**Citerus**
- Founded 1996 in Uppsala, HQ in Uppsala, office in Stockholm
- Offers consultancy with the whole spectrum from software development to corporate change and management
- 2004 world’s first corporate member in Agile Alliance
- 2006 Sweden’s first certified Scrum Master Trainers (out of 36 worldwide)
- Growing!
- www.citerus.se

**Myself**
- Mikael Lundgren
- Graduated DVP Uppsala 1995 (ahem)
- Resumé: programmer, project manager, manager and consultant
- Current projects:
  - Implement Scrum in a fast growing organization
  - Acting SW Development manager (leaving)
  - Mentor and Scrum coach
  - Gives Scrum training and certifications
  - Mikael.Lundgren@Citerus.se

**Why work in projects?**
- Solve a task within a given timeframe
- Provide a structured way of creating a team and work environment
- Structured way of (hopefully) doing The Right Things for The Money

**What is Agile?**
- Often referred to as “empirical process control” instead of “defined process control”
- Uses inspection and adaptation to optimize realization of goals
Lean & Agile

The small company is often agile by definition
- Everyone is co-located, from CEO to programmer
- Everyone understands the business perspective as well as technical issues
- Simple system, simple releases

When the organization grows, the need for coordinated activities arise

Software projects – a difficult beast?
- "Hard to grasp"
- "Always delivers late"
- "It never turns out the way we expected!"
- "Impossible to plan"
- "Next time you have to specify in greater detail"
- ..."16.2% software projects are completed on-time and on-budget"

What is Scrum?

A brief history of Scrum
- Lean Software Development
  - "The Toyota Model"
  - Brought to USA by Mary & Tom Poppendieck
- Agile Project Management - "Scrum"
  - Ken Schwaber
  - [www.agilealliance.com](http://www.agilealliance.com)
  - In Sweden through Citerus AB

Noun
1. In rugby union or rugby league, all the forwards joined together in an organized way. Also known as a scrummage.
2. In software development, SCRUM is an agile, lightweight process that can be used to manage and control software and product development using iterative, incremental practices.

From Dictionary.com 2006-03-28
**Scrum Overview**

- Empirical management & control process
  - inspect and adapt feedback loops;
- Used to manage complex projects since 1990
- Delivers business functionality in 30 days
- Scalable to distributed, large, and long projects
- CMM Level 3 and ISO 9001 compliant; and
- Extremely simple but very hard.

**Some companies using Scrum**

- Ongame, Microsoft, Sun, Siemens, Philips, BBC, IBM, Federal Reserve Bank, HP, Medtronic, Motorola, Yahoo, Bose, Xerox, Nokia, SAP, Siemens, Scania, Tain, …

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**Caution before proceeding**

1. People in our profession are skilled and take pride in creating meta-solutions to problems and implementing them.
2. The problem we face has nothing to do with process and technology, but with people.
3. Scrum and Agile are based on the hypothesis that there is no meta-solution for software development. Just a framework within which we will be empirical—inspect and adapt.
4. This is very frustrating to those looking for procedures and final answers.

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**Roles – Product Owner**

- Defines the features of the product, decides on release date and content
- Is responsible for the profitability of the product (ROI)
- Prioritizes features according to market value
- Can change features and priority every 30 days
- Accepts or rejects work results

**Roles – Scrum Master**

- Ensures that the team is fully functional and productive
- Enables close cooperation across all roles and functions and removes barriers
- Shields the team from external interferences
- Ensures that the process is followed. Invites to daily Scrum, iteration review and planning meetings
Roles – The Team

• Cross-functional, seven plus/minus two members
• Selects the iteration goal and specifies work results
• Has the right to do everything within the boundaries of the project guidelines to reach the iteration goal
• Organizes itself and its work
• Demonstrates work results to the Product Owner

Scrum

• Most projects deliver software every 6 to 18 months. Scrum reduces this to many 1 month deliveries to increase control via inspect/adapt.
• This puts stress on the team and organization, exposing underlying problems and limitations.
• The ScrumMaster’s job is to prioritize these problems and help the organization overcome them to get better at software development, managing software investments, and becoming a community to work in.

Product Backlog

• List of functionality, technology, issues
• Issues are placeholders that are later defined as work
• Emergent, prioritized, estimated
• More detail on higher priority backlog
• One list for multiple teams
• Product Owner responsible for priority
• Anyone can contribute
• Maintained and posted visibly
• Derived from Business Plan or Vision Statement, which sometimes have to be created with customer

A Sprint

Continuous uninterrupted work and status updates
Sprint review
Sprint (2-4 weeks)
Sprint planning (1 day)
Demonstration

Example of a Sprint backlog

<table>
<thead>
<tr>
<th>Distributed Lobby</th>
<th>Person</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Game Model</td>
<td>Tommy</td>
<td>5</td>
</tr>
<tr>
<td>Editor</td>
<td>Tommy</td>
<td>5</td>
</tr>
<tr>
<td>Rig Manager</td>
<td>Tommy</td>
<td>10</td>
</tr>
<tr>
<td>Core Table and Task Manager</td>
<td>Tommy</td>
<td>5</td>
</tr>
<tr>
<td>Movement</td>
<td>Tommy</td>
<td>2</td>
</tr>
<tr>
<td>Core</td>
<td>Tommy</td>
<td>2</td>
</tr>
<tr>
<td>User</td>
<td>Tommy</td>
<td>2</td>
</tr>
<tr>
<td>Information</td>
<td>Tommy</td>
<td>5</td>
</tr>
<tr>
<td>Global Controller – Server</td>
<td>Tommy</td>
<td>5</td>
</tr>
<tr>
<td>State Model</td>
<td>Tommy</td>
<td>5</td>
</tr>
<tr>
<td>Chat</td>
<td>Tommy</td>
<td>2</td>
</tr>
<tr>
<td>Movement</td>
<td>Tommy</td>
<td>5</td>
</tr>
<tr>
<td>Game Table</td>
<td>Tommy</td>
<td>10</td>
</tr>
<tr>
<td>Play Manager</td>
<td>Tommy</td>
<td>5</td>
</tr>
<tr>
<td>State Model</td>
<td>Tommy</td>
<td>5</td>
</tr>
<tr>
<td>Core</td>
<td>Tommy</td>
<td>2</td>
</tr>
</tbody>
</table>

Daily Scrum

• 15 minutes each day
• Same time and place
• Each team member gets three questions:
  – What did you achieve yesterday?
  – What have you planned to achieve today?
  – Do you have any problems?
  • Everyone else (product owner, managers, other project teams, ...) are welcome as listeners.
  • Take decisions in this forum if possible
Sprint backlog (Excel)

<table>
<thead>
<tr>
<th>Description</th>
<th>Person</th>
<th>% done</th>
<th>Initial</th>
<th>Day 1</th>
<th>Day 2</th>
<th>Day 3</th>
<th>Day 4</th>
<th>Day 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>State Model</td>
<td>Tommy</td>
<td>72%</td>
<td>55</td>
<td>55</td>
<td>55</td>
<td>55</td>
<td>55</td>
<td>55</td>
</tr>
<tr>
<td>Global Controller</td>
<td>Tommy</td>
<td>72%</td>
<td>55</td>
<td>55</td>
<td>55</td>
<td>55</td>
<td>55</td>
<td>55</td>
</tr>
<tr>
<td>Manager</td>
<td>Tommy</td>
<td>72%</td>
<td>55</td>
<td>55</td>
<td>55</td>
<td>55</td>
<td>55</td>
<td>55</td>
</tr>
<tr>
<td>Server and Table Manager</td>
<td>Tommy</td>
<td>72%</td>
<td>55</td>
<td>55</td>
<td>55</td>
<td>55</td>
<td>55</td>
<td>55</td>
</tr>
<tr>
<td>Development</td>
<td>Tommy</td>
<td>72%</td>
<td>55</td>
<td>55</td>
<td>55</td>
<td>55</td>
<td>55</td>
<td>55</td>
</tr>
<tr>
<td>User</td>
<td>Tommy</td>
<td>72%</td>
<td>55</td>
<td>55</td>
<td>55</td>
<td>55</td>
<td>55</td>
<td>55</td>
</tr>
<tr>
<td>Update</td>
<td>Tommy</td>
<td>72%</td>
<td>55</td>
<td>55</td>
<td>55</td>
<td>55</td>
<td>55</td>
<td>55</td>
</tr>
<tr>
<td>Administrator</td>
<td>Tommy</td>
<td>72%</td>
<td>55</td>
<td>55</td>
<td>55</td>
<td>55</td>
<td>55</td>
<td>55</td>
</tr>
<tr>
<td>State Controller - Server</td>
<td>Tommy</td>
<td>72%</td>
<td>55</td>
<td>55</td>
<td>55</td>
<td>55</td>
<td>55</td>
<td>55</td>
</tr>
<tr>
<td>Create Model</td>
<td>Tommy</td>
<td>72%</td>
<td>55</td>
<td>55</td>
<td>55</td>
<td>55</td>
<td>55</td>
<td>55</td>
</tr>
</tbody>
</table>

Sprint backlog using whiteboard and PostIT

A sprint backlog on a notebook

Reporting example

The optimal trade-off

One Sprint of uninterrupted work!

Product Owner Rules!

Project cycle from the outside

Continuous reporting

Sprint

Sprint

Sprint

Sprint

...
Using RUP phases

- Inception
- Elaboration
- Construction
- Transition

Pre-study
Scope
Basic priorities
ROI

• The project team will solve the tasks with aid in the guidelines for the work
• Each requirement is detailed and documented further by the project team
• Each requirement shall be possible to realize within one iteration – bigger items are broken down to smaller chunks

Implementation

QA

• Build and test often
• QA Lead is present on all planning- and requirement meetings
• Final verification can start before the entire system is built

Demonstration

• Everyone is invited
• A working release and a projector
• Team members demonstrate their own features, in a “sales demo”
• Allocate at most one hour
• Defer technical questions/comments to after the presentation

End of the iteration

• Product owner has the possibility to do a beta release, or prolong the project
• Product owner can change the direction and/or priorities
• Time and quality are fixed – contents are varied
• Evaluate the past Sprint within the group and make adjustments as needed

Sprint summary

• 2 – 4 weeks iteration
• The team builds functionality that converts items from the Product backlog to meet the Sprint goals
• The team organizes itself to do the work
• The team follows existing guidelines
• It is possible to cancel a Sprint
**Sprint abnormal termination**

A Sprint can be cancelled:
- The team can cancel the Sprint if it feels it is impossible to meet the goals
- Management can cancel the Sprint if new information invalidates the goals
- A new Sprint planning is immediately held. The reasons for the termination are reviewed.

**Possible actions**

1. Return unfinished functionality to the product backlog and reprioritize it.
2. Remove functionality from the product backlog that was unexpectedly done in the Sprint.
3. Work together with the Scrum Master to reform the team.
4. Refactor the product backlog to take advantage of opportunities shown at the demonstration.
5. Ask for a release Sprint for the current functionality.
6. Choose to terminate or suspend the project.
7. Try to increase velocity by adding Scrum teams to work on the product backlog.

**Retrospect (review)**

- Performed by the team after every Sprint, targets process improvements.
- +/- What worked well? What can be improved?
- Scrum Master makes a prioritized backlog according to the team’s instructions.
- The team devises solutions to the most bothersome problems.

**Implementing Scrum**

- Start small!
- Start with a single project, where the entire team (product owner, Scrum Master, team) is trained (1-2 days).
- Find the rhythm – the Sprint length.
- Introduce new members on planning day.
- Do not use more advanced project tools than Excel!

**Organizing large projects**

Scrum of Scrums – so many layers that are needed to get just enough amount of information to take decisions. Warning: Too much information will make it difficult to take decisions.
### Scrum vs XP

<table>
<thead>
<tr>
<th>Scrum</th>
<th>XP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Backlog of requirements - less granular</td>
<td>Stories of Specifications - more granular</td>
</tr>
<tr>
<td>14-32 day iteration required to complete increment (starts with analysis)</td>
<td>1-2 week iteration required to create software increment (no analysis, just design)</td>
</tr>
<tr>
<td>Estimates gradually get better as a matter of course</td>
<td>Effort is made to increase precision of estimates</td>
</tr>
<tr>
<td>Customer interrelates at ROI level</td>
<td>Customer interrelates at specification level</td>
</tr>
<tr>
<td>Implements in 2 days, then gradually improves everything</td>
<td>Implements in 6-8 months, depending on existing engineering practices</td>
</tr>
<tr>
<td>Management process that wraps any existing business processes and methodologies</td>
<td>Engineering process that has borrowed some wrapping management practices, but is at odds with many organisational practices</td>
</tr>
</tbody>
</table>

### As a Scrum Master you will have to contend with:

- The tyranny of the waterfall
- The illusion of command and control
- The belief in magic and,
- The era of opacity

### Scrum Resources

- Citerus: [www.citerus.se](http://www.citerus.se)
- The Scrum Alliance: [www.scrumaalliance.org](http://www.scrumaalliance.org)
- ControlChaos: [www.controlchaos.org](http://www.controlchaos.org)
- Agile Alliance: [www.agilealliance.org](http://www.agilealliance.org)