شركة تحالف الإمارات للحلول التقنية ذ.م.م.
TAHALUF AL EMARAT TECHNICAL SOLUTIONS L.L.C.

Agile Methodology Scrum Master

Tahaluf Training Center 2021

Day 1

1. **Agile Software Development**
2. The Brief of History of Scrum
3. Understanding the Basics
4. Agile Process

Agile Software Development

Agile is A mindset

In software development, agile (**sometimes written Agile**) practices involve discovering requirements and developing solutions through the collaborative effort of self-organizing and cross-functional teams and their customer(s)/end user(s).

It advocates adaptive planning, evolutionary development, early delivery, and continual improvement, and it encourages flexible responses to change.

software development methods included:

1. rapid application development (RAD).
2. unified process (UP).
3. dynamic systems development method (DSDM).
4. Scrum.
5. Crystal Clear and extreme programming (XP).
6. feature-driven development.

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The Brief of History of Scrum

Scrum is not only one of the most widely used software development method in the agile world but also one of the most popular frameworks.

The history of the Scrum method starts in 1986. That year, two Japanese business experts introduced the term in the context of product development.

Hirotaka Takeuchi and **Ikujiro Nonaka** published the article, "New New Product Development Game" (the double "New" is indeed part of the title) .

The authors described a new approach to commercial product development that would increase speed and flexibility.

What Scrum is and isn't?

- At a high level, Scrum is lightweight and easy to understand, but when you dig in you will find that it is difficult to master.
- Scrum is a framework or model; **it is not a process**.
- Scrum does not tell you how to do things, it tells you what needs to be done and lets you figure out how to do it.

What Scrum is and isn't?

- To make it even more confusing, Scrum is not literal; you must modify what it says to match your circumstances.
- Scrum is a well-balanced framework, all its parts are needed in order to be effective.

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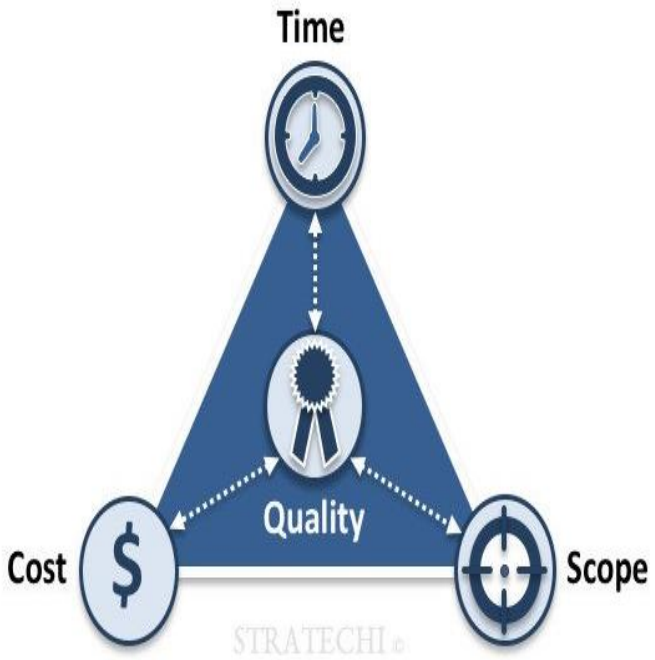
The Iron Triangle of Project Management: also known as triple constraint, project management triangle or flexibility matrix, models the constraints project managers work within on every project they oversee.

The three constraints project managers work within are budget, scope and schedule:

1. Schedule (**or time**) is at the top of the model (**shaped like a triangle**).

2. Scope is on the right of the triangle .

3. budget (**or cost**) is on the left.



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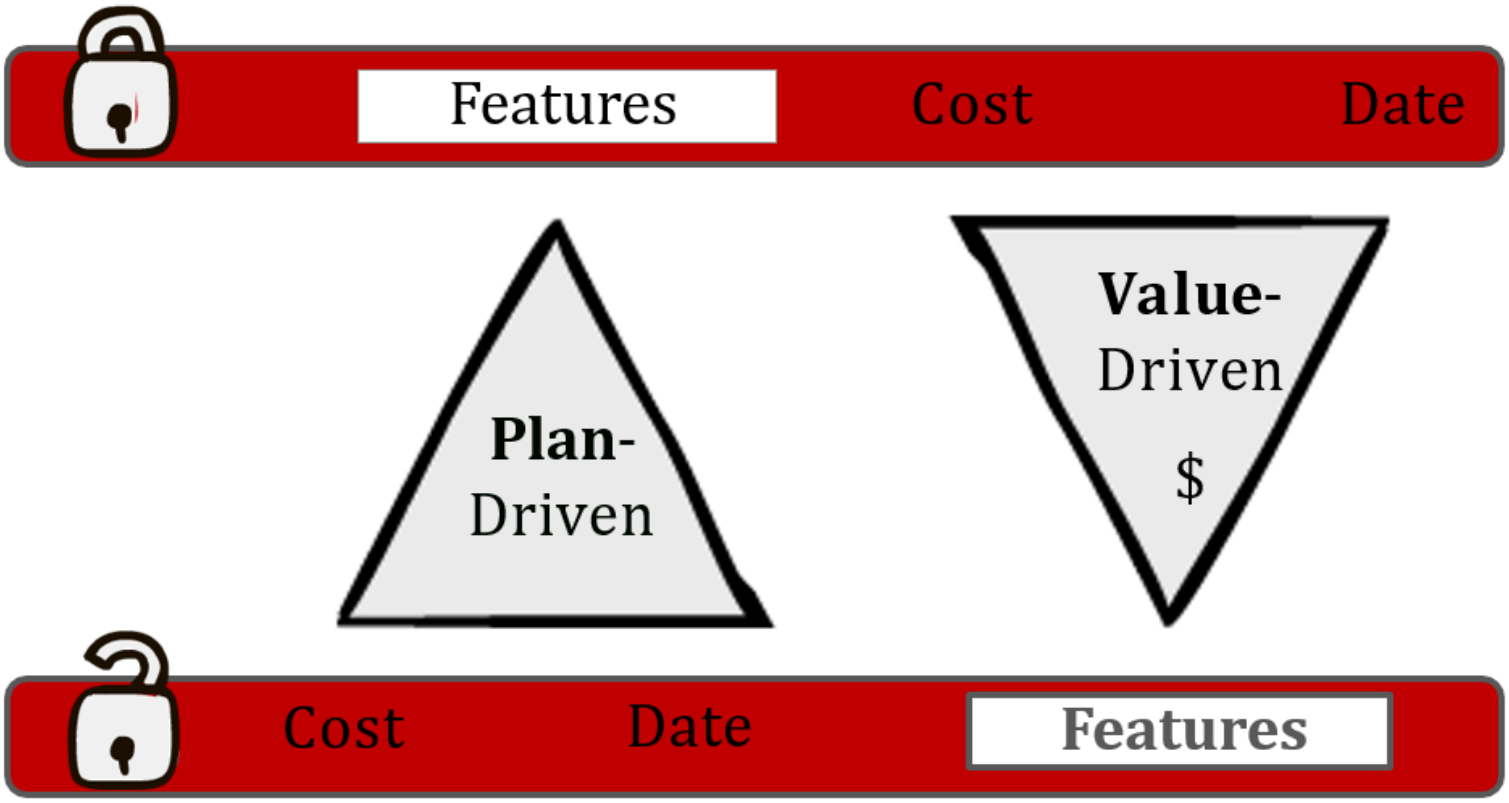
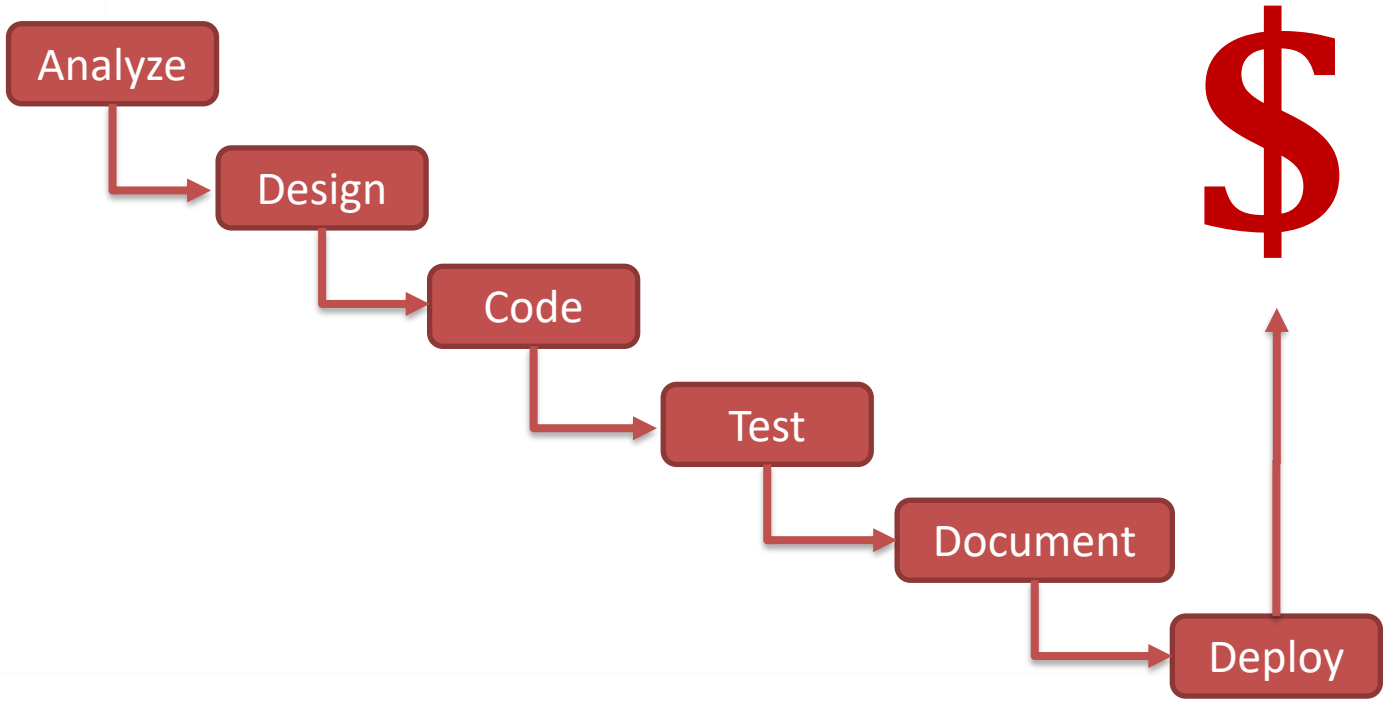


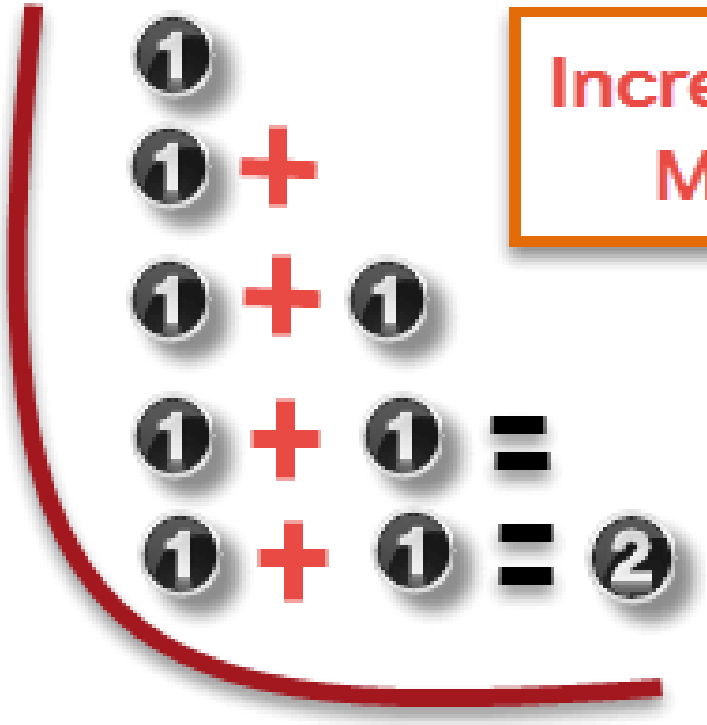
Incremental Value Delivery:



What is Incremental Model?

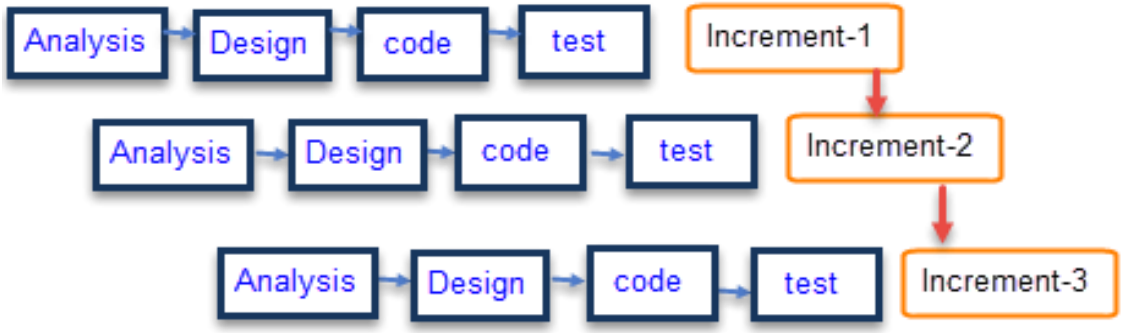
Incremental Model is a process of software development where requirements are broken down into multiple standalone modules of software development cycle.

Incremental development is done in steps from analysis design, implementation, testing/verification, maintenance.



Incremental Model

Each iteration passes through the **requirements, design, coding and testing phases**. And each subsequent release of the system adds function to the previous release until all designed functionality has been implemented.



Incremental Model

Incremental Phases	Activities performed in incremental phases
Requirement Analysis	•Requirement and specification of the software are collected
Design	•Some high-end function are designed during this stage
Code	•Coding of software is done during this stage
Test	•Once the system is deployed, it goes through the testing phase

What is Agile Methodology?

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AGILE Methodology is a practice that promotes continuous iteration of development and testing throughout the software development lifecycle of the project. In the Agile model, both development and testing activities are concurrent, unlike the Waterfall model.

In the Portal:

What is the difference Between

Agile Model & **Waterfall Model** ?

Agile Model Vs Waterfall Model

Agile and **Waterfall model** are two different methods for software development process. Though they are different in their approach, both methods are useful at times, depending on the requirement and the type of the project.

Agile Model	Waterfall Model
•Agile method proposes incremental and iterative approach to software design	•Development of the software flows sequentially from start point to end point.
•The **agile process** is broken into individual models that designers work on	•The design process is not broken into an individual models

Agile Model Vs Waterfall Model

Agile Model	Waterfall Model
•The customer has early and frequent opportunities to look at the product and make decision and changes to the project	•The customer can only see the product at the end of the project
•Agile model is considered unstructured compared to the waterfall model	•Waterfall model are more secure because they are so plan oriented
•Small projects can be implemented very quickly. For large projects, it is difficult to estimate the development time.	•All sorts of project can be estimated and completed.
•Error can be fixed in the middle of the project.	•Only at the end, the whole product is tested. If the requirement error is found or any changes have to be made, the project has to start from the beginning

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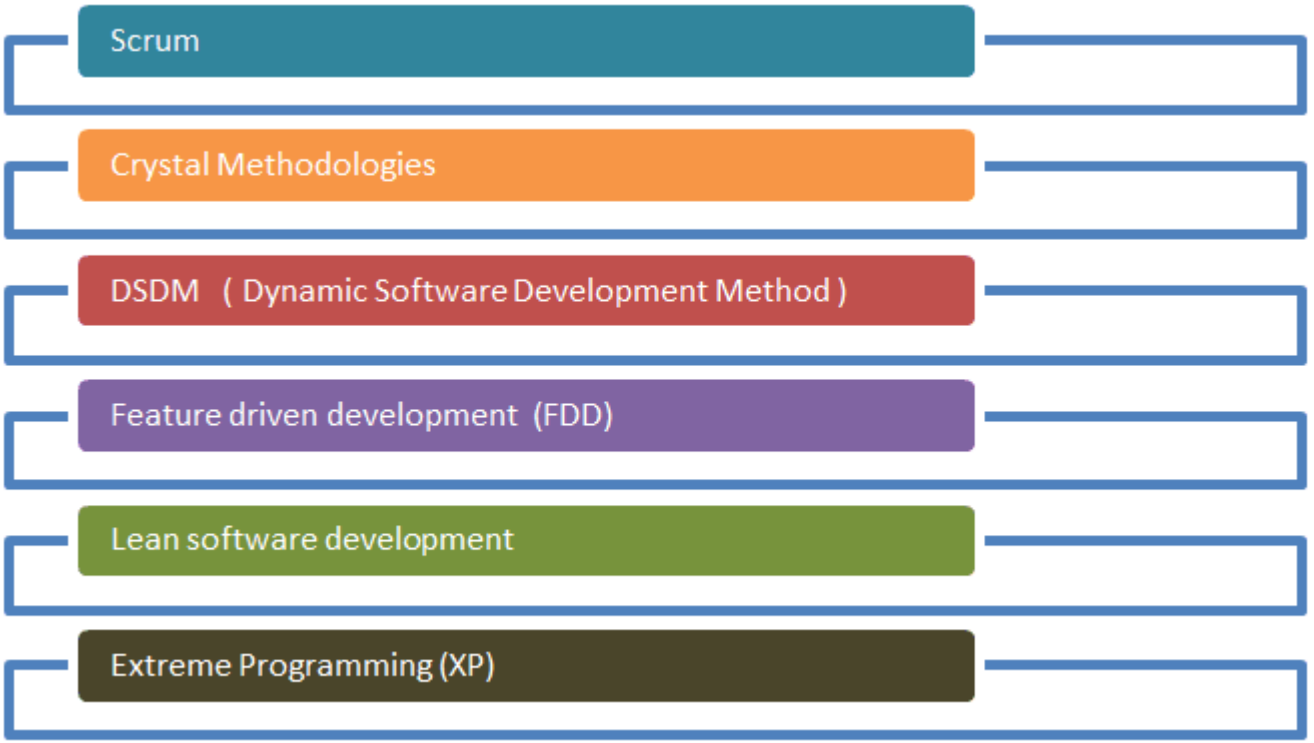
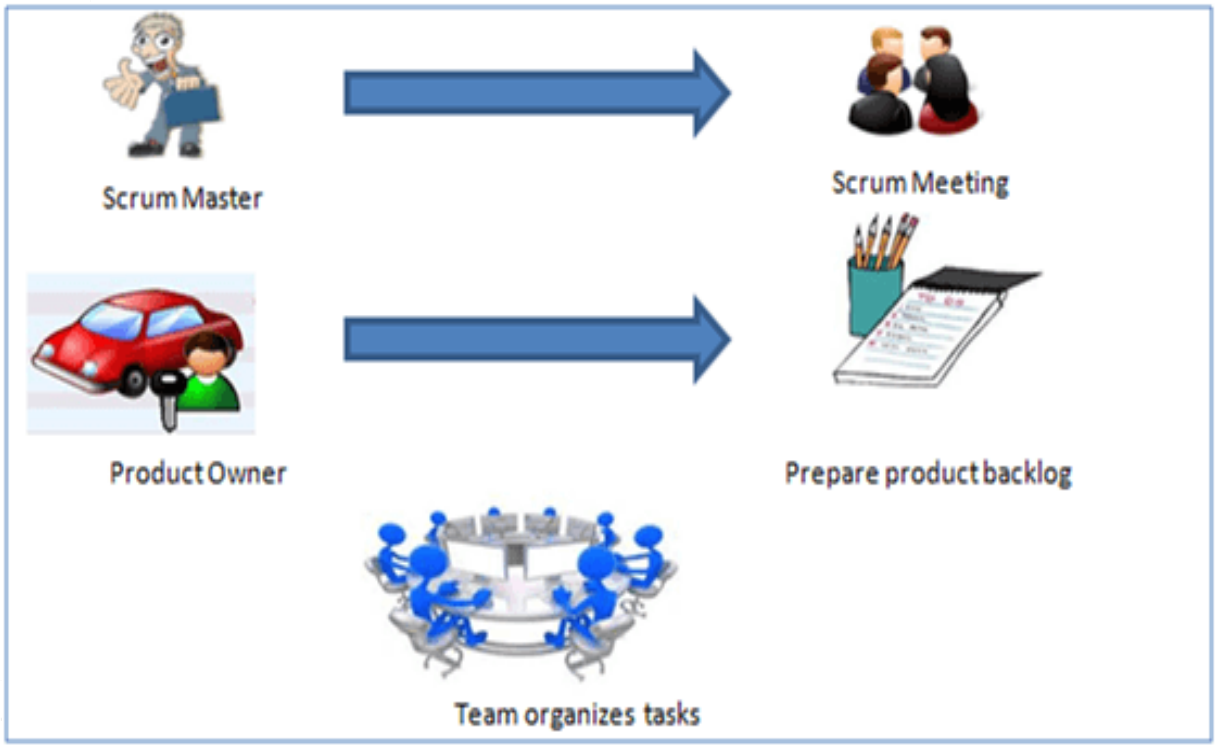
Check below Agile process model to deliver successful systems quickly.



SCRUM is an agile development method which concentrates specifically on how to manage tasks within a team-based development environment.

Scrum believes in empowering the development team and advocates working in small teams (say- 7 to 9 members).

It consists of three roles, and their responsibilities are explained as follows:



1. **Scrum Master:**
   Master is responsible for setting up the team, sprint meeting and removes obstacles to progress.

2. **Product owner:**
   The Product Owner creates product backlog, prioritizes the backlog and is responsible for the delivery of the functionality at each iteration.

3. **Scrum Team:**
   Team manages its own work and organizes the work to complete the sprint or cycle.

Extreme Programming technique is very helpful when there is constantly changing demands or requirements from the customers or when they are not sure about the functionality of the system.

It advocates frequent "releases" of the product in short development cycles, which inherently improves the productivity of the system and also introduces a checkpoint where any customer requirements can be easily implemented.

There are 6 phases available in Agile XP method, and those are explained as follows:

1-Planning

- Identification of stakeholders and sponsors
- Infrastructure Requirements
- Security related information and gathering
- Service Level Agreements and its conditions

2-Analysis

- Scrubbing of stories for estimation.
- Resource planning for both Development and QA teams.

3-Design

- Break down of tasks
- Test Scenario preparation for each task

4-Execution

- Coding
- Unit Testing
- Execution of Manual test scenarios
- Defect Report generation

5-Wrapping

- Small Releases
- Demos and reviews
- Process Improvements based on end of iteration review comments

6-Closure

- Pilot Launch
- Training
- Production Launch
- SLA Guarantee assurance
- Production Support

Crystal Methodology is based on three concepts:

1-Chartering: Various activities involved in this phase are creating a development team, performing a preliminary feasibility analysis, developing an initial plan and fine-tuning the development methodology.

2-Wrap Up: The activities performed in this phase are deployment into the user environment, post-deployment reviews and reflections are performed.

3-Cyclic delivery: The main development phase consists of two or more delivery cycles, during which the

1. Team updates and refines the release plan.
2. Implements a subset of the requirements through one or more program test integrate iterations.
3. Integrated product is delivered to real users.
4. Review of the project plan and adopted development methodology.

DSDM is a Rapid Application Development (RAD) approach to software development and provides an agile project delivery framework.

The important aspect of DSDM is that the users are required to be involved actively, and the teams are given the power to make decisions. Frequent delivery of product becomes the active focus with DSDM.

This method is focused around "designing & building" features. Unlike other agile methods, FDD describes very specific and short phases of work that has to be accomplished separately per feature.

It includes domain walkthrough, design inspection, promote to build, code inspection and design.

Lean software development method is based on the principle "Just in time production". It aims at increasing speed of software development and decreasing cost.

Lean development can be summarized in seven steps:

1. Eliminating Waste
2. Amplifying learning
3. Defer commitment (deciding as late as possible)
4. Early delivery
5. Empowering the team
6. Building Integrity
7. Optimize the whole

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Any Question ?!