

## SCRUM – Mastering your process

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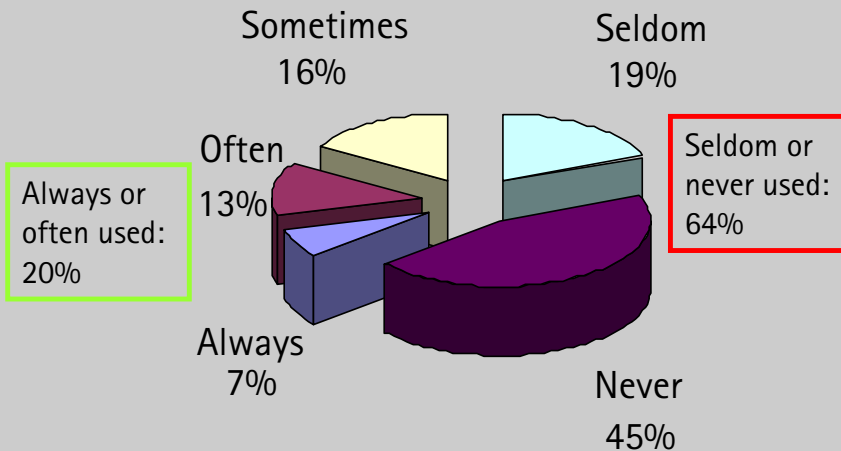
## The Odds Are Against Us

Project size	Successful	Problematic	Didn't deliver
Under \$500K	38%	44%	19%
\$501K - \$3M	27%	52%	21%
\$3M - \$6M	16%	55%	29%
\$6M - \$10M	4%	57%	39%
Over \$10M	0%	66%	34%

Source - The Standish Group CHAOS'2000 Survey

## The Biggest Source of Waste

### ► Functions of a typical system



Source - The Standish Group CHAOS'2000 Survey

## Reality Check

### ► In a Harvard Business School study, researchers discovered:

- "The first flawed assumption is that it is possible to plan such a large project."
- "The second flawed assumption is that it is possible to protect against late changes."
- "A third flawed assumption is that it even makes sense to lock in big projects early!"

## The Landscape of Management

Un-order  
non causal

Ontology

Ordered &  
causal

Mathematical Complexity <i>Axelrod, Kauffman</i>	Organizational Complexity <i>Stacey, Snowden</i>
Process Engineering <i>Taylor, Hammer</i>	Systems Thinking <i>Senge, Peters</i>

Rules

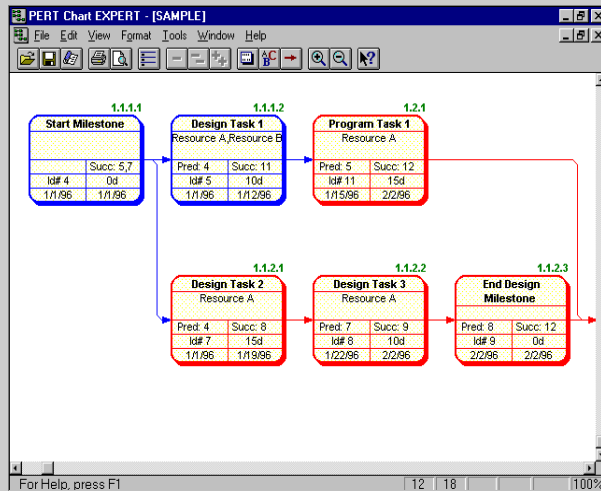
Heuristics

Epistemology

## Why We Are Not Ants

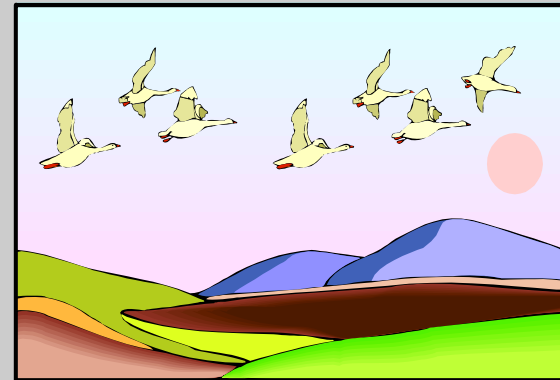
- ▶ We never make rational decisions unless we're autistic
- ▶ We have multiple identities
- ▶ We impute intention where none exists
- ▶ We evolve to be malicious gossips
- ▶ We are not limited to acting in accordance with predetermined rules

## Defined Processes



- ▶ Command and Control for simple projects
- ▶ Plan what you expect to happen
- ▶ Enforce that what happens is the same as what is planned
- ▶ Use change control to manage change

## Empirical Processes



- ▶ When you can't define things enough so that they run unattended and produce repeatable, acceptable quality output;
- ▶ Empirical models are used when the activities are not predictable, are non-linear, and are too complex to define in repeatable detail; and
- ▶ Control is through inspection and adaptation.

## Software Development is an Empirical Process

- ▶ **Ziv's Uncertainty Principle in Software Engineering** – *"uncertainty is inherent and inevitable in software development processes and products"* [Ziv, 1996].
- ▶ **Humphrey's Requirements Uncertainty Principle** – *"for a new software system, the requirements will not be completely known until after the users have used it"* [Humphrey, 1995].
- ▶ **Wegner's Lemma** – *"it is not possible to completely specify an interactive system"* [Wegner, 1995].

## Agile Practices

- ▶ **Agile lays out a vision and then nurtures project resources to do the best possible to achieve the plan.**
- ▶ **Agile is the "art of the possible."**
- ▶ **Agile employs the following practices:**
  - ▶ Frequent inspection
  - ▶ Emergence of requirements, technology, and team capabilities
  - ▶ Self-organization and adaptation in response to what emerges
  - ▶ Incremental emergence
  - ▶ Dealing with reality, not artefacts
  - ▶ Collaboration

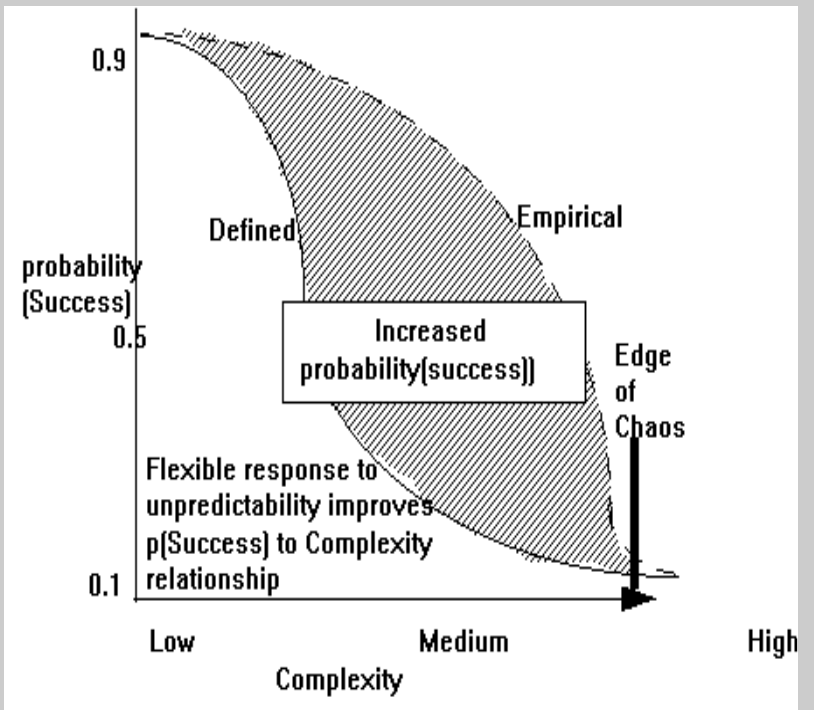
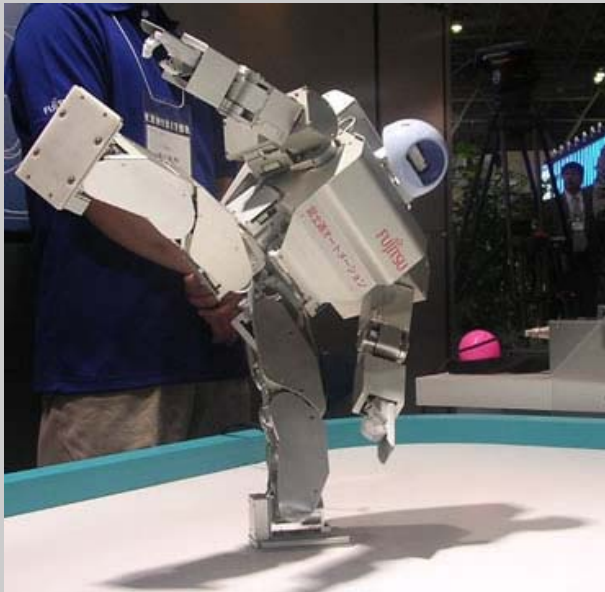
”Agile” means moving from...



...to...

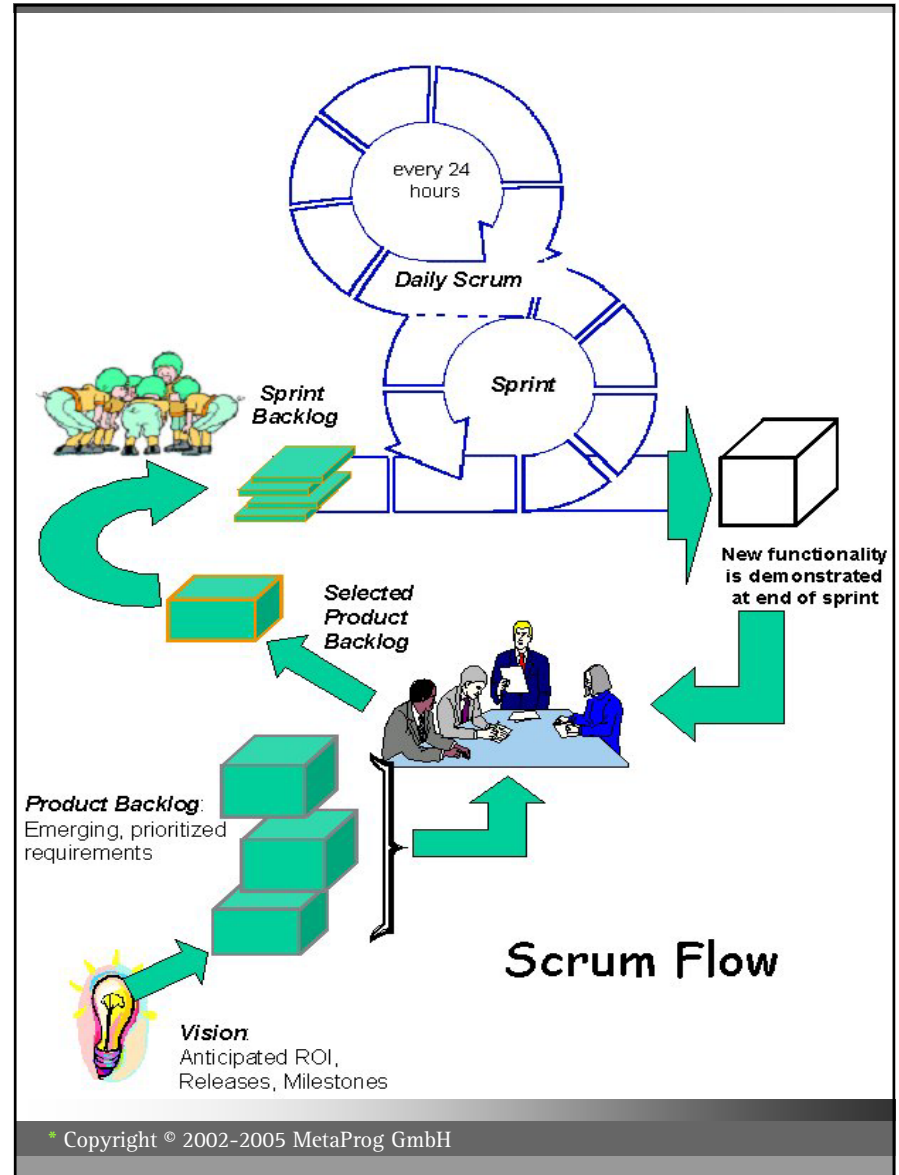


...and not to



## Scrum Overview

- ▶ Empirical management and control process for development efforts;
- ▶ Used at product companies and IT organizations since 1990;
- ▶ Wraps existing engineering practices;
- ▶ Extremely simple but very hard;
- ▶ CMMi Level 3 compliant
- ▶ Usually implements in 1 day, delivers business functionality in 30 days;
- ▶ Scalable; and
- ▶ Scrum feels completely different!





## Scrum Practices – Product Planning Meeting

- ▶ Enough to drive first development Sprint to deliver product increment that provides business value;
- ▶ Requirements emerge as customer sees product increments;
- ▶ Systems architecture emerges as design emerges and is refactored; and
- ▶ Product architecture emerges as produce emerges and is refactored.

## Scrum Practices – Scrum Master

- ▶ Responsible for establishing Scrum practices and rules;
- ▶ Representative to management;
- ▶ Representative to team;
- ▶ A coach;
- ▶ Engineering and development skills; and
- ▶ Agile version of IT project manager

## Scrum Practices – Daily Scrum Meeting

- ▶ Daily 15 minute status meeting
- ▶ Same place and time every day
- ▶ Meeting room
- ▶ Chickens and pigs
- ▶ Three questions
- ▶ Impediments and Decisions

## Scrum Practices – Scrum Teams

- ▶ 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

## Scrum Practices – Product Backlog

- ▶ List of functionality, technology, issues
- ▶ Emergent, prioritized, estimated
- ▶ More detail on higher priority backlog
- ▶ One list for multiple teams
- ▶ Product Owner responsible for priority – agile business project manager
- ▶ Anyone can contribute

## Product Backlog

This Sprint : well defined work that can be done in <30 days & produce executable

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Probable next sprint : backlog next in priority, depends on results from prior Sprint

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**Planned Release**

During a Sprint, that Sprint's backlog is fixed and can only be changed as a result of the work being performed in that Sprint.

Backlog outside the current Sprint is always changing, evolving, and being reprioritized.

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## Scrum Practices – Product Owner

- ▶ One person;
- ▶ Sets development schedule by prioritizing backlog;
- ▶ Can be influenced by committees, management, customers, sales people, but is the only person that prioritizes;
- ▶ Responsible for ensuring that the most important business value is developed first;
- ▶ This mechanism ensures that only one set of requirements drives development; and
- ▶ Eliminates confusion of multiple bosses, different opinions, and interference.

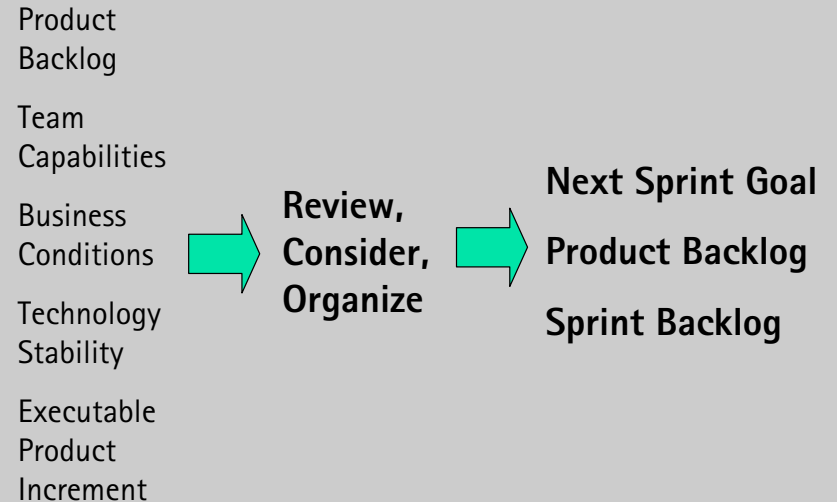
## Scrum Practices – Sprint

- ▶ Thirty calendar day iteration
- ▶ Team builds functionality that includes product backlog and meets Sprint goal
- ▶ Team self-organizes to do work
- ▶ Team conforms to existing standards and conventions
- ▶ Abnormal termination of Sprint

## Abnormal Termination

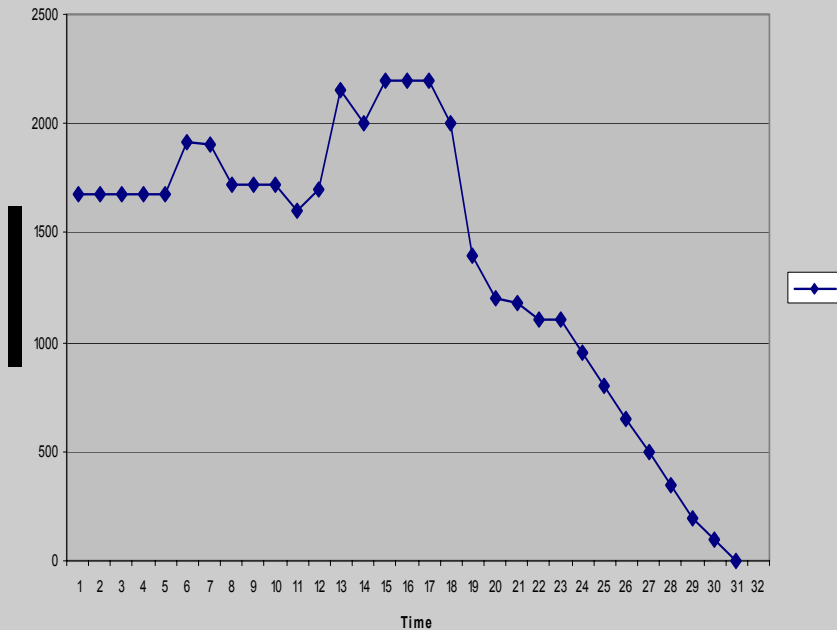
- ▶ Sprints can be cancelled before the allotted thirty days are over;
- ▶ Team can cancel Sprint if they feel they are unable to meet Sprint goal;
- ▶ Management can cancel Sprint if external circumstances negate the value of the Sprint goal; and
- ▶ If a Sprint is abnormally terminated, the next step is to conduct a new Sprint planning meeting, where the reason for the termination is reviewed.

## Scrum Practices – Sprint Planning Meeting



## Sprint Trend Burndown Graph

Sprint Backlog Trend

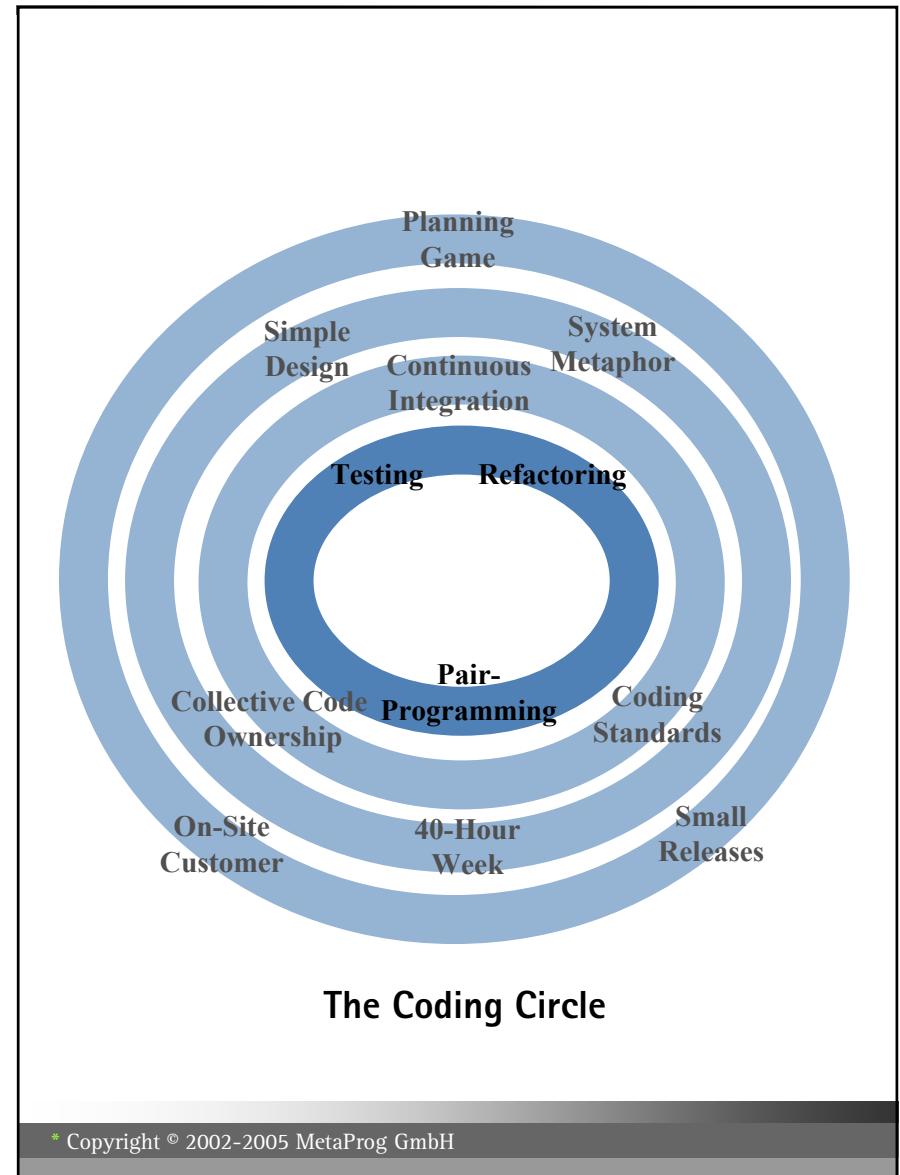


## Scrum Practices - End-of-Sprint Review

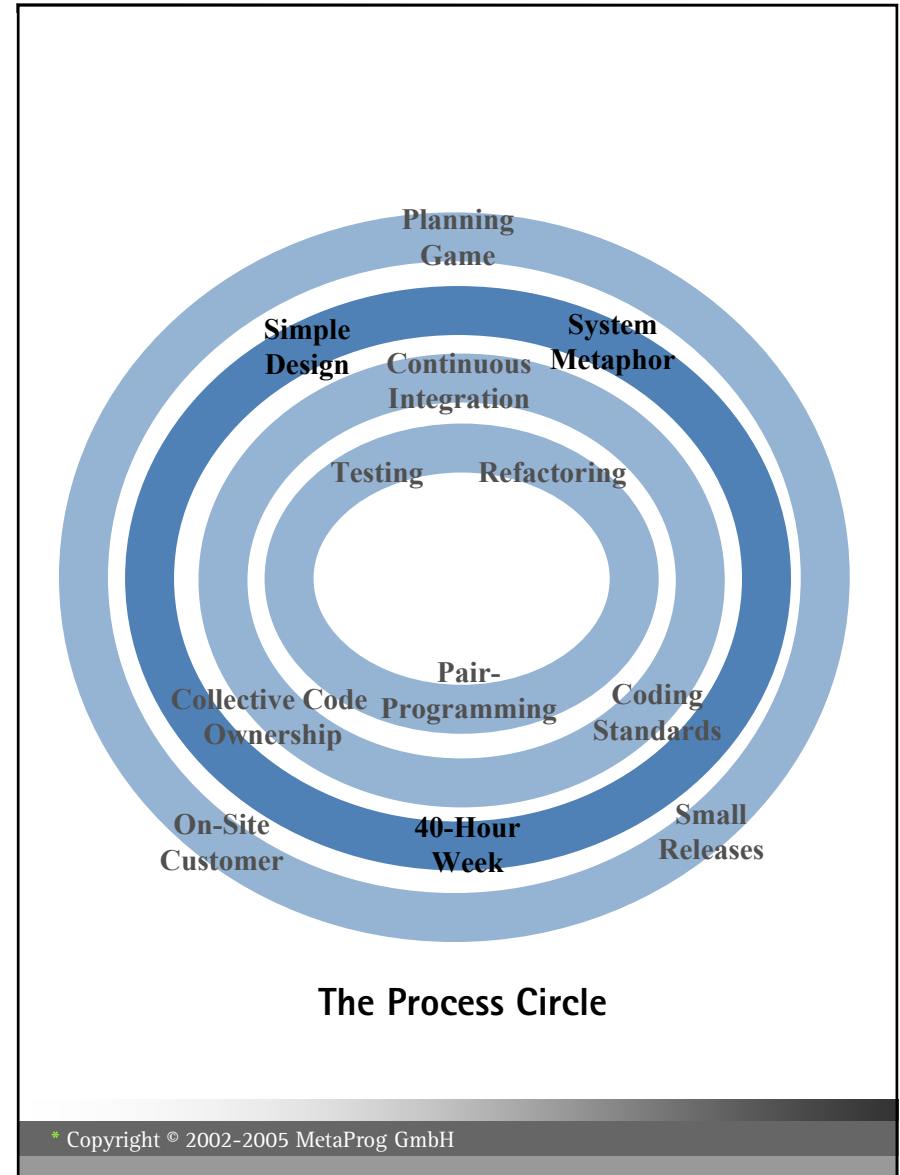
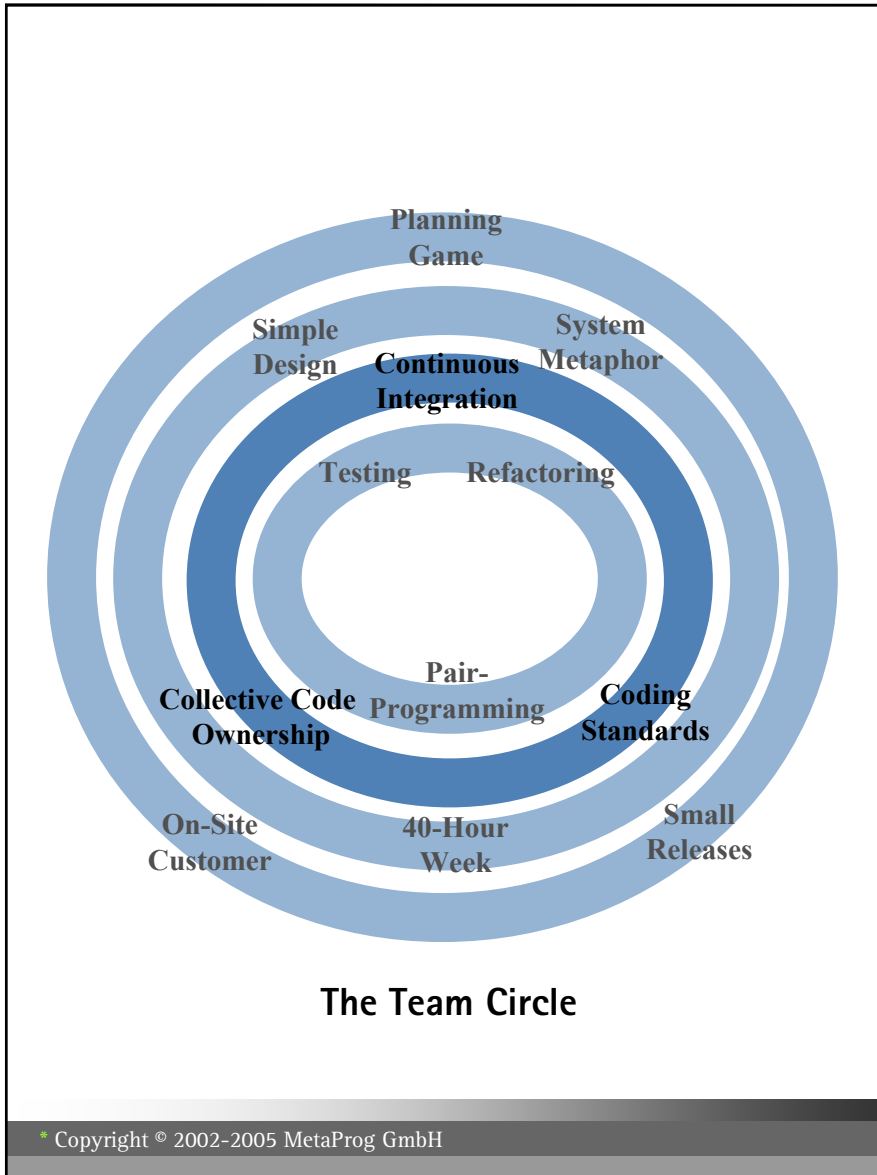
- ▶ **Analysis of**
  - ▶ Product backlog
  - ▶ Current product functionality
  - ▶ Current business and technology conditions
- ▶ **Review, consider and organize Info**
- ▶ **Set next Sprint goal**

## Can XP & Scrum be combined?

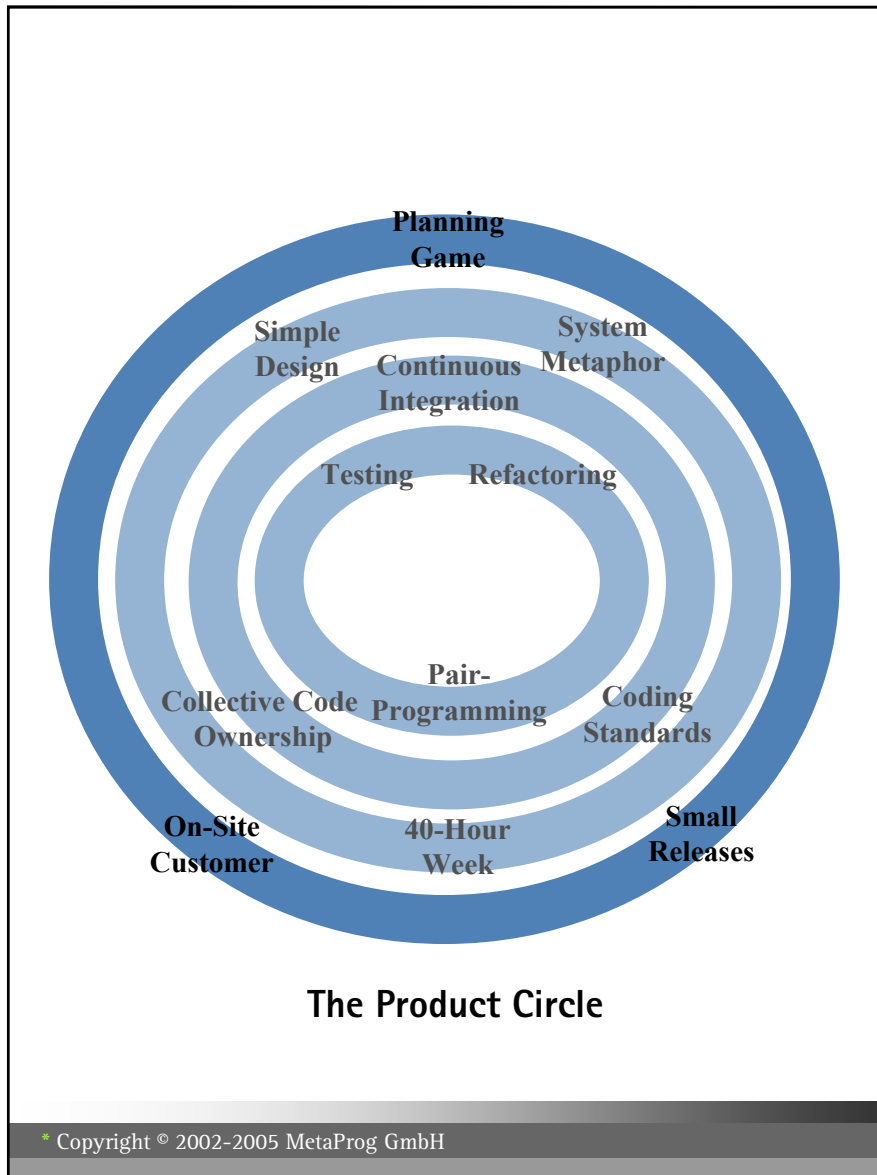
- ▶ Two complementary methodologies
- ▶ The XP Planning Game idea was taken directly from Scrum
- ▶ Every process can be best understood by the concerns that it is trying to address
  
- ▶ **Scrum emphasises Project Management**
  - ▶ Scrum emerged from Japanese product development processes and focuses on the delivery cycle
  
- ▶ **XP emphasises Programming**
  - ▶ XP emerged from the Smalltalk tradition and from the pattern movement and addresses code quality



The Coding Circle



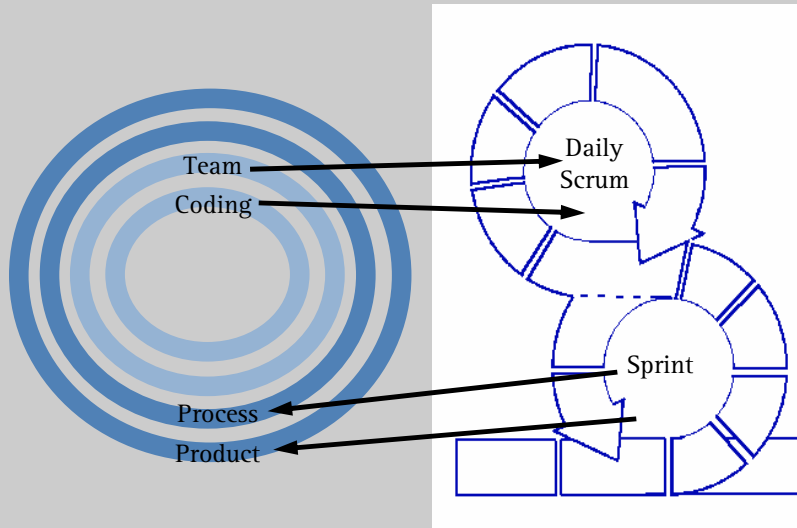




## From Development to Organization...

- ▶ eXtreme Programming is very good as a software development methodology
- ▶ The further out the practices get from the core circle, though, the less clearly defined they are
- ▶ What XP is missing is a compatible organizational methodology
- ▶ For this, we use Scrum

## XP @ Scrum



## Questions?

