussed and explained?