

Agile Project Management

Prepared by Eng. Ahmed Hussein,
MBA, PfMP®, PMP®, CMP APMG

PMG 622
Master of Project Management

Lecture 1



History, principles, and values of agile approaches and the Agile Manifesto

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Agile Project Management

Prepared by
Eng. Ahmed Hussein, MBA, PfMP®,
PMP®, CMP APMG

www.midocean.ae

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Key Points from Previous Lecture

Organizations need to continuously adapt and change in response to changing business environment

Agile is an iterative and incremental approach to project management that adapts to uncertain, complex and changing needs

Being Agile is a mindset based on Values and principles

In Agile project management approach, the project is delivered in a series of “Iterations”

Agile approaches embrace change, Scope can vary within the project

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Learning Objectives

1. Understand the Evolution of Agile Project Management
2. Learn the four values and twelve principles of the Agile Manifesto
3. List the main agile project management frameworks
4. Determine factors to select which project management lifecycle to use

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History of agile project management



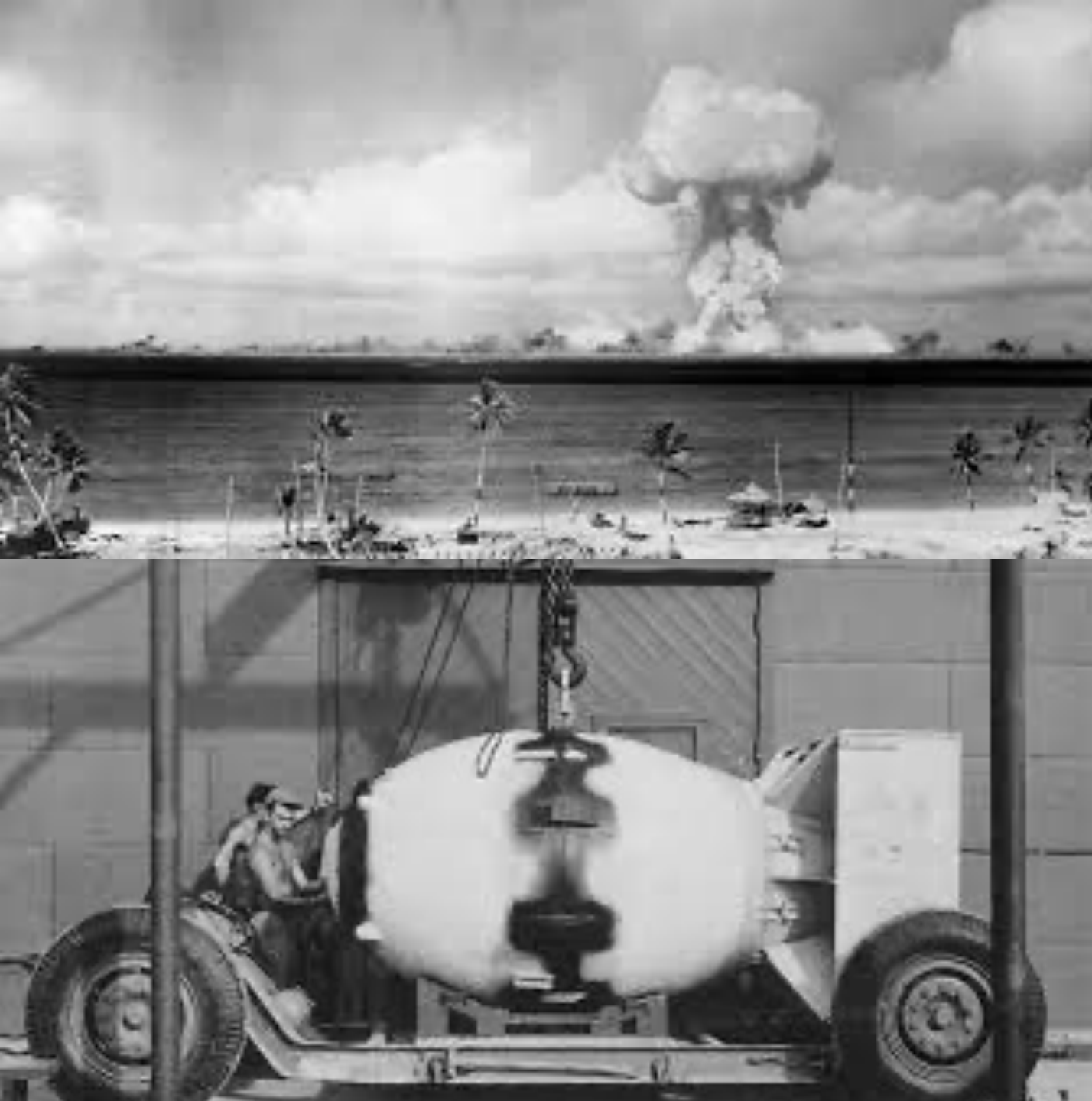
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History of Project Management

- Large scale projects existed thousands of years ago and were usually managed by the Technical Engineer or Designer.





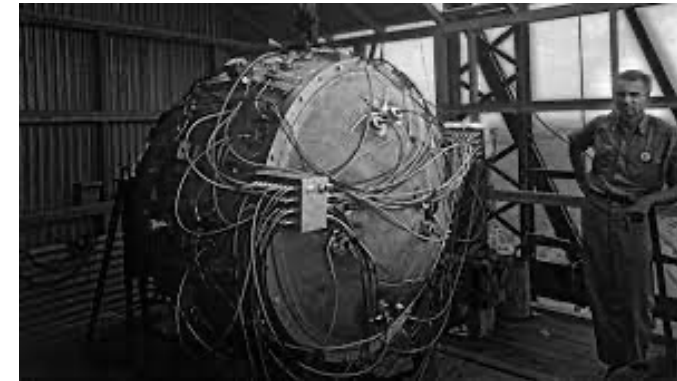
Most people consider
Manhattan Project during
WWII to be the first project
to use “modern” project
management

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History of Project Management

- Manhattan Project:
 - Four-years (1942-1946),
 - A team of 130,000 personnel, and
 - Spent \$2.2 billion
- The project had a **Project Manager** and a Technical Manager
- The Project used modern Project Management techniques as the Critical Path Method

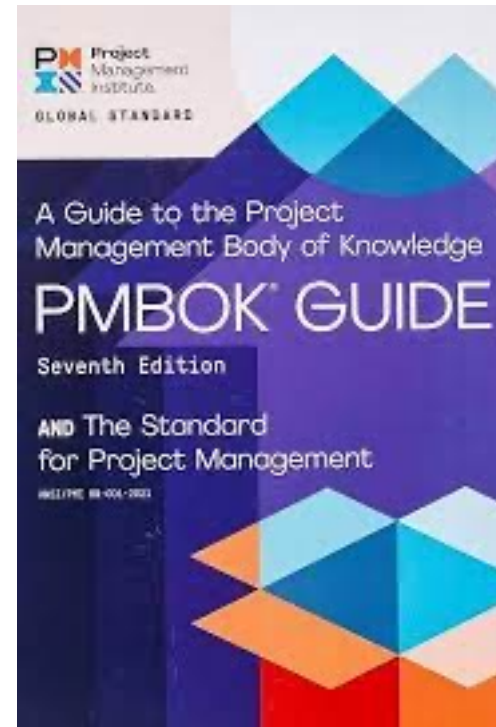


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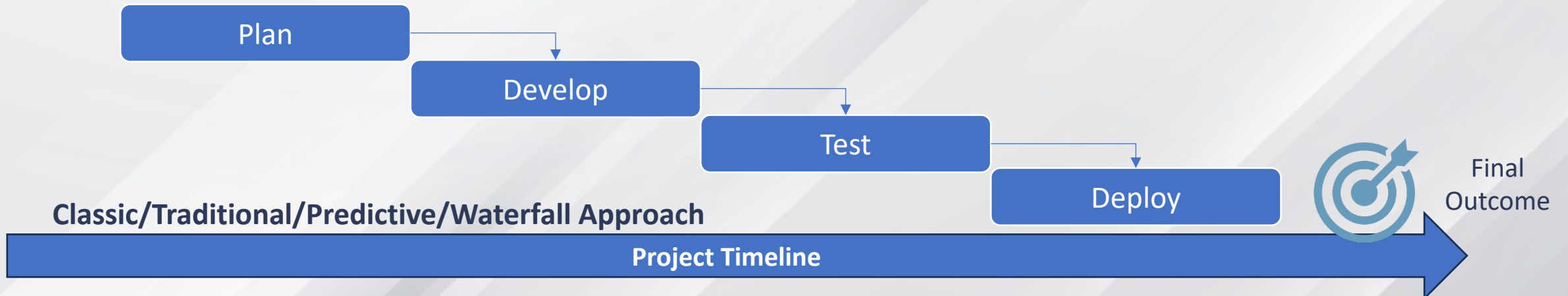
History of Project Management

- The Project Management Institute (PMI) is an international professional society for project managers was founded in 1969
- The first PMBOK® Guide published in 1996 in the US
- PRINCE was released in 1989 and PRINCE2 in 1995 in the UK.



Characteristics of Traditional Approaches

- Define requirements in a clear, complete, and detailed manner
- Develop a detailed and complete plan (from start to finish)
- Follow the plan, monitor and manage changes
- Characteristics:
 - Plan-driven
 - Process heavy
 - Documentation heavy



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History of Project Management

- As business needs kept emerging and due to the rise of the knowledge work, projects became more complex with high degree of uncertainty.
- Traditional project management methodologies were rigid and inflexible leading to projects being:
 - Over budget,
 - Behind schedule, or
 - Their outcomes became obsolete

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History of Project Management

- In the **1970s** and **1980s**, there were efforts to bring flexibility into traditional project management as :
 - Introducing phases and rolling wave planning,
 - Development of software development methodologies such as Rapid Application Development (RAD) and Adaptive Software Development (ASD).
- These methodologies emphasized the importance of **flexibility**, **adaptability**, and **customer collaboration**.
- In the **late 1990s**, software developers began to experiment with new, more agile approaches. These approaches were based on the principles of **iterative development**, **incremental delivery**, and **continuous feedback**.

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The Agile Manifesto



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The Agile Manifesto

- In 2001, a group of software developers met at Snowbird, Utah to discuss their experiences with lightweight software development methodologies.
- The outcome of this meeting was the **Agile Manifesto**, a document that outlines the four core principles of agile project management.



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The Agile Manifesto

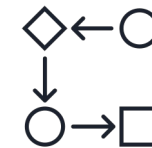
- The Agile Manifesto unified the agile community and raised awareness of agile methodologies.
- Agile project management became increasingly popular and is now used by teams of all sizes, in all industries, to deliver high-quality results quickly and efficiently.



Research &
Development



Product Development



Business Process
Management

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The Agile Manifesto

- Agile project management continues to evolve, new practices and tools are being developed to help deliver value to customers more quickly and efficiently.
- Agile project management trends include:
 - DevOps: a set of practices that combines software development and IT operations to shorten the systems development life cycle and provide continuous delivery with high software quality.
 - Scaled agile: frameworks, such as **SAFe** and **Disciplined Agile**, designed to help large organizations implement agile principles at scale.
 - Agile for business: applying agile principles to business functions other than software development, such as marketing, sales, and product management.

The Agile Manifesto – Four Values

“We are uncovering better ways of developing software by doing it and helping others do it.
Through this work we have come to value:

- Individuals and interactions over processes and tools
- Working software over comprehensive documentation
- Customer collaboration over contract negotiation
- Responding to change over following a plan

That is, while there is value in the items on the right, we value the items on the left more.”

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The Agile Manifesto – Twelve Principles (1/3)

1

- Our highest priority is to satisfy the customer through early and continuous delivery of valuable software.

2

- Welcome changing requirements, even late in development. Agile processes harness change for the customer's competitive advantage.

3

- Deliver working software frequently, from a couple of weeks to a couple of months, with a preference to the shorter timescale.

4

- Business people and developers must work together daily throughout the project.

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The Agile Manifesto – Twelve Principles (2/3)

5

- Build projects around motivated individuals. Give them the environment and the support they need, and trust them to get the job done.

6

- The most efficient and effective method of conveying information to and within a development team is face-to-face conversation.

7

- Working software is the primary measure of progress.

8

- Agile processes promote sustainable development. The sponsors, developers, and users should be able to maintain constant pace indefinitely.

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The Agile Manifesto – Twelve Principles (3/3)

9

- Continuous attention to technical excellence and good design enhances agility.

10

- Simplicity--the art of maximizing the amount of work not done--is essential.

11

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

12

- At regular intervals, the team reflects on how to become more effective, then tunes and adjusts its behavior accordingly.

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Agile Project Management



**iterative and
incremental approach**



**Mindset Based on
values and principles**



**Emphasizes
collaboration, change,
and flexibility**

- Agile project management is an iterative and incremental approach to project management that emphasizes collaboration, flexibility, change, and continuous improvement.
- Agile project management is a Mindset based on Values and Principles.

Agile is a mindset, defined by values, guided by principals, and manifested through many different practices.



Mindset



4 Values

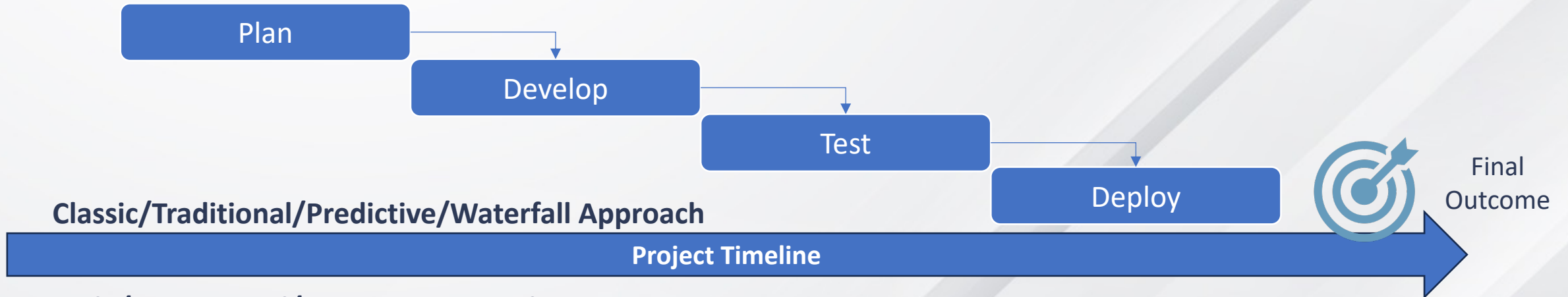


12 Principles

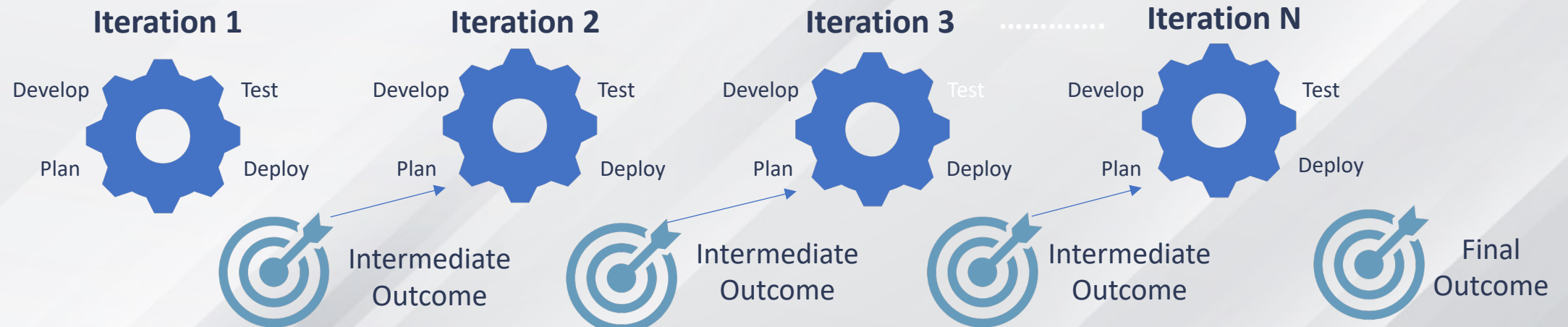


Practices

Agile vs. Traditional Approaches



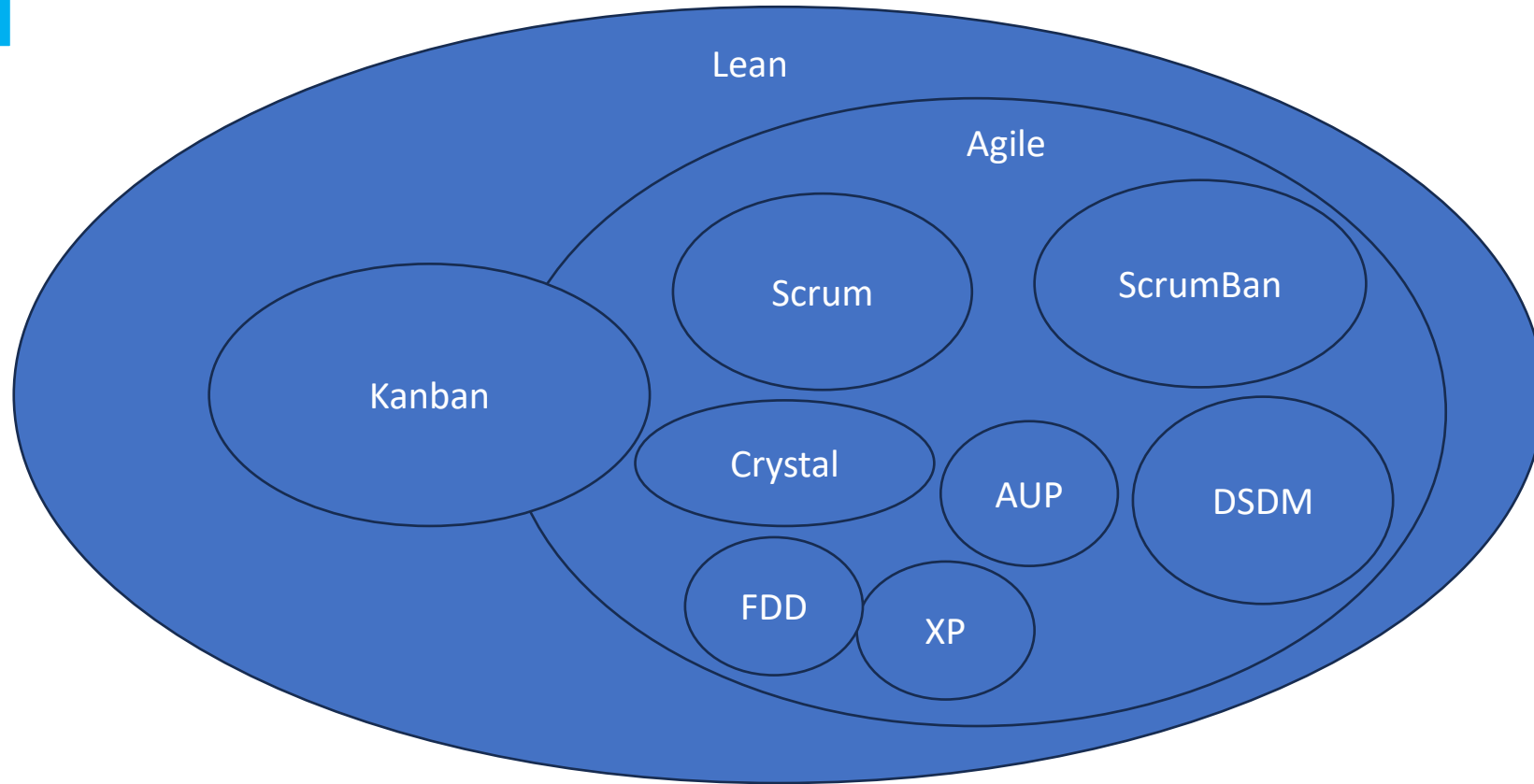
Agile/Incremental/Iterative Approach



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There are many different Agile frameworks



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Main Agile Organizations and Certifications



PMI Agile Certified Practitioner(PMI-ACP®)



Professional Scrum Master (I,II,III)



Scaled Agile Framework (SAFe) Agilist



ICAgile Certified Professional (ICP)

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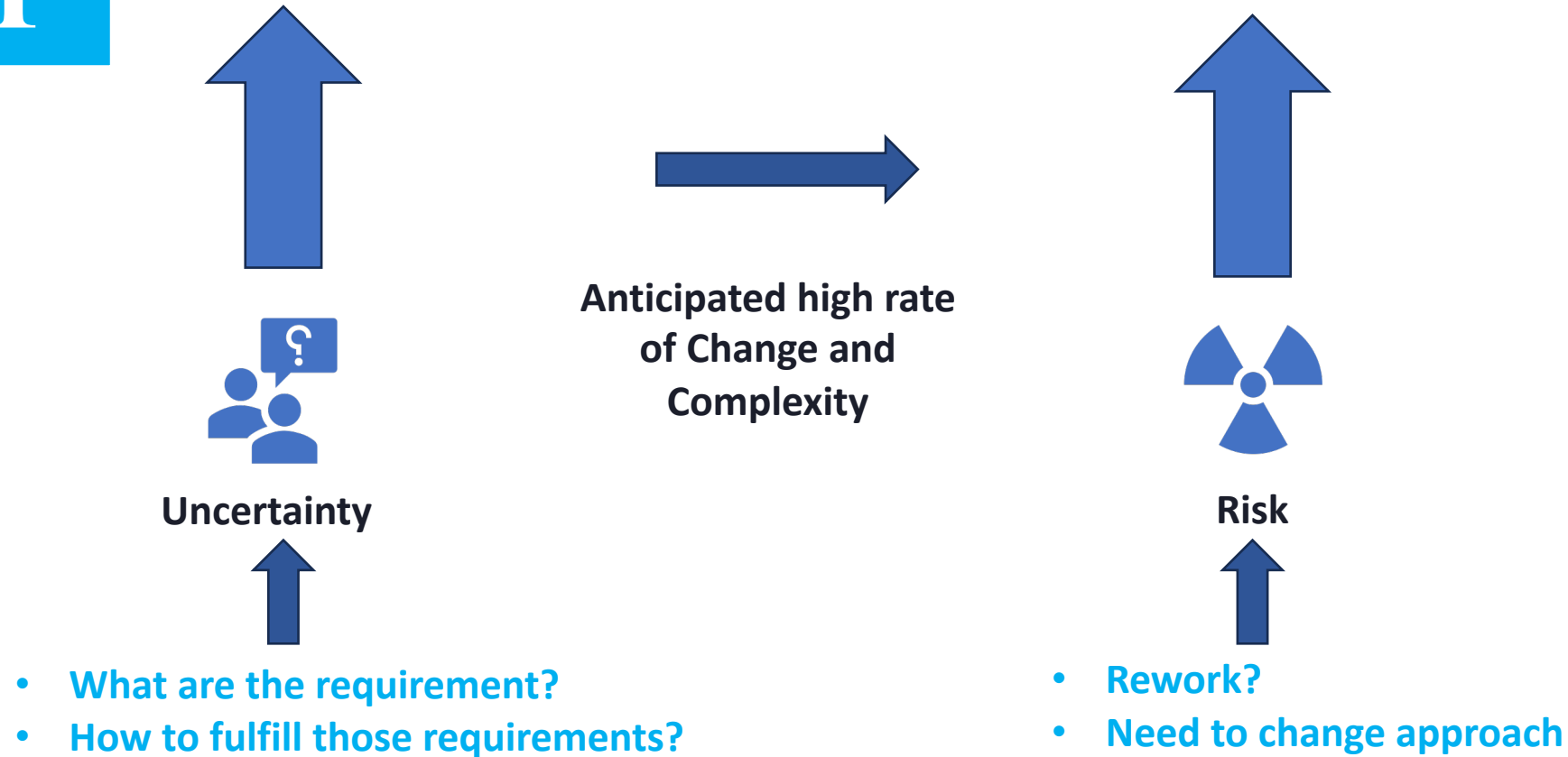
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How to select appropriate Project Management approach?



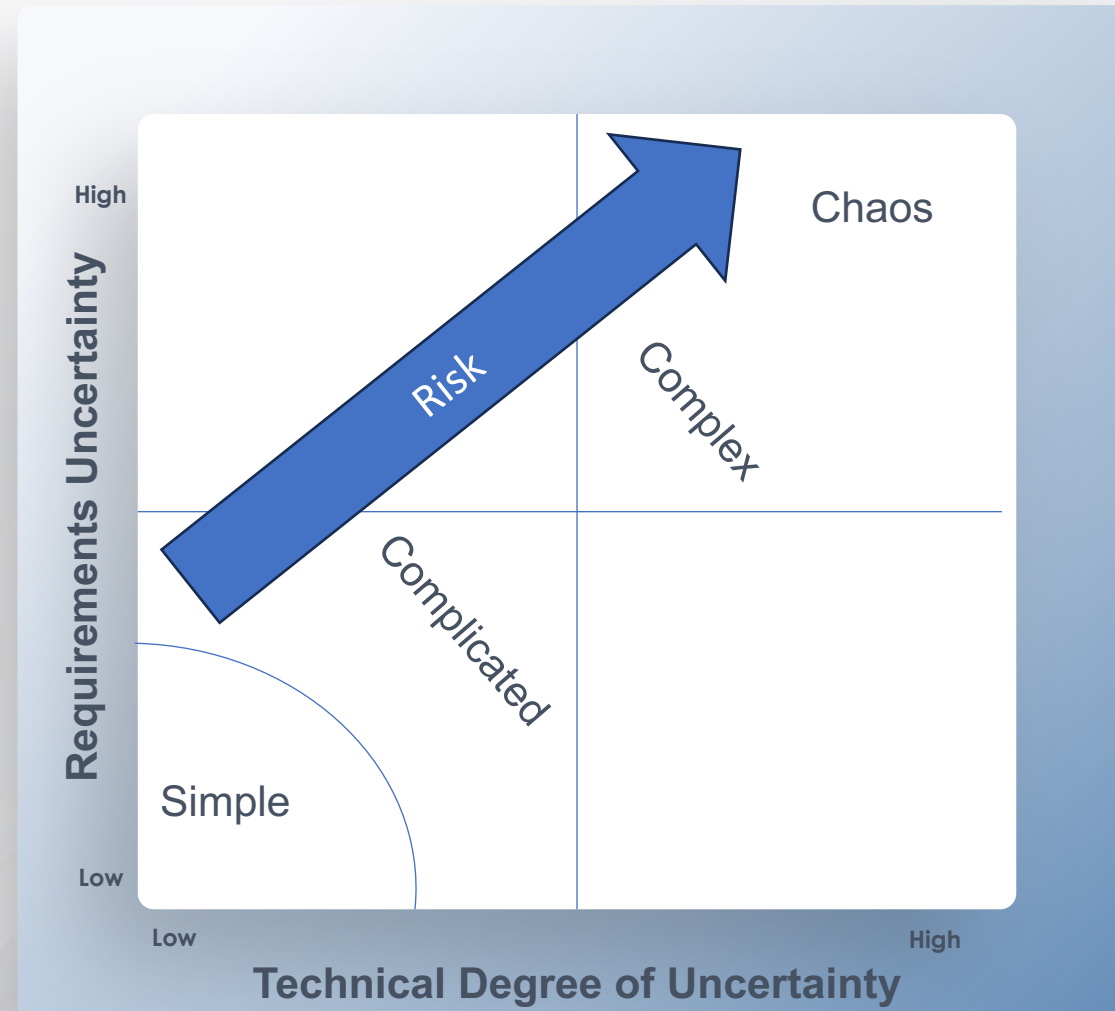
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Uncertainty leads to increased project risks



Adapted from: Project Management Institute, *Agile Practice Guide*, Project Management Institute Inc., 2017, Page 13.

Stacey Complexity Model



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There are many different Agile frameworks

- When teams deliver small increments, they better understand requirements in a more accurate manner than with a static written specification
- Teams verify work after each small increment and can change what they do next
- When requirements are explored iteratively and deliver more often incrementally, the teams adapt to changes more easily

Adapted from: Project Management Institute, *Agile Practice Guide*, Project Management Institute Inc., 2017, Page 13.

Iterative and Incremental Approaches reduce waste and rework because of feedback and learning

Very Short
Feedback
Loops

Frequent
Adaptation of
Process

Reprioritization

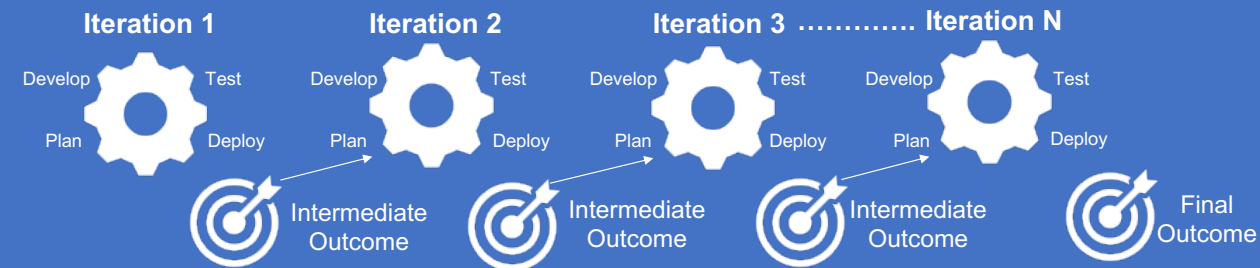
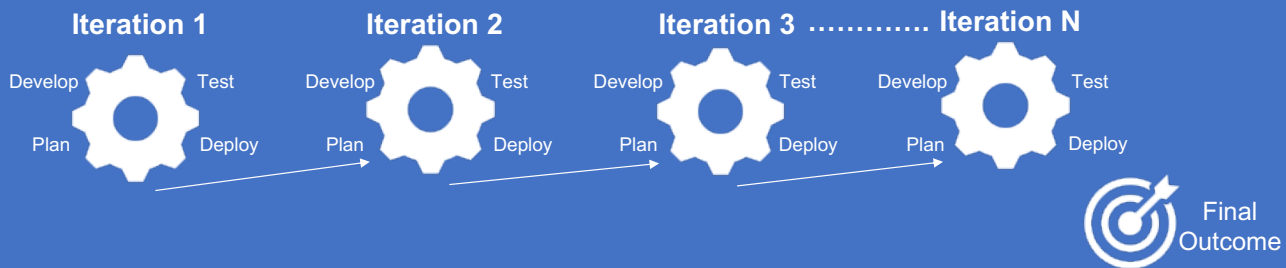
Regularly
Updated Plans

Frequent
Delivery

Agile

Iterative

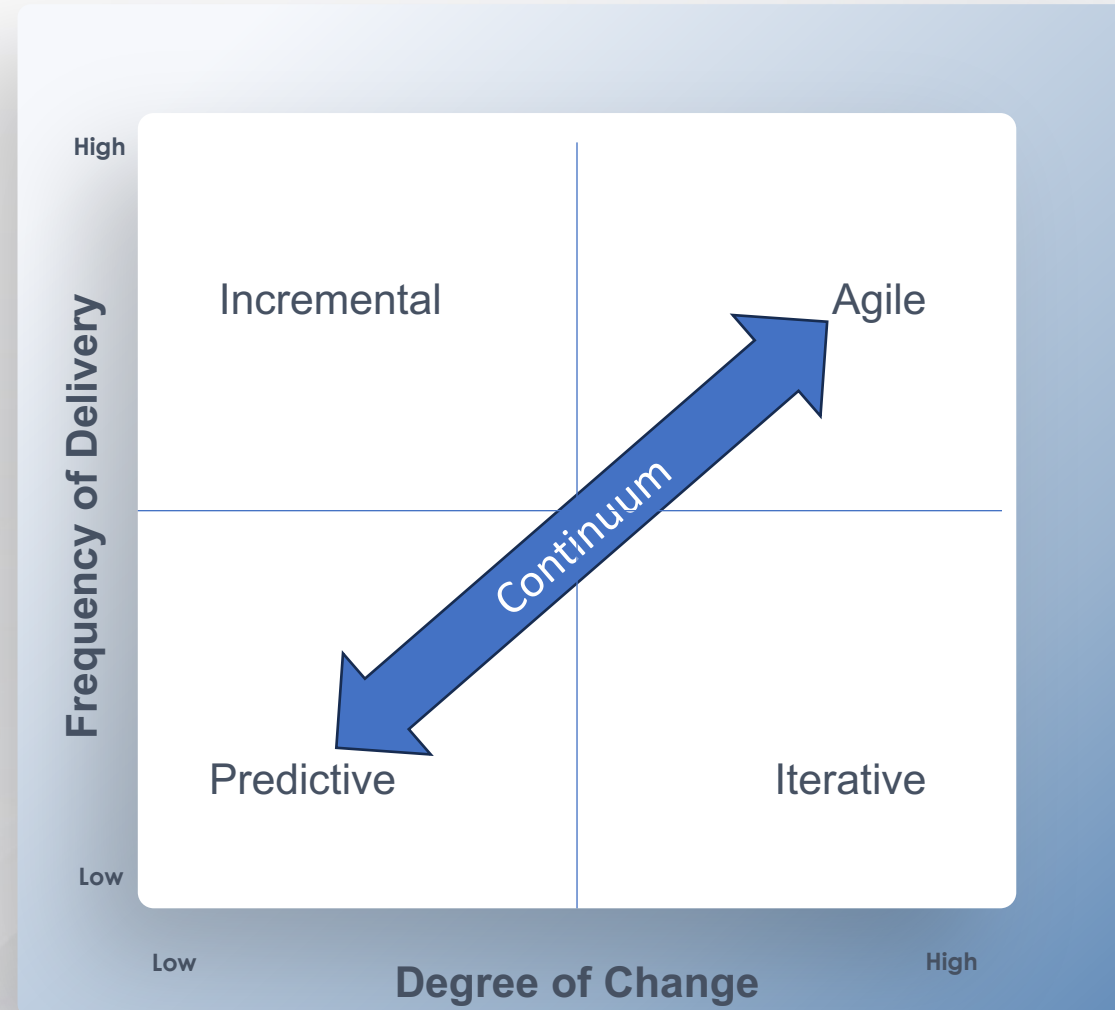
Incremental



The four main Project Life Cycles

	Predictive	Iterative	Incremental	Agile
Definition	A more traditional approach, with the bulk of planning occurring upfront, then executing in a single pass; a sequential process	An Approach that allows feedback for unfinished work to improve and modify that work	An approach that provides finished deliverables that the customer may be able to use immediately	An approach that is both iterative and incremental to refine work items and deliver frequently
Example	Building a house	Developing a new medication Product is released at the end only bit (product, technologies, methods might be adjusted along the way	Modifying 100 processes in batches of 10 and implementing finished processes in each batch immediately	Developing a software application and adding features while testing different technologies

The Continuum of Project Lifecycles



Selecting the project most suitable Life Cycle

- Each project must be rated based on:
 - Anticipated Degree of Change
 - Frequency of Delivery required
- And based on that the most suitable life cycle is selected

There is NO ONE SIZE FITS ALL

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Key Points

Agile project management started slowly since 1970s but gained momentum from 2001 onwards after publishing “The Agile Manifesto”

The Agile Manifesto has 4 values and 12 principles that focus on flexibility, faster delivery, and customer collaboration

There are many frameworks and methodologies following Agile Values and Principles (ex. Scrum, Kanban, XP)

Uncertainty in projects comes from lack of requirements clarity and/or solution clarity

We select the suitable approach to manage the project based on degree of change and frequency of change

Preparation for discussion panel:

- Watch the Case study:
[“Case Study Tesla | Scrum Academy explains agile at Tesla”](#)
- *Note: search for more articles/videos on Agile in Tesla*
- Question for discussion:
How is Tesla implementing Agile mindset, values, and principles?



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For Discussion Panel

Before next lecture:

- Download and Read:
["The Scrum Guide"](#)



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For Next Lecture



Thank You