



Everyone's Smart
University

PMG 622

Agile Project Management

LECTURE 01: An Introduction to Agile

دكتور مهندس استشاري ادارة المشروعات

Eng. Dr. Akram Mustafa Suliman Ali,

PhD. AU, BEng. & MSc. AAST, CEng CMarEng MIMarEST, PE, PMP®,

ASQ CSSBB, ISO Lead Auditor, NDT Level II,



جامعة الجميع الذكية
EVERYONE'S SMART UNIVERSITY

PRE-COURSE INTRODUCTION

INTRODUCE YOURSELF



جامعة الجميع الذكية
EVERYONE'S SMART UNIVERSITY

✓ YOUR NAME?

✓ Eng. Dr. Akram Ali

✓ EXPERIENCE / BACKGROUND?

✓ مهندس استشاري ادارة المشروعات

✓ PMP

✓ ASQ CSSBB

✓ PMC Senior Manager of Projects of accumulated value of above 3 Billion USD

✓ PMC Senior Manager of Projects size from 50 Million USD up to 600 Million USD

✓ Manage projects of net budget of up to 200 Million USD .

✓ Used agile for :

✓ Six Sigma Projects

✓ Construction Projects

✓ Products Development Projects



COURSE LEARNING OBJECTIVES

Develop an agile mindset for project delivery

Advocate for agile principles and values to create a shared mindset

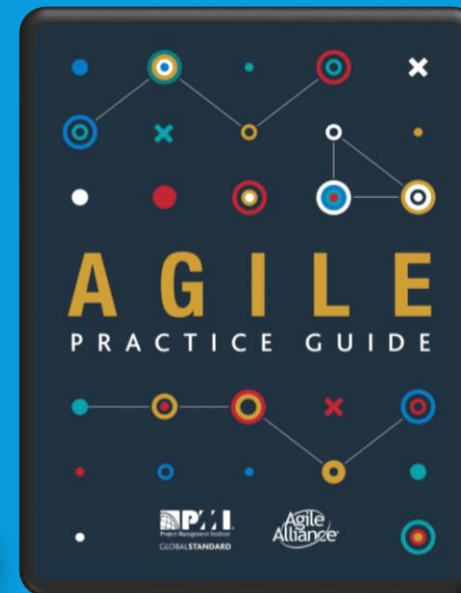
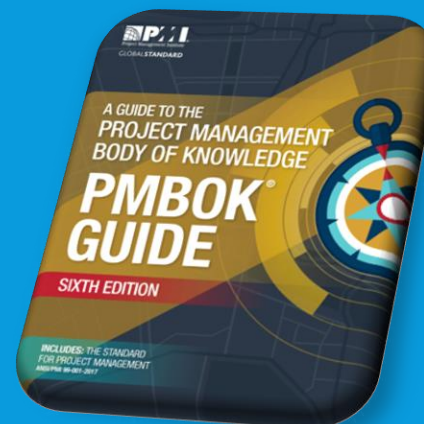
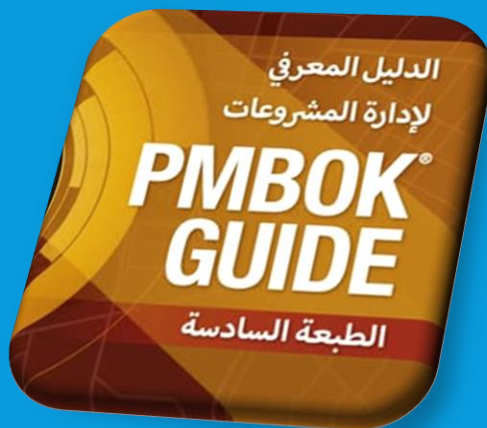
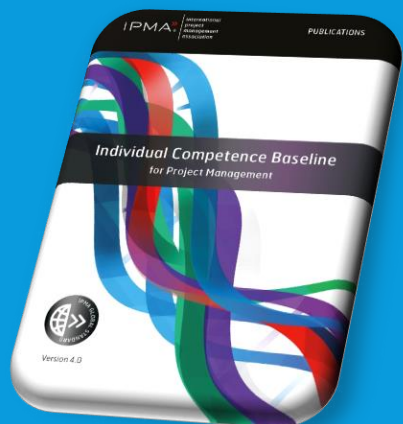
Support change through educating and influencing

Practice servant leadership

Prepare for ACP exam

YOUR MAIN REFERENCE MATERIAL

- PMBOK (6th ed.) & Agile Practice Guide
- الدليل المعرفي لإدارة المشروعات
- دليل ممارسة الأسلوب الرشيق
- IPMA – ICB4 – In Agile World



HOW COURSE IS DELIVERED AND HOW TO STUDY



جامعة الجميع الذكية
EVERYONE'S SMART UNIVERSITY

- Primary Course Delivery Method:
 - LECTURE
- How to study:
 1. Print material;
 2. watch video and
 3. take notes

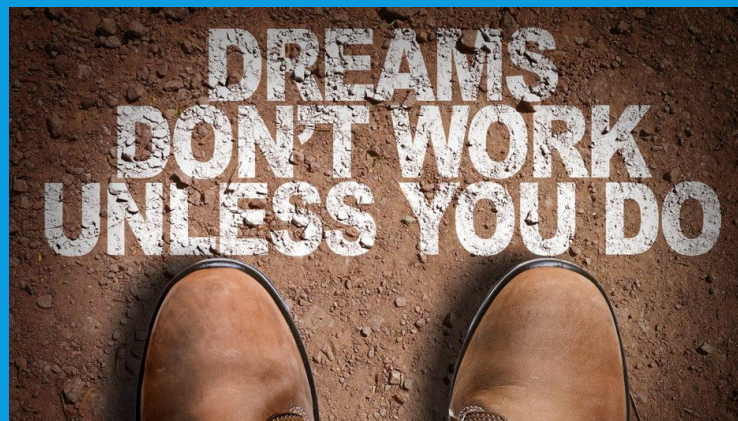


THE SECRET TO SUCCESS?

- The proven best learning technique . . .
- Is simply hard work . . .



- Please be prepared to put in the time and effort necessary to be successful



CAUTION!!!!!!!!!!!!!!!!!!!!!!



- Lecture notes are considerable references
- Conflict or differences between professors is for the benefit of the student



INTRODUCTION TO AGILE

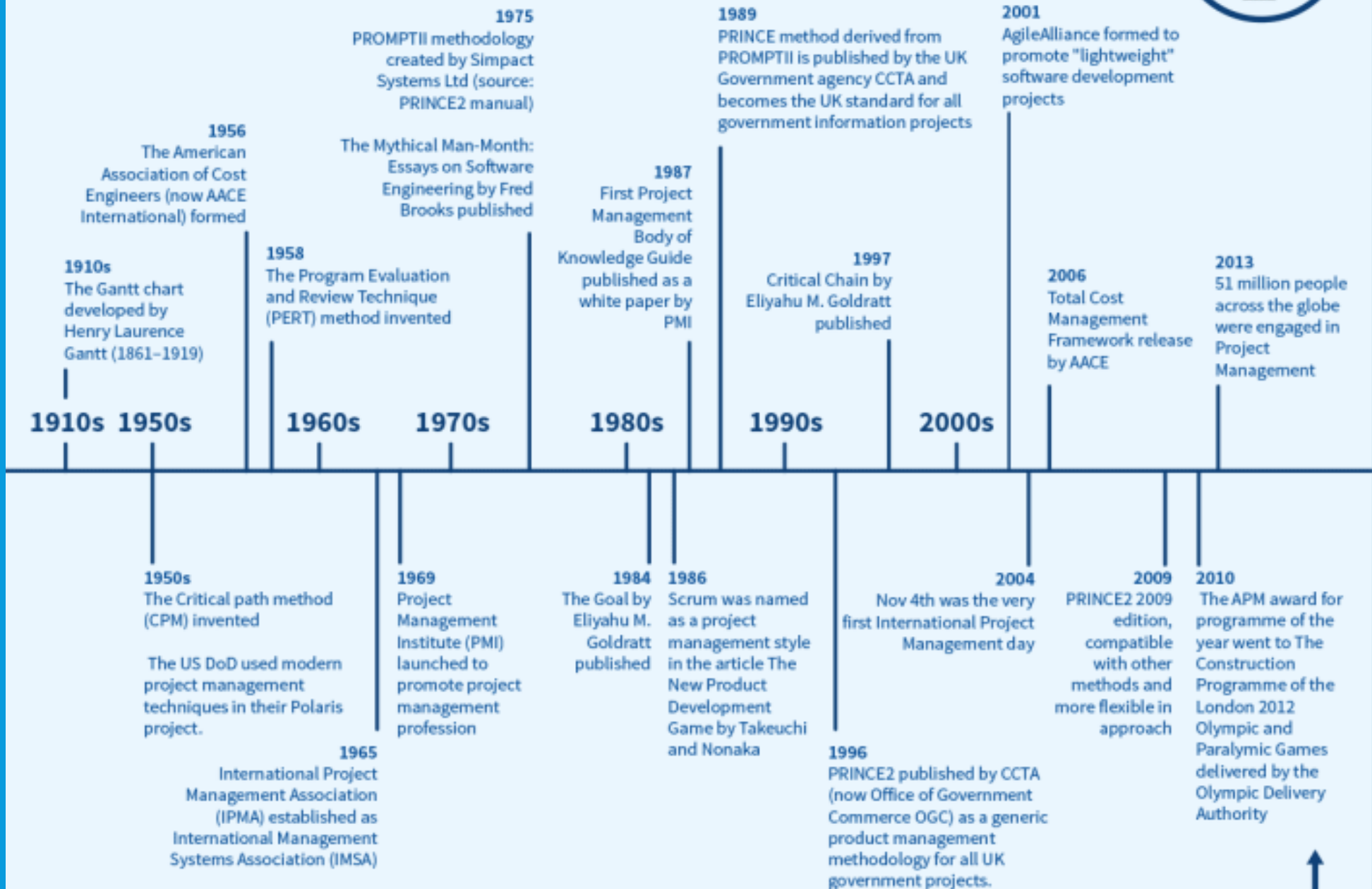
VALUE

- A feature the customer is willing to pay for.
- WE ARE ALL VALUE ENGINEERS



Forum Topic: The
Ultimate Value
Definitions List

19th - 20th Century PM Developments

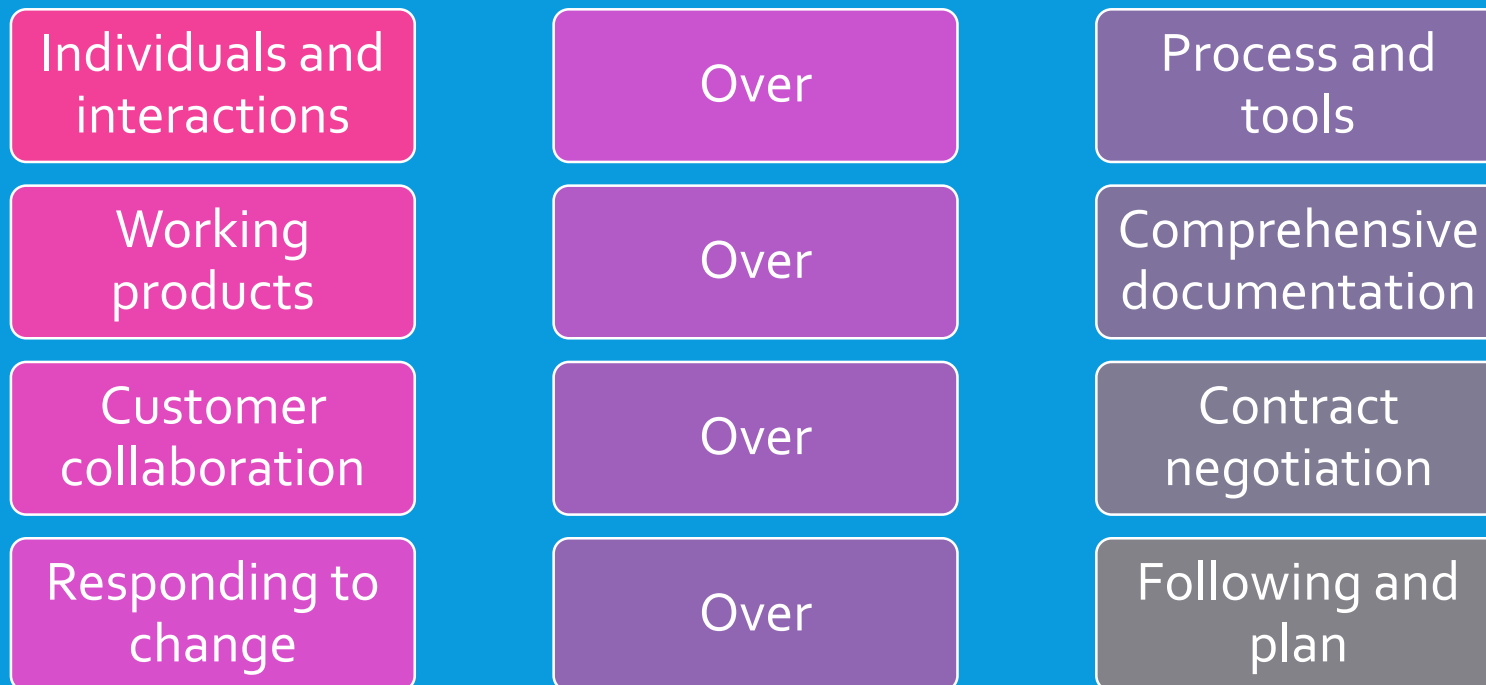


ORIGINS OF AGILE

- ❑ In 2001, 17 individuals went to **The Lodge at Snowbird Ski Resort in Utah**.
- ❑ Jeff Sutherland, Ken Schwaber, Alistair Cockburn, Dave Thomas, Kent, Beck, etc.
- ❑ **Leaders in Programming, Software Development, and Architecture.**
- ❑ The purpose was to find a simpler way of doing Software Development.
- ❑ The Agile Manifesto was born.

AGILE MANIFESTO / “4 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:



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

THE 12 PRINCIPLES BEHIND THE AGILE MANIFESTO [1/4]

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

THE 12 PRINCIPLES BEHIND THE AGILE MANIFESTO [2/4]

4. Business people and developers must work together daily throughout the project.
5. Build projects around motivated individuals. Give them the environment and 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.

THE 12 PRINCIPLES BEHIND THE AGILE MANIFESTO [3/4]

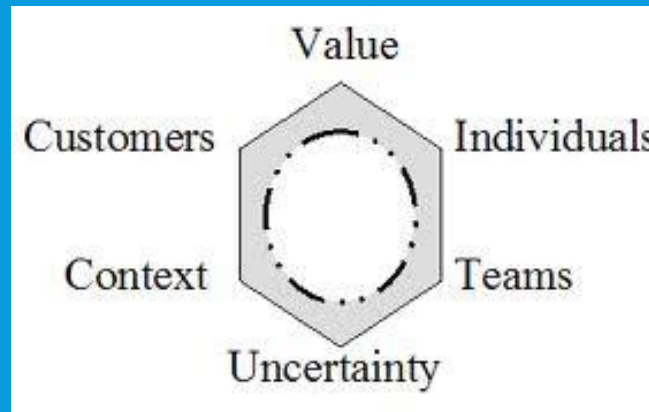
7. Working software is the primary measure of progress.
8. Agile processes promote sustainable development. The sponsors, developers, and users should be able to maintain a constant pace indefinitely.
9. Continuous attention to technical excellence and good design enhances agility.

THE 12 PRINCIPLES BEHIND THE AGILE MANIFESTO

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.

DECLARATION OF INTERDEPENDENCE

1. Increase **return on investment** by making continuous flow of **value** our focus.
2. Deliver **reliable results** by engaging **customers** in frequent interactions and shared ownership.
3. Expect **uncertainty** and manage for it through iterations, anticipation and adaptation.
4. Unleash **creativity and innovation** by recognizing that **individuals** are the ultimate source of value, and creating an environment where they can make a difference.
5. Boost **performance** through **group accountability** for results and **shared responsibility** for team effectiveness.
6. Improve **effectiveness and reliability** through **situationally specific strategies, processes, and practices**.



KNOWLEDGE WORK VS INDUSTRIAL WORK

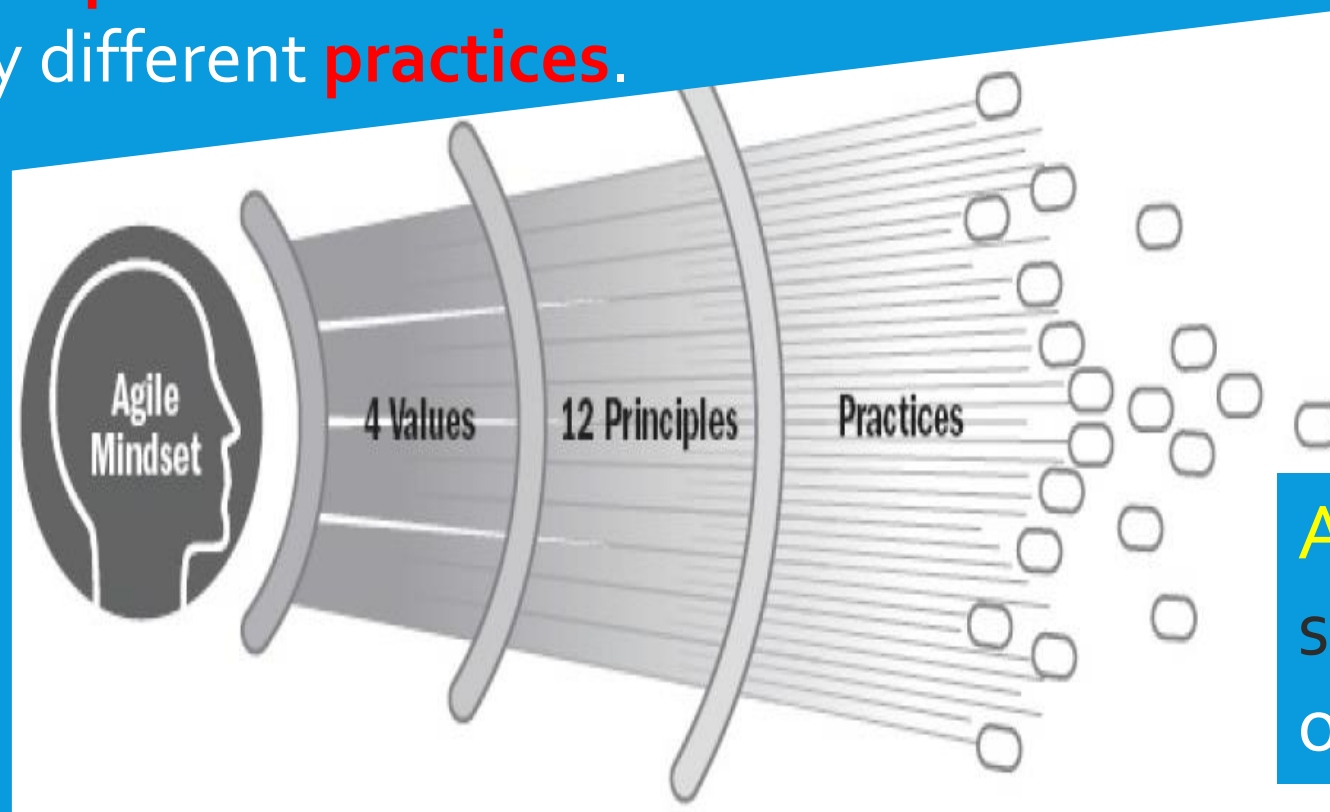


جامعة الجميع الذكية
EVERYONE'S SMART UNIVERSITY

Characteristics of Industrial Work	Characteristics of Knowledge Work
Work is visible	Work is invisible
Work is stable	Work is changing
Emphasis is on running things	Emphasis is on changing things
More structure with fewer decisions	Less structure with more decisions
Focus on the right answers	Focus on the right questions
Define the task	Understand the task
Command and control	Give autonomy
Strict standards	Continuous innovation
Focus on quantity	Focus on quality
Measure performance to strict standards	Continuously learn and teach
Minimize cost of workers for a task	Treat workers as assets, not as costs

THE AGILE MINDSET

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



Agile practitioners select **practices** based on their **needs**.

PMP® VS. PMI-ACP®



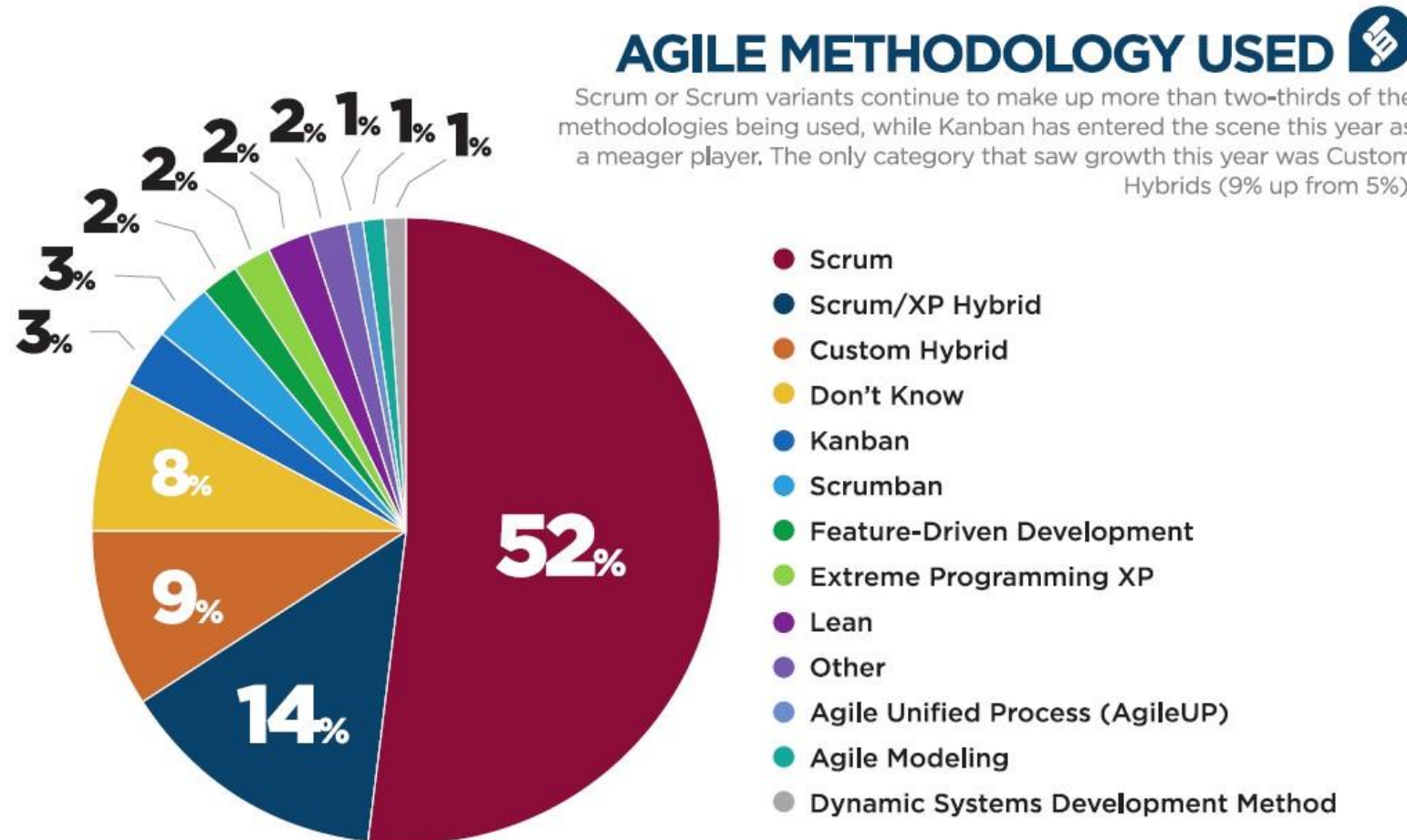
جامعة الجميع الذكية
EVERYONE'S SMART UNIVERSITY

PMP®	PMI-ACP®
Traditional Waterfall	Agile
Over 900,000 hold this credential	Less than 30,000 hold this credential
Project Manager Average Salary \$75,000	Agile Coach Average Salary \$138,000
Focuses on Delivering a Product or Service	Focuses on Delivering Value
Concerned about Project and Results	Concerned about People
Defines Project all up Front	Defines Project Incrementally

AGILE METHODOLOGY USED



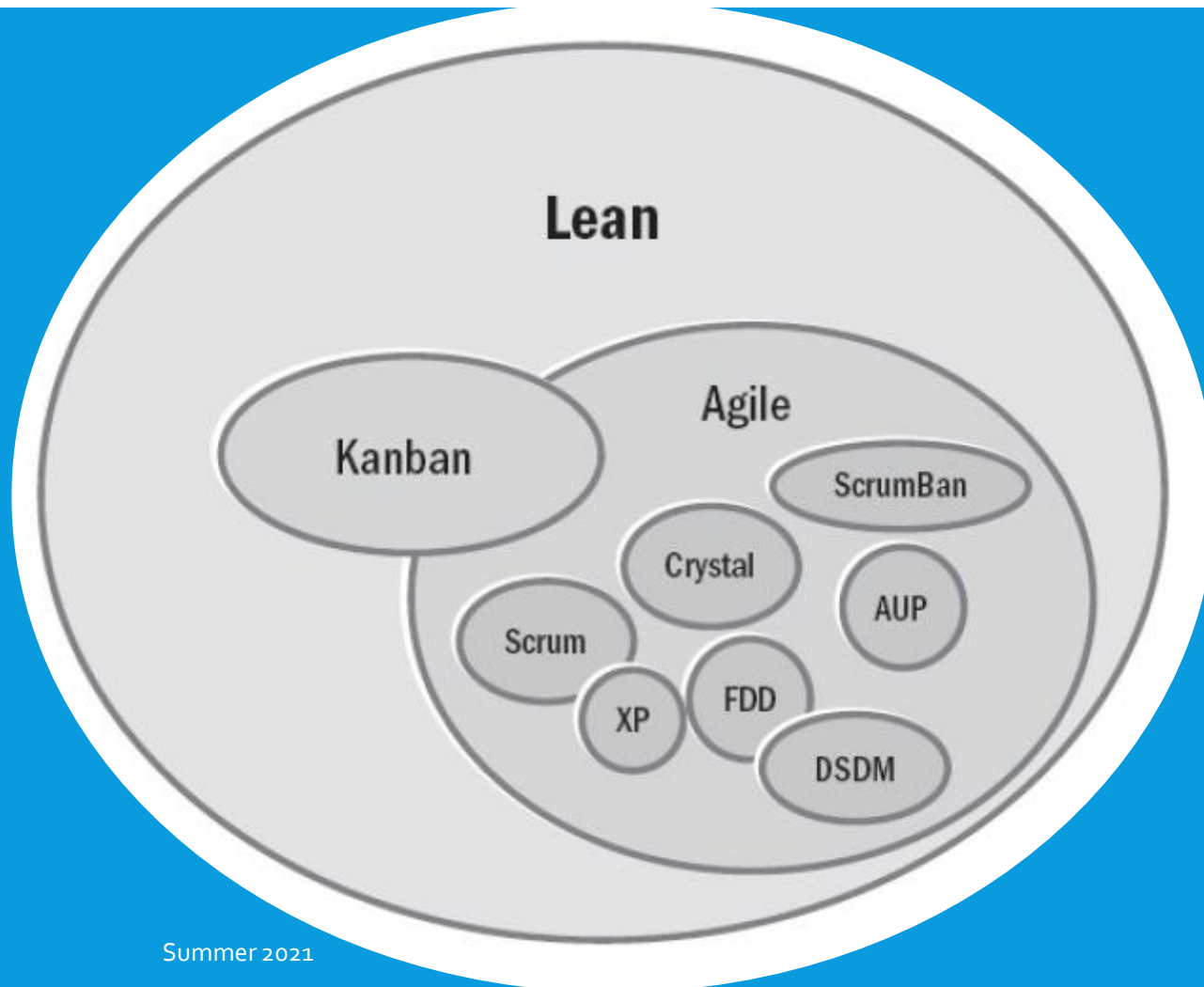
جامعة الجميع الذكية
EVERYONE'S SMART UNIVERSITY



AGILE IS A BLANKET TERM FOR MANY APPROACHES



جامعة الجميع الذكية
EVERYONE'S SMART UNIVERSITY



Any kind of approach, technique, framework, method, or practice that fulfills the values and principles of the Agile Manifesto.

shows agile and the Kanban Method as subsets of lean. This is because they are named instances of lean thinking that share lean concepts such as: “focus on value,” “small batch sizes,” and “elimination of waste.”

LEAN IS A SUPERSET FOR AGILE AND KANBAN

- One way to think about the relationship between lean, agile, and the Kanban Method is to consider agile and the Kanban Method as descendants of lean thinking. In other words, lean thinking is a superset, sharing attributes with agile and Kanban.

LEAN AND AGILE SHARED HERITAGE

- Delivering value
- Respect for people
- Minimizing waste
- Being transparent
- Adapting to change, and
- Continuously improving

AGILE = MINDSET??????

- Is agile an **approach**, a method, a **practice**, a **technique**, or a **framework**?
- Any or all of these terms could apply depending on the situation. This practice guide, uses the term "approach" unless one of the other terms is obviously more correct.
- Agile is a set of Values and Principles
- Ans
- Managing a project using an agile approach requires that the project team adopt an agile mindset.

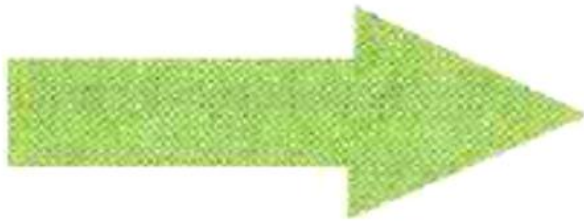
BEING AGILE VS DOING AGILE



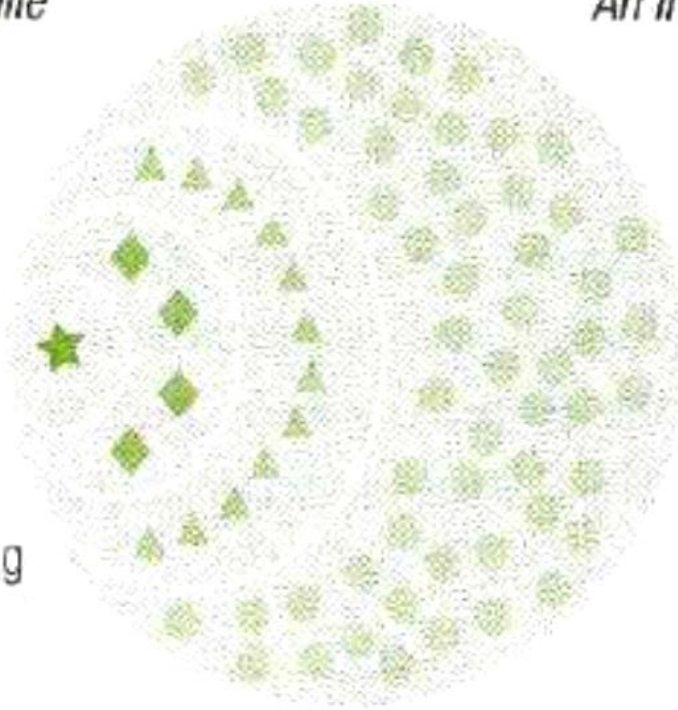
جامعة الجميع الذكية
EVERYONE'S SMART UNIVERSITY

“Being” Agile

The correct way to implement agile

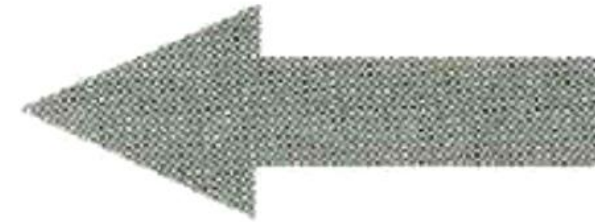


Being agile starts with internalizing the agile mindset, then using that understanding to select and implement the correct practices, tailoring them to different situations as needed.



“Doing” Agile

An ineffective way to implement agile



Doing agile involves using agile practices without embracing the agile mindset that allows us to understand how to select the right balance of practices and tailor them appropriately.

TWO STRATEGIES TO FULFILL AGILE VALUES AND PRINCIPLES [1/2]

- The first is to adopt a formal agile approach, intentionally designed and proven to achieve desired results.
 - Then take time to learn and understand the agile approaches before changing or tailoring them.
 - Premature and haphazard tailoring can minimize the effects of the approach and thus limit benefits.

TWO STRATEGIES TO FULFILL AGILE VALUES AND PRINCIPLES [2/2]

- The second strategy is to implement changes to project practices in a manner that fits the project context to achieve progress on a core value or principle.
 - Use time boxes to create features, or specific techniques to iteratively refine features.
 - Consider dividing up one large project into several releases, if that works for the specific project context.
 - Implement changes that will help the project succeed—the changes do not need to be part of the organization's formal practices.
 - The end goal is not to be agile for its own sake, but rather to deliver a continuous flow of value to customers and achieve better business outcomes.

KANBAN METHOD

- The Kanban Method is inspired by the original lean-manufacturing system and used specifically for knowledge work.
- It emerged in the mid-2000s as an alternative to the agile methods that were prevalent at the time.

KANBAN METHOD

- The Kanban Method is less prescriptive than some agile approaches and less disruptive, as it is the original “start-where-you-are” approach.
- Project teams can begin applying the Kanban Method with relative ease and progress toward other agile approaches if that is what they deem necessary or appropriate.

CASE

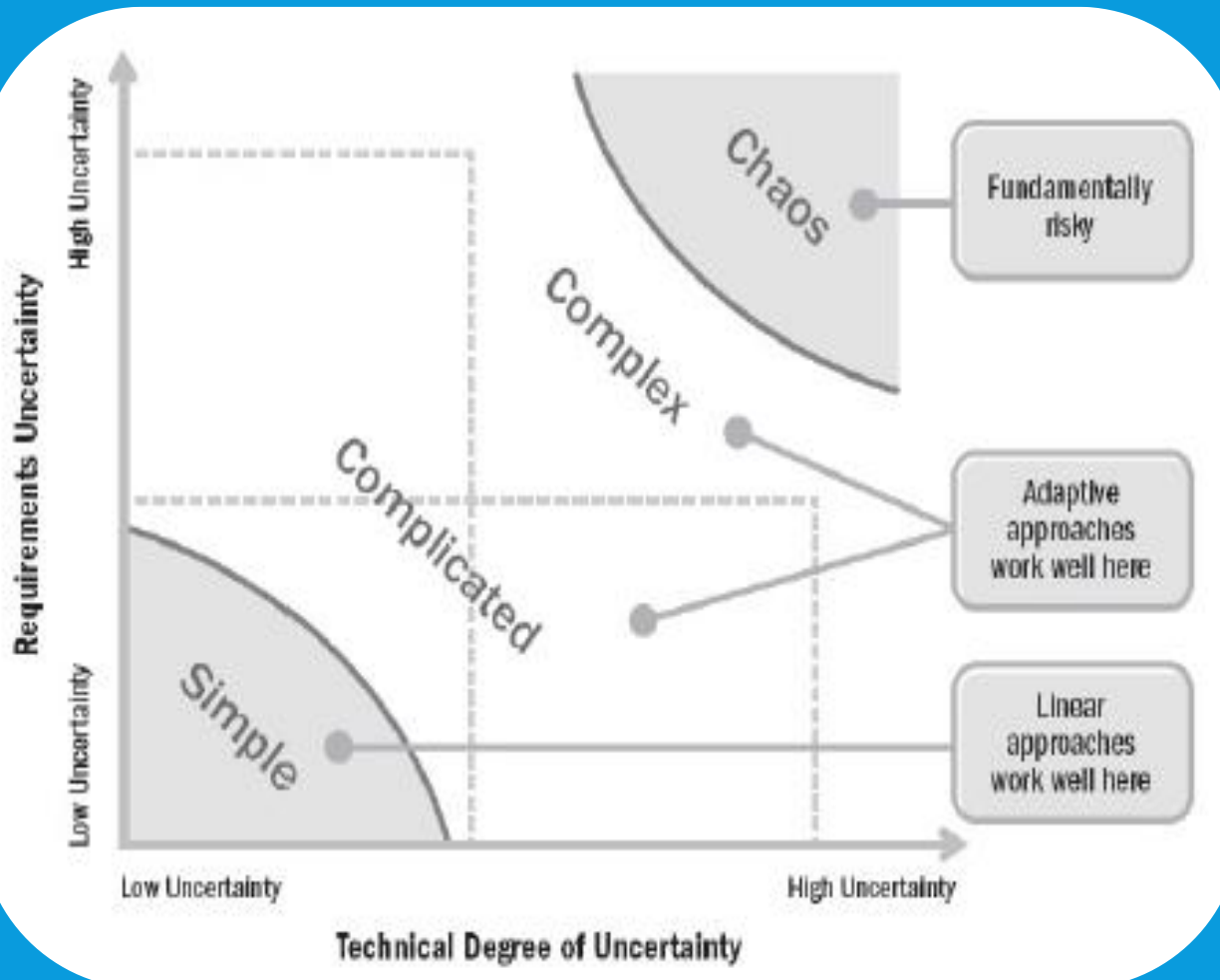
- *There is and probably always will be a lot of discussion around the Kanban Method and whether it belongs to the lean or agile movement. It was conceived in and around lean manufacturing, but is widely used in agile settings.*

UNCERTAINTY, RISK, AND LIFE CYCLE SELECTION

STACEY COMPLEXITY MODEL (TECHNICAL / REQUIREMENTS UNCERTAINTIES)



جامعة الجميع الذكية
EVERYONE'S SMART UNIVERSITY



These uncertainties can contribute to high rates of change and project complexity.

As project uncertainty increases, the risk of rework increases.

When teams deliver small increments, they are better able to understand the true customer requirements faster and more accurately than with a static written specification.

LIFE CYCLE SELECTION FOR UNCERTAIN PROJECTS

- Teams can plan and manage projects with clear and stable requirements and clear technical challenges with little difficulty.
- However, as the uncertainty in the project increases, the likelihood of changes, wasted work, and rework also increases, which is costly and time consuming.
- Some teams have evolved project life cycles to use iterative and incremental approaches.
- Many teams discover that when they explore the requirements iteratively and deliver more often incrementally, the teams adapt to changes more easily.
- These iterative and incremental approaches reduce waste and rework because the teams gain feedback.

APPROACHES FOR MANAGING UNCERTAIN PROJECTS

- These approaches use:
 - Very short feedback loops,
 - Frequent adaptation of process,
 - Reprioritization,
 - Regularly updated plans, and
 - Frequent delivery.

WHEN TO APPLY ITERATIVE, INCREMENTAL AND AGILE APPROACHES?

- These iterative, incremental, and agile approaches work well for projects that involve:
 - New or novel tools, techniques, materials, or application domains.
 - Require research and development;
 - Have high rates of change;
 - Have unclear or unknown requirements, uncertainty, or risk; or
 - Have a final goal that is hard to describe.

UNCERTAINTY AND DISAGREEMENT

- However, iterative and incremental approaches have their limits of applicability.
- When both technology uncertainty and requirements uncertainty are very high (the top right of Figure 2-5), the project moves beyond complex to chaotic.
- In order for the project to become reliably possible, it needs one of the variables (uncertainty or disagreement) to be contained.

CHARACTERISTICS INVOLVING HIGH UNCERTAINTY

1. product specification / suitability and requirements (is the right product being built?),
2. production capability / technical feasibility and performance (can this product be built this way?)
3. process suitability / process and people (is this an effective way for the team to work?)

OVERCOMING UNCERTAINTY

- By building a small increment and then testing and reviewing it, the team can explore uncertainty at a low cost in a short time, reduce risk, and maximize business value delivery.

TYPES OF PM LIFECYCLES

- **Predictive life cycle.** A more traditional approach, with the bulk of planning occurring upfront, then executing in a single pass; a sequential process.
- **Iterative life cycle.** An approach that allows feedback for unfinished work to improve and modify that work.
- **Incremental life cycle.** An approach that provides finished deliverables that the customer may be able to use immediately.
- **Agile life cycle.** An approach that is both iterative and incremental to refine work items and deliver frequently.