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Agile Development

Topic 1:
Introduction to the Unit and an Overview of Agile


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Introduction to the Unit and an Overview of Agile Topic 1 - 1.2


Topic 1: Coverage

This first topic is an introduction to the rest of the unit. It will:

- Provide an introduction to the structure and content of the Agile Development unit;
- Give the aim, scope and coverage of the unit;
- Introduce the history and key concepts of Agile, in comparison to the waterfall approach;
- Show the structure of DSDM.



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Introduction to the Unit and an Overview of Agile Topic 1 - 1.3


Topic 1: Agenda

In this lecture, we will cover:

- Scope of the Agile Development unit
- What is Agile?
- Underpinning Themes
- What is Waterfall?
- What is DSDM?
- Private Study and Self Study Tasks
- Recommended Reading



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Unit Scope and Coverage

The *Agile Development unit* will:

- Provide an introduction to the principles, people, processes and practices of Agile development;
- Prepare students for future trends in software development practices;
- Reinforce understanding of the information systems development process.

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Unit Aim

The *Agile Development unit* will:

- Introduce Agile Development;
- Provide a basic understanding of the main concepts and terminology of Agile;
- Give sufficient understanding of the lifecycle, framework, techniques to equip students to work within an Agile team.

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Unit Learning Outcomes – 1

By the end of the *Agile Development unit* students will be able to:

- Understand the background to Agile development;
- Understand the roles within an Agile development team;
- Understand the various Agile development techniques;
- Understand an Agile development lifecycle;

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Unit Learning Outcomes – 2

- Understand the principles associated with an Agile development approach;
- Be able to apply an Agile development approach to a particular project scenario.

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Structure of the Unit

Key points to consider are:

- The lectures and seminars will provide you with the underpinning knowledge you need;
- You should raise any questions you have as they arise at lectures and seminars;
- You will be set self study tasks to complete for each topic;
- You are encouraged to work together as a team to provide mutual support and assistance.

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Introduction to the Unit and an Overview of Agile Topic 1 - 1.3

Topics - 1

1. Introduction to the unit and an Overview of Agile
2. The Agile Approach and Principles
3. Modelling
4. Roles, Skills and Team Structures
5. Lifecycle and Products
6. Project Management Considerations (Part 1)

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Topics - 2

7. Project Management Considerations (Part 2)

8. Facilitated Workshops

9. Requirements Definition and Prioritisation


10. Development and Prototyping


11. Estimating and Time boxing

12. Unit Summary and Revision Guidance

Each topic is typically 2 hours of lectures and 3 hours of seminars, followed by private study time.

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Unit Assessment

This unit is assessed by an assignment. You should plan to spend roughly 8 hours working on your assignment. You will work on it while you study the unit. The assignment is worth 100% of your overall mark for the unit.

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Introduction to the Unit and an Overview of Agile Topic 1 – 1.12

Exercise 1

Write down FIVE (5) words which you think describe Agile Development.

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Underpinning Themes of Agile

Key points to consider are:

- User Involvement
- Iterative Development
- Incremental Development
- Flexibility to embrace change
- Prioritisation
- Collaborative working

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What is Agile? - 1

There is a family of approaches:

- DSDM
- Lean
- FDD
- XP
- Scrum
- ... and others

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What is Agile? - 2

Collectively, they address:

- Engineering best practices
- Leadership philosophy
- Project management framework
- Development framework

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The Agile Manifesto – 1

'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

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The Agile Manifesto – 2


- **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.**

[Source: www.agilemanifesto.org](http://www.agilemanifesto.org) (2001)

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Where does Agile come from?

In 1956, Herbert D Benington described a process of development at a conference on advanced programming methods for digital computers. In 1970, Winston Royce wrote an article entitled: “*Managing the Development of Large Software Systems*”.

These ideas formed the basis of what we know as the The Waterfall Model. Agile Development uses the stages from the Waterfall Model, but addresses its inadequacies.

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What is The Waterfall Model?

The Waterfall Model is a sequential development model. It insists on each stage of the development process to be completed before moving on to the next step.

```
graph TD; Feasibility --> Analysis; Analysis --> Design; Design --> Implementation; Implementation --> Testing; Testing --> Maintenance;
```

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Introduction to the Unit and an Overview of Agile Topic 1 - 1.20

Agile is Iterative, Incremental, Evolutionary

```
graph TD; Feasibility --> Planning; Planning --> Analysis; Analysis --> Design; Design --> Implementation; Implementation --> Testing; Testing --> Maintenance; Maintenance --> Learn; Learn --> Planning;
```

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Advantages of Agile Development

```
graph TD; A([Optimised]) --- B([Effective]); B --- C([Dynamic]); C --- D([User centred]); D --- E([Focussed]); E --- F([Rapid]); F --- A; A --- B --- C --- D --- E --- F;
```

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What is DSDM?

Dynamic Systems Development Method (DSDM)
Agile Project Framework (2014 Onwards)

It an Agile Project Delivery Framework that delivers the right solution at the right time. It is applicable to any kind of project. Key characteristics are:

- Focused on business benefit;
- On-time and in budget;
- Quality and rigour;
- Incremental and Collaborative.

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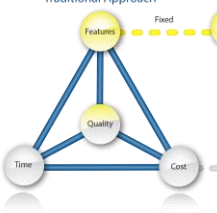
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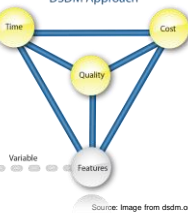
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How does DSDM differ?

Traditional Approach





DSDM Approach



Source: Image from dsdm.org © 2016

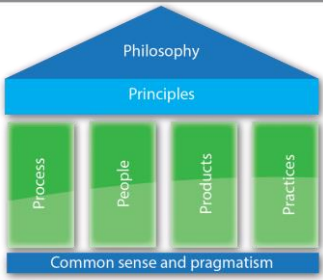
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The Structure of DSDM

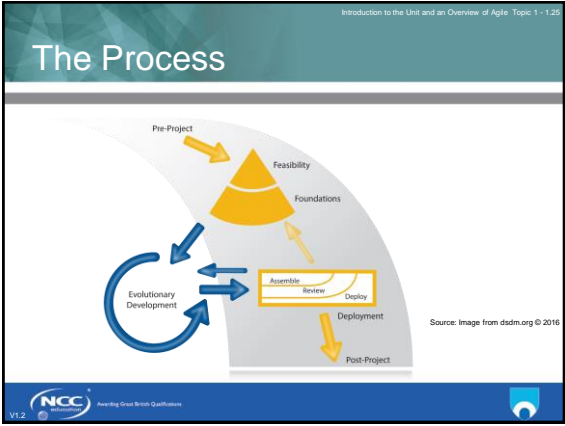


Source: Image from dsdm.org © 2016

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Summary of Topic 1 Coverage

This first topic has:

- Provided an introduction to the structure and content of the Agile Development unit;
- Given the aim, scope and coverage of the unit;
- Introduced the history and key concepts of Agile, in comparison to the waterfall approach;
- Shown the structure and process of DSDM Agile Project Framework 2014

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Introduction to the Unit and an Overview of Agile Topic 1 – 1.27

Self Study Tasks – 1

Exercise 1: Familiarisation with DSDM

You should take the opportunity to familiarise yourself DSDM. Research the process in greater detail. Find at least ONE (1) case study documenting how it was applied and make notes relating to what you see as the benefits.

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Self Study Tasks – 2


Exercise 2: Research

Work in a pair or a small group (max 3) to complete this task.

Focus on researching the following approaches; Scrum, FDD, Lean and XP. These were introduced in this lecture. You should also produce a 50-100 word summary of **each** approach in your own words, ready for discussion at the seminar session for this topic.

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Suggested Reading List


- The DSDM Agile Project Framework. (2014). *DSDM Agile Project Framework (2014 Onwards) Handbook*. DSDM Consortium
<https://www.dsdm.org/resources/dsdm-handbooks/the-dsdm-agile-project-framework-2014-onwards> (Last accessed 13th September 2016)
- The DSDM Consortium . (2008). *DSDM Atern Handbook. 2nd Edition*. DSDM Consortium
<https://www.dsdm.org/resources/dsdm-handbooks/dsdm-atern-handbook-2008> (Last accessed 13th September 2016)

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Topic 1 – Introduction to the unit and an Overview of Agile

Any Questions?

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