Agile Terms and Processes

A study in Agile by
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What is Agile?

- The term Agile stands for a set of beliefs and values from a document called the **Agile Manifesto**.
- Agile was first used for software development because it allowed teams to respond to the unpredictability of constructing new software.
- Agile has been called a methodology, philosophy, movement or approach which is time-focused and iterative.

History of Agile

- The increased use of personal computers and demand for information technology in the 1990s led to a software development crisis.

- In 2001, 17 leading software developers came together in search of a fast delivery approach to their projects.

- Known as the “Snowbird” meeting, these developers wrote the *Manifesto for Agile Software Development* which includes 12 principles and 4 core beliefs.

The AGILE Manifesto

The 12 Principles:

1) Highest priority is customer satisfaction through early and continuous deliver of valuable software

2) Welcome changing requirements, even in late development

3) Deliver working software frequently, from a couple of weeks rather than months.

4) Close daily collaboration between business people and developers.

5) Projects are built around motivated individuals who should be trusted.

6) Face to face conversations is the best form of communication.

The AGILE Manifesto

7) Working software is the principal measure of progress

8) Sustainable development so that sponsors, developers and users should be able to maintain a constant pace indefinitely.

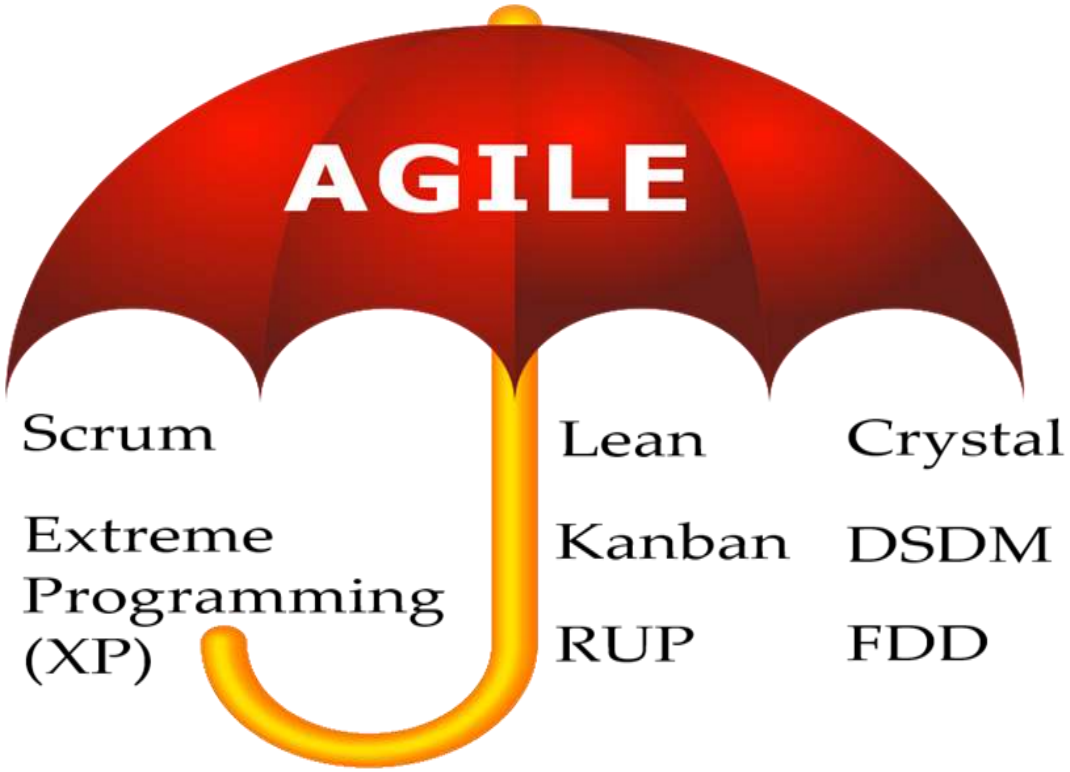
9) Continuous attention to technical excellence and good design

10) Simplicity defined as the art of maximizing the amount of work not done. Develop just enough to get the job done for right now

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

12) Regularly, the team reflects on how to become more effective and adjusts accordingly

Today Agile is an umbrella term that can include other methodologies or frameworks such as Scrum, Lean, Kanban or Extreme Programming.



The AGILE Manifesto

4 Core values:

Individuals and interactions over **Processes and tools**

Working software over **Comprehensive documentation**

Customer collaboration over **Contract negotiation**

Responding to change over **Following a plan**

*While there is value in the items on the right, we value the items on the left more.

Agile projects are characterized by:

- Short incremental iterative work sequences known as “sprints” and quick frequent delivery of end products early in the project.

- Small self-managed, cross functional teams who have the power and authority to quickly make changes.

- Intense collaboration and transparency.

*https://realtimeboard.com/blog/choose-between-agile-lean-scrum-kanban/#.WGx5IFMrLIU
http://www.forbes.com/2010/01/11/software-lean-manufacturing-technology-cio-network-agile.html

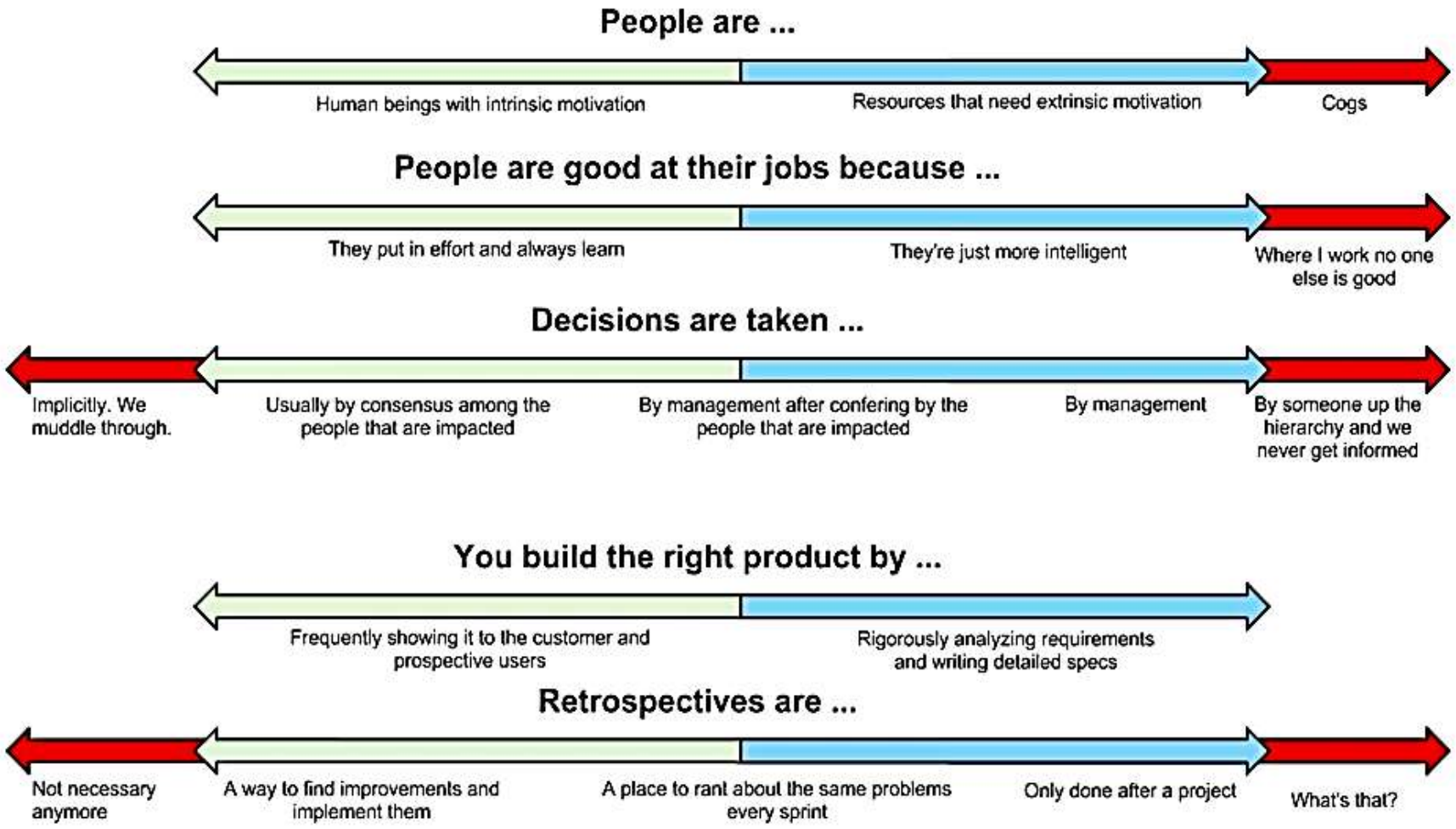
Why Agile

- Agile allows companies to seize new opportunities as they appear.
- It is impossible to gather all the requirements at the beginning of the project.
- There will always be more to do than time and money allows.

What is an Agile Mindset?

A set of completely subjective scales (Version 0.1)

Chaos labeled as "Agile" | **More Agile** | **Traditional** | **Just bad**



What is an Agile Mindset?

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When trying to improve ...

Not only do we change, we oscillate.

What is the smallest change that might help? What can we start right now? Can we use something physical?

Obviously we need a tool / framework / process

We never try to improve

When people show undesirable behavior, you ...

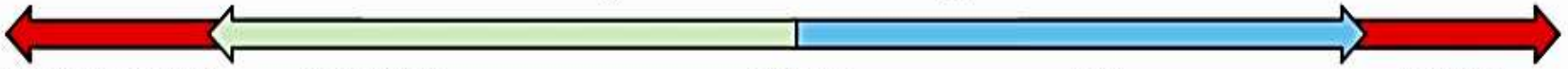
How would I know what's undesirable?

Give feedback, but also check whether the system inadvertently rewards said behaviour

Give feedback so they might change

Do nothing

Something needs clarification, you ...



Clarify it, but don't tell anyone, so that several people clarify it independently

Talk to them in person

Call them

Email

Do nothing

The documentation is ...

There's none. Haven't you read the manifesto?

Just enough. When you discover something's missing, you add that particular part.

Extensive and hard to maintain

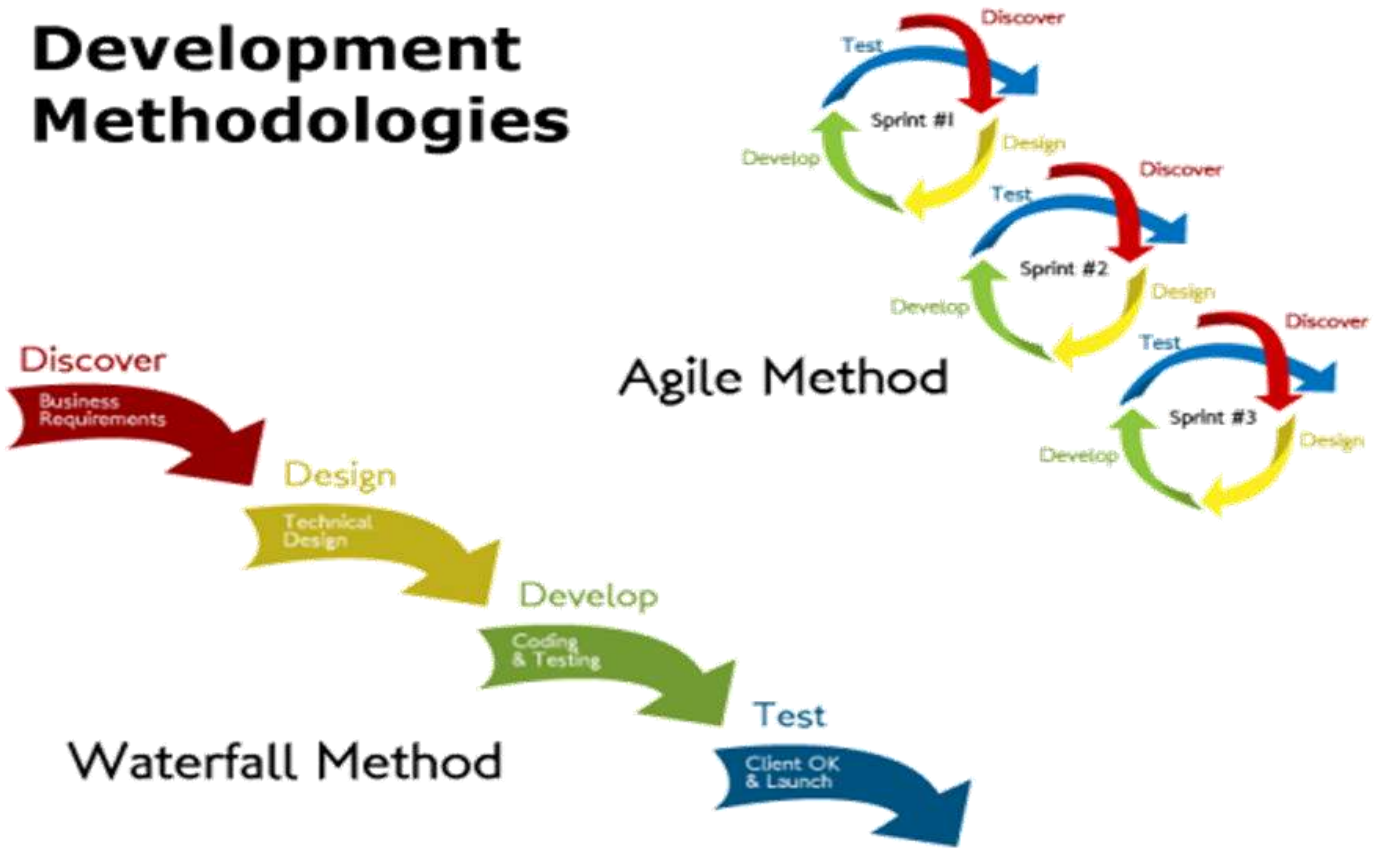
Outdated

CC-BY http://www.finding-marbles.com, @findingmarbles

Advantages of Agile

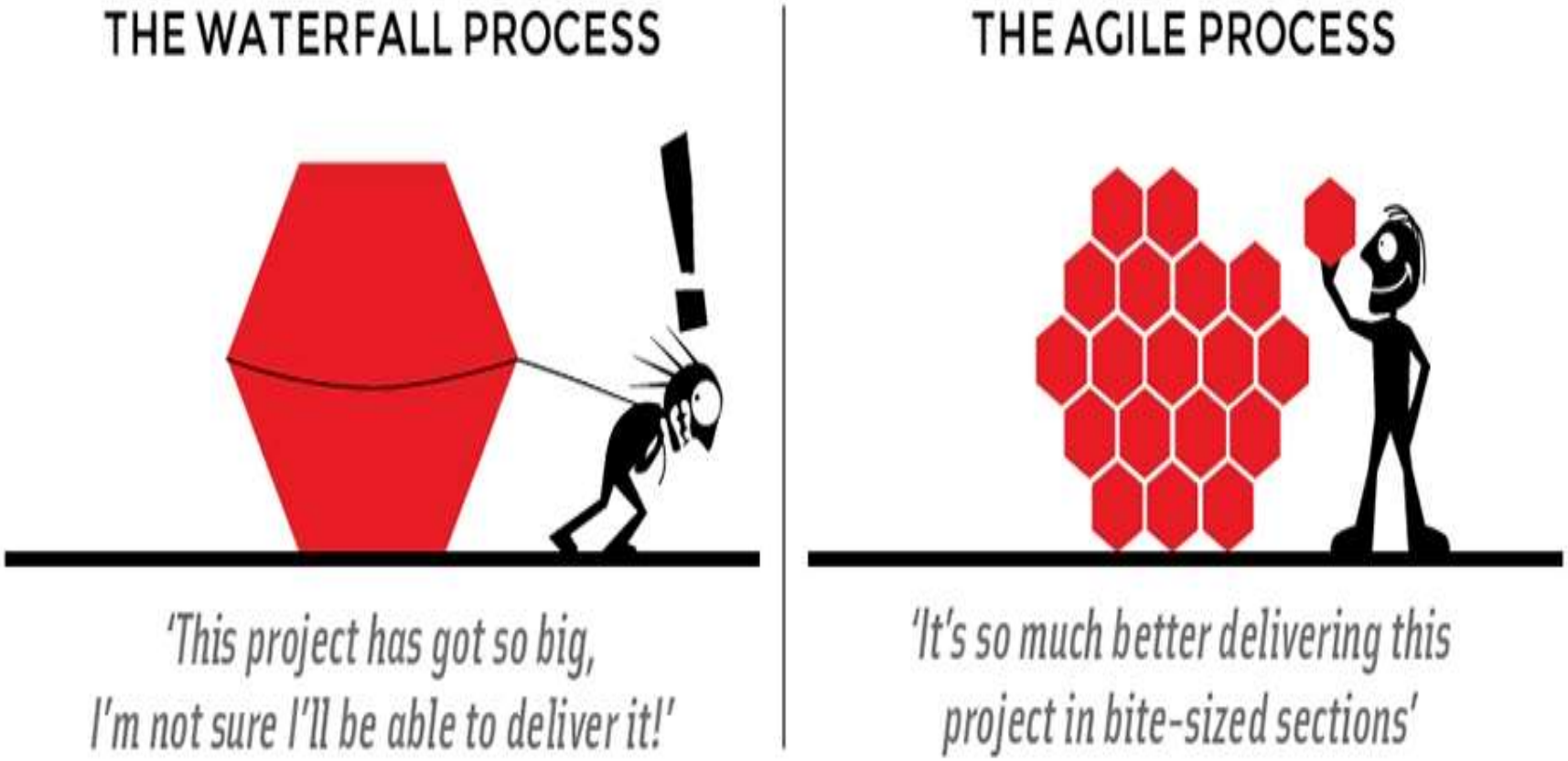
- Agile embraces change, flexibility and collaboration - giving companies a competitive edge.
- Agile brings value to the customer sooner.
- Frequent feedback from customers means better quality.
- Extreme transparency and visibility makes the process more predictable.
- Small self-managed teams are given an objective rather than an assignment and have the ability to make corrections.
- Agile tackles the riskier tasks first.
- Shorter project cycles bring in revenue much faster than the longer cycles in a classic waterfall process.

Agile vs Waterfall



http://www.slideshare.net/OPNFV/opnfv-101

Agile vs Waterfall

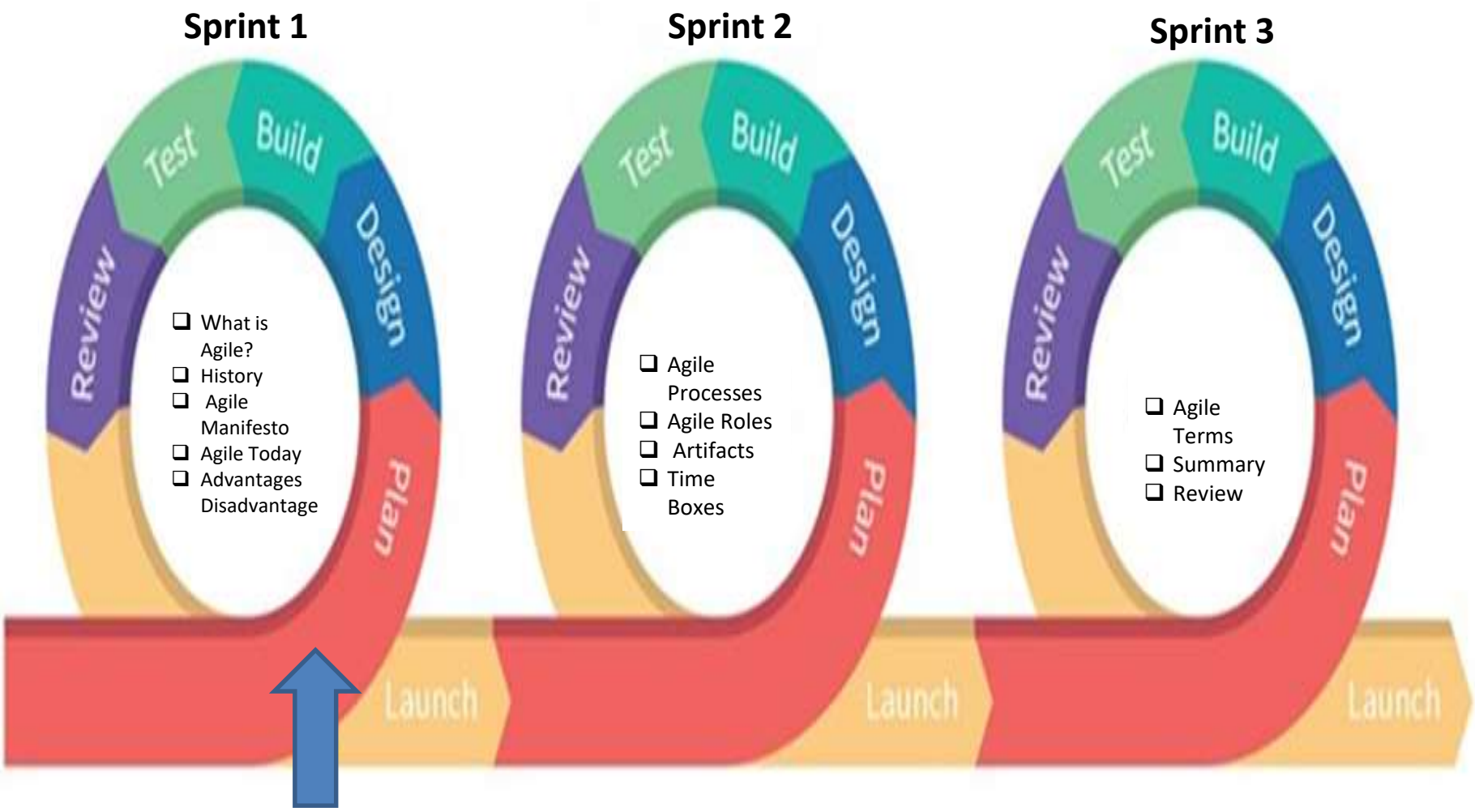


https://blog.ganttpro.com/en/waterfall-vs-agile-with-advantages-and-disadvantages/

Disadvantages

- Agile is more expensive and complex than traditional project management
- Companies must have the resources to hire teams that are trained in Agile.
- Team members must be highly skilled in a variety of areas.
- Agile is an extremely expedited way to work.
- Agile requires a lot of discipline and transparency.
- Planning is less concrete.
- The final product can be very different than originally intended.

Agile Project Example



Agile Processes

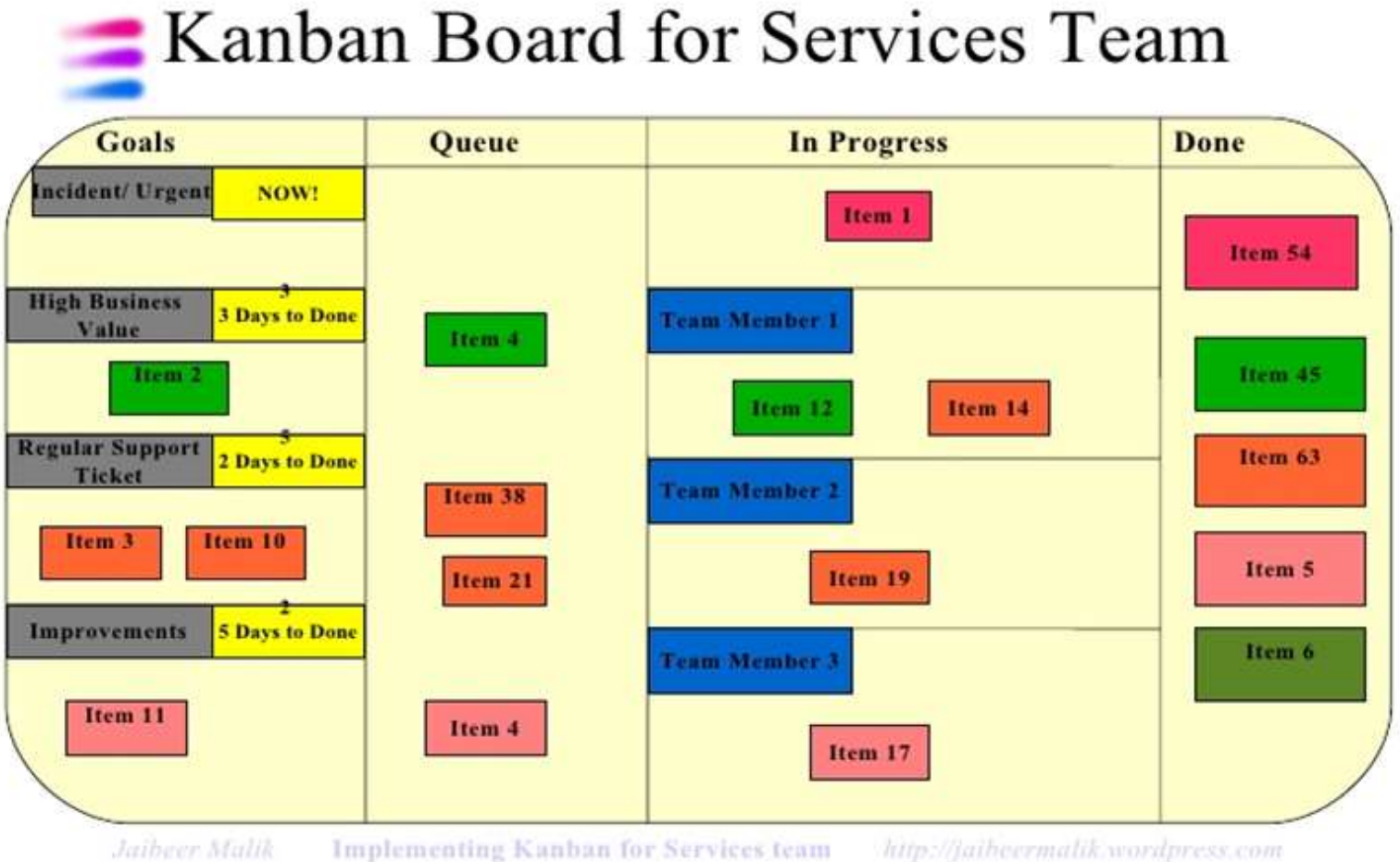
- **Agile project management** is the terminology used for project management using agile methodologies and practices.

- **Scrum** is the most widely used Agile framework. Comprised of short iterations, It focuses on quick delivery and responding to the new requirements.

- **Lean Agile Project Management** applies both Agile and Lean principles.

- **Kanban** uses a sign board or a system of writing everything that is going on with the project on the board.

Agile Processes



Agile Roles, Events and Artefacts

Agile Roles

- **Product owner** is an expert on the product and the customer's needs. Responsible for bridging the gap between customer, stakeholders, and development team

- **Scrum master** Also called team coach or project lead. Supports the development team, facilitates daily standup meetings, tracks the progress of the team, and removes any organizational roadblocks.

- **Scrum Team** creates deliverables, user stories, tasks and sprint backlog, Teams are cross-functional, self-organized, and empowered.

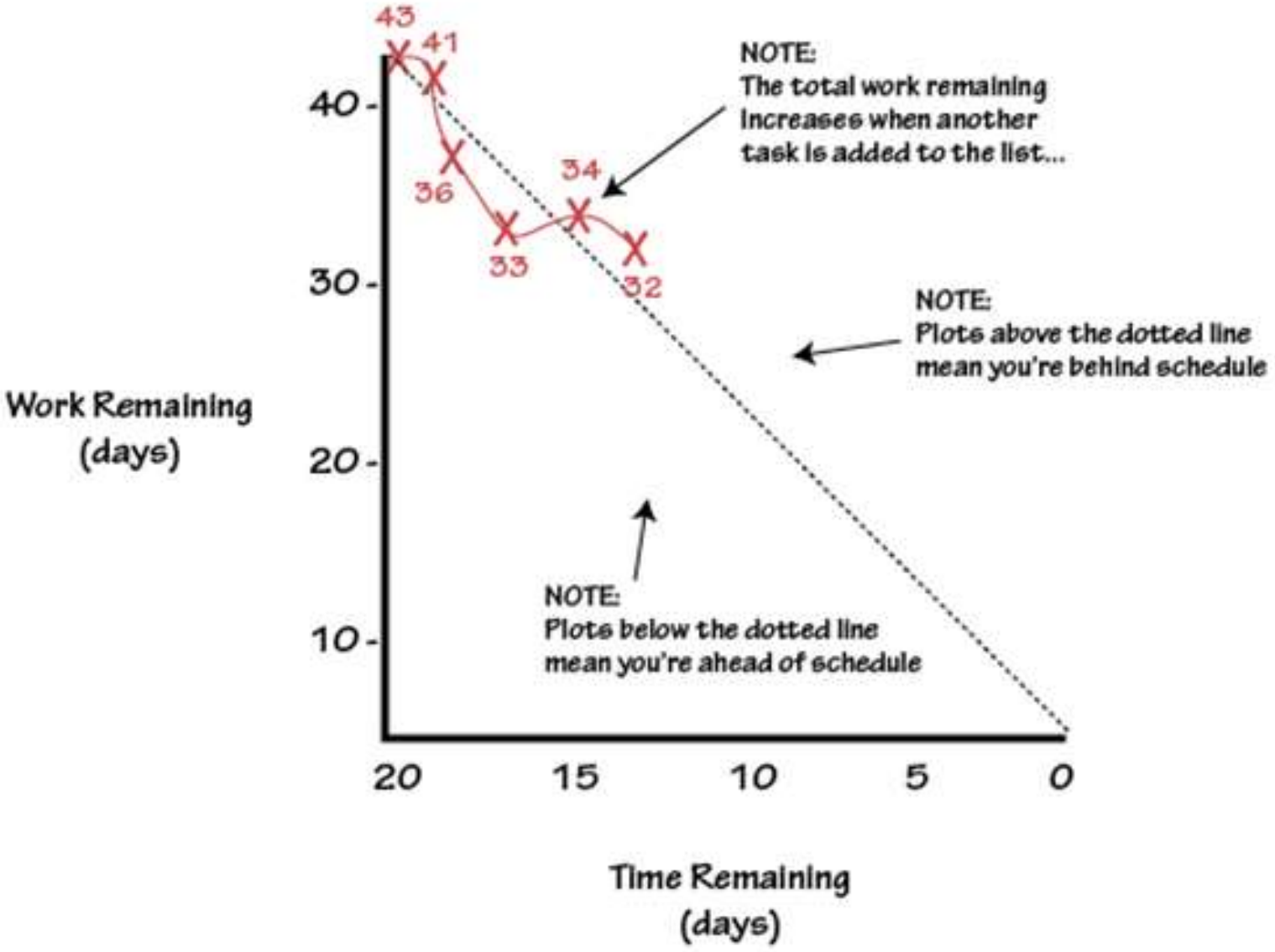
Agile Artifacts

- **Product backlog** is a collection of *all the user stories and tasks* that the team needs to work on or complete.

- **Sprint Backlog** is a collection of user stories and tasks that the team needs to complete in the *current sprint* and in the upcoming sprint.

- **Burn Down Charts** A graphical representation of the remaining work to be done and the available time left . This chart is updated at each sprint meeting by the sprint master.

Burndown Chart



Agile Time Boxes

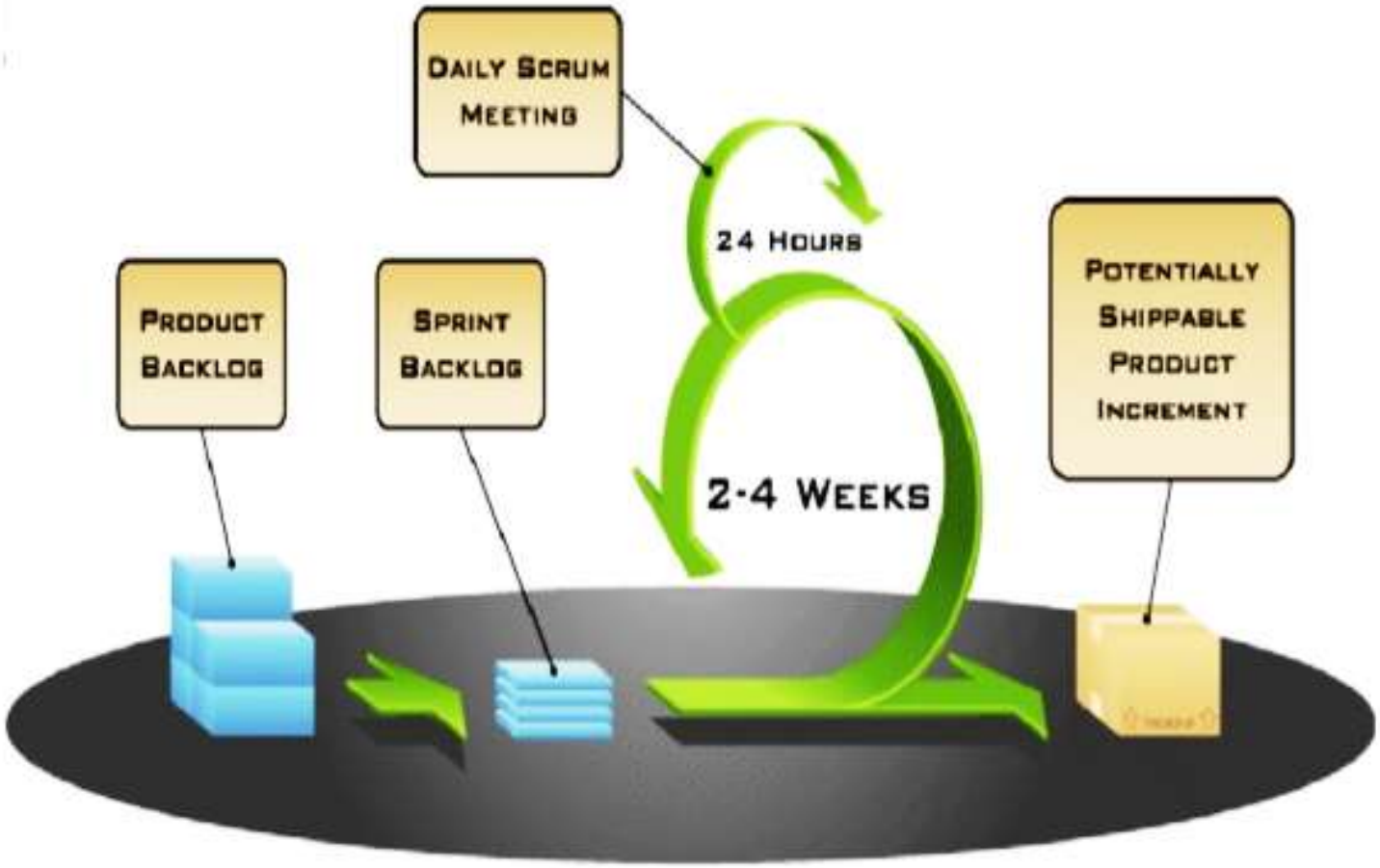
- **Sprint** or iteration. 2-4 week period when the team works to produce the next increment of the finished product.

- **Daily Standup Meeting -** a brief 15 minute meeting. Team members report their progress by answering these 3 questions:
  1. What did I complete yesterday?
  2. What will I complete today?
  3. What obstacles (if any) am I currently facing**?**

These Activities once per sprint:

- **Sprint Planning meeting** conducted prior to each Sprint
- **Sprints Review Meeting** the Scrum Team presents the deliverables of the current Sprint to the Product Owner
- **Retrospect Sprint Meeting** team reviews and reflects on the previous Sprint.

Agile Project Life Cycle



Agile Life Cycle Model (Partial)

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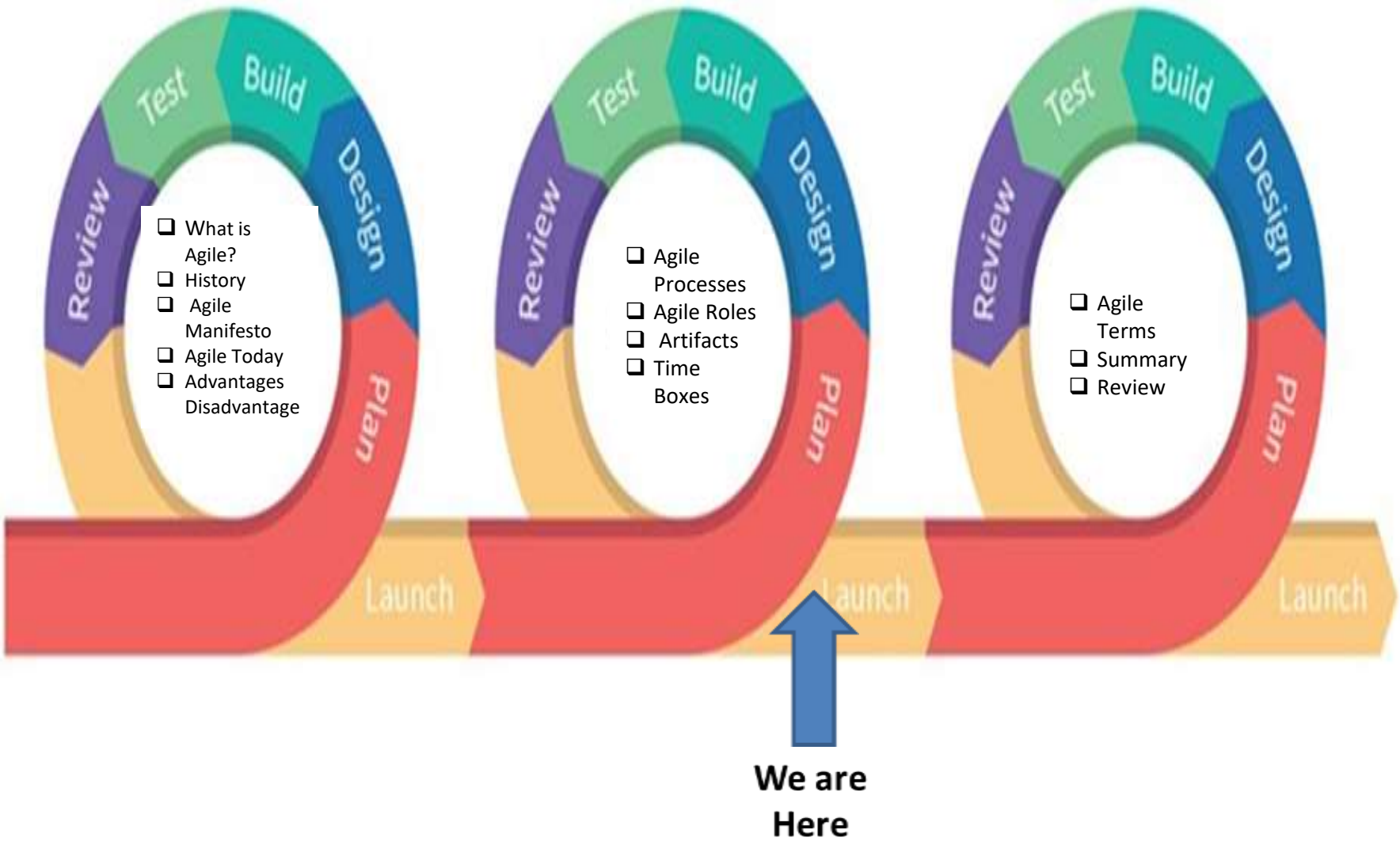
Agile Project Example



Agile Terms

Iteration Another word for Sprint. A short time box which breaks up the work into small increments, minimizing the amount of up-front planning

Stakeholder Anyone with an interest in the project. They provide input and are affected by the project's outcome.

Agile mentor: Someone who has experience implementing agile projects and can share that experience with a project team. He provides valuable feedback to new teams and to project teams that want to perform at a higher level.

http://searchsoftwarequality.techtarget.com/definition/user-story
https://www.atlassian.com/agile/delivery-vehicles

Agile Terms

User Story is a tool which describes a feature from an end-user perspective. It describes the type of user, what they want and why using the following template:

As a <type of user>, I want <goal> so that I <receive benefit>

- User stories are broken down into Tasks.
- Tasks are prioritized by MOSCW below.
    - Must have
    - Ought to have
    - Should have
    - Could have
    - Would have

Each task has a point value. The higher the point, the more value it has.

http://searchsoftwarequality.techtarget.com/definition/user-story

- https://www.atlassian.com/agile/delivery-vehicles

Agile Terms

Epic is a large user story that needs to be broken down into smaller pieces before it can be used in agile.

Task A Task is a completely broken down form of a user story.

A task board a place where all the current tasks, along with their assignees are displayed.

Decomposition is the process of breaking down epics or user stories into smaller, more executable user stories or tasks.

Agile Terms

Velocity a measure of how much the team can complete in 1 iteration. Measured by number of user story points completed in a sprint.

Fail-fast –the ability of the system to report a failure or any condition hat may lead to failure as soon as possible.

Poker planning a consensus based approach for estimating the efforts for a test using actual poker cards until everyone agrees to one value.

Technical Debt describes the cumulative consequences of cutting corners throughout a project's development. These shortcuts help the product to be delivered in time, but can cause long term issues.

www.atlassian.com/agile/developer

Agile Terms

Dynamic scope In agile projects, scope becomes the dynamic variable so teams can protect quality and stay tightly coupled with the business and customer needs.

Continuous integration is a development practice that requires developers to integrate code into a shared repository several times a day. Each check-in is verified by an automated build, allowing teams to detect problems early.

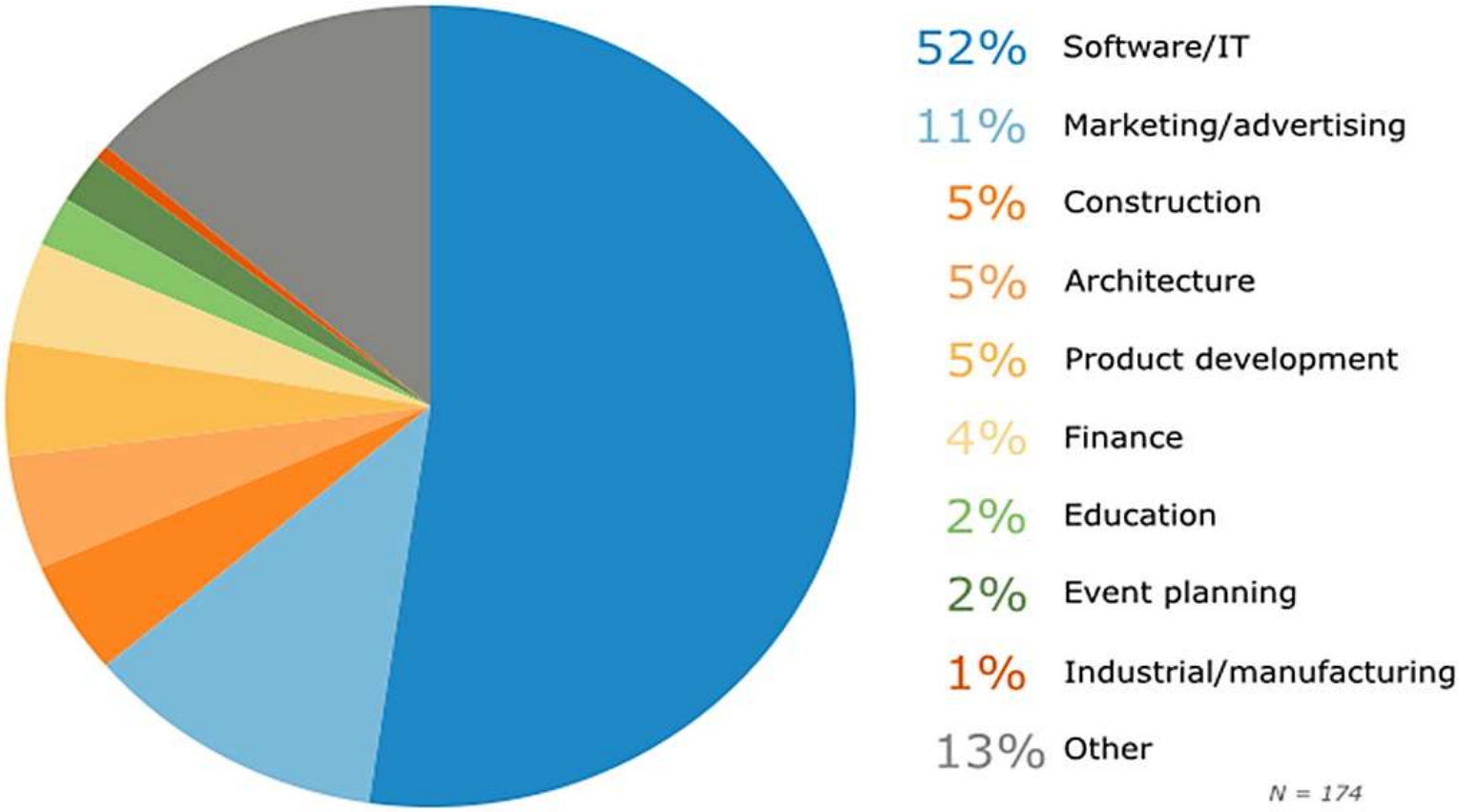
Test-Driven Design In line with the continuous integration thinking, scrum recommends micro cycles of requirement gathering, software development, and testing.

https://www.atlassian.com/agile/developer

https://www.thoughtworks.com/continuous-integration

Industries using Agile

Agile can be used in any industry but is ideal for more complex projects and when customer requirements are likely to change due to technology, regulations, market changes or economic conditions.

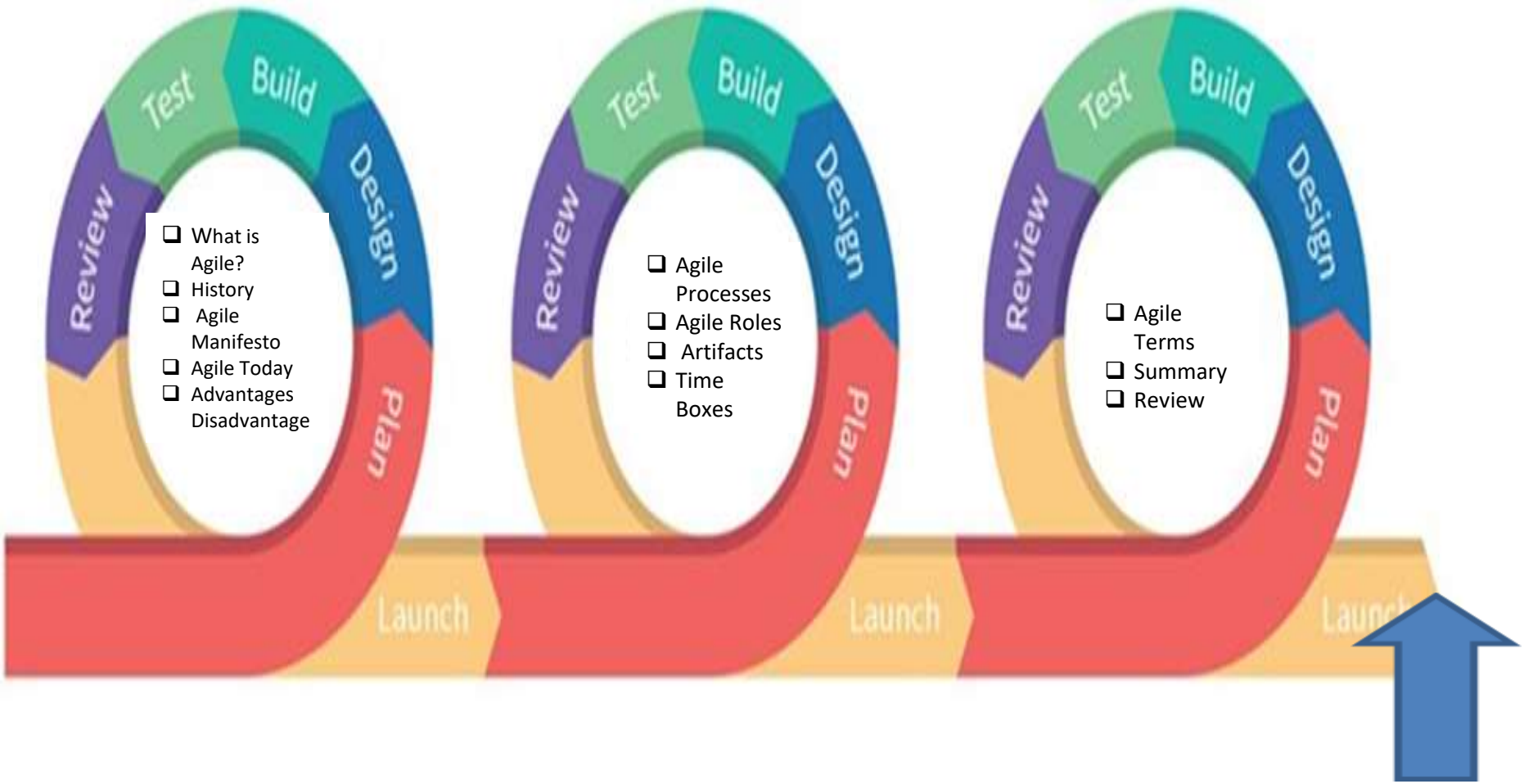


- http://www.isbconsulting.co.za/isb-consulting-launches-agile-and-scrum-professional/

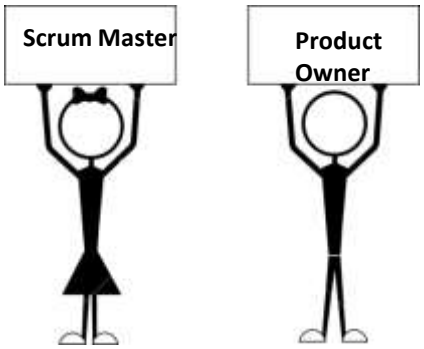
Summary

- The demand for Agile continues to increase. As business cycles become shorter, companies are fighting to keep their competitive edge.
- Agile brings faster results and ROI. Agile also brings transparency and predictability to the project.
- Agile projects have a much higher success rate than those using traditional waterfall project management.
- Companies worldwide are adopting Agile techniques. Today, Agile is used in all types of industries.
- Thanks to Agile methodologies, companies continue to prosper as they deliver new innovations.

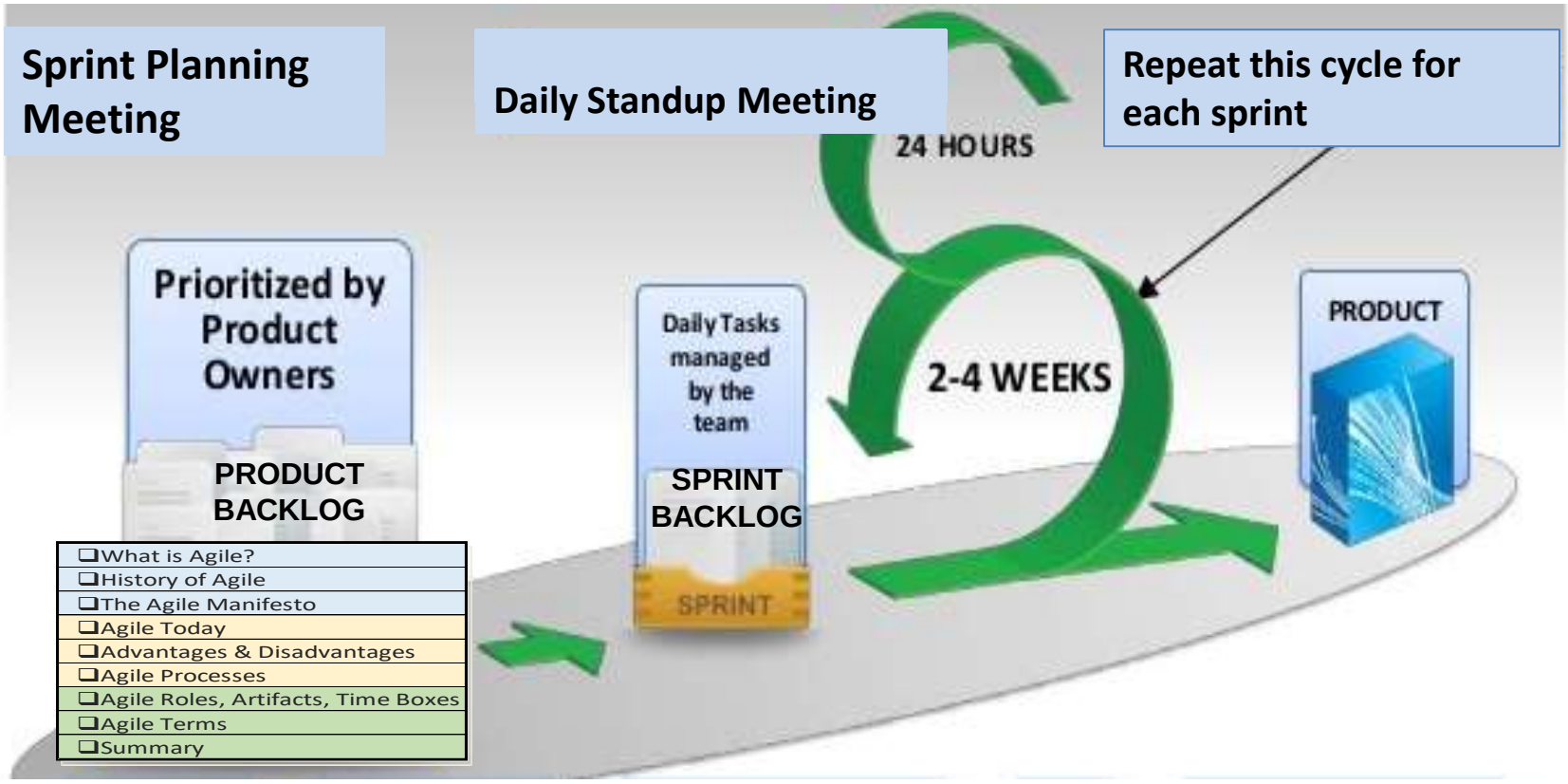
Agile Project Example



Agile Project Review



Development Team



Any questions?

Thank you for this opportunity to present this study on AGILE!