# SCRUM –
# Agile Project Management

# Agenda

- Introduction
- Agile Project Management
- What is Scrum?
- History of Scrum
- Functionality of Scrum
- Components of Scrum
  - Scrum Roles
  - The Process
  - Scrum Artifacts
- Scaling Scrum
- Evolution of Scrum
- Scrum & XP
- Conclusion

# Introduction

- Classical methods of software development have many disadvantages:
  - huge effort during the planning phase
  - poor requirements conversion in a rapid changing environment
  - treatment of staff as a factor of production

→ New methods:
Agile Software Development

# Manifesto for Agile SD

- Based on the Manifesto for Agile Software Development
  - **Individuals and interactions** over processes and tools
  - **Working software** over comprehensive documentation
  - **Customer collaboration** over contract negotiation
  - **Responding to change** over following a plan

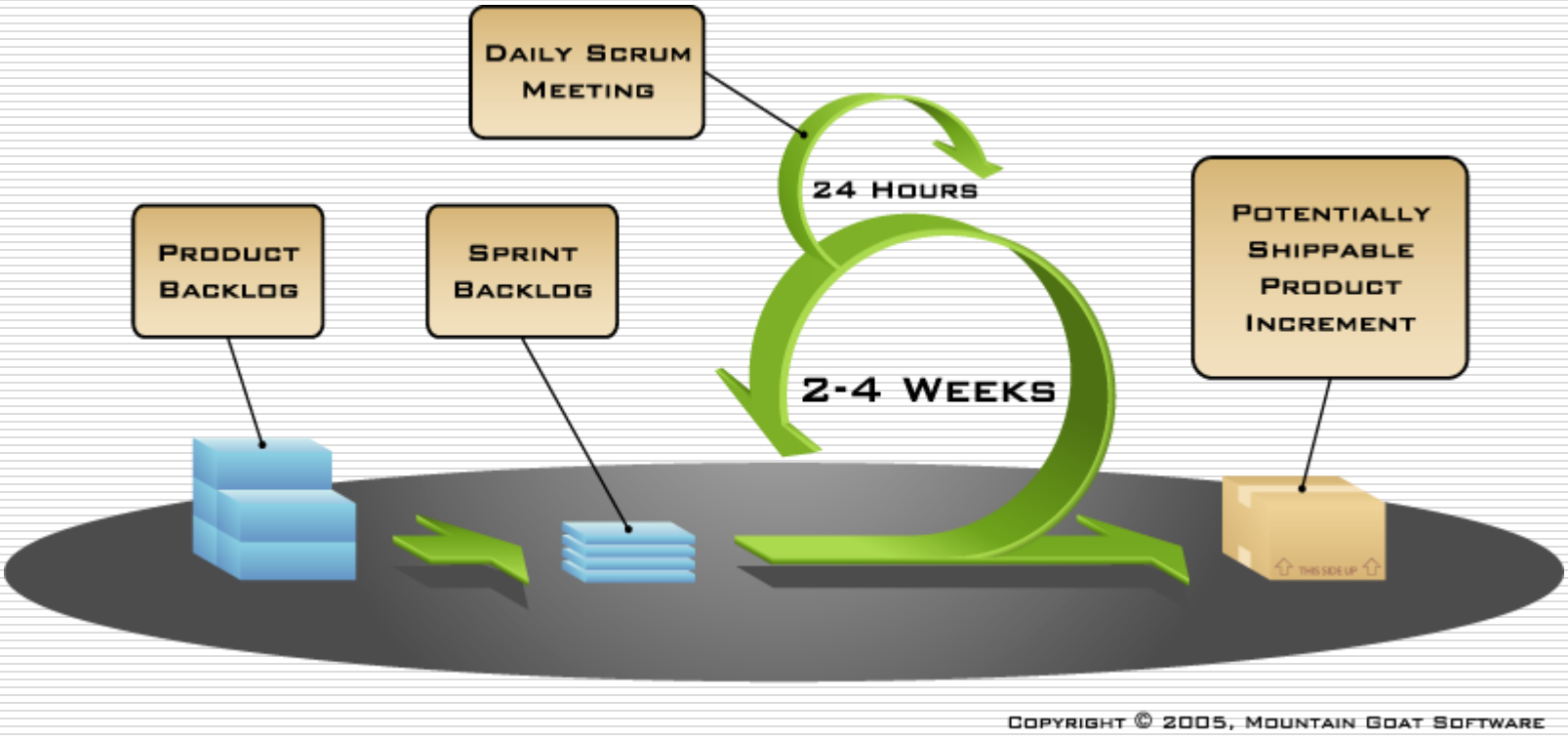
# Agile Methods

- Agile methods:
  - Scrum
  - Extreme Programming
  - Adaptive Software Development (ASD)
  - Dynamic System Development Method (DSDM)
  - …
- Agile Alliance
  - A non-profit organization promotes agile development

# Scrum - an agile process

- SCRUM is an agile, lightweight process for managing and controlling software and product development in rapidly changing environments.
  - Iterative, incremental process
  - Team-based approach
  - developing systems/ products with rapidly changing requirements
  - Controls the confusion of conflicting interest and needs
  - Improve communication and maximize cooperation
  - Protecting the team form disruptions
  - A way to maximize productivity

# Functionality of Scrum



# Components of Scrum

- Scrum Roles
- The Process
- Scrum Artifacts

# Scrum Master

- Represents management to the project
- Typically filled by a Project Manager or Team Leader
- Responsible for enacting scrum values and practices
- Main job is to remove impediments

# The Scrum Team

- Typically 5-10 people
- Cross-functional (QA, Programmers, UI Designers, etc.)
- Members should be full-time
- Team is self-organizing
- Membership can change only between sprints

# Product Owner

- Acts like one voice (in any case)
- Knows what needs to be build and in what sequence this should be done
- Typically a product manager

# The Process

- Sprint Planning Meeting
- Sprint
- Daily Scrum
- Sprint Review Meeting

# Sprint Planning Meeting

- A collaborative meeting in the beginning of each Sprint between the Product Owner, the Scrum Master and the Team
- Takes 8 hours and consists of 2 parts (“before lunch and after lunch”)

# Parts of Sprint Planning Meeting

- 1st Part:
  - Creating Product Backlog
  - Determining the Sprint Goal.
  - Participants: Product Owner, Scrum Master, Scrum Team
- 2nd Part:
  - Participants: Scrum Master, Scrum Team
  - Creating Sprint Backlog

# Pre-Project/Kickoff Meeting

- A special form of Sprint Planning Meeting
- Meeting before the begin of the Project

# Sprint

- A month-long iteration, during which is incremented a product functionality
- NO outside influence can interference with the Scrum team during the Sprint
- Each Sprint begins with the Daily Scrum Meeting

# Daily Scrum

- Is a short (15 minutes long) meeting, which is held every day before the Team starts working
- Participants: Scrum Master (which is the chairman), Scrum Team
- Every Team member should answer on 3 questions

# Questions

- What did you do since the last Scrum?
- What are you doing until the next Scrum?
- What is stopping you getting on with the work?

# Daily Scrum

- Is NOT a problem solving session
- Is NOT a way to collect information about WHO is behind the schedule
- Is a meeting in which team members make commitments to each other and to the Scrum Master
- Is a good way for a Scrum Master to track the progress of the Team

# Sprint Review Meeting

- Is held at the end of each Sprint
- Business functionality which was created during the Sprint is demonstrated to the Product Owner
- Informal, should not distract Team members of doing their work

# Scrum Artifacts

- Product Backlog
- Sprint Backlog
- Burn down Charts

# Product Backlog

- Requirements for a system, expressed as a prioritized list of Backlog Items
- Is managed and owned by a Product Owner
- Spreadsheet (typically)
- Usually is created during the Sprint Planning Meeting
- Can be changed and re-prioritized before each Planning Meeting

# Estimation of Product Backlog Items

- Establishes team's velocity (how much Effort a Team can handle in one Sprint)
- Determining units of complexity.
  - Size-category ("T-Shirt size")
  - Story points
  - Work days/work hours
- Methods of estimation:
  - Expert Review
  - Creating a Work Breakdown Structure (WBS)

# Product Backlog

- Is only a FORECAST!-> is not exact

# Sprint Backlog

- A subset of Product Backlog Items, which define the work for a Sprint
- Is created ONLY by Team members
- Each Item has it’s own status
- Should be updated every day

# Sprint Backlog

- No more then 300 tasks in the list
- If a task requires more than 16 hours, it should be broken down
- Team can add or subtract items from the list. Product Owner is not allowed to do it

# Sprint Backlog

- Is a FORECAST!
- Is a good warning monitor

# Burn down Charts

- Are used to represent “work done”.
- Are wonderful Information Radiators
- 3 Types:
  - Sprint Burn down Chart (progress of the Sprint)
  - Release Burn down Chart (progress of release)
  - Product Burn down chart (progress of the Product)

# Information Radiator

- "Two characteristics are key to a good information radiator. The first is that the information changes over time. This makes it worth a person's while to look at the display... The other characteristic is that it takes very little energy to view the display."

# Burn down Charts

- X-Axis: time (usually in days)
- Y-Axis: remaining effort

# Sprint Burn down Chart

- Depicts the total Sprint Backlog hours remaining per day
- Shows the estimated amount of time to release
- Ideally should burn down to zero to the end of the Sprint
- Actually is not a straight line
- Can bump UP

# Release Burn down Chart

- Will the release be done on right time?
- X-axis: sprints
- Y-axis: amount of hours remaining
- The estimated work remaining can also burn up

# Alternative Release Burn down Chart

- Consists of bars (one for each sprint)
- Values on the Y-axis: positive AND negative
- Is more informative then a simple chart

# Product Burn down Chart

- Is a “big picture” view of project’s progress (all the releases)

# Scaling Scrum

- A typical Scrum team is 6-10 people
- Jeff Sutherland - up to over 800 people
- "Scrum of Scrums" or what called "Meta-Scrum"
- Frequency of meetings is based on the degree of coupling between packets

# XP@Scrum

Scrum is an effective project management wrapper for eXtreme Programming development practices, which enables agile projects to become scalable and developed by distributed teams of developers.

# Pro/Con

- Advantages
  - Completely developed and tested features in short iterations
  - Simplicity of the process
  - Clearly defined rules
  - Increasing productivity
  - Self-organizing
  - each team member carries a lot of responsibility
  - Improved communication
  - Combination with Extreme Programming
- Drawbacks
  - “Undisciplined hacking” (no written documentation)
  - Violation of responsibility
  - Current mainly carried by the inventors