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AgilePM® Practitioner WorkBook

Instructions to Follow

Please follow the below Instructions before reading this workbook:

1. Open workbook in Adobe Reader or any other pdf reader
2. Write your answer and Save the pdf by pressing Ctrl+S
3. Upload this workbook at the time you request for the exam

Using this Workbook

This AgilePM® workbook has been produced in-line with the courseware provided by The Knowledge Academy and forms supplementary material with a provided scenario to help develop the knowledge base of delegates after completing the taught element of the AgilePM® training course.

The scenario, Cyberium Worlds, provided in this booklet is fictitious and any resemblance to any past, present, or future organisations or persons is purely coincidental and is not representational of views expressed by The Knowledge Academy.

Please familiarise yourself with the following points when using this workbook:

This icon indicates space for you to make your own notes.

Question indicates a question with a provided answer at the end of the chapter.

Exercise indicates an exercise that references the scenario provided in this workbook. Please note this is for your own practice to help you apply your understanding.

Contents

Scenario

Scenario – Cyberium Worlds

Cyberium Worlds is a game development and publishing studio that has spent much of its lifetime focusing on single player action role-playing games (ARPGs). While they have had success, the studio desires to expand its portfolio and deliver a new online experience for their fan base. This has led the studio's CEO to sign a merger with a publishing firm, Horizon. Horizon has increased their available capital for game development as well as increasing the size of the team for the project's development. The merger has led to the addition of further roles to the project structure to facilitate its development. Horizon has also given the team four years for an alpha release version with a further year for beta testing.

This new direction is in light of the increasing demand for player-to-player interaction and the value it brings to games by enabling co-operative gameplay elements including team oriented objectives and competitive levels of gameplay. Cyberium Worlds has identified this as a potential benefit to the studio's future as it retains player interest and consumer awareness, and increases chance for sales of its products including merchandise alongside funding from the publisher.

The team that has been charged with responsibility for developing an initial working concept of the new IP have settled on a sci-fi themed futuristic universe setting as the backdrop using effects such as, but not limited to, weather, lighting, and gravitational fields to enhance immersion. They want to implement highly co-operative gameplay elements between players, whilst supporting player alliances from small groups to larger in-game gatherings.

The team is formed of the following disciplines:

- Programmers
- 3D modellers and artists
- Concept artists
- Sound designers and engineers
- A lead designer
- A development director who has taken the role of Project Manager

Another characteristic of the team is non-local locations of some of the team divisions, which require constant communication and open dialogues to facilitate the work required.

The backdrop for the game provides ample opportunities to explore different types of worlds, effects, living organisms, and races, biomes and land formations along with differing styles of architecture and space ship design based on in-game company design ideas as well as those of the different races that can be encountered.

The Project Manager has decided to make use of an Agile approach to the project and team management to help with the following requirements and features for the game.

The following are some of the epics identified within the project:

Cyberium Worlds New IP: Codename Starfarer			
Epic category	Identified epic	Requirements	Identified sub-requirements
Ships	Small fighter class	Flight model simulator	Interaction with planetary gravitational fields
		Thrust model and engine	Engine type and placement
		Hull design and shape	
		Hull interior styling	
		Crew facilities	
		Entry/exit	
		Weapon systems	Light armaments
		Defence systems	Shield generators
	Heavy fighter class	Flight model simulator	
		Thrust model and engine	
		Hull design and shape	
		Hull interior styling	
		Crew facilities	Well-being
			Spacesuit equipment

Cyberium Worlds New IP: Codename Starfarer			
Epic category	Identified epic	Requirements	Identified sub-requirements
Ships (cont'd)	Heavy fight (Cont'd)	Entry/Exit	Animations for air-locks
		Weapon systems	Heavy ship-to-ship armaments
		Defence systems	Shield generators
Planetary	Planet A	Gravity simulation	Strength of gravity
			Position to solar system sun
		Terra formation	Mountains
			Land formations
			Cliffs
		Ocean	Wave simulation; interaction with wind simulator
		Wind/air simulator	Distribution of weather
			Interaction with wave simulator
		Biomes	Flora
			Fauna
			Climate
		Weather effects	Rain
			Sun
			Snow
			Wind speed
			Storms – land and sea based

Cyberium Worlds New IP: Codename Starfarer			
Epic category	Identified epic	Requirements	Identified sub-requirements
	Planet A (cont'd)	Weather effects (cont'd)	Weather intensity based on type
			Affected by interaction with wind/air simulation

Cyberium Worlds New IP: Codename Starfarer			
Epic category	Identified epic	Requirements	Identified sub-requirements
Gameplay	FPS	Camera orientation	
		Player movement speed	Engine type and placement
		Animations	Walking
			Running
			Reloading
			Entry/Exit of ships
	Co-operative	Group/Party	
		Party location mapping	

Introduction to the AgilePM®

Introduction to AgilePM®

AgilePF® (Agile Project Framework) is the current version of DSDM from the Agile Business Consortium and forms the basis for AgilePM®. It also integrates easily with AgilePgM™ (Agile Programme Management) for the management of programmes. AgilePM® is effectively the name of the qualification focusing on the role of the Agile Project Manager. The framework the qualification focuses upon is DSDM which was created by the DSDM Consortium, now the Agile Business Consortium, in 1994.

Dynamic Systems Development Method, or DSDM, is a proven framework within the Agile methodology for project management. DSDM was developed when many organisations began looking to implement higher levels of quality into their approach to business software development.

Before DSDM, RAD (Radical Application Development) was used to address problems that arose out of the more traditional Waterfall project management approach by bringing in users of the solution to work more closely with the developers to develop iteratively and incrementally the desired product. However, although RAD solved many of the problems introduced by Waterfall, it brought in other issues around the supportability and scalability of solutions. Additionally, although RAD provided quick fixes, its application was found to affect solution quality because the disciplines of design and analysis were not properly implemented or documented.

RAD solved the issues of projects being too large and taking too long to complete. It also mitigated problems caused by poor communication and business engagement, and progress being measured as percentage complete rather than the delivery of business value. However, RAD's informal approach caused quality issues because of documentation and analysis.

The Agile manifesto for software development has the following values:

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


Focus on the business need


Build incrementally from firm foundations


Deliver on time


Develop iteratively


Collaborate


Communicate continuously and clearly


Never compromise on quality


Demonstrate control

Agile itself is a description of a style for project management that, while highlighting the previously mentioned values, incorporates:

- Flexibility
- Customer collaboration throughout the process
- A focus on final solutions which actually meet business needs
- The deferring of decisions regarding details until the last responsible moment

Approaches used that are described as Agile include DSDM, SAFe®, Scrum, Kanban, Lean, and Extreme Programming (XP). DSDM and SAFe® are more extensive approaches of Agile, tending to focus on the project as a whole whilst also being scalable. The remaining Agile approaches of Scrum, Kanban, Lean, and XP, are lighter and more concerned with development rather than overall project management.

Choosing the Right Agile Approach

For any project, the selection of the right methodological approach is crucial. It is important to understand what each approach involves and why it is used. Additionally, some methodologies may be combined for a more hybrid approach to project management. The same can be said of Agile as it incorporates many different approaches. More extensive Agile approaches may be suited to more complex environments and projects as they are underpinned by a full iterative and incrementally focused lifecycle. The DSDM approach offers a greater opportunity for effective direction, ownership of the solution and on time delivery while protecting quality, reducing risk of incorrect solution development, increasing the likelihood of meeting business needs, and enabling a smoother deployment process.

Question 1

Expand upon each of the DSDM principles below, which support the underlying DSDM philosophy.

a. Focus on the business need:

b. Deliver on time:

c. Collaborate:

d. Never compromise on quality:

e. Build incrementally from firm foundations:

f. Develop iteratively:

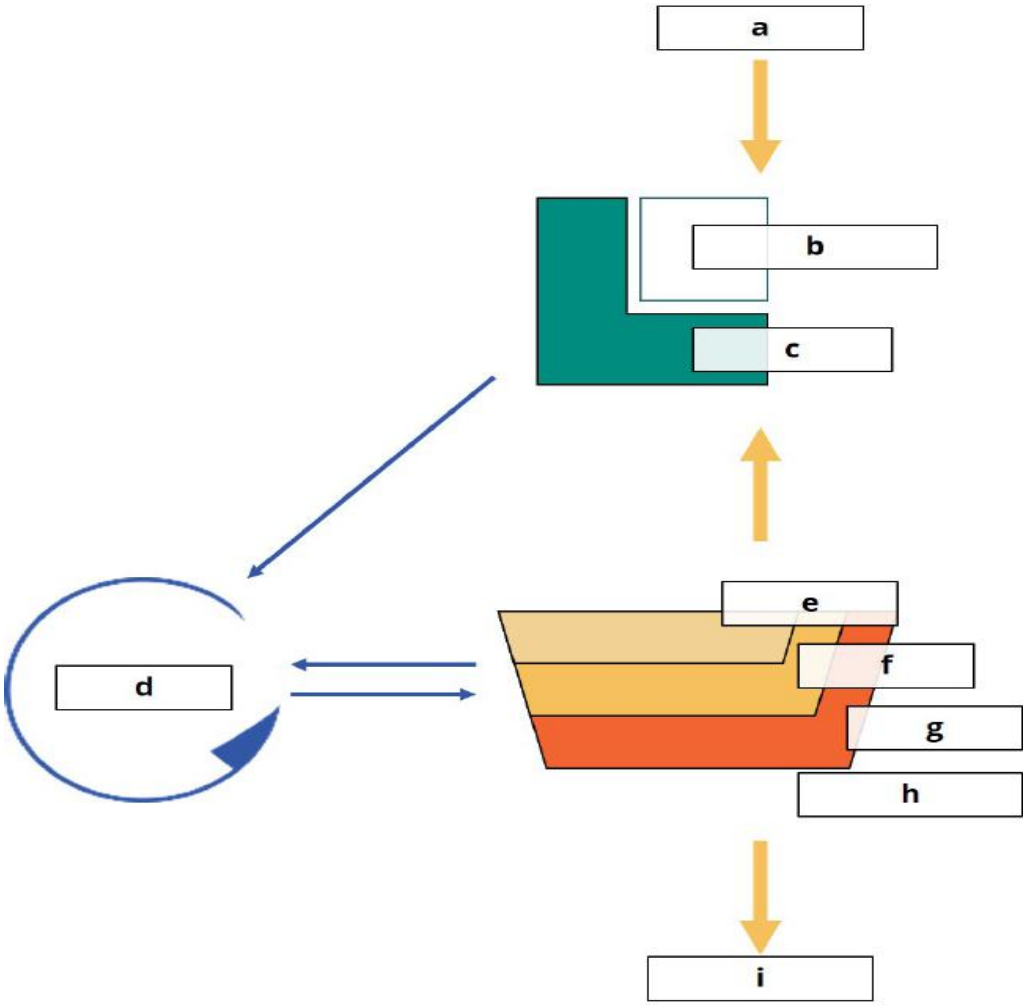
g. Communicate continuously and clearly:

h. Demonstrate control:

Question 2

The lifecycle of DSDM itself can be splited into any number of necessary timeboxes over the course of solutions development.

a. Complete the DSDM lifecycle diagram below.



a) _____

b) _____

c) _____

d) _____

e) _____

f) _____

g) _____

h) _____

i) _____

b. Write three examples of DSDM lifecycle configuration for the following types:

i. Single increment deployed after a series of timeboxes

ii. Multi-increment with a series of timeboxes

iii. Multi-incremental project deployed after each timebox

1

Determining the Agile DSDM Approach

Chapter 1: Determining the Agile DSDM Approach

DSDM has its basis in the following philosophy:

"Best business value emerges when projects are aligned to clear business goals, deliver frequently, and involve the collaboration of motivated and empowered people".

1.1: DSDM Process
The DSDM lifecycle is described through six phases:

1. Pre-project
2. Feasibility
3. Foundations
4. Evolutionary development
5. Deployment
6. Post-project

Question 1

Describe the purpose of each of the above phases in the DSDM lifecycle.

a. Pre-project:

b. Feasibility:

c. Foundations:

d. Evolutionary development:

e. Deployment:

f. Post-project:

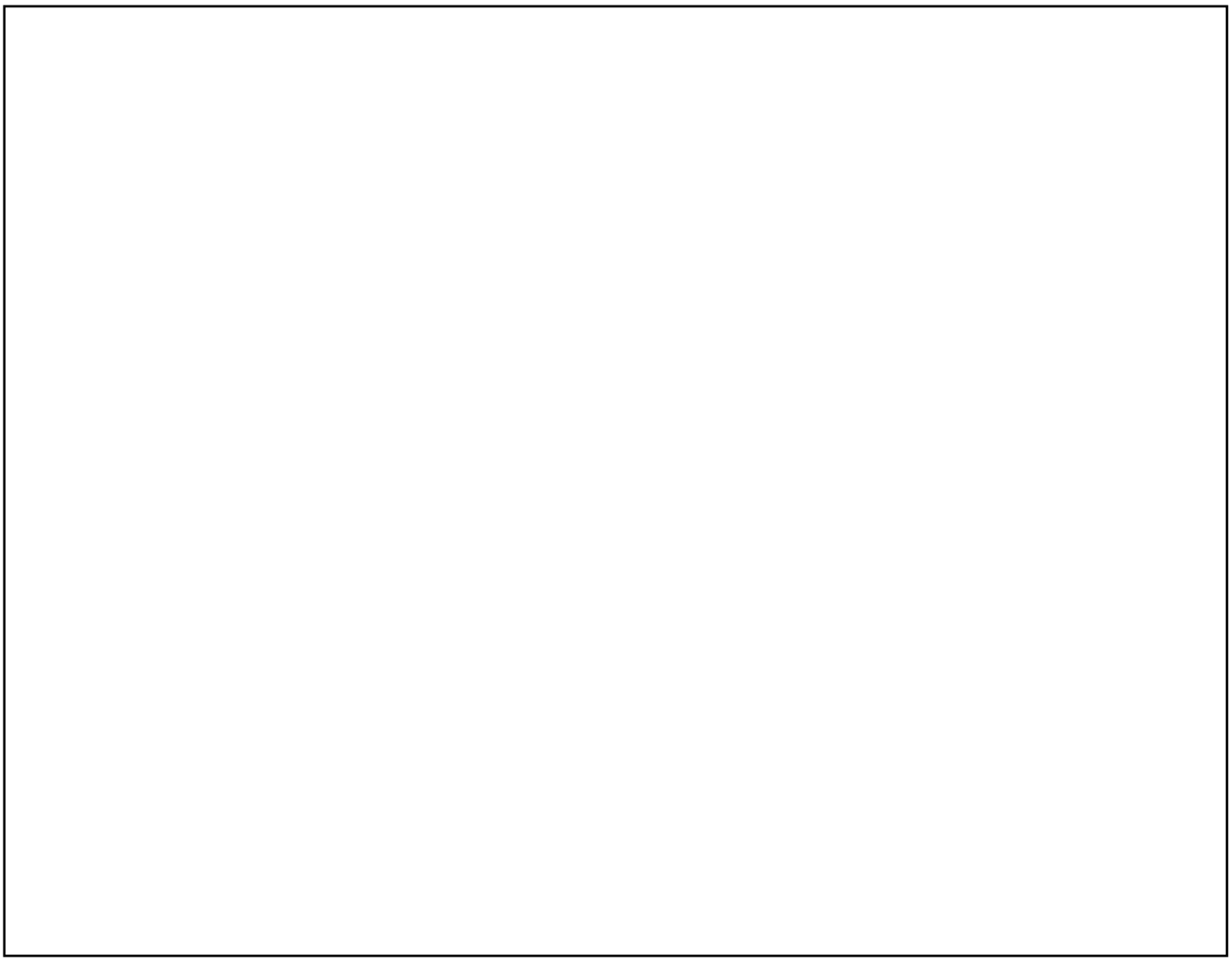
The DSDM lifecycle provides a return path in practice to highlight the implementation of a repeatable, iterative development process during a project. This iterative development cycle provides an incremental release cycle from the DSDM development lifecycle. DSDM also supports projects of varying size and complexity.

DSDM can be configured for both scalability and formality. It recognises the value of Agile in terms of project productivity and solution quality while identifying and accepting necessary constraints that often exist when working in a corporate environment. These restrictions may stem from finance, architecture and infrastructure strategies, regulations, vendor agreements, and considerations from third parties.

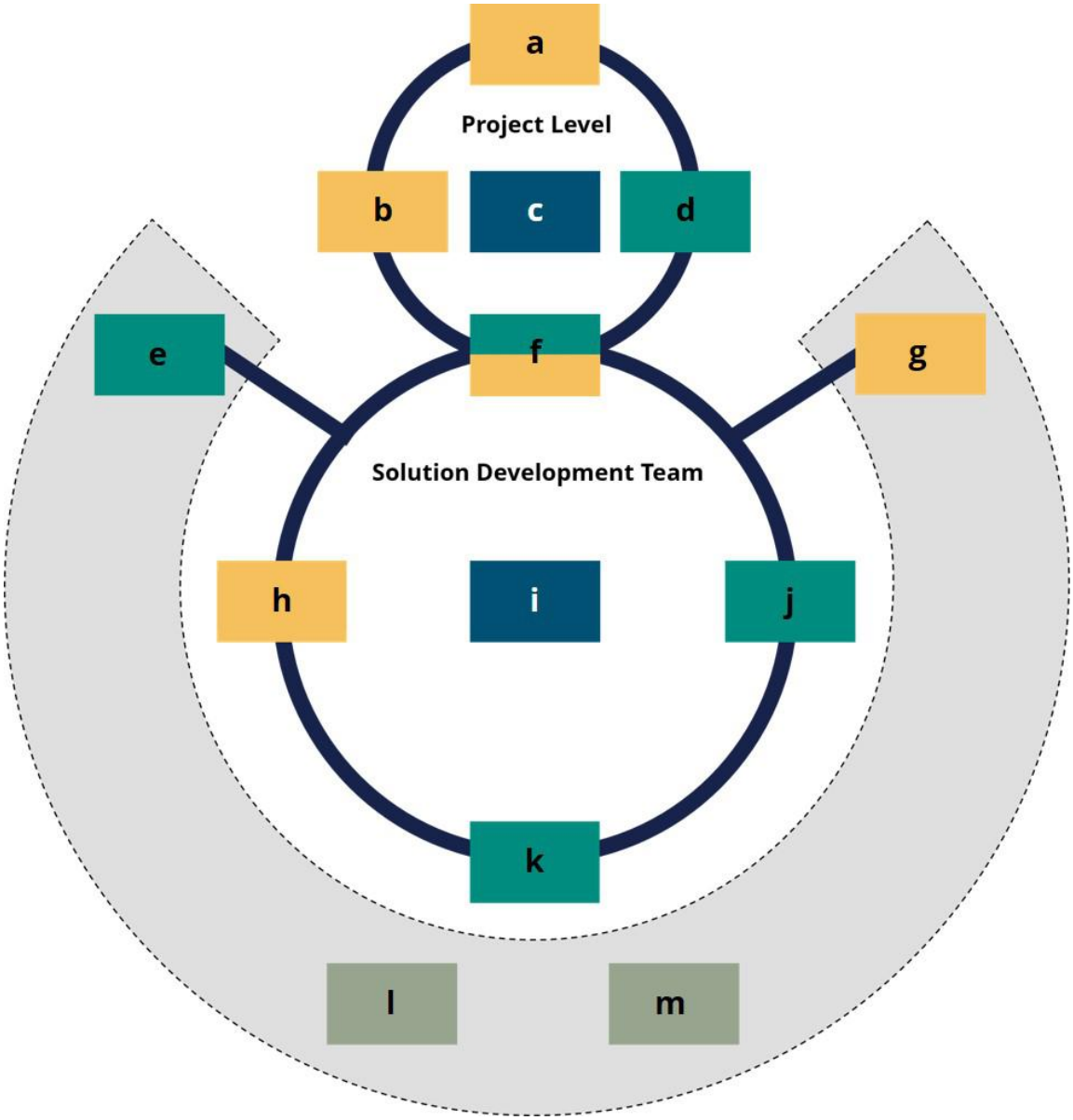
1.2: Roles and Responsibilities in DSDM

Every project benefits from the effective collaboration of individuals and teams. It is a foundational element for any project. DSDM assigns clear roles and responsibilities to each individual in the project environment. These roles and responsibilities identify representation of business interests, solution and technical interests, management interests and process interests.

DSDM recognises that often, the best solutions arise from self-organising and empowered teams. Yet, for this to be the case, the individuals within these teams must agree upon active responsibilities within agreed boundaries.



Question 2: Complete the DSDM Team Model below,



a)

b)

c)

d)

e)

f)

g)

h)

i)

j)

k)

l)

m)

Exercise A

List the DSDM team roles in the following table with a description of each role's specific area of interest and responsibilities.

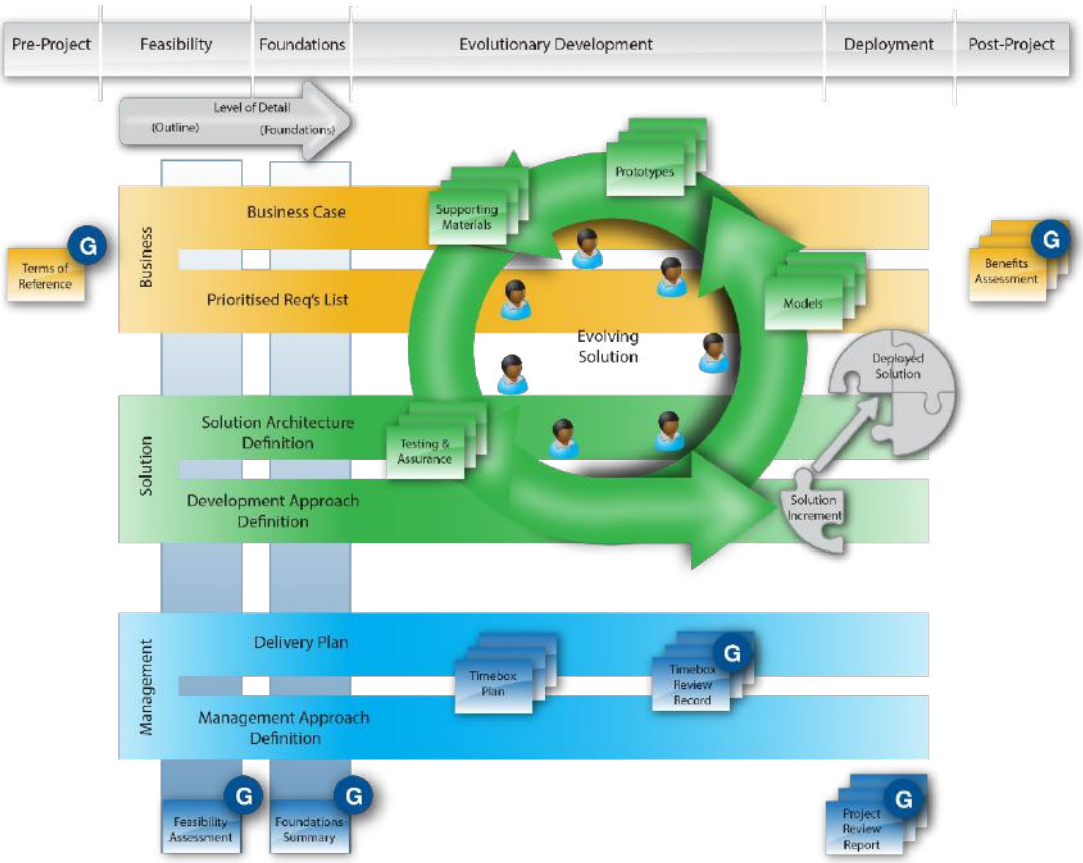
Role	Area of Interest	Responsibilities

Role	Area of Interest	Responsibilities

Role	Area of Interest	Responsibilities

Question 3: DSDM also supports the use of a RACI matrix. Define and describe the purpose of the RACI matrix.

1.3: DSDM Products and their use by the Project Manager



Credit: © 2019 Agile Business Consortium Limited from

https://www.agilebusiness.org/page/ProjectFramework_08_Product

Products produced as part of the DSDM Agile framework are defined in the above diagram. Note that not all products are required in all projects, and formality will vary from project to project and from organisation to organisation. Formality itself should, however, be influenced by the product's factors as some products will require more formal associations and characteristics than others. This is especially the case when dealing with third parties, contractual relationships, corporate standards, and the needs of, and for, governance.

Question 4: Define the following types of products identified by DSDM:

a. **Evolutionary Products:**

b. **Milestone Products:**

Exercise C

From the DSDM product diagram, identify those products which are business focused, those which contribute to the solution being created, those which cover project management and control interests, and those involved in governance processes.

Product	Business-focused	Contributes to the created solution	Covers project management and control interests	Also involved with governance processes

Table continued from previous page.

Product	Business-focused	Contributes to the created solution	Covers project management and control interests	Also involved with governance processes

Question 5

Identify the following statement as true or false:
The Business Analyst Role is involved at the project level **and** the team level whilst also having responsibilities that involve both business and technical elements.

- ◯ True
- ◯ False

Question 6

Fill in the blank:
A Project Manager's role involves _____ and _____.

Question 7 Which of the following roles is responsible for shaping and building the solution?

- ☐ Solution Manager
- ☐ Solution Developer
- ☐ Solution Creator
- ☐ Solution Tester

2

Planning and Controlling the DSDM Lifecycle

Chapter 2: Planning and Controlling the DSDM Lifecycle

While DSDM advocates the same approach to planning as Agile, valuing the idea of responding to change over that of following a plan, it still maintains an emphasis on high-level planning. In this way, DSDM plans can shape and structure the project and its associated work without getting into the low-level detail of exactly who does what and when.

Like many other approaches, the planning of DSDM requires an agreement of the strategy to be taken in order to evolve the solution, while considering incremental delivery and quality assurance.

To effectively deal with these considerations, DSDM defines three Agile planning concepts, six testing concepts, and four tracking and control concepts.

- Project planning concepts include:
    1. Outcome-based planning
    2. Planning to sensible horizons with the right level of detail
    3. Planning and re-planning based on best available estimates
- Testing concepts include:
    1. Testing integrated throughout
    2. Collaborative testing
    3. Repeatable testing
    4. Prioritised testing
    5. Independent testing
    6. Test-driven development

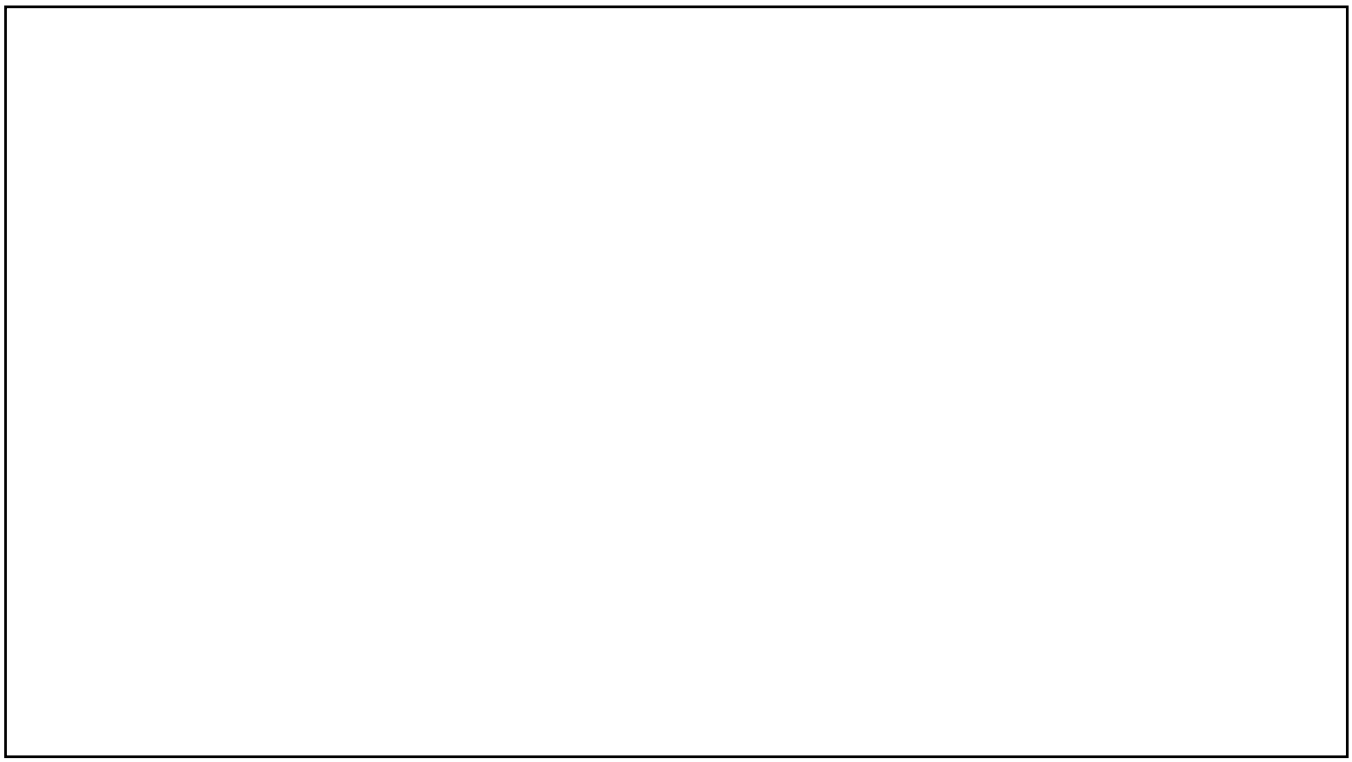
Tracking and controlling concepts include:

- Time boxing and outcome-based measurements
- Process an progress transparency
- Change responsiveness
- Management by exception

Furthermore, the planning involved during the DSDM lifecycle includes activity planning phase by phase. During the feasibility phase in particular, a high-level investigation is performed and there may only be a few requirements identified with many still to be discovered.

During the Foundations phase, the team will gain a more refined understanding of the requirements and obtain further clarification where needed. These requirements will be expanded with more detail, and though the number of individual requirements may still be typically below 100, overall MoSCoW priorities will be able to be decided.

Other elements within the planning concepts of the DSDM lifecycle include time boxing, planning for deployment, planning benefits assessment activity for the post-project phase, and incremental planning for re-visitation of the Foundations phase.



2.1: Planning through the Lifecycle

Strategic planning in a DSDM project mainly occurs during the feasibility phase. Outlines for project management and approaches for solution development are created in this phase. These may or may not include a possible timeline for delivery during the project. In addition, these plans will need to be revisited during the project as the changing environment of projects will affect the plans themselves.

Planning may be accomplished for each phase of the DSDM lifecycle with a specific focus. The life cycle diagram below shows the key focus of each of the phases.

Planning in DSDM must follow all of the DSDM principles. Every plan should:

- Focus on the business need including identification of the final outcome.
- Demonstrate that on-time delivery of the plan can be achieved.
- Include collaboration for evolution of the solution during project execution.
- Be considered effectively enough to never compromise on quality.
- Incrementally build the solution. This includes sensible levels of detail suitable for each of the different planning horizons. For example, high-level planning should have firm, strategically aligned foundations.
- Apply continuous iteration to align and re-align the project and solution with changing of circumstances.
- Employ continuous and clear communication at all times and use sensible predictions for delivery of project requirements.
- Measure actual progress against what was predicted on a formed and agreed basis. In addition, this measuring should help act as a demonstration of control over what is being done in terms of work against the baselines prior to re-planning.

As planning may be carried out at each phase of the DSDM lifecycle, such planning may also be revisited and re-aligned so it is more relevant to the project's current state.

Pre-project planning: Carried out at the programme and portfolio level, planning here is focused on whether and when the assessment of project feasibility will be completed.

Feasibility planning: This is where a high-level investigation is carried out to determine the project's viability within the organisation and its capabilities to complete the project and realise its deliverables.

Foundations planning: The development team takes the investigation from the feasibility phase to the next level of detail. Timeboxing schedules are created for the project's first increment. Approaches to be used across the project are defined here as well, and these will look at the solution's development along with control of the development. A deployment strategy is also identified with a date committed to for first increment delivery.

Evolutionary Development planning: Although Timebox planning has been done to some extent prior to the evolutionary development phase, it is revisited at the beginning of each Timebox. Timeboxing is the lowest-level of planning in DSDM projects and the Solution Development Team (SDT) is responsible for Timebox planning through the basis of objectives and agreed outcomes. The duration of each Timebox should be agreed and fixed prior to execution. However, before development during a Timebox can be carried out, the product backlog needs to be prioritised via MoSCoW to avoid delay and misalignment of requirements during the project.

Deployment planning: During the evolutionary development phase, which is carried out through iterative development cycles delivered in Timeboxes, further project detail will begin to evolve and develop over time. This facilitates more detailed planning to be implemented, including that for solutions deployment. This will vary according to the complexity of the solution, but should be agreed upon in advance to reserve the resources needed.

Incremental planning: DSDM relies upon an incrementally produced solution that evolves through its evolutionary development phase. This means that the Foundations phase should be revisited at the end of a delivered increment to determine continued project viability and to update plans for that increment.

2.2: Prioritisation

DSDM uses the MoSCoW approach to prioritisation of the product backlog and associated user stories. This prioritisation is well-suited to enable consistent on-time delivery of projects that have fixed deadlines. The individual effectiveness of MoSCoW combined with Timeboxing provides a core strength of DSDM and is built upon the understanding of what the business needs and when that need is required.

For effective MoSCoW prioritisation to take place, a well-understood set of requirements, or User Stories, should be created. Teams and organisations should not aim to define the complete set of requirements at the beginning of the project, as not only is this against the principles and values of Agile and DSDM, but it often proves to be counterproductive, restrictive, and wasteful of effort. This is especially true in the case of projects that are expected to take long periods of time to complete.

DSDM identifies the approach of capturing requirements at a high level, without the low level detail, early on in the project with further detail elicited gradually during the project's progression. Details are therefore left until as late as is practical such as during Timeboxes in the evolutionary development phase.

In its simplest definition, a requirement is an identified service, function, or feature that the end user needs. A user story, however, is the requirement itself expressed from the end user's perspective. These stories may often be referred to, depending on project and organisation, as epics, themes, or features, but ultimately will all follow a similar format. User stories are popular among Agile approaches, including DSDM, as a way to express the necessary project requirements for the following reasons:

- They provide a focus for a role, such as the end user, that will use or be impacted by the solution

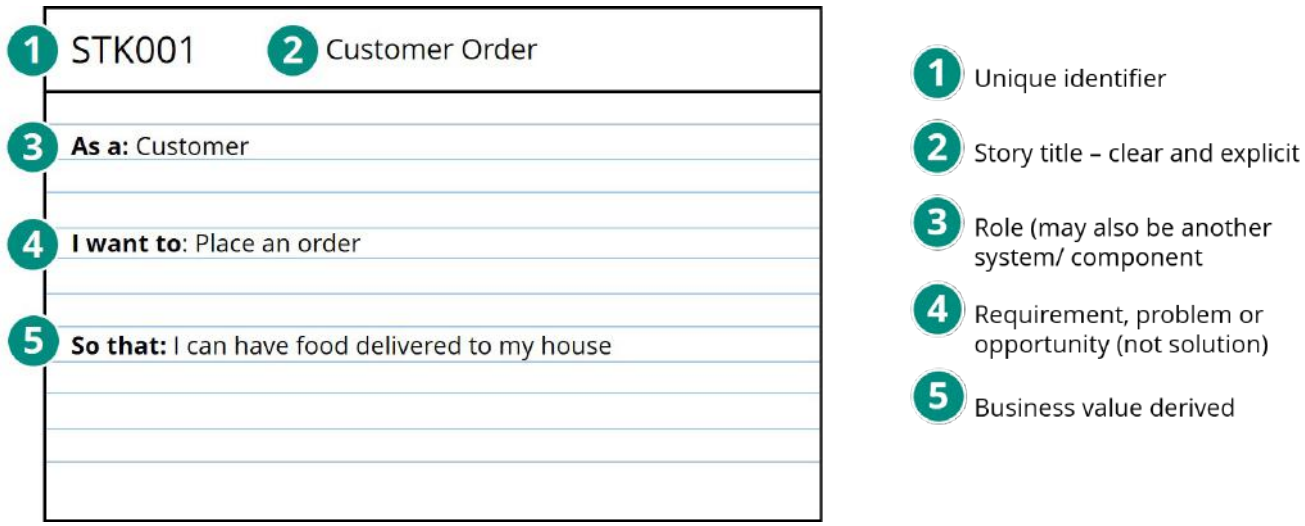
- The requirement is defined in a language that has meaning to the people in the identified role
- They clarify the reason for the requirement
- They define high-level requirements without needing to go into low-level detail early on in a project

User Stories are often expressed through cards, conversations and confirmation. The format of a user story usually takes the following structure:

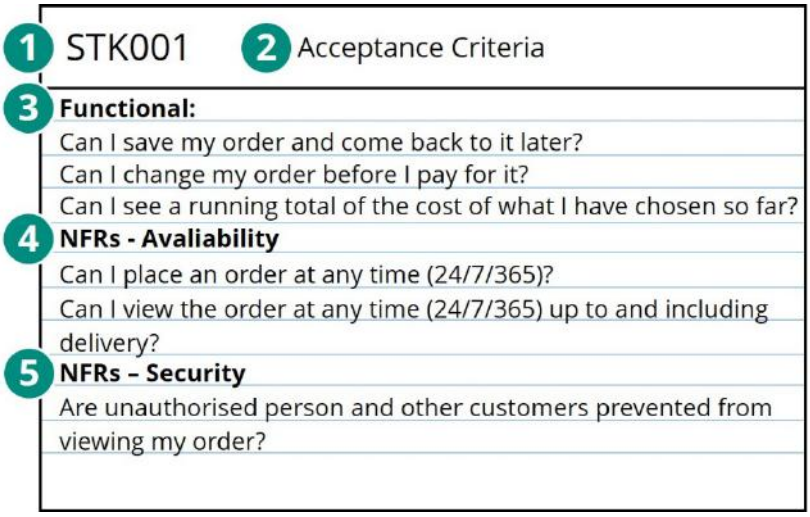
- As a <role>
- I need <requirement/feature>
- So that <goal/value>

User Stories are, in the case of DSDM, recorded in a Prioritised Requirements List (PRL). The stories are often presented on cards for the purposes of planning and to help the SDT monitor their progress on that requirement. The front and back of the card can be seen below.

User Story Card: Front



User Story Card: Back



1. Unique identifier
2. Story title – clear and explicit
3. Functional (what is the user allowed to do)
4. Availability (what should the user expect?)
5. Security (does it meet organisational standards?)

To help create well-constructed User Stories, many organisations make use of Bill Wake's INVEST model. This model provides guidance on the creation of effective user stories:

Independent: Stories need to be independent from each other to allow them to be moved around with minimal impact. If stories are found to be too dependent on each other, then it is worth considering combining them into a single User Story.

Negotiable: User Stories are not contracts and should be treated as such. Instead, they are more akin to placeholders for features that the team will discuss and clarify nearer to time of development.

Valuable: Features in User Stories should ideally present clear business value to the user or owner of the final solution, and be written appropriately.
Estimable: Without being too detailed, it should be possible to give an estimate for the completion of a User Story within a timeframe.

Small: A good story should be small in effort, typically representing no more, than 2-3 person weeks of effort. A story which is more than that in effort can have more errors associated with scoping and estimation.

Testable: The User Story should be worded in such a way that it is clear and specific enough to be tested.

Question 1: What does “S” stands for in Bill Wake’s INVEST model?

- ◯ System
- ◯ Security
- ◯ Smart
- ◯ Small

Question 2: The format of a user story is _____.

- ◯ As a <type of user>, I want <functionality>
- ◯ As a <type of user>, I want <functionality> so that <reason>
- ◯ As a <type of user>, I want <functionality> that is done <how>
- ◯ I want <functionality> so that <reason>

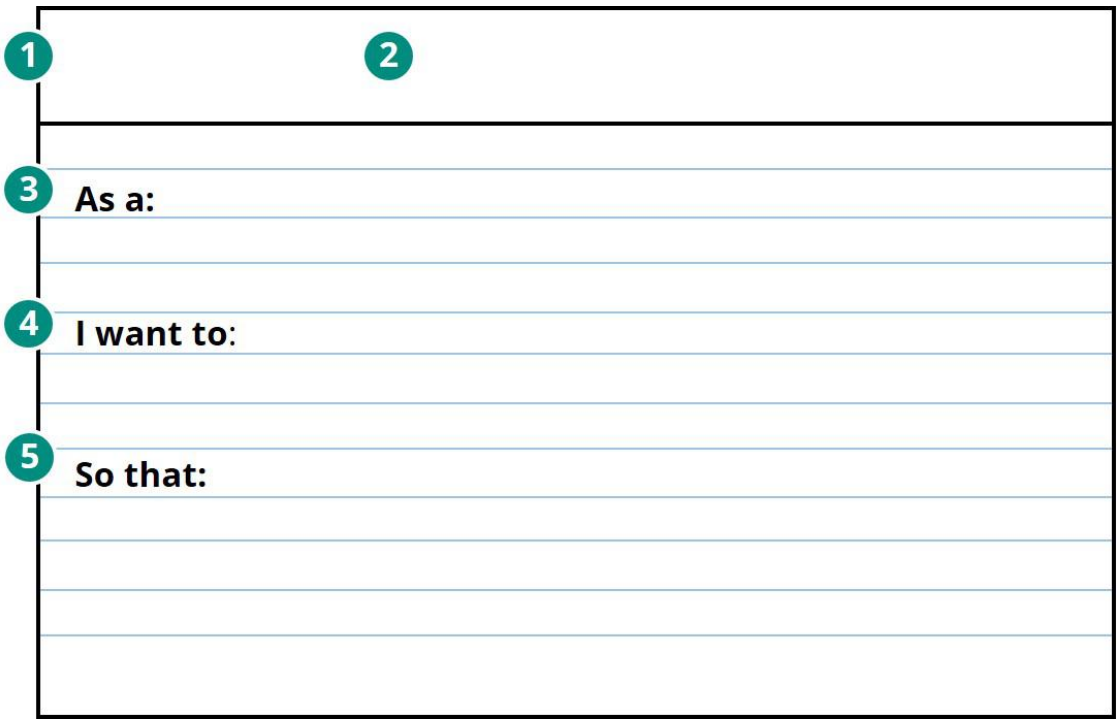
Question 3 Which of the following approach to prioritisation of the product backlog and associated user stories is used by DSDM?

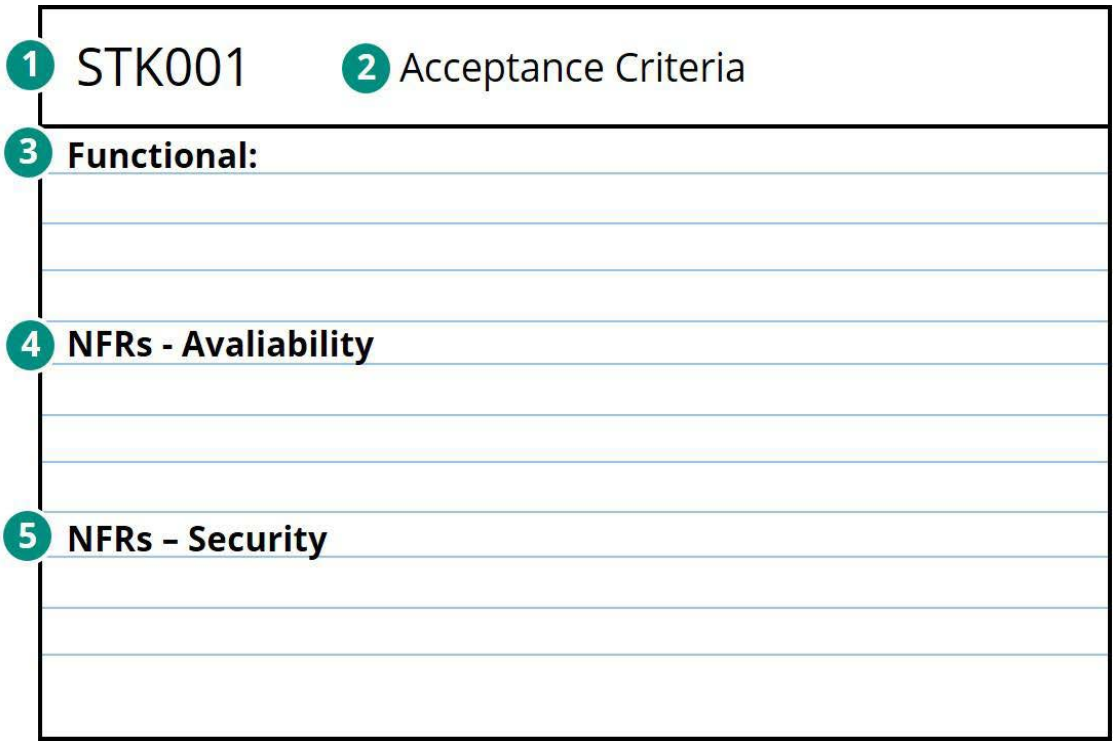
- ◯ PESTLE
- ◯ MoSCoW
- ◯ Poker
- ◯ SWOT analysis

Exercise A

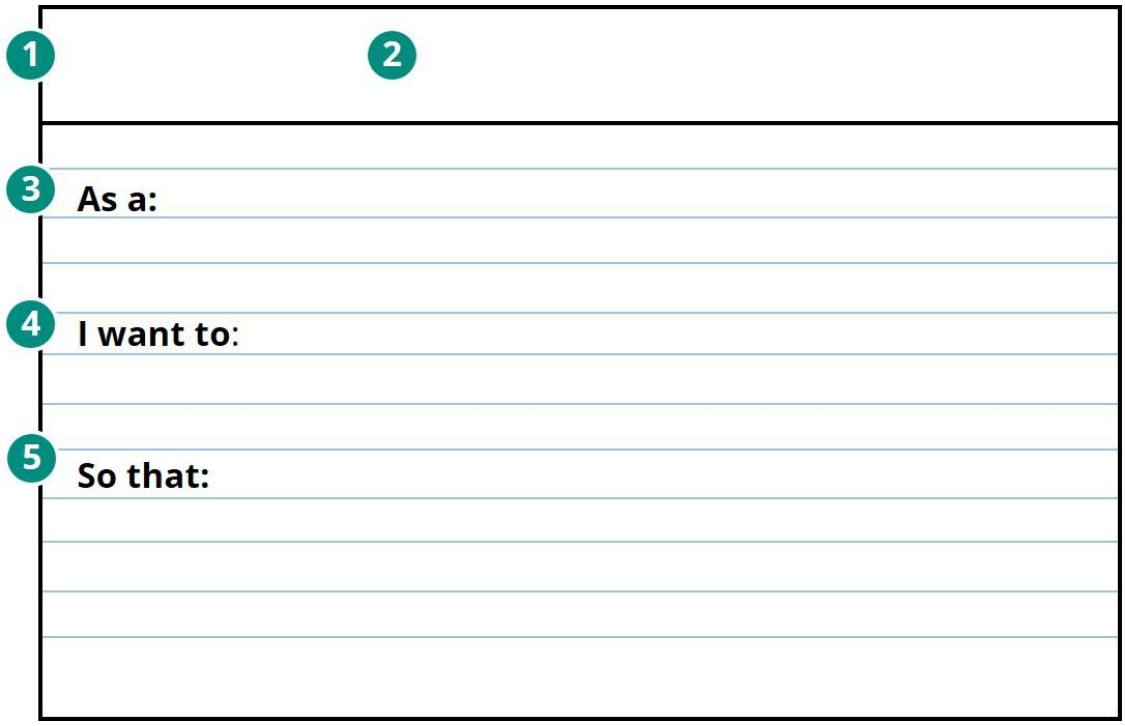
Looking at the list of identified Epics in the Cyberium Worlds scenario, choose any requirement and complete the following three User Story cards.

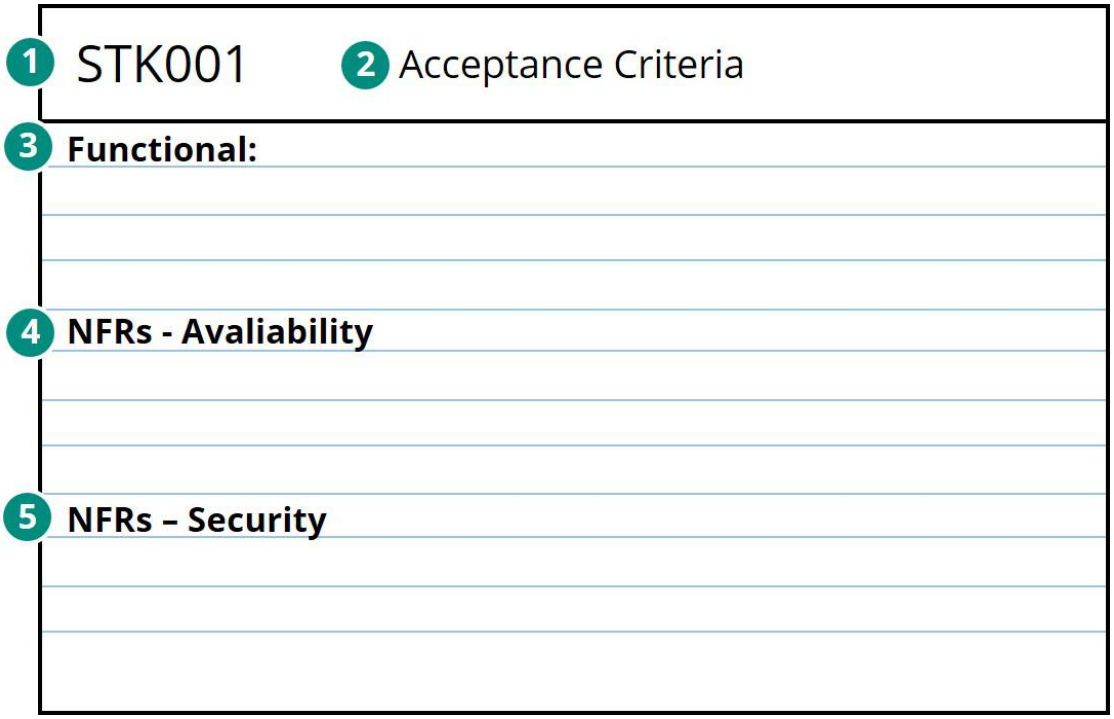
1)



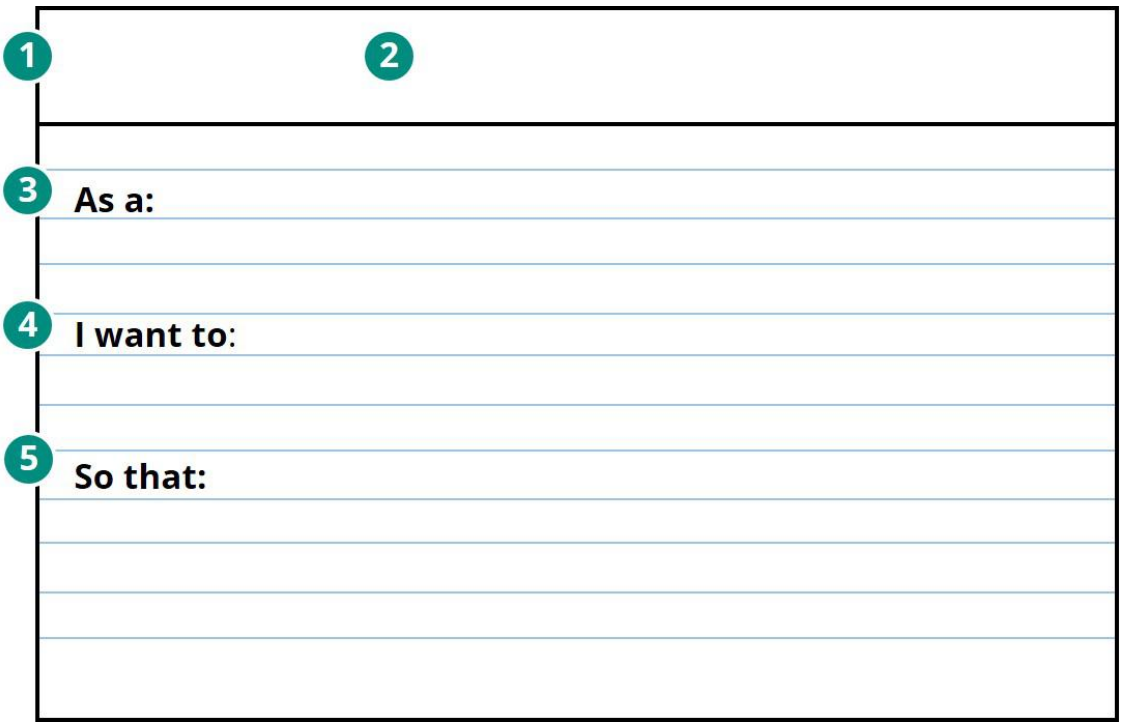


2)


1
2
3
As a:
4
I want to:
5
So that:


1
STK001
2
Acceptance Criteria
3
Functional:
4
NFRs - Avaliability
5
NFRs – Security

3)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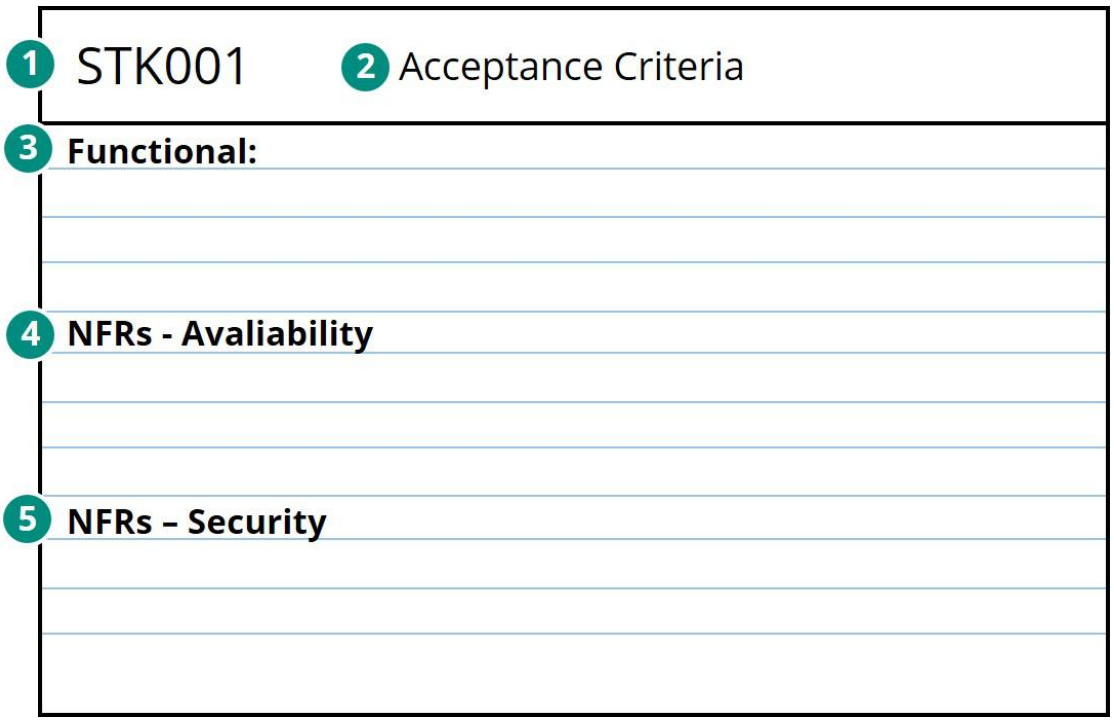
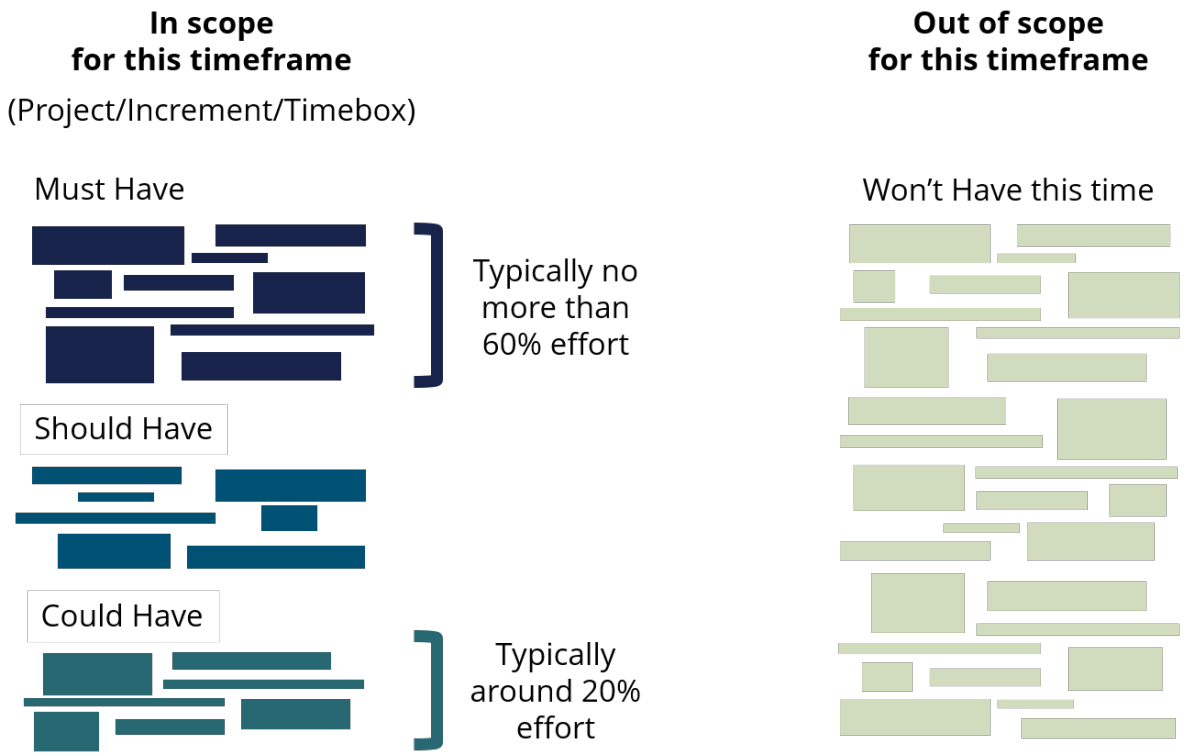

1
STK001
2
Acceptance Criteria
3
Functional:
4
NFRs - Avaliability
5
NFRs – Security

MoSCoW itself is an approach of prioritisation that describes requirements in the following way:

- ***Must Haves***: These requirements are identified as delivering the Minimum Useable Subset, remaining as the primary focus for team members.
- ***Should Haves***: Requirements likely to be delivered under normal circumstances are listed as Should Haves. Organisations are reasonable to expect delivery of most Should Have requirements.
- ***Could Haves***: Any identified requirements that might be delivered, but are considered the least important or valuable fall into this category. These types of requirements will, however, provide the first level of contingency in the event of problems to protect the delivery of higher priority requirements.
- ***Won't Haves***: This category identifies requirements that will not be delivered in the current timeframe but still need to be considered as part of the project's bigger picture. Prioritising Won't Have requirements can help retain focus upon the current Must Have, Should Have and Could Have requirements.



The diagram above illustrates different requirements, represented by different shaped and sized boxes, and prioritised using MoSCoW.

MoSCoW replaces prioritisation approaches that use a typical high, medium, or low classification, or a numerical association of prioritisation on an ascending or descending scale. These approaches tend to be weaker and rely on individual opinion rather than a more objective focus on the expectation of what will be delivered. Numerical categories in particular cause debate as to whether an item should be placed higher or lower than others.

The categories identified in MoSCoW provide the SDT with a more organised idea of what to deliver in a given Timebox and what is likely to be delivered with each increment of the solution.

The allocation of effort to Must Have requirements, as identified in the above diagram, is in respect of everything else being a contingency. It is therefore recommended through DSDM that the effort for delivering the Must Have requirements is at a level where the team's confidence is high; usually no more than 60% effort. Additionally, the team needs to be in agreement, with a pool of Could Have requirements for the increment that realistically reflects a certain level of contingency. This tends to be around the 20% effort margin. This realistic pool of Could Have requirements sets a correct expectation for the organisation that these will, in a best case scenario, be delivered, but the focus is on the Must Have requirements first and foremost. Won't Have requirements are excluded during Timebox effort estimation.

MoSCoW can also be divided between three levels of the project depending on the size and scale of requirements:

- *Project Level*
- *Project Increment Level*
- *Timebox (Current) Level*

Exercise B

Consider the Epic category “Gameplay” for Cyberium Worlds’ new IP, Codename Starfarer. Assuming each epic will take approximately 4 Timebox periods to develop all identified features, prioritise the list of identified requirements for the Gameplay requirements using MoSCoW in the first Timebox.

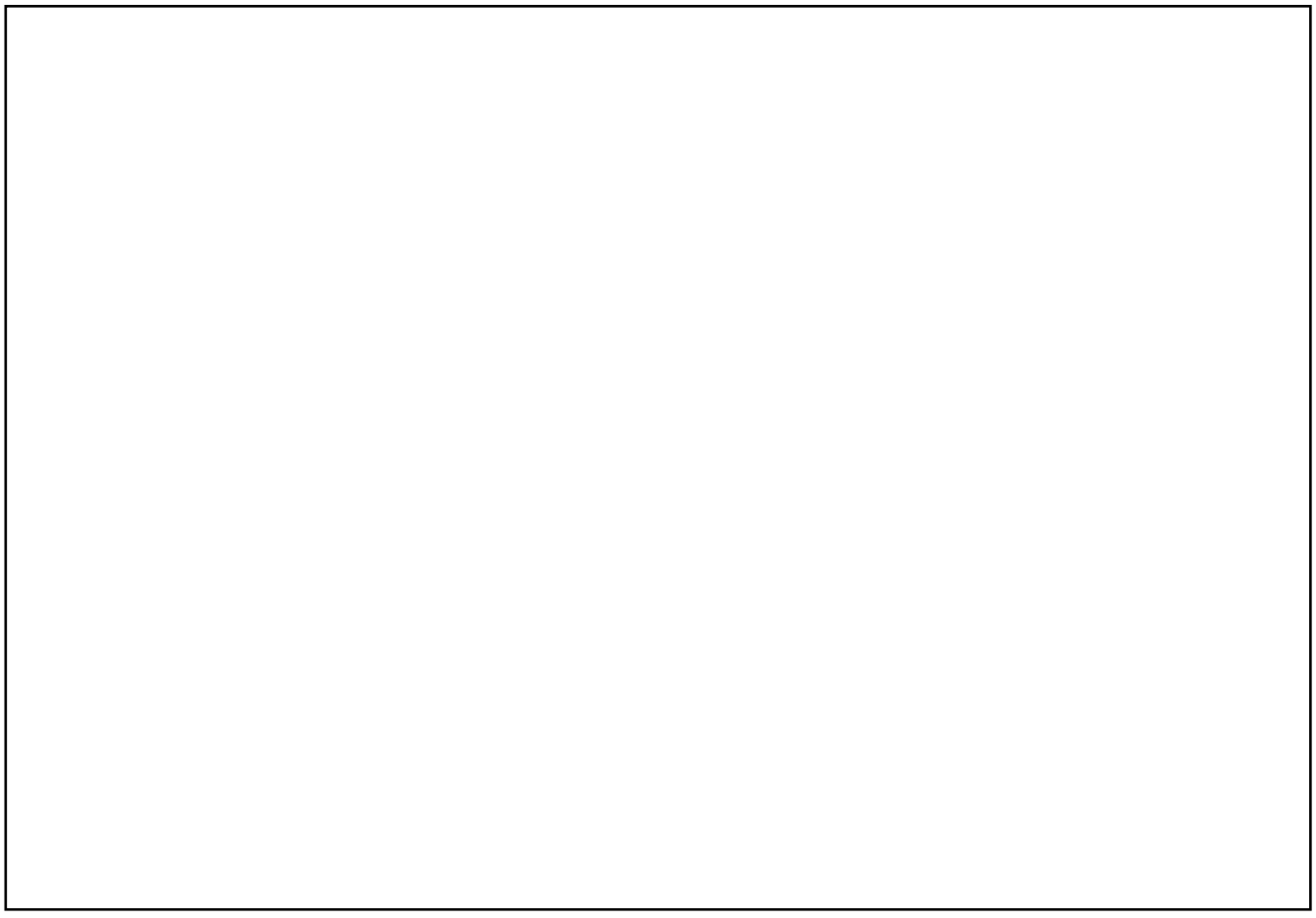
2.3: DSDM Practices

The practices of Timeboxing, daily stand-ups, facilitated workshops, and modelling, are used in the DSDM approach as well as other Agile approaches.

Timeboxes in the DSDM lifecycle provide projects with a structure of nested plans that support outcome-based measurement. Here, the primary focus is on what has been delivered as part of the Solution Increment at the end of the Timebox itself. Timeboxing can be structured to suit the needs of the project in question and the features or requirements to be developed. The Business Ambassador or Visionary will determine formal acceptance whether the delivery of the increment at the end of the Timebox is fit for purpose.

This level provides a comparison between what has been delivered and what was planned for the specific Timebox and allows Project Managers to decide whether the project is on track. Control during a Timebox, therefore, feeds up to the higher level of project management to determine whether the project is on track or not.

Timeboxing also provides an opportunity for transparency of processes and progress through the implementation of a Team or Kanban board and the Daily Stand-up.



Exercise C
Create a Timebox plan for the development of features identified for the Small Fighter Class from the “Ships” epic category.

Daily Stand-ups are another practice used in DSDM as an integral part of all Timeboxes, regardless of their structure or style. This provides the Solution Development Team (SDT) with an opportunity to share information across the team and perform any day-to-day replanning and re-organisation that may be necessary due to the occurrence of issues.

This Daily Stand-up ideally takes place at the same time and place each day and is normally facilitated by the team leader. It provides a chance for team members to understand the progress being made when compared with the objectives and exposes any issues or blocks that may adversely impact rate of progression in the Timebox.

Daily Stand-ups should be of short duration (typically averaging 15 minutes) and involve the following:

- *All SDT members and Business Ambassador/s*
- *Business Advisors actively involved in the current Timebox*
- *Technical Advisors actively involved in the current Timebox*

Facilitated Workshops are specialised meetings that take place with a very specific set of clear, objective deliverables, a set of participants specifically selected and empowered to deliver the required outcomes, and an independent individual designated the Workshop Facilitator to enable achievement these objectives. These workshops enable the participants to not only openly communicate, but also acquire a shared understanding of the meeting's deliverables. This can translate to the wider project and can enable more pro-active communication over the course of the project.

Facilitated Workshops also enable the following:

- Rapid, high-quality decision making
- Greater buy-in from participants and stakeholders
- The building of team spirit and consensus
- Clarification of identified issues

Modelling is another practice involved in Agile approaches and in DSDM. It provides a way to either visually represent problems or create solutions.

Question 5
How can models in DSDM be defined?

3

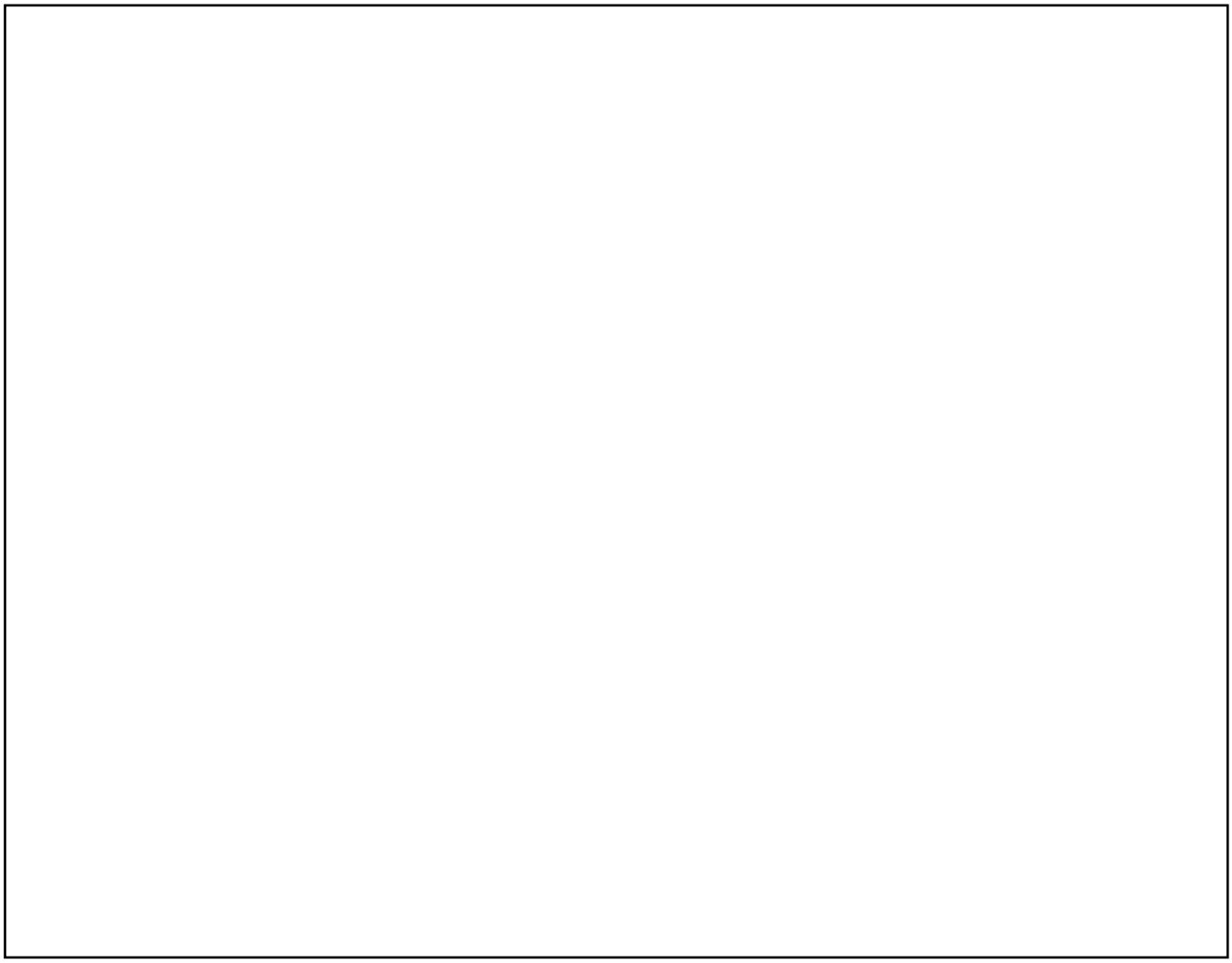
Quality in Agile

Chapter 3: Quality in Agile

Quality is an incredibly important principle to understand in relation to AgilePM® because without it, projects will be at risk of fragility and maintenance problems. Although implementing a thorough quality control process will increase initial time required and costs, failure to do so will likely cause long-term business issues in areas such as complaint handling, future enhancement possibilities, and the costs to fix problems.

Quality can be divided into two distinct areas: solution and process. The purpose of Solution Quality is fundamentally to ensure that the solution (service or product) meets the required business need, whereas Process Quality focuses on compliance with internal and external standards.

Delivering quality should not be a fixed process that is carried out simply to tick boxes. The AgilePM® approach is about valuing individual and team capabilities and driving a project by utilising their skillsets. Project Managers acknowledge team professionalism and motivation and use this to ensure quality. Quality solutions and processes should also be adaptable to the specific circumstances of the project.



3.1 Solution Quality

There are two key principles to Solution Quality: the scope of features and the technical quality. Maintainability is also a key factor that comes into consideration.

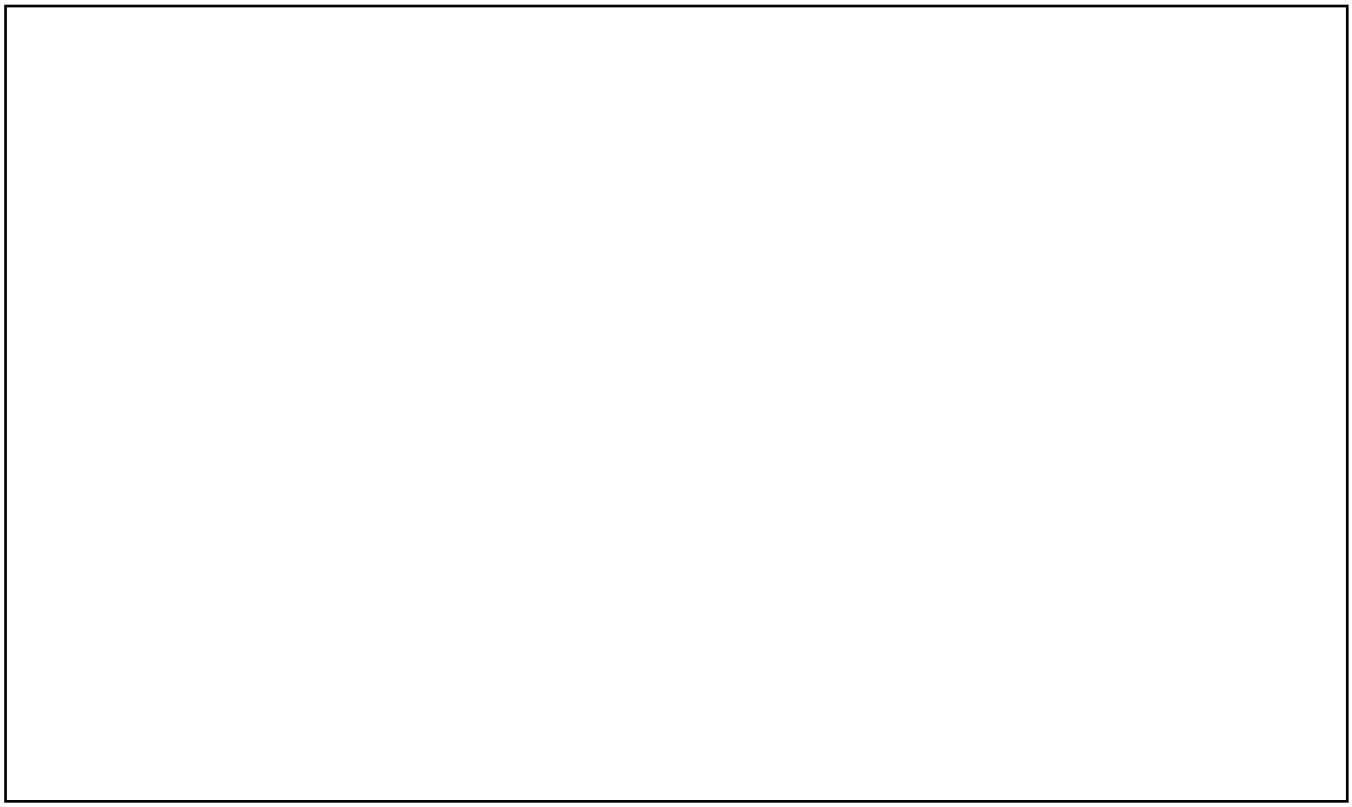
Scope of features:

- In a traditional setting, if 100% of the requirements are not fulfilled the project is deemed a quality failure.
- In an Agile setting, the quality of the solution is only judged against the business need.

This is effective because requirements are prioritised using the MoSCoW methodology, creating realistic project objectives. As long as a project meets the Must Have and Should Have requirements then quality is assured. If the Could Have requirements are met then the level of quality is exceeding expectations.

Technical Quality:

This is about delivering a product or service that is fit for purpose, a concept that must be defined and agreed upon by the end of Foundations. This will vary from project to project, and must accommodate the individual circumstances of the project. Once set, it is the level of technical quality that must be achieved. Remember, quality should never be compromised. Downgrading or amending the quality criteria should be avoided unless absolutely necessary.



Question 1:
Who must approve the decision to amend the quality criteria of a project?

- ◯ Project Manager
- ◯ Project Board
- ◯ Executive
- ◯ All of the above

Question 2:

List some potential issues that might arise when the team fail to agree upon the level of technical quality.

Question 3:

All businesses need to be equipped to deal with change, and have planned solutions in place to meet new requirements. Despite the fact that maintenance occurs after the project has moved into the support phase, it must be considered from the earliest planning stages.

If a business fails to implement effective maintenance planning into the project, what issues might occur?

3.2: Maintainability Levels

Required attribute of the initial delivered solution:

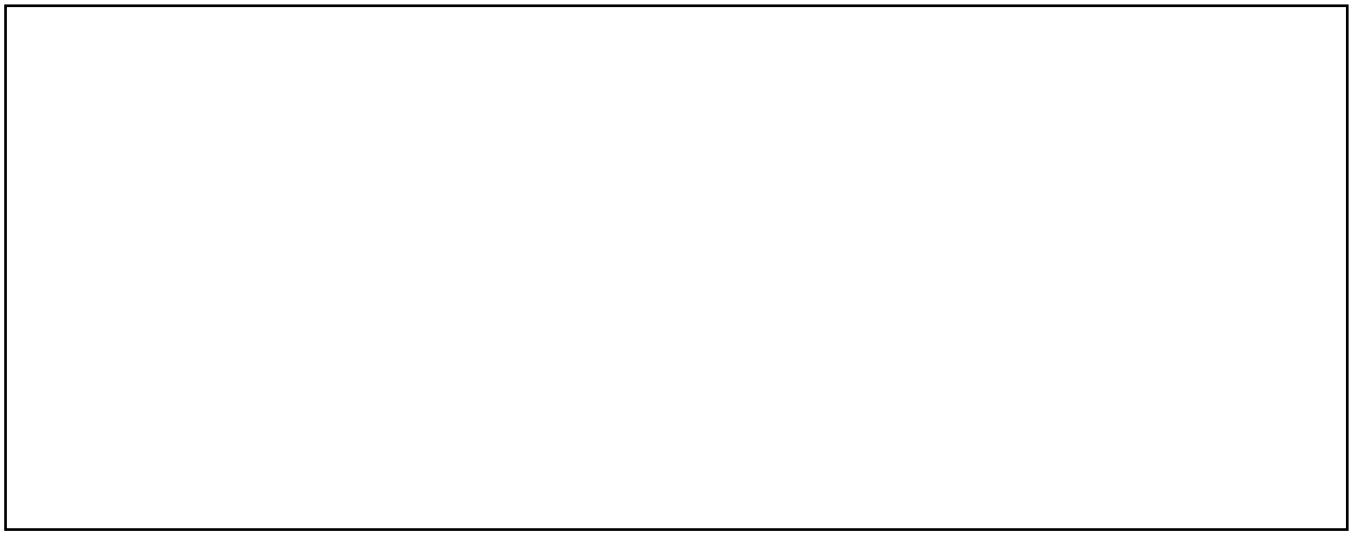
- Supportable solutions should be prioritised during the first Project Increment
- Ensuring that components can be fully supported
- Checking at the deployment of each Solution Increment that the established standards are being attained

Deliver first, re-engineer later

- Priority to implement a working solution as quickly as possible
- Solutions should have a long-term focus
- It is accepted that subsequent re-engineering may be necessary
- Costing is typically much higher, but initial delivery is far quicker

Short-term, tactical solution

- Aim is to deliver solutions as early in the process as possible
- Formally recorded as a one-off/temporary solution
- Once the objective of the solution has been reached, it will be removed or replaced



Scenario Exercise Part 1:

Using the information provided in the scenario, identify some maintainability objectives that the company is likely to define.

Scenario Exercise Part 2:

Once you have listed potential objectives, place them into the table below which shows the three levels of maintainability.

Required attribute of the initial delivered solution	Deliver first, re-engineer later	Short-term, tactical solution

3.3: Using DSDM to Build Quality Solutions

By actively 'owning' the solution, a business can ensure that a solution will meet its requirements. Often, a project is incorrectly labelled according to department, such as an IT project, or a Customer Services project, when in reality it is simply a business project.

The different business roles set out by DSDM ensure that a project retains continual access to broader business perspectives.

How does DSDM help to ensure the quality of a solution?

- The defined set of roles and responsibilities ensures the right people and teams are involved in the project
- The project can be driven forward based on effective decision making and collaboration.

Question 4: Match the business role with the viewpoint.

a) Business Sponsor	1) Day-to-day view	
b) Business Visionary	2) Financial view	
c) Business Ambassador	3) Business specialism	
d) Business Advisor	4) Big picture	

Question 5: Identify the DSDM techniques that could be used to improve team communication and collaboration.

3.4: Quality Across the Lifecycle

Feasibility – set early expectations

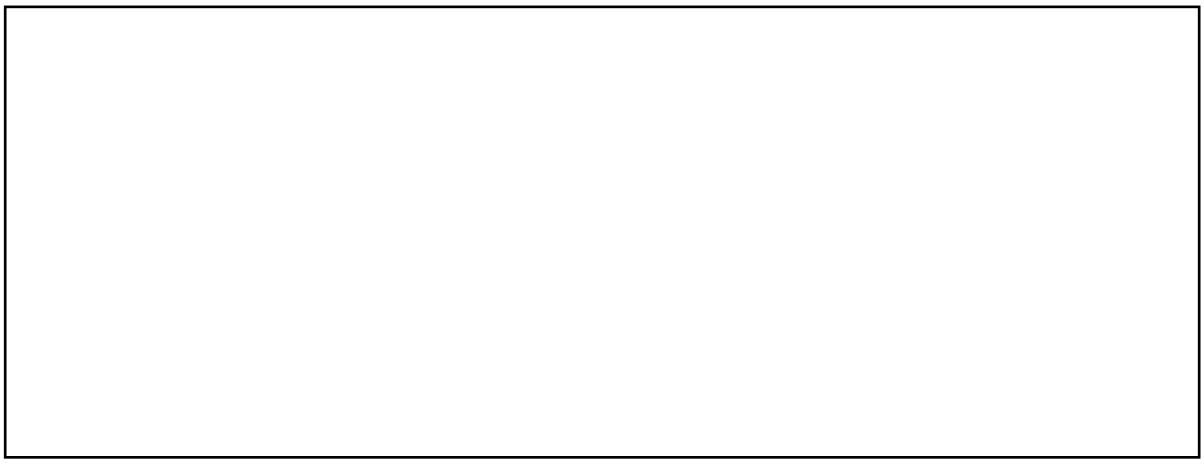
- *Agree high-level acceptance criteria*
- *Consider the level of maintainability*
    - *Life expectancy of the solution will determine the required quality and Estimates*
    - *Costing must also be considered (both initial and maintenance)*
- *Information gathered will form part of the Feasibility Assessment*

Foundations – confirm and refine expectations

- Expand high-level acceptance criteria
- Make appropriate decisions on architectural matters
- Agree upon a suitable strategy for the testing and review phase

Evolutionary Development – meet expectations

- Timebox objectives must be agreed upon
- The acceptance criteria for individual requirements should be developed
- Ensure that testing is fully integrated
- Technical and business testing must occur before the Timebox is completed



3.5: Process Quality

Every business aims to deliver quality solutions on a consistent basis. In order to attain this consistency, there must be a quality process in place throughout every project that promotes and supports best practice and conformity.

The Process Quality statement:

- Say what you do
- Do what you say
- Prove it
- Improve it

Question 6: List the potential benefits of implementing an appropriate best practice process.

Question 7: Complete the table below.

Statement	True/False
The Management Approach Definition sets out the review and testing strategy	
Team boards, daily stand-ups, and Timebox reviews provide transparency that aids communication	
Timebox review records can be created when there is a need to keep a formal, auditable record	
Timebox and Project Retrospectives form the basis of effective testing and review	

Predictability

This is a key element of Process Quality that considers four variables:

- Time
- Cost
- Quality
- Features

By taking time to consider each of these variables, teams can predict the future status of them and be better prepared for changing circumstances.

Question 8: What factor does the DSDM model not fix by default?

- Time
- Cost
- Quality
- Features

Process Quality Formality

This will greatly depend on the individual business, some will adopt a very simple and informal Process Quality practice, while others will formally assess the situation. In the latter situation, mandatory or regulatory processes might also be necessary.

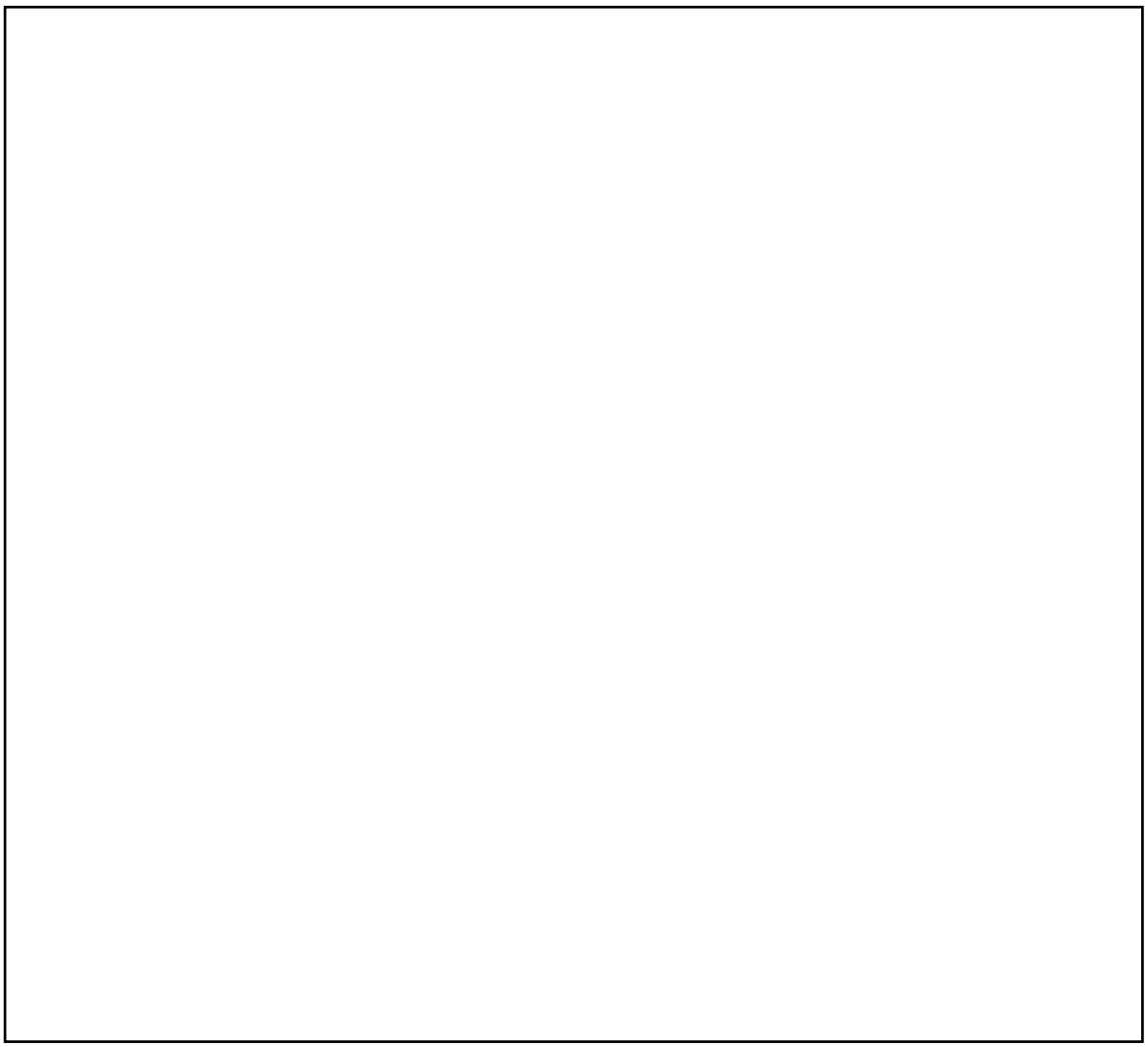
Process Quality should not add unwanted levels of bureaucracy and overheads, provided that the business is flexible enough to utilise DSDM and ensures the solution evolves to meet the business needs.

Quality Reviews

It might be deemed necessary to review a project's compliance with an organisation's procedures, practices, and standards. If errors or issues are spotted early enough, measures can be put in place quickly to restrict potential damage.

A Quality Review can also be used simply to assess the effectiveness of a project.

Question 9: List the potential questions that could be asked when reviewing a project.



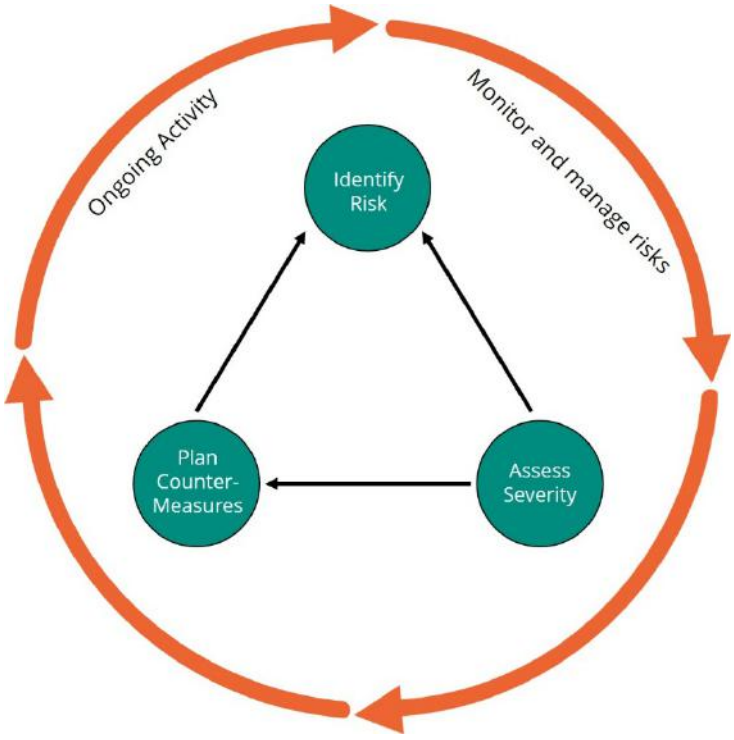
4

Risk Management

Chapter 4: Risk Management

Risk management is a well-established discipline, and as important to DSDM as it is to other project methodologies. It aims to ensure the project's desired outcome and success. By providing teams and projects with the necessary risk management approaches and frameworks to confidently explore greater solutions, it enables the realisation of greater benefits.

Although the risk management process varies from project to project and organisation to organisation, retains some common aspects as shown in the following diagram.



One key element that chosen approaches for Risk Management in DSDM should cater for is to enable it to remain Agile and not impede on innate agility for project management and progression. Therefore, Agile Project Management favours a generic risk management process:

- Identify risks.

- Assess probability or likelihood of each risk occurring and its impact to determine severity.
- Plan both reactive and proactive countermeasures based upon risk severity.
- Continuously monitor and manage risks throughout the project.

Key areas for risk during DSDM style projects include:

- Level of business involvement and commitment.
- Team skills, ability and availability.
- Clarity of vision without defining detail too early in the project.
- Focus of on-time delivery by varying features.

Risks themselves will be dependent on various factors such as the chosen approach and risk appetite of those involved. For example, having high risk is considered normal and acceptable while other organisations or individuals will be more risk averse. Whatever the case, careful risk management should be implemented to enable greater creativity and a greater likelihood of benefits realisation.

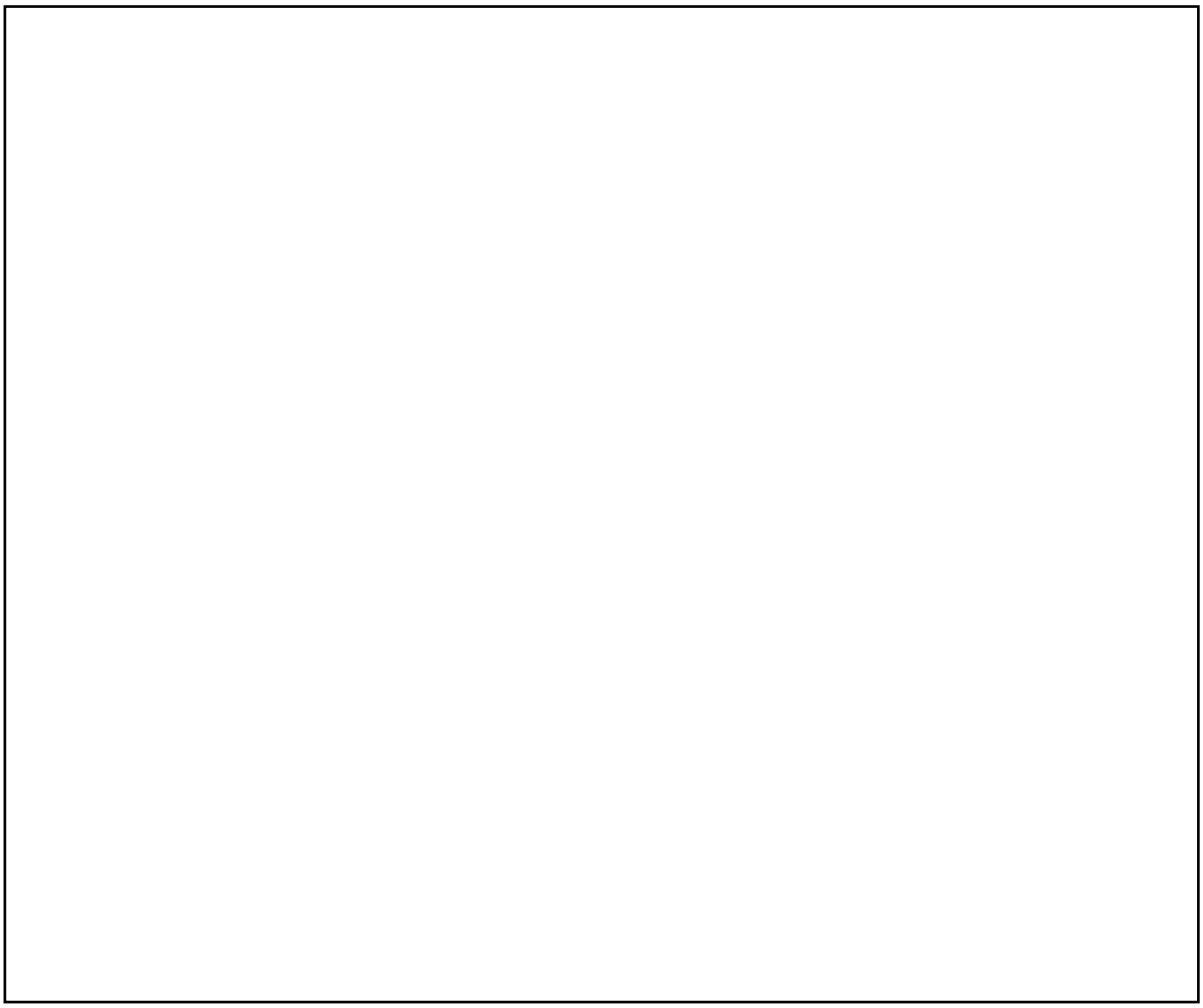
During DSDM projects, it's vital to manage the ISFs, the PAQ, and the adherence to the DSDM principles. Although these are initially considered during the Feasibility phase, they are reconsidered and reassessed in the Foundations phase as the team work towards reducing risk using these tools.

Risks themselves require constant monitoring and management throughout a project. As the project environment may change, so too may associated risks, their probability of occurring and the impact they may have. In addition, new risks are likely to emerge as the project progresses.

DSDM by its very nature allows for a natural cadence of risk management activities during its evolutionary development phase. This occurs because DSDM best practice encourages risk assessment and identification for each specific Timebox.

Often, there is a perception that Risk Management is the Project Manager's responsibility. However, whilst the Project Manager is accountable for the effectiveness of the Risk Management in place for the project, individual risks should be assigned named owners. In addition, the SDT should be made aware of all currently identified project risks and mitigation plans should they occur.

Furthermore, the Business Visionary and Sponsor should be kept informed of risks and, where appropriate, take ownership of the key risks that they themselves are in the best position to manage.



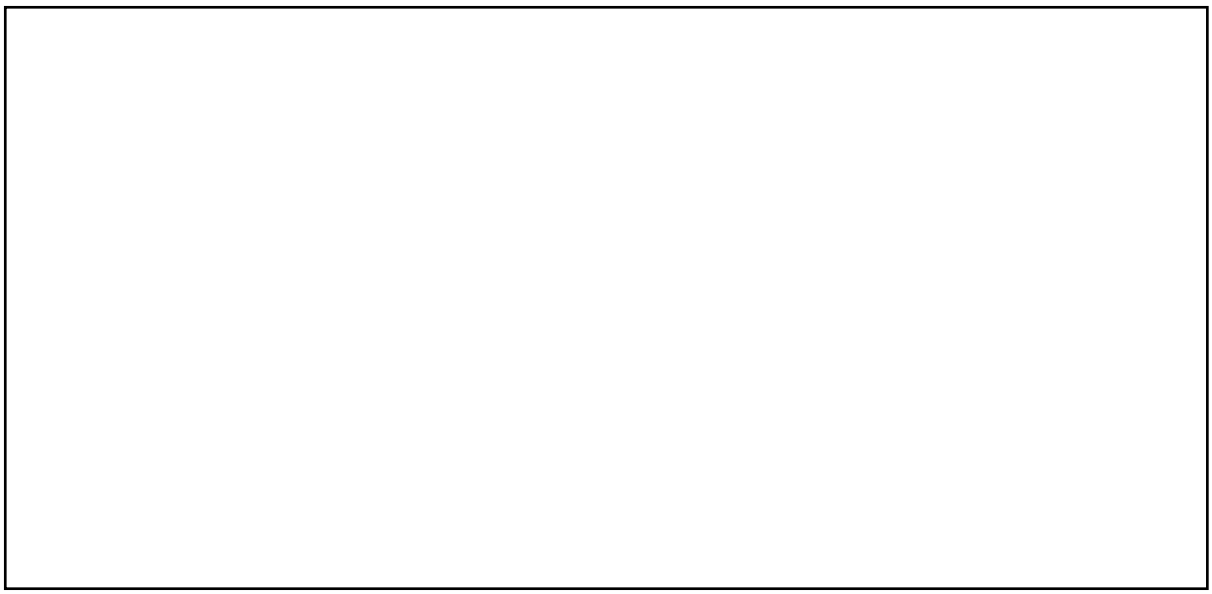
4.1: Sources of Project Risk

Although risk can come from any number of areas, AgilePM® identifies the following major sources:

- The working environment for individuals to work together effectively
- Competence and professionalism of individuals
- Behaviour style of those managing the project
- The inability to accurately and appropriately describe the business need to those building the solution
- A lack of clarity in business vision
- Inability to evaluate the implementation of requirements necessary for the project
- Lack of contingency to counter imperfect understanding of

  business needs, inaccuracies of estimates, sickness, extreme weather, and other such things
- Inflexible requirements
- Change
- The project approach being incorrect and/or not followed by participants
- Poor and ineffective monitoring and governance

It is well worth identifying what risks can be managed at the project level, and which ones cannot. Each risk should also be considered when assessing risk.



Exercise A
Identify key risks for Cyberium Worlds' development of their new IP, Codename Starfarer, and who is likely to be the risk owner of each.

Named Risk	Risk Owners

4.2: DSDM Mitigation

Part of DSDM's designed approach was to mitigate the risk that came with preceding approaches including:

- Waterfall, where much of a project's detail and requirements list was defined prior to commencing the sequential project lifecycle.
- Rapid Application Development (RAD), which included many current Agile concepts but was undermined by its lack of professional discipline, resulting in poor quality of delivered outcomes.
- Agile projects focused purely on solution development with little to no consideration of the project's full concept and the necessary governance.

Question 1: The table below lists some risk scenarios. Identify how DSDM can reduce each one.

Typical Project Risk Scenario	How risk is reduced by DSDM
Business representatives are unclear on what they want.	
All the details are not agreed at the project start.	

An unwillingness to commit to final sign-off	
There is a risk to the schedule of the project	

Successful DSDM relies upon certain practices. Should these be missing, or misused, this can introduce further risk into the project. In addition, DSDM assumes a set of behaviours, discipline, and professionalism from those involved in the project.

Risks to the DSDM approach and the project itself should be assessed as early as possible and monitored. The PAQ can aid in this respect via a series of questions that aim to assess the application of DSDM's principles and whether or not the ISFs are in place. Ideally this is completed during the Feasibility phase and then reassessed before the end of the Foundations phase. Additionally, issues highlighted through the PAQ can be worked on during the Foundations phase to improve the environment for the success of DSDM projects.

DSDM recognises, in the consideration of Risk Management during project execution, the running of a Risk Analysis workshop at an early stage. This same technique can be used at any other appropriately identified time, such as the beginning of a Timebox, or during the project as an aid to continuously manage risk. During Timeboxes, this approach of iterative risk management can be used to support iterative development, or at other points during the project where change is proposed to improve understanding of potential implications.

Question 2

When using the PAQ, which of the following statements are true about its use?

- ◯ It can help with risk identification in relation to the DSDM process.
- ◯ The PAQ does not necessarily need to be completed collaboratively with the Business Visionary or Technical Coordinator.
- ◯ The PAQ is the only suitable method for risk identification during DSDM projects.
- ◯ The PAQ is not for the identification of risks during DSDM projects.

Tailoring DSDM

Chapter 5: Tailoring DSDM

It is well known that project environments do not remain constant for the duration of the project, and projects will vary in a multitude of different ways from organisation to organisation. Therefore, part of DSDM's approach is that it can be tailored as the organisation and Project Manager sees fit to do so to ensure project success.

5.1: PAQ

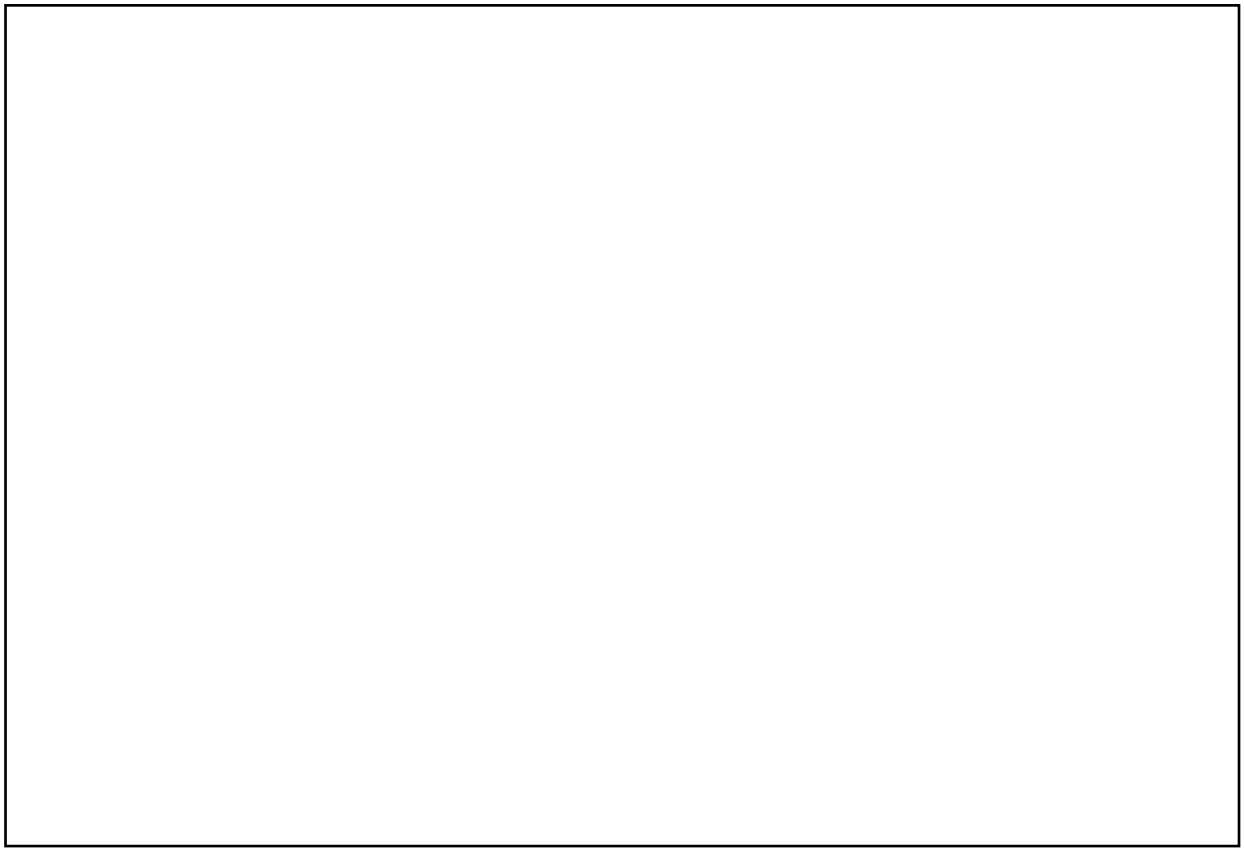
The Project Approach Questionnaire, PAQ, is a means to identify areas where the project environment is not suited to the DSDM approach. Additionally, it can be used to negotiate changes in the project to reduce risk whilst improving the likelihood of success. In the event of change needs to be more quickly accommodated or too much change being required at once, the DSDM can, in this instance, be tailored for individual project needs.

The PAQ works on the basis of a number of project statements with a collective, agreed opinion for each statement. The collective opinion is described through the following range:

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

The statements, combined with the collective opinion, should identify the risk associated with using the DSDM approach for the project. If the opinion for all statements is "Strongly Agree" or "Agree", then the associated risk is relatively low. In this scenario, tailoring of DSDM may not be necessarily required.

Should any of the statements be collectively described as “Disagree” or “Strongly Disagree”, then there is a risk posed to the implementation of DSDM to the project. Where there is a collective opinion to “Disagree” or “Strongly Disagree” with the PAQ statement, evaluation of necessary corrective actions should be made. In some cases, only simple corrective action is required. However, in the event of the risk being more difficult to resolve, tailoring of DSDM should be carried out to prevent further risk from being introduced.



Exercise A

Look at the below statements from the PAQ and the collective opinion. Identify what actions may be necessary.

Statement	Collective Opinion	Suggested Actions
The DSDM approach is understood by all members of the project.	Disagree	
Clear and proactive ownership of the project is demonstrated by the Business Sponsor and Visionary.	Strongly Disagree	
The primary measure of project success, on-time delivery of an acceptable solution, is understood by all participants of the project.	Agree	
It is accepted by all project team members that requirements are only to be defined at a high-level in the project's early phases, allowing detail to emerge as development progresses.	Disagree	
Change in requirements is accepted to be inevitable by project team members, and embracing such change will allow the correct solution to be developed.	Disagree	
The SDT is empowered appropriately and sufficiently to support day-to-day decision making necessary for rapid evolution of the solution in short, focused Timeboxes.	Agree	

Question 1 Identify the following statement as true or false:

The Project Assessment Questionnaire, PAQ, is a checklist to assess the risk of using the DSDM approach for managing a project.

- ○ True
- ○ False

Question 2 Fill in the blank:

Should the majority of answers to the PAQ be _____or_____ then the risk of using DSDM for project management is low and tailoring is not necessarily required.

Question 3

How many statements are found in DSDM's PAQ?

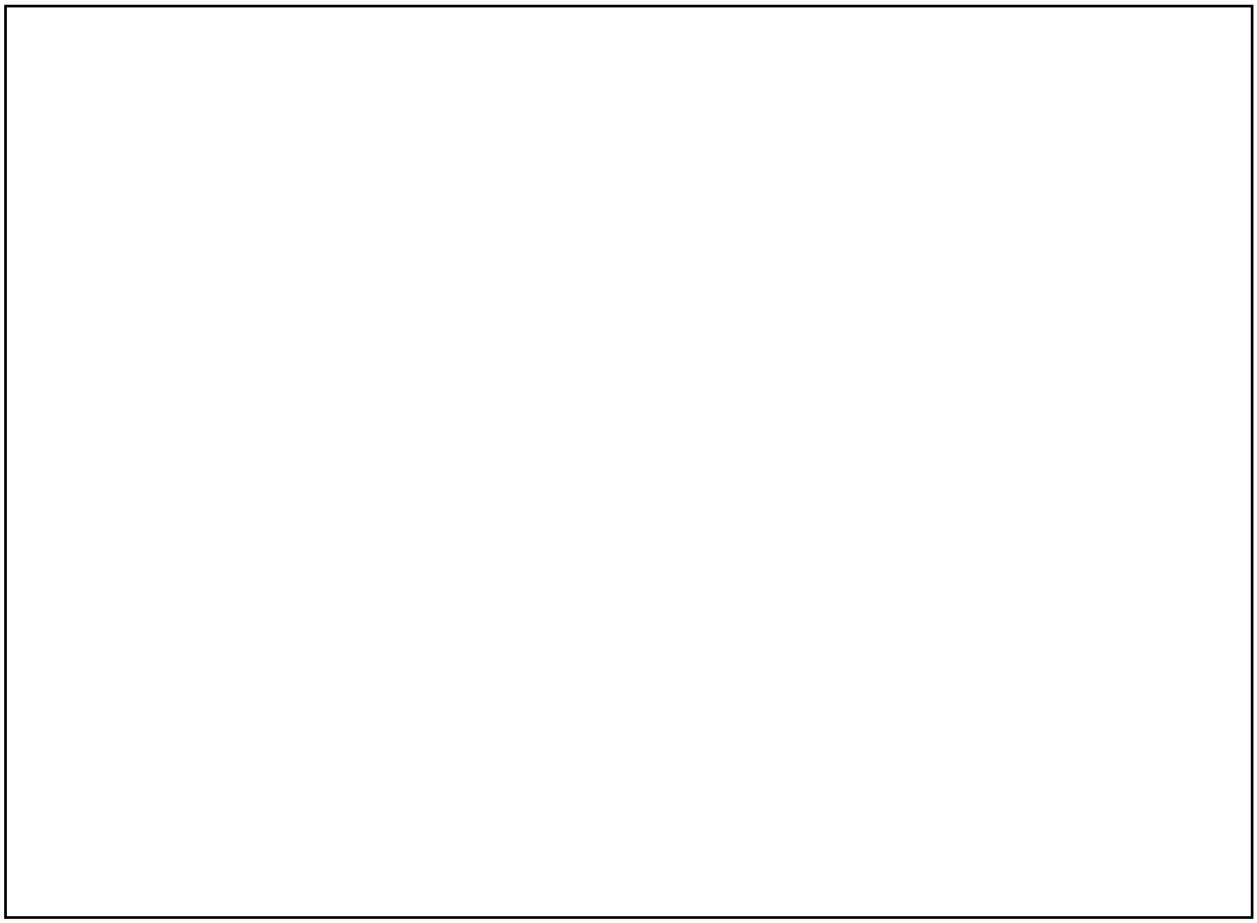
- ○ 13
- ○ 17
- ○ 20
- ○ 15

5.2: Tailoring by the Agile Project Manager

When tailoring DSDM for use consider the following points:

- Ensure the PAQ is completed collaboratively with the Business Visionary, Technical Coordinator, and the Project Manager.
- Encourage all those involved to be realistic when completing the PAQ and to do so towards the end of the Feasibility phase, followed by mitigation actions.
- The PAQ ideally should be reassessed towards the end of the Foundations phase by the same participants to see how or if any of the situations have changed.
- As the PAQ can indicate risk to the use of DSDM, and like risk management as a whole, it should be monitored and reviewed throughout the project's duration. Should any statements look as if they are beginning to become false, immediate remedial action should be taken. Tailoring the method after Foundations is possible, but this carries the threat of severe risk to project success.
- The PAQ can drive appropriate DSDM tailoring. This must be documented in the Management Approach Definition (MAD).
    - The Project Manager has the responsibility to ensure risks to effective DSDM use are assessed early on in the project, with appropriate actions planned.
    - The Project Manager is ultimately responsible for getting the PAQ completed, however, this should be done collaboratively.
    - Due to how DSDM works, it can be integrated with existing Project Management approaches, such as PRINCE2®. As such, it should be carefully considered how integration will be used and monitored within the project.
    - In the event of team training being required for DSDM, consider organising this as a team event as it typically helps with relationship building.

- The Project Manager should continue to assess the status of ISFs and if they are still being met during the project. Although the PAQ is considered early on in the project, behaviours may change later.



Glossary

Term	Definition / Description
Agile Manifesto	This defines the approach and principles fundamental to Agile approaches. Created in 2001.
Business Case	A product of DSDM. The Business Case describes the project baseline of its vision as well as a business justification or reason for the project. Created during the end of the Foundations phase.
Cycle	DSDM defines the process of Iterative Development as an informal cycle of “thought, action, conversation”.
Deployed Solution	The Deployed Solution forms a baseline of the Evolving Solution that is deployed into live use at end of a Project Increment.
Deployment	This is a DSDM lifecycle phase that focuses on making the solution, or part of it, operational and bringing it into live use.
Development Timebox (See also *Timebox*)	Refers to a fixed period of time as part of the Evolutionary Development phase. During this period, development and testing of the solution takes place as it evolves. They typically last from 2 to 4 weeks.
Evolutionary Development	Another of the DSDM lifecycle’s phases. In this phase, the solution is developed iteratively and incrementally to help the detailing of requirements.
Evolving Solution	A DSDM product that is formed from all appropriate components of the ultimate solution with any intermediate deliverables necessary to explore requirement detail and the under-construction solution. At any specific time, these components may be incomplete, a partial baseline, or work in progress. It can include the use of prototypes, models, supporting materials, testing, and review of artefacts.
Feasibility	A DSDM lifecycle phase. This provides first opportunity for deciding viability of the project from both technical and business perspectives.

Term	Definition / Description
Feasibility Assessment	A DSDM product providing a snapshot of the evolving Business Solution and Management products as they are at the end of the Feasibility phase. This may be expressed as a baselined collection of products or through an executive summary covering key aspects of each.
Foundations	A phase of the DSDM lifecycle to establish the firm and enduring foundations for the three perspectives of business, management, and solution on a project.
Foundations Summary	A product of DSDM providing a brief snapshot of the Business Solution and Management products at the end of the Foundations phase. This may be expressed as a baselined collection of products or through an executive summary covering key aspects of each.
Function / Feature	See *Requirement*.
Increment	An element of the Evolving Solution that comprises a collection of one or more features. As a group, this collection has business value or meaning. One or more increments may form a release.
Iteration	1. A general term for cyclical working in which multiple attempts are made to generate a more beneficial or accurate result. 2. A single development cycle that takes place inside a Development Timebox. Finishes with a review. 3. XP Iterations equate to DSDM Timeboxes.
MoSCoW	A prioritisation technique used in DSDM mainly for the organisation of requirements. The acronym describes requirements through four levels: 1. Must Haves 2. Should Haves 3. Could Haves 4. Won't Have this time
Minimal Usable SubseT (MUST)	A term used to refer to the minimal set of requirements necessary to deliver a usable solution – the solution in its most basic, usable form.

Term	Definition / Description
Post-Project	A DSDM phase taking place after the last planned deployment of the solution. This phase involves assessing the business value delivered by the project.
Pre-Project	A DSDM phase during which the project's initial idea or imperative is formalised prior to project initiation.
Prioritised Requirements List (PRL)	A DSDM product that is baselined at the end of the Foundations phase. The PRL describes requirements the project needs to address in addition to the priority to meet both project objectives and business needs.
Project Approach Questionnaire (PAQ)	Based on Instrumental Success Factors, ISFs, this DSDM questionnaire aids in flagging up potential risks that will impact the success of DSDM projects.
Project Timebox (See also *Timebox*)	A level of Timeboxing that is applied to the project which comprises of the sum of Increment Timeboxes used by the project.
RACI	A form of Responsibility Assignment Matrix describing the participation levels of roles for completing DSDM products. • R = Responsible • A = Accountable • C = Consulted • I = Informed
RAD	Rapid Application Development, RAD, a form of Agile development that preceded DSDM. Although used to solve issues and risks brought in through Waterfall approaches, RAD introduced its own set of potential problems, namely lack of professional discipline leading to poor Solution quality, later fixed with the introduction of DSDM.
Requirement	Refers to something the Solution needs to be able to do (Functional Requirement, FR) or be able to do at a certain expected level (Non-functional Requirement, NFR).
Scope	Refers to the description of what the Solution will be able to do, and what it will not be able to do. May include a list of requirements or features as well as descriptions of business areas that may be affected.

Term	Definition / Description
Story	See *User Story*.
Team Board	A graphical representation displaying project and/or Timebox information in plain sight of the Agile team's shared work space. This board should show anyone who views it appropriate information preventing the need to ask for it. As a result, it can help to aid as a communication tool whilst reducing interruptions. Team boards may contain most Agile charts used in project development as well as burn-down charts, task boards, planning boards, and storyboards. Information Radiators (IRs) may also be used.
Terms of Reference (ToR)	A DSDM product concerned with high-level definitions of the over-arching business driver for the project, as well as top-level objectives. Created during Pre-Project phase.
Timebox	A fixed period of time that typically forms part of the Evolutionary Development phase of DSDM where an objective has been achieved at its end. These mainly operate at the Development Level, but may also exist at the Project and Increment Levels. Timeboxes are managed by adding or removing requirements or content to meet the deadline.
Timebox Plan	A DSDM product. A Timebox Plan is created for each Timebox, elaborating on provided objectives with details of the expected deliverables, activities in which they will be produced and resources required. Timebox Plans are produced by the SDT and often represented on the Team Board.
User Story	Details a requirement expressed from the perspective of a user with associated acceptance criteria. Typical format involves the following sections: • As a <role> • I need <requirement/feature> • So that <goal or benefit to be attained>

Term	Definition / Description
Extreme Programming (XP)	An Agile approach with a stronger focus and emphasis on technical development techniques. XP aims to improve software quality and responsiveness to changing customer requirements.