

Introduction to Agile

Lecture 1

SoftUni Team
Technical Trainers



SoftUni



Software University

<https://about.softuni.bg>

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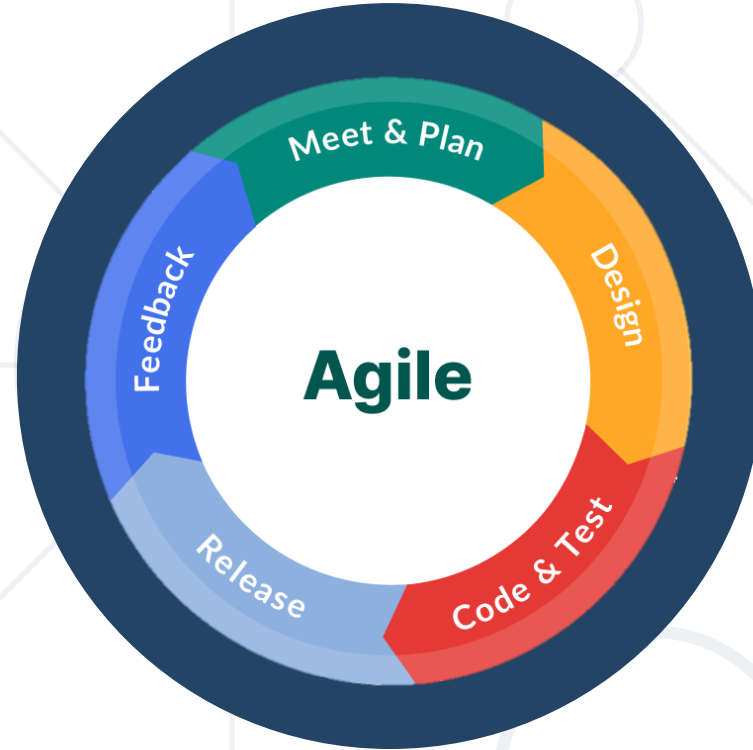
Have a Question?



sli.do

#Agile

- Overview
- Structure, lectures & topics
- Exam



State of Agile

- What is the first thing you think when you hear the term "Agile"?
- Why do you think "Agile" is important for organizations today?

- Global surveys
 - "McKenzie & Co", 2021 – Agile Transformation
 - "Digital AI", 2021 – annual (global) survey

Agile Culture Today - *McKenzie & Co*

Highly successful agile transformations result in a step change in performance, with impact achieved in multiple dimensions.

Impact achieved by highly successful¹ agile transformations

Customer centricity	Operational performance	Speed	Innovation	Employee engagement	Efficiency
30%	30%	5–10×	#1	30	30%
increase in customer satisfaction by creating teams with end-to-end customer missions	improvement in selected processes by removing hand overs and driving continuous improvement	increase in speed in driving change and decision making through simplified operating model	ranking in driving innovation among peers	percentage-point increase in employee engagement by ensuring people have autonomy and purpose	efficiency gains through fewer hand overs, reduced overhead, and strict focus
VS 5–10% for less successful transformations	VS 5–10% for less successful transformations	VS 2× for less successful transformations	VS no ranking for less successful transformations	VS 5–10 for less successful transformations	VS 5–10% for less successful transformations

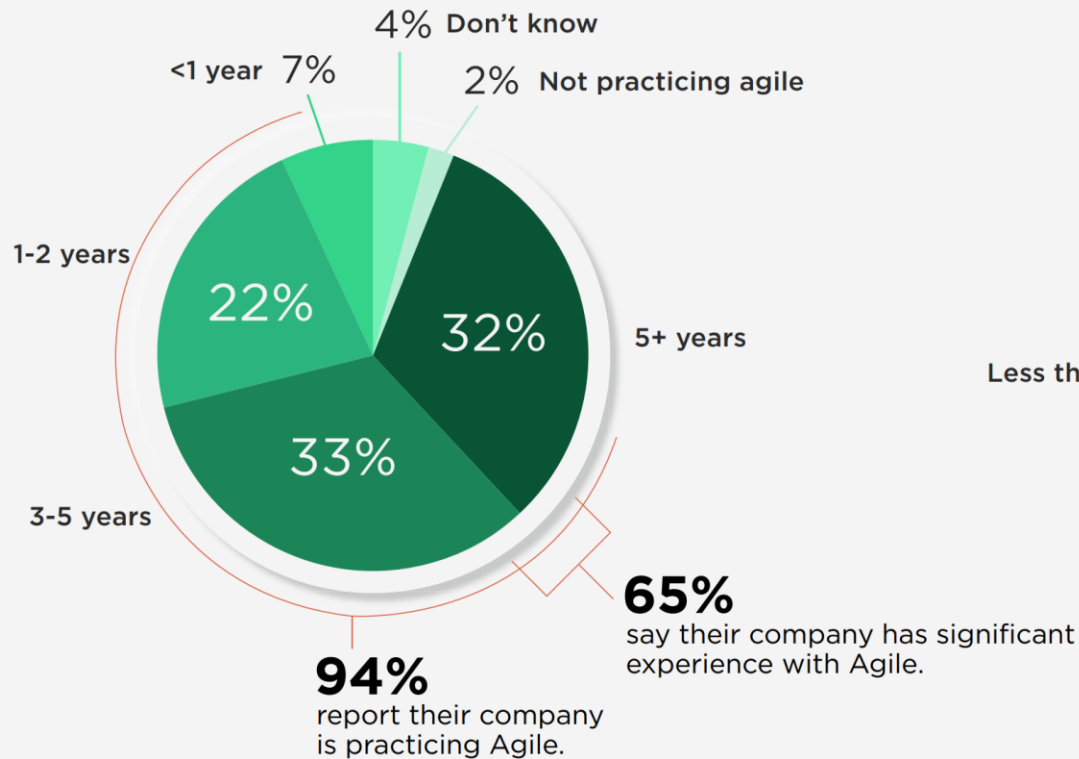
Share of organizations reporting a significant impact on their financial performance after their transformation

65%

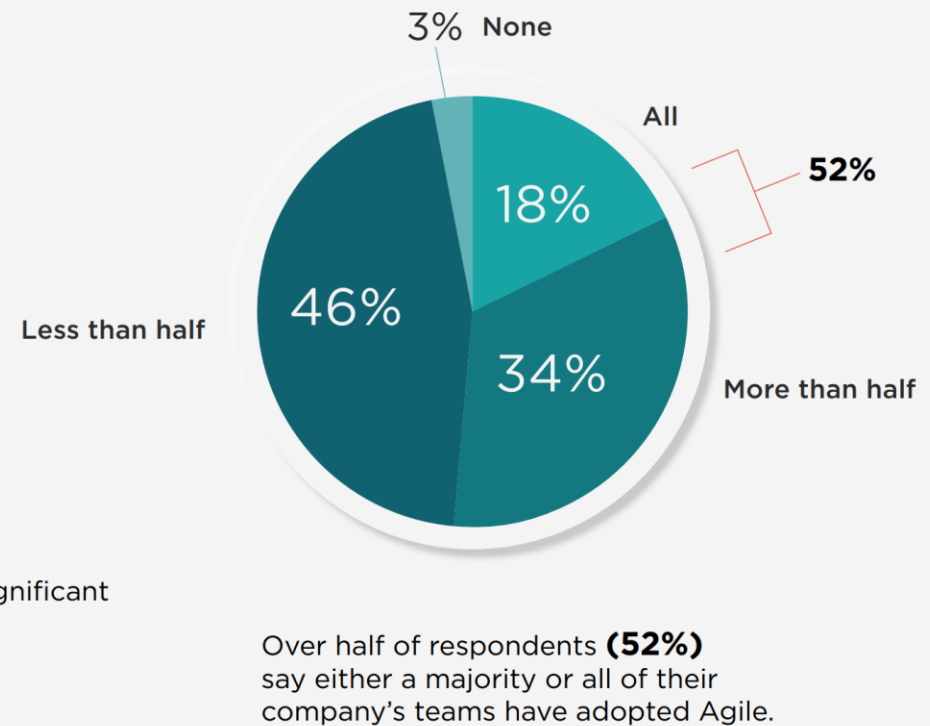
15%

Company Experience with Agile

How long has your company been practicing agile?

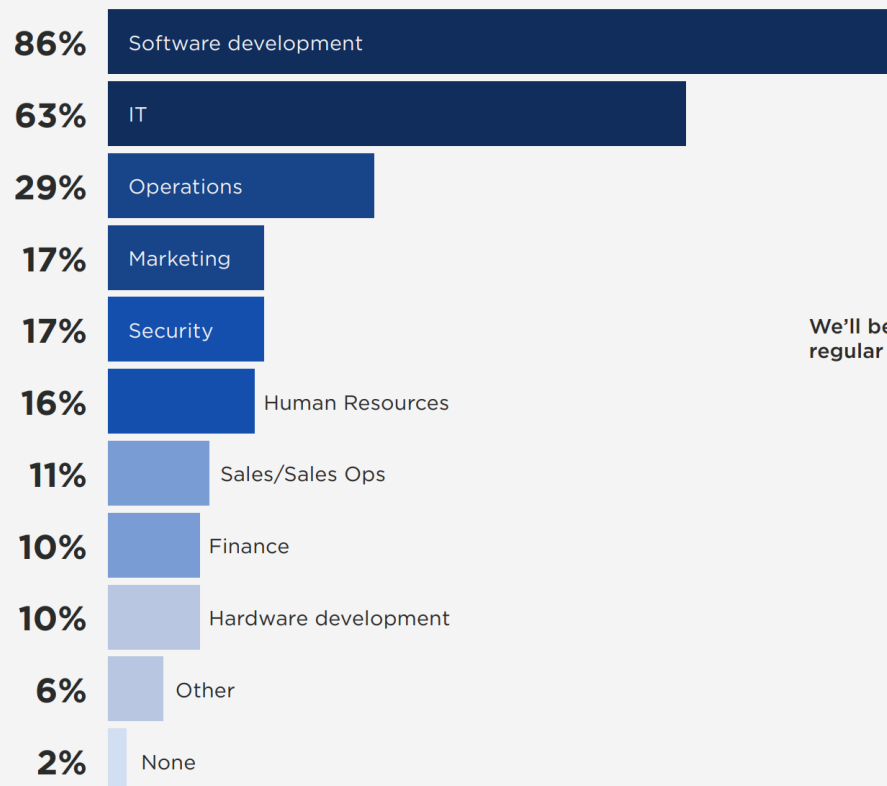


How many of your company's teams have adopted agile practices?



Company Experience with Agile

Which areas of your organization have adopted agile principles and practices?



How do you see the distribution of your agile team changing post-COVID-19?



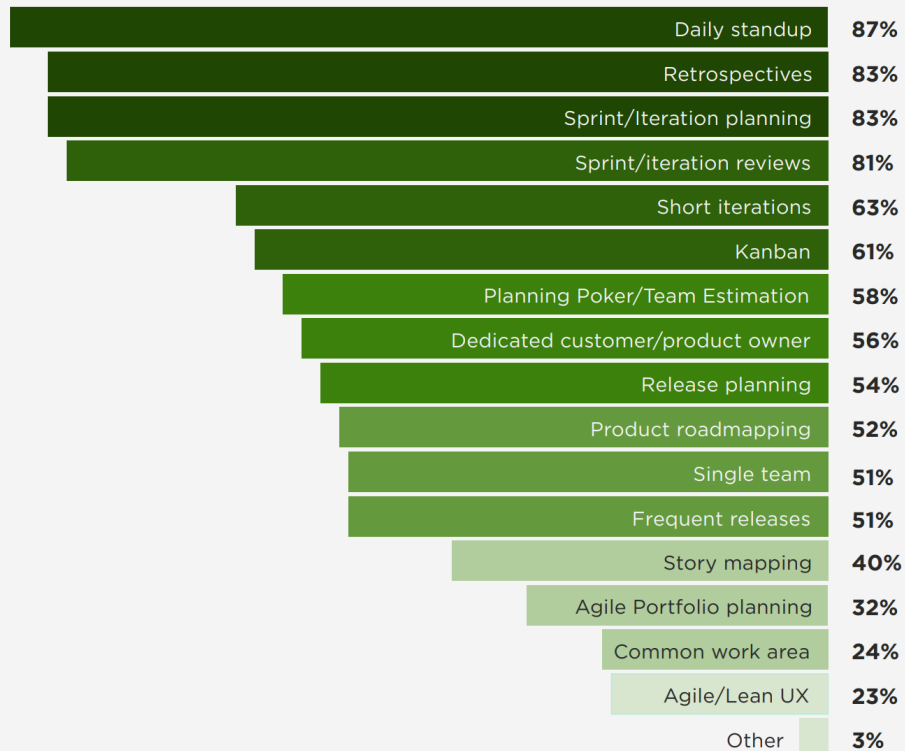
Multiple industry studies have shown a growth in distributed teams. This survey indicates that 89% of teams are geographically distributed.

Remote work isn't just a temporary trend during COVID-19 — a mere 3% say they will be back in the office all of the time after COVID-19.

Agile Techniques and Maturity

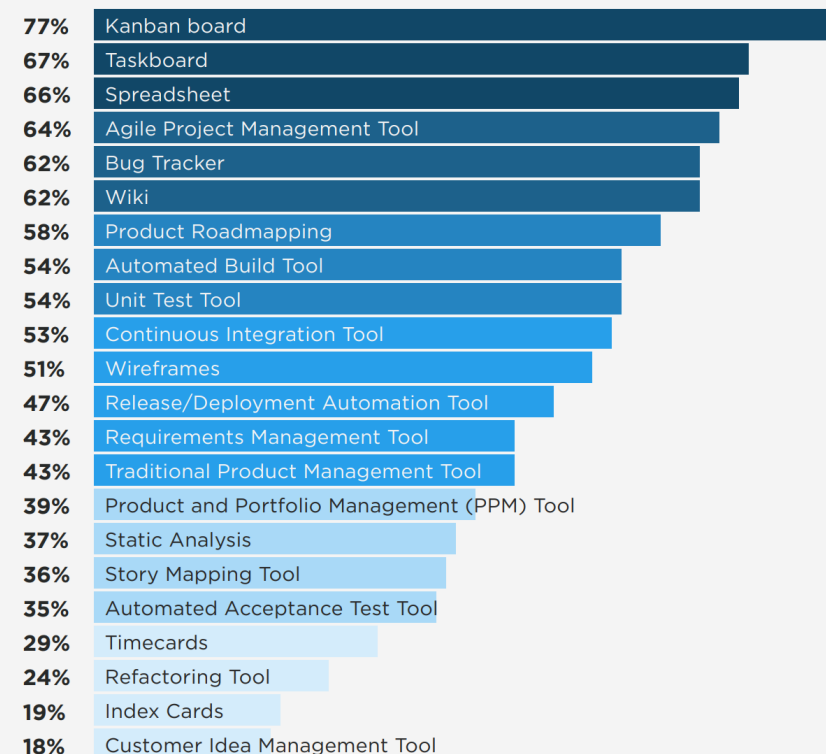
Almost nine in 10 respondents use daily standups while over four in five use retrospectives and sprint/iteration planning.

Which of the following agile techniques and practices does your organization use?



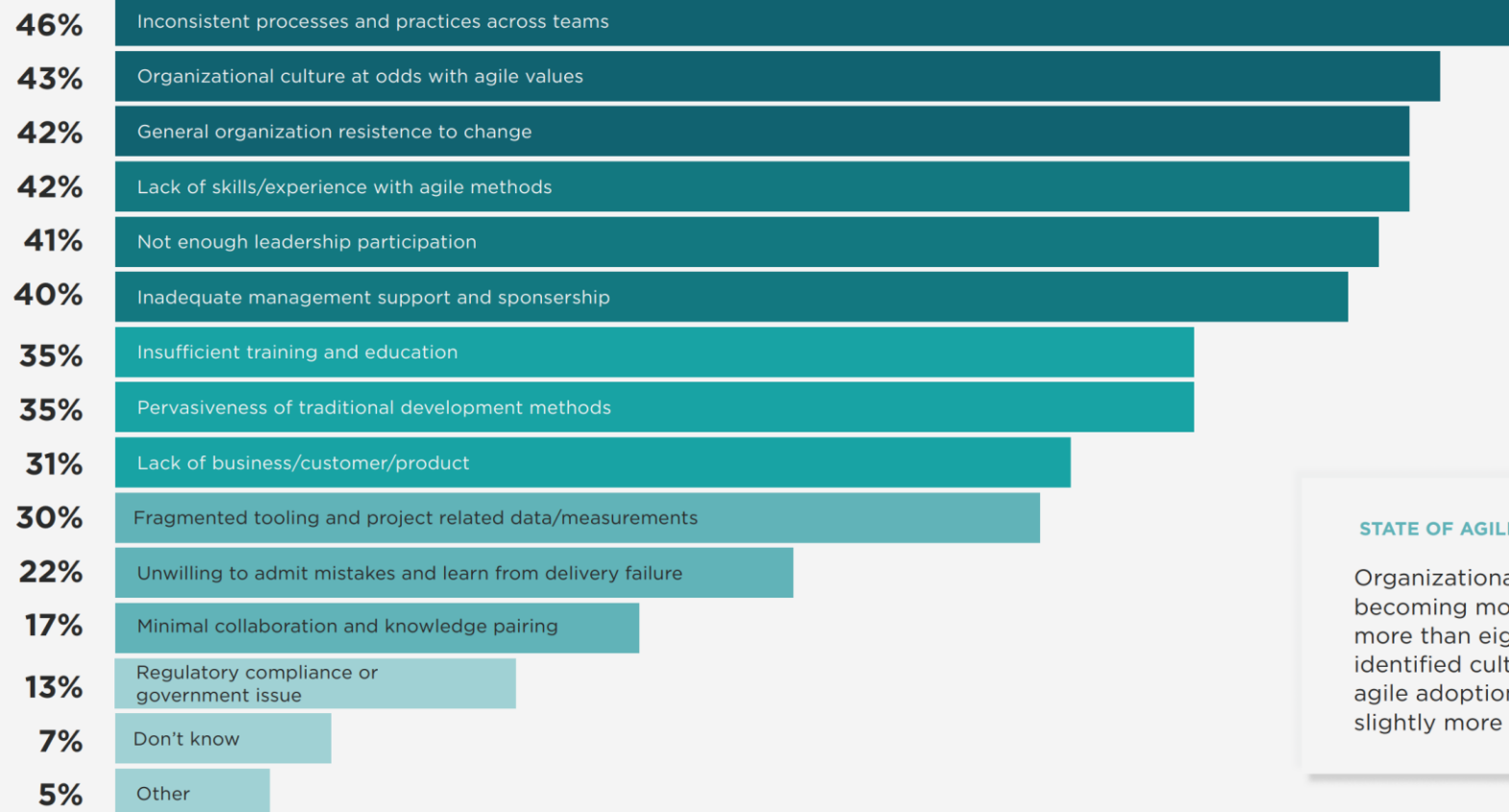
$\frac{3}{4}$ of respondents say they use kanban boards while $\frac{2}{3}$ use taskboards and spreadsheets.

Which agile planning and delivery tools do you currently use?



Agile Challenges

What are the most significant barriers to adopting and scaling agile practices in your current organization?



STATE OF AGILE LOOK BACK

Organizational culture and agile values are becoming more aligned. A few years ago, more than eight out of 10 respondents identified culture as a significant barrier to agile adoption. That number now stands at slightly more than four in 10.

The 15th State of Agile (2021)

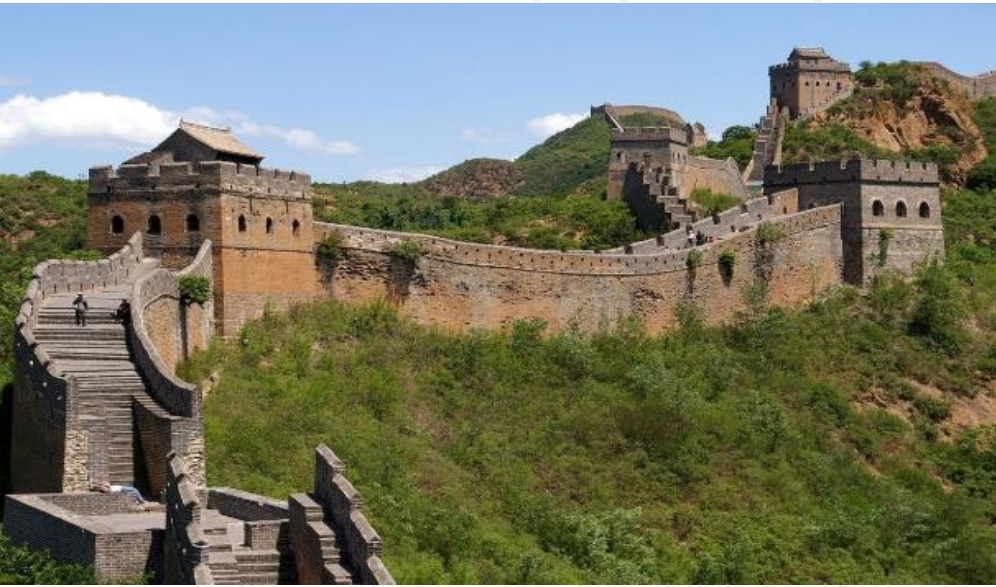
- What is the report focusing on?
- Differences between 2019th and 2021?
- What is trending now?
- How do you think this would affect the industries?





Historical Overview

Some of the Greatest Projects

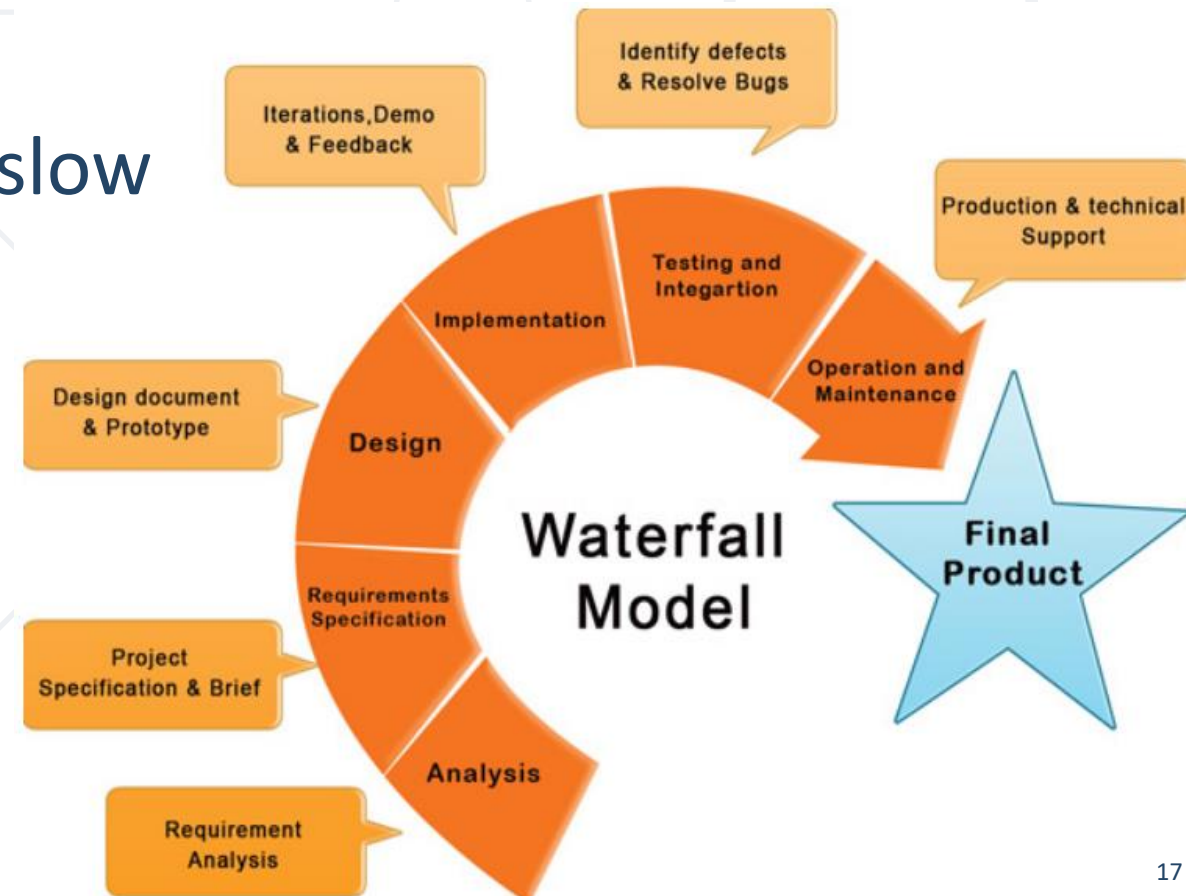


The Waterfall (Cascade) Model (1)

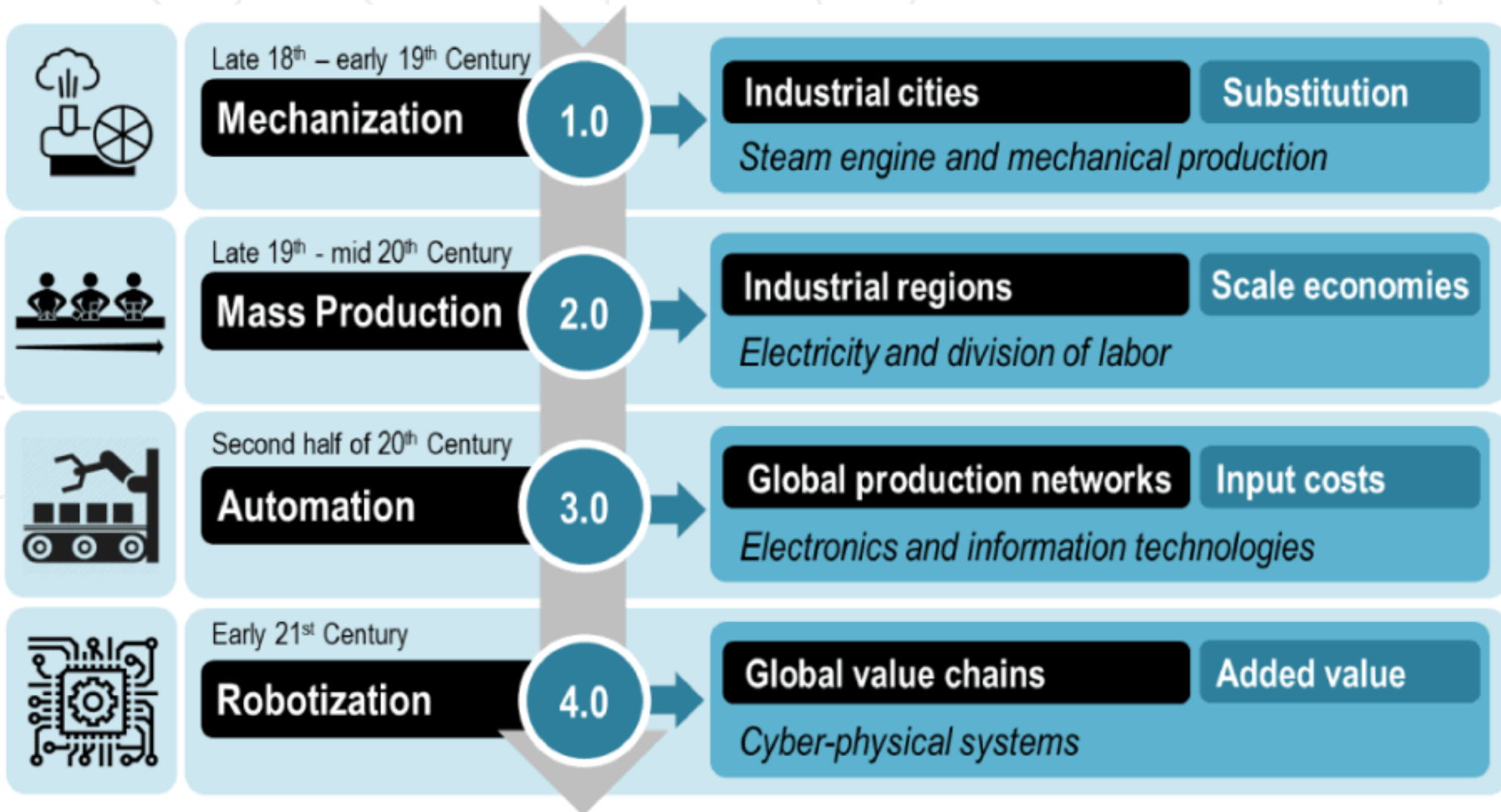
- The "classic" project management model
- The project is a liner one. There are (**almost**) no iterations
- Each part of the project is an individual set of actions
- One phase starts when the previous one is done
- Original roots in production, engineering and construction
 - Later adopted in SW development

The Waterfall (Cascade) Model (2)

- Widely used by large corporations and governmental projects
- Easy to manage, the deadlines are strict and set before the start of the project
- The product development is often slow
- The final product may differ from the initial expectations



Industrial revolutions



Mass Production (1)



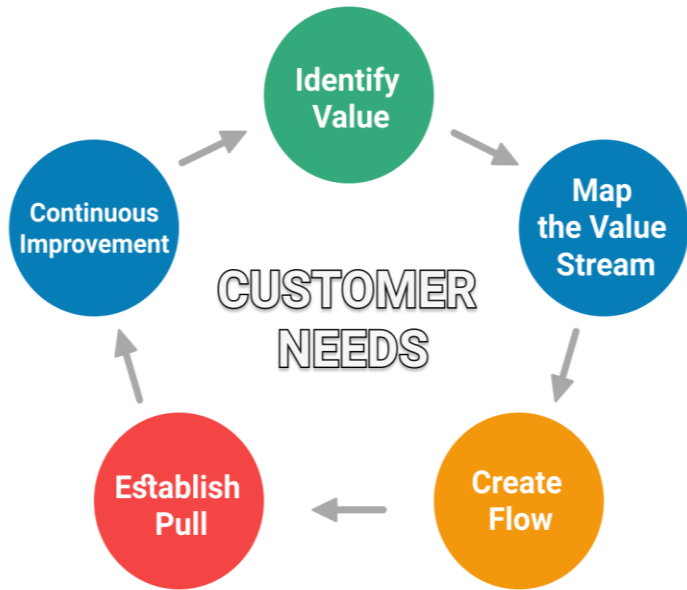
Mass Production (2)

- Focus on standardization
- Important are the tools and the processes, not people behind them
- There is very little competition between companies
- Production lines and automation
- The term "management" comes into play

Shifting Focus to the Customer, or Think "Lean" (1)

- The world after WW2
- Japan has lost the war and is in isolation
- Business must solve the following problems
 - How to produce more with less?
 - How to be more efficient?
 - How to achieve growth when resources are not sufficient?

Shifting Focus to the Customer, or Think "Lean" (2)



- Customer needs are in the center
- Identify value in everything you do
- Introducing the "pull" system
- Value Stream Mapping
- Continues improvement (**KAIZEN**)
- Perfection on every level

- Kaizen – 'kai' (to alter) and 'zen' (to improve) – continuous improvement
- Just in Time (JIT) – focus on both quality and schedule; materials are available just when they are needed – no sooner, no later

Kanban – a Lean Methodology (1)

- Developed by Toyota for lean manufacturing and just-in-time manufacturing
- Focus on improvement
- Visualize work
- A signal tells a supplier to produce and deliver a new shipment when a material is consumed.
- Ohno is also known for his "Ten Precepts" to think and act to win.^[7]
 - You are a cost. First reduce waste
 - First say, "I can do it." And try before everything

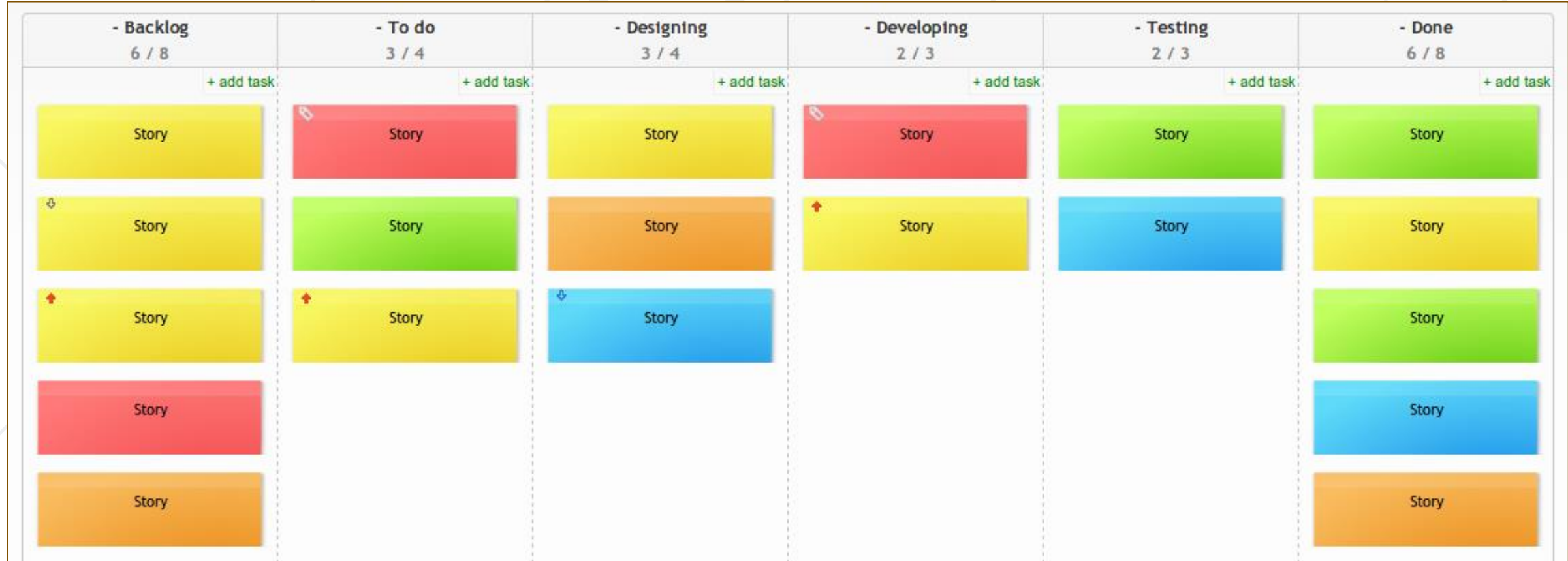
Kanban – a Lean Methodology (2)

- The workplace is a teacher. You can find answers only in the workplace
- Do anything immediately. Starting something right now is the only way to win
- Once you start something, persevere with it. Do not give up until you finish it
- Explain difficult things in an easy-to-understand manner. Repeat things that are easy to understand
- Waste is hidden. Do not hide it. Make problems visible
- Valueless motions are equal to shortening one's life
- Re-improve what was improved for further improvement
- Wisdom is given equally to everybody. The point is whether one can exercise it

Kanban Board - Original



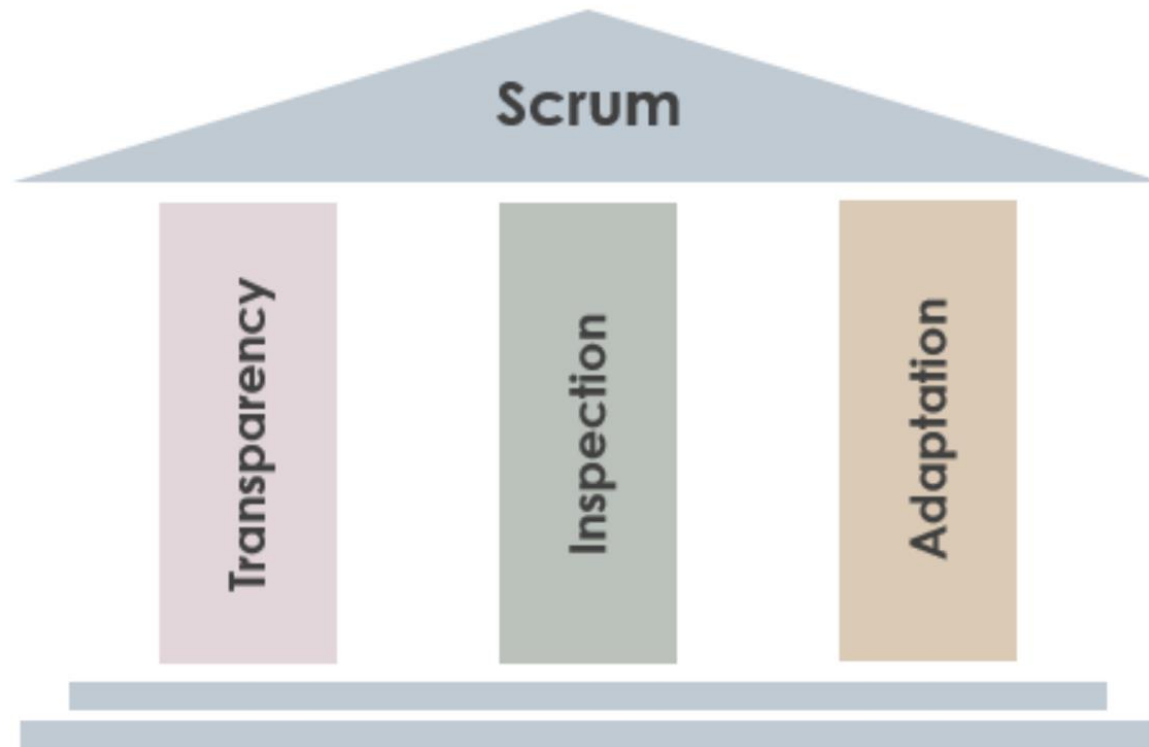
Kanban Board – Basics



SCRUM (1)

- Based on short cycles
- Typical cycle varies from 2 to 4 weeks
- After each cycle, the team evaluates its strategy and adjust tactics.
- It is almost a never-ending circle which repeats
- At the end of the cycle there is always a workable product





Transparency

Giving visibility to the significant aspects of the process to those responsible for the outcome.

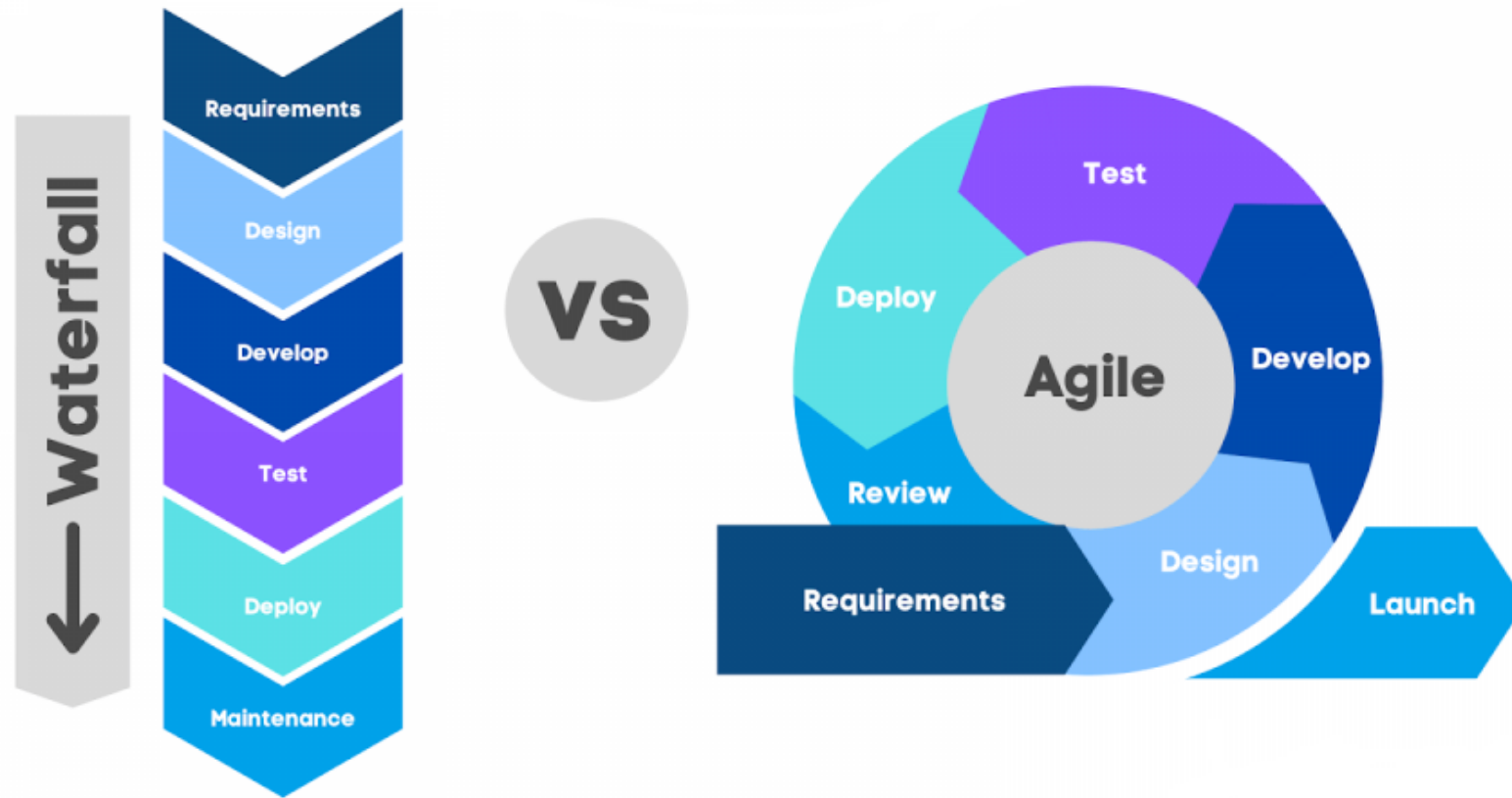
Inspection

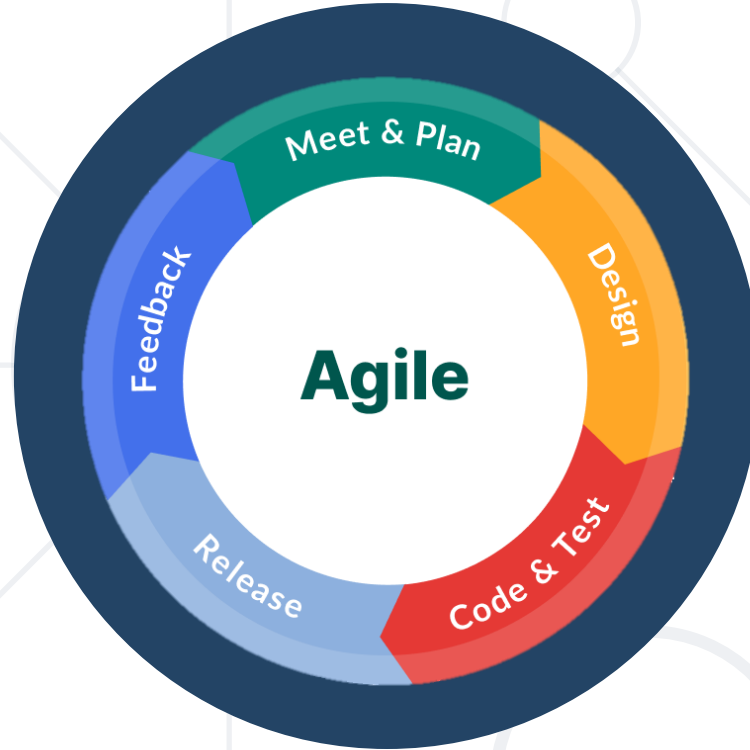
Timely checks on the progress toward a sprint goal to detect undesirable variances.

Adaptation

Adjusting a process as soon as possible to minimize any further deviation or issues.

Waterfall vs Agile



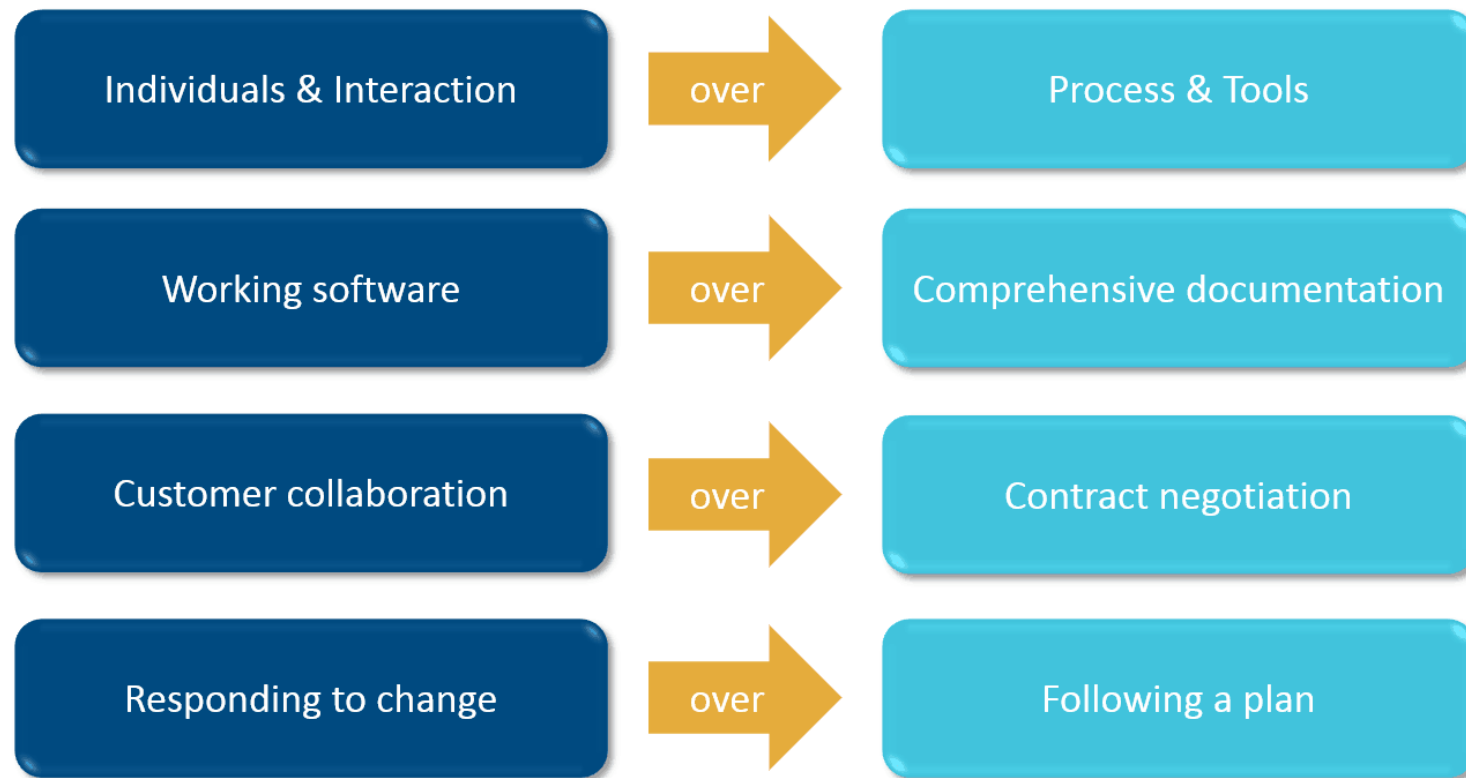


The "Agile Manifesto"

Agile Manifesto – 2001



Agile Manifesto – The 4 Values



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

...So What is Agile?

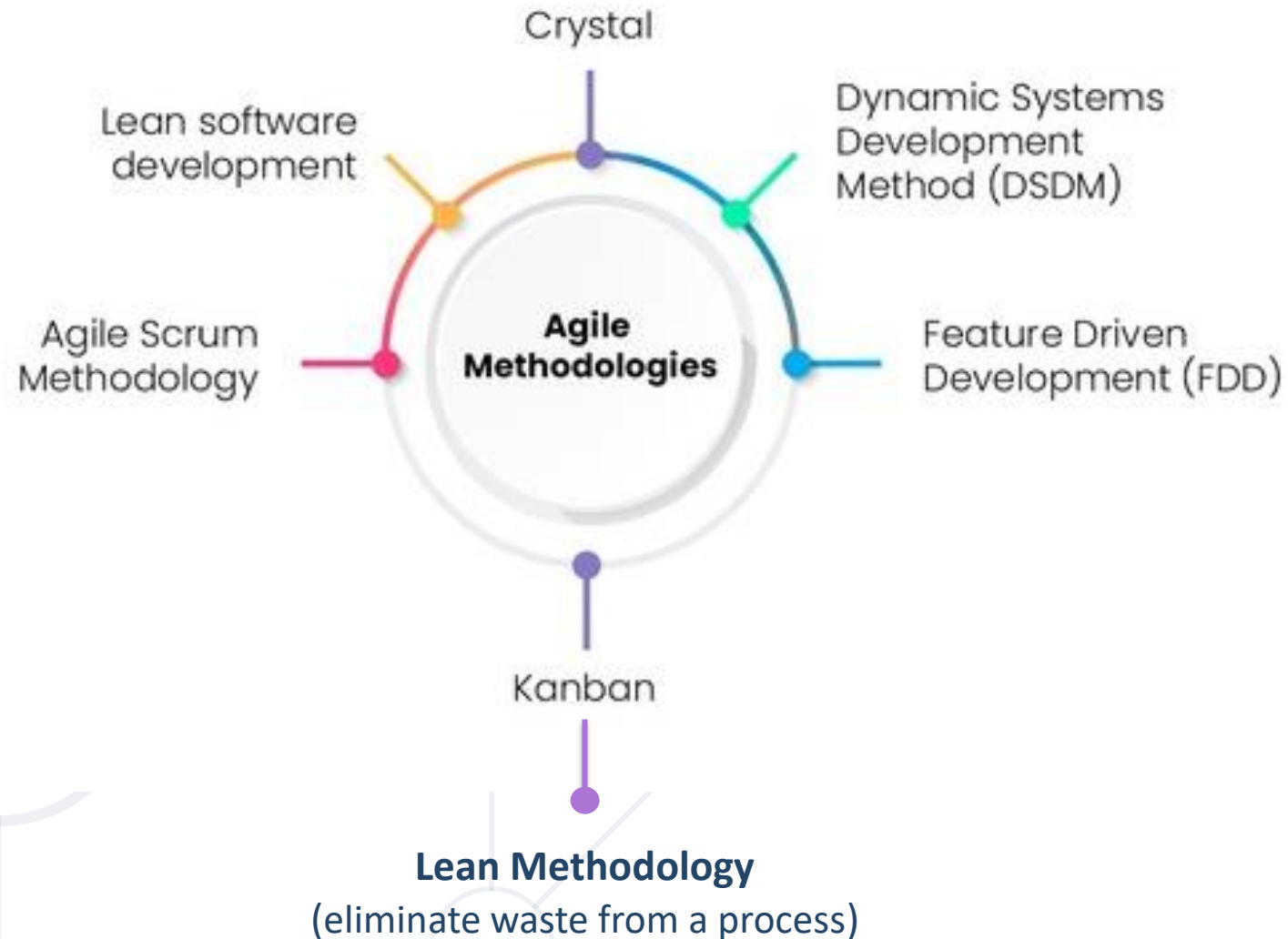


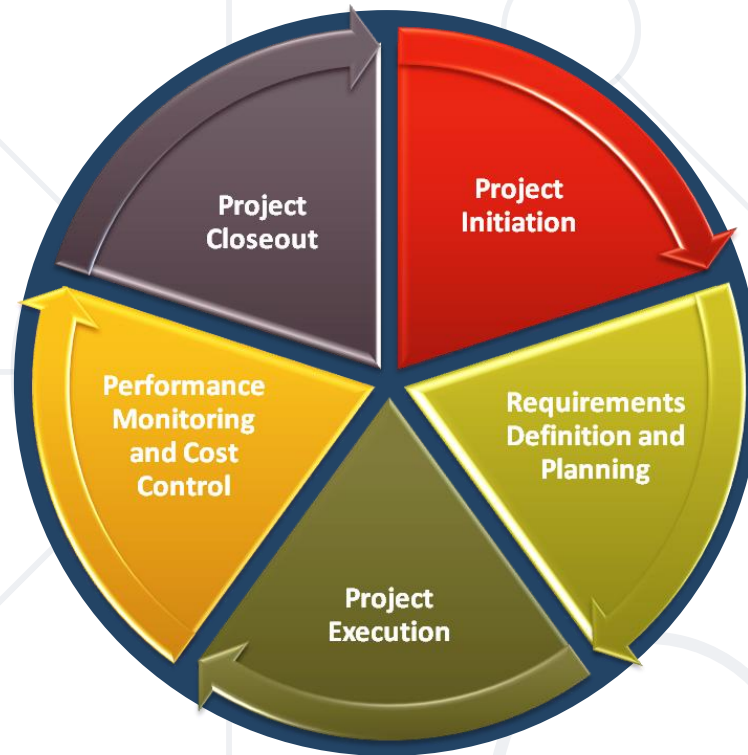
Definitions for Agile from Business Perspective (1)

- "Agile" is a **set of methods and frameworks** that embody the principles and values of the "**Agile Manifesto**"
- "Agile" is a term used to describe **approaches to software development** emphasizing **incremental delivery, team collaboration, continual planning, and continual learning**
 - The term "Agile" was coined in 2001 in the "**Agile Manifesto**"
- "Being 'Agile' Is a **mindset**. It's about finding the right thing to build, faster (and not just building things faster)."

Definitions for Agile from Business Perspective (2)

- "Agile is a time boxed, **iterative approach** to software delivery that builds software **incrementally** from the start of the project, **instead of trying to deliver it all at once near the end.**"
- "The ability to create and **respond to change** in order to succeed in an uncertain and turbulent environment."
- "Agile is best suited for situations that have some **level of uncertainty** where **creativity** and **innovation** are important to **maximize the business value** of the solution as opposed to other situations with lower levels of uncertainty where planning and control to achieve predictability are more important."





Introduction to Classical Project Management

- A project, by definition, has the following characteristics
 - It is temporary – with a beginning and an end
 - It creates/delivers a unique product, service or result

■ Projects

- Non-recurring, unique work
- Temporary in nature
- Provides a unique deliverable
- Example: Development of new SW application

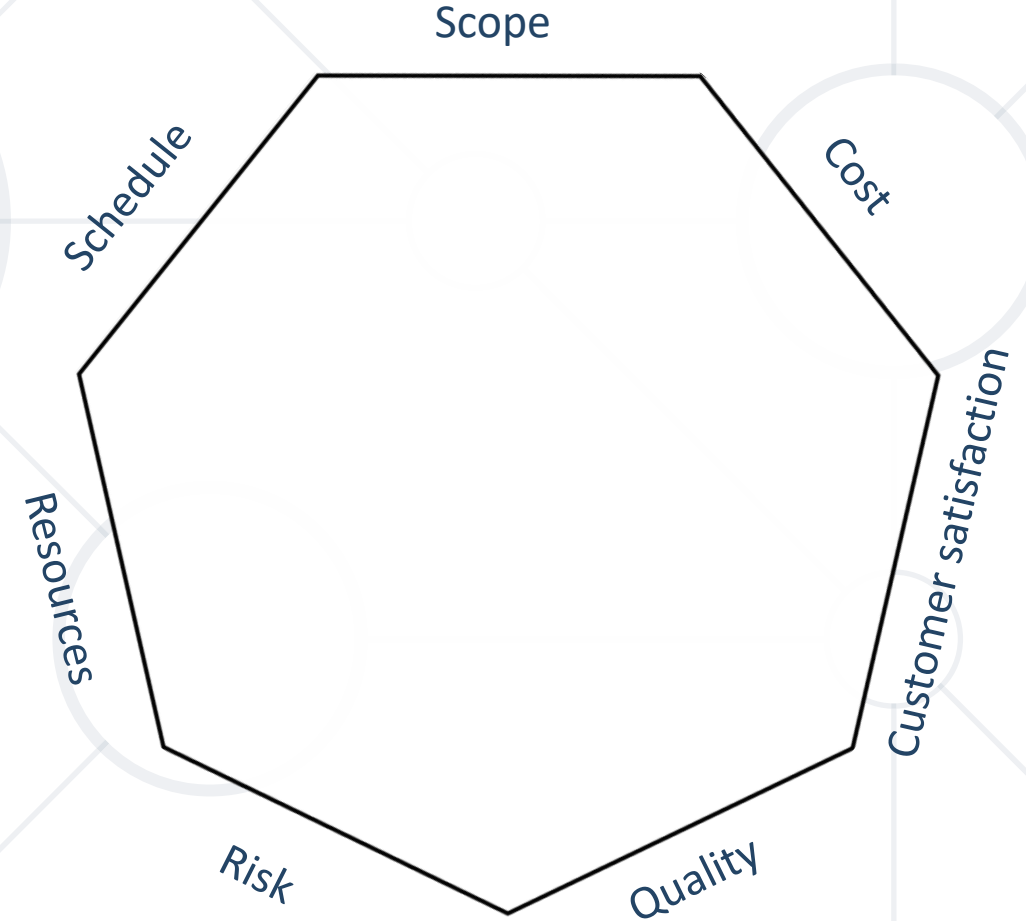
■ Operations

- Ongoing work that follows a process
- Does not have an end
- Repetitive delivery of the same results
- Example: Manufacturing TVs

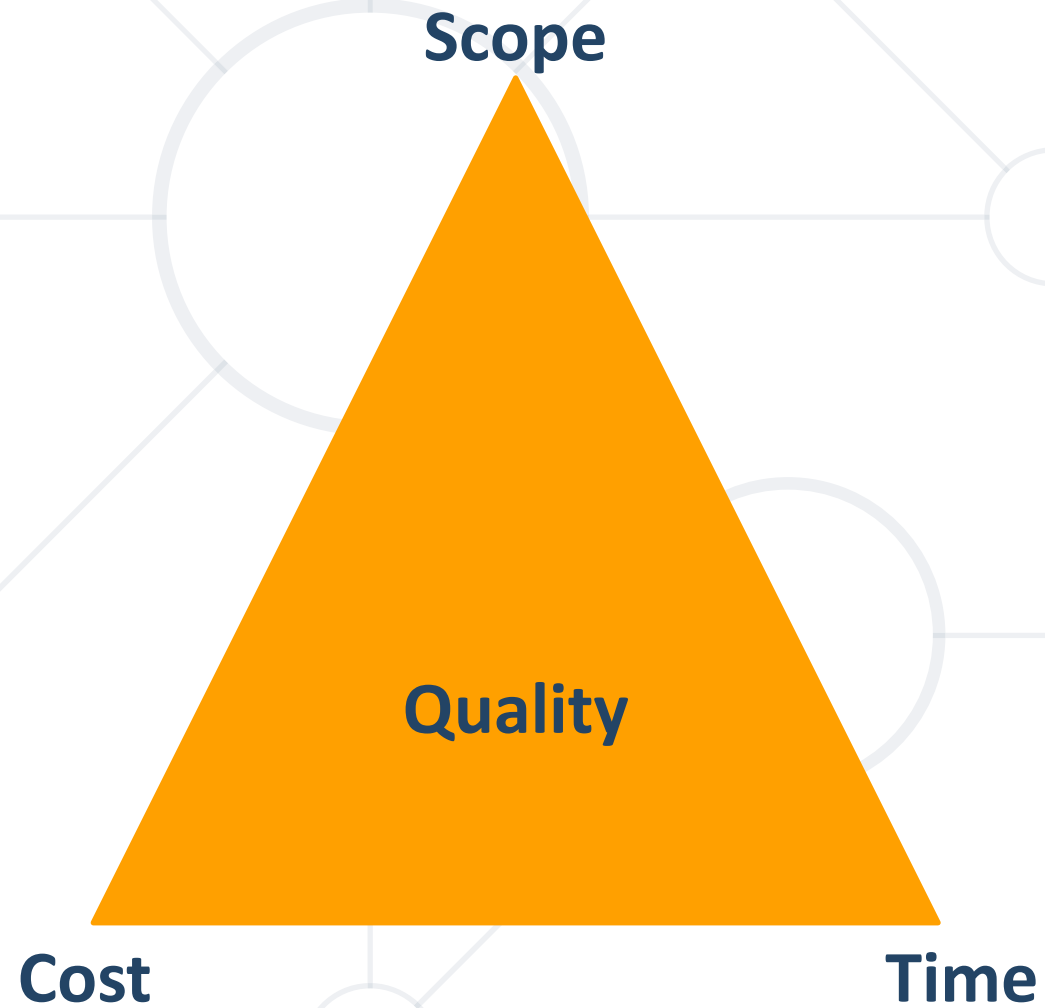


Project Constraints and Trade-offs

Project management is meeting project objectives with consideration to project constraints

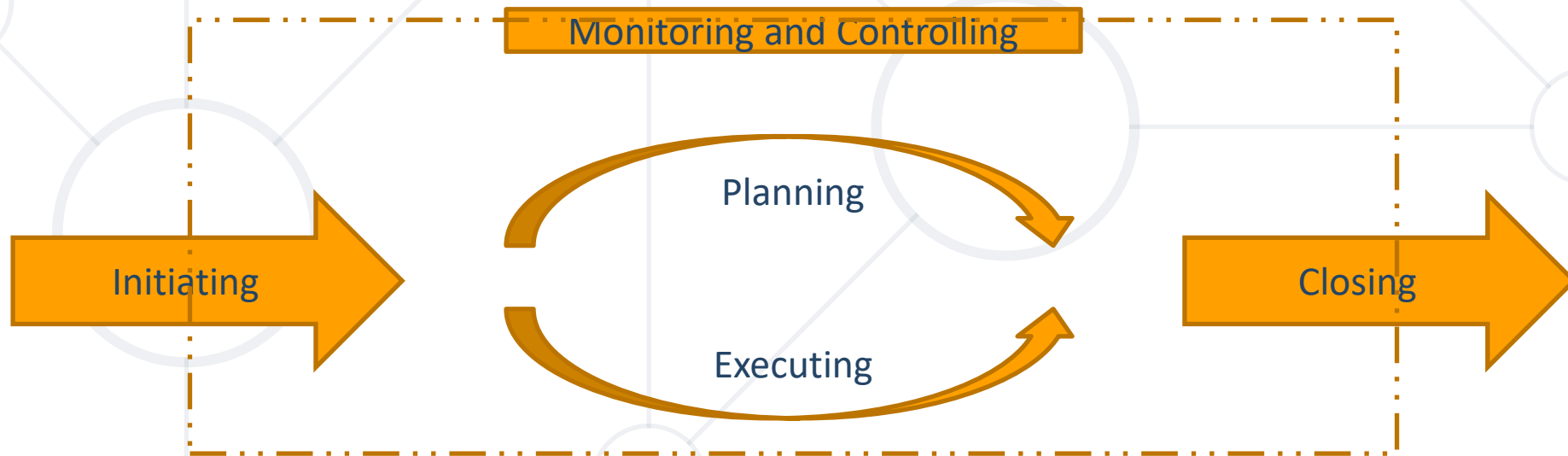


Triple Constraints



Classic Approach

- Predefined project goal, known and elaborated scope and deliverables
- Plan-driven approaches require more information to be known up-front



- 
- Integration Management
 - Scope Management
 - Schedule Management
 - Cost Management
 - Quality Management
 - Resource Management
 - Communications Management
 - Risk Management
 - Procurement Management
 - Stakeholder Management

- The processes are either project or product oriented
- The processes can be used once, several times or continuously



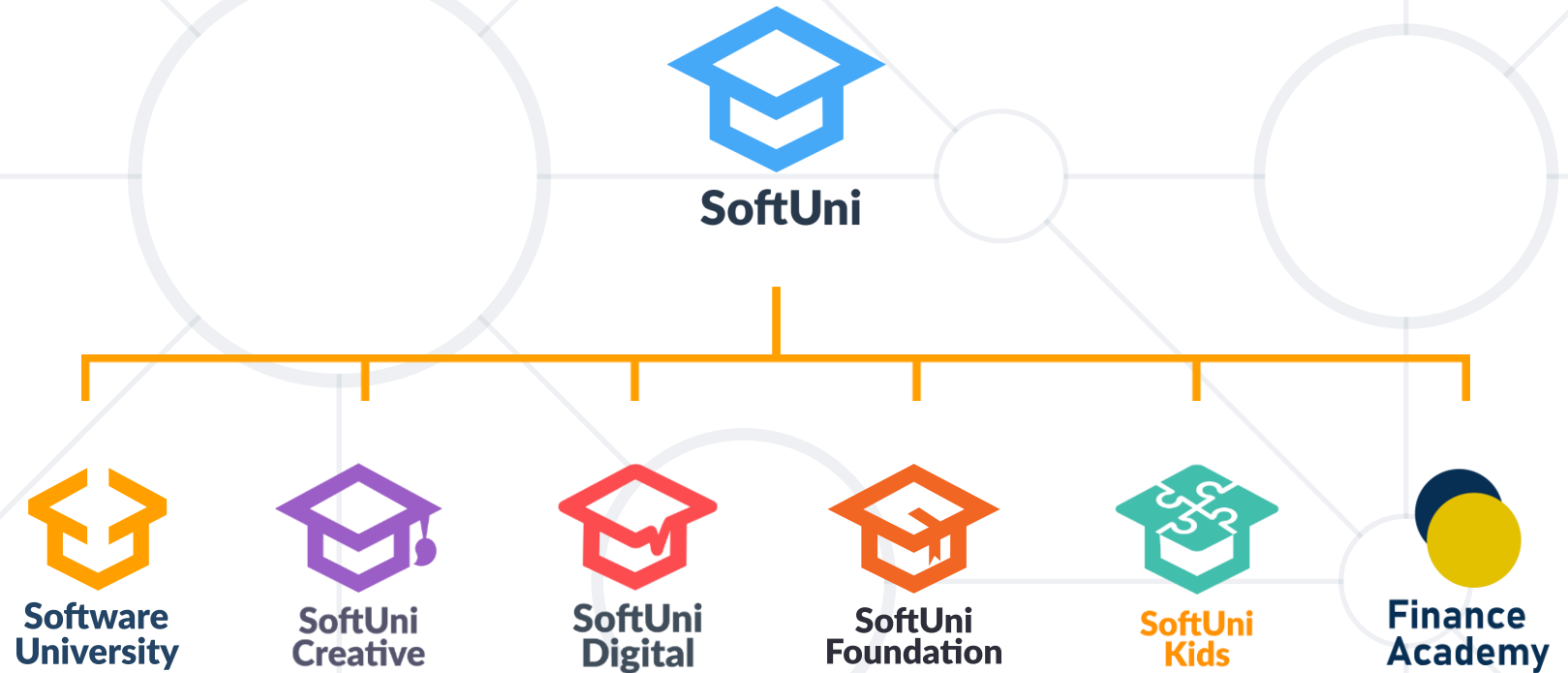
- Things to consider
 - Project complexity and resource availability
 - Organization's environment and overall project management experience
 - Lessons Learned from previous projects

- [What is Project Management?](#)
- [12 terms you should know | Project Management Fundamentals](#)
- [Agile Manifesto](#)
- [Agile Glossary](#)

- Agile is a Mindset
- It is built on Values, Principles and Practices
- It is developed for SW development, but applicable outside of it
- It is developed by practitioners
- It was built on top of existing methodologies
- And it is still evolving
- Agile is NOT a project management methodology
- Agile is NOT an answer to every problem



Questions?



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