

IFB295 IT Project Management

ISO Standard & Review

Timebox 12 of 12

Lecturer: Sri Nair



ISO 21500:2012 Guidance on PM

- Generic guidance on the concepts and processes of Project Management (PM).
 - Any domain
 - Any size
- Context of Portfolio, Programme and Project (PPP).
 - Portfolio – a collection of projects or programmes grouped to manage strategic objectives. Can be unrelated.
 - Programme – set of related projects
 - Project – unique and temporary activity.



ISO 21500:2012 Guidance on PM

This guide (not a mandatory standard):

- Take account of latest developments in International PM
- Reflect the best that we all have to offer
- Does not nullify or negate existing standards
- Flexible enough to support differences
- Become a set of universally acceptable PM Principles
- Identify potential future standards
- Process oriented: “What”, not “How”



Concepts & Processes

ISO 21500:2012 describes PM basics in terms of concepts and processes.

- Concepts (applicable to most projects) include;
 - Project, Project Management, Organisation, Environment, Governance, Operations, Stakeholders, Competencies, Lifecycle, Constraints, relationships concept/process.
- Processes activities to be done
- Project Manager uses concepts to perform process activities



Scheduling Assumption

- Standard does **not** define an approach to scheduling
 - Any technique can be used such as Network diagrams, Gantt charts and Agile schedules.
- Standard does define terms usually associated with Waterfall schedules
 - Baseline, change request, critical path (CP), work breakdown structure (WBS)




Global Standards & Frameworks

- **ISO 21500** guidance for PM
- **PMBok from Project Management Institute (PMI)** focus on PM
 - What you need to know to manage a project
- **PRINCE2, PRINCE2 Agile** PM within an organisation(**PRINCE2 and DSDM**)
 - Framework for managing a project



Standards – Frameworks Models

Project Leadership Framework 

Project Management Standards
ISO 21500:2012 - 

Phased Models
(Waterfall)

PMBok 
PRINCE2 

Incremental &
Iterative Models
(Agile)

Scrum 
DSDM 

Techniques

Summary of quantitative comparison of ISO 21500 and PMBoK® Guide

Project Processes:

	ISO	PMBOK
The same	33	33
Merged	3	6
Only PMBOK® Guide	-	8
Only ISO 21500	3	-
Total	39	47

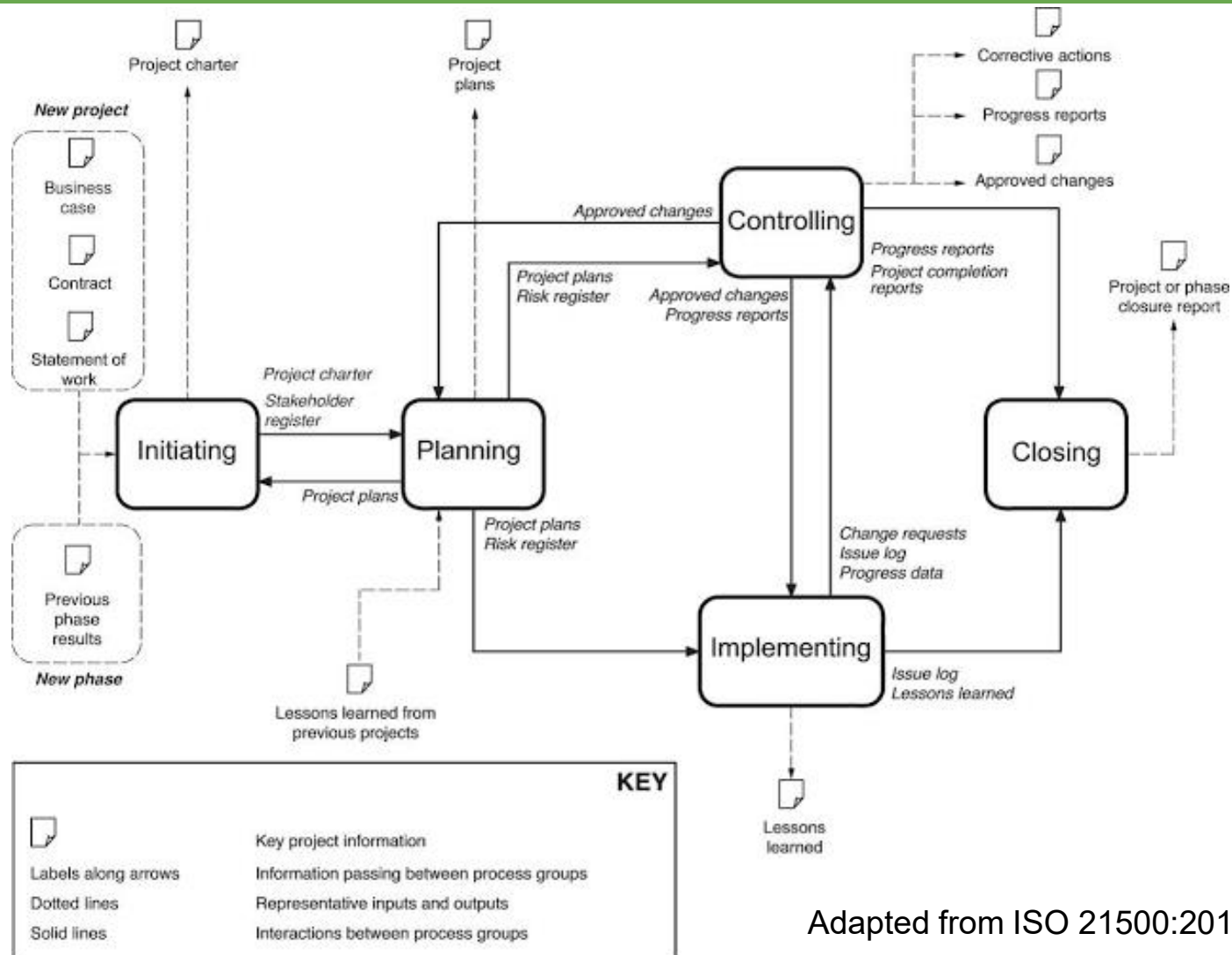
Processes in PMBoK® Guide and absent from ISO 21500:

- 5.1 Plan Scope Management
- 5.5 Validate Scope,
- 6.1 Plan Schedule Management,
- 7.1 Plan Cost Management,
- 9.1 Plan Human Resource Management,
- 12.1 Plan Risk Management,
- 13.2 Plan Stakeholder Management,
- 13.4 Control Stakeholder Engagement.

Processes in ISO 21500 and absent from PMBoK® Guide:

- 4.3.8 Collect Lessons Learned,
- 4.3.17 Define Project Organization,
- 4.3.19 Control Resources

Process Group Interactions and Main Inputs and Outputs




Adapted from ISO 21500:2012(E)

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Unit Themes

Project Leadership Framework 

Project Management Standards
- ISO 21500:2012 - 

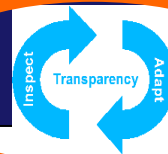
Phased Models
(Waterfall)

PRINCE2 


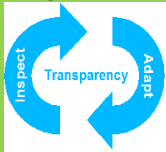
Incremental &
Iterative Models
(Agile)

Scrum 
DSDM 

Tutorials



Cynefin (Ku-nev-in) Framework

Domain	Cause & Effect	Risk Type	Cost of Change	PM Approach	Examples
1. Simple	Obvious	Known-known	Very High	Standard Operating Procedures	Postal services
2. Complicated	Requires analysis	Known-unknown	High	Waterfall 	Civil engineering
3. Complex	Perceived in retrospect	Unknown-unknown	Low	Agile 	Software development & IS development
4. Chaotic	None	Unknown-known	Very low	Novel	Fire rescue services




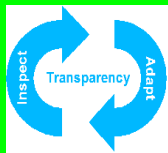
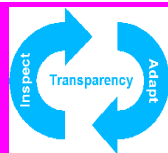
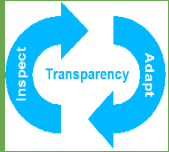
Alignment of Agile Methods

Portfolio - a group of programs or projects.

Program - a group of related projects.

Project - temporary endeavour to deliver a unique product, service or result.

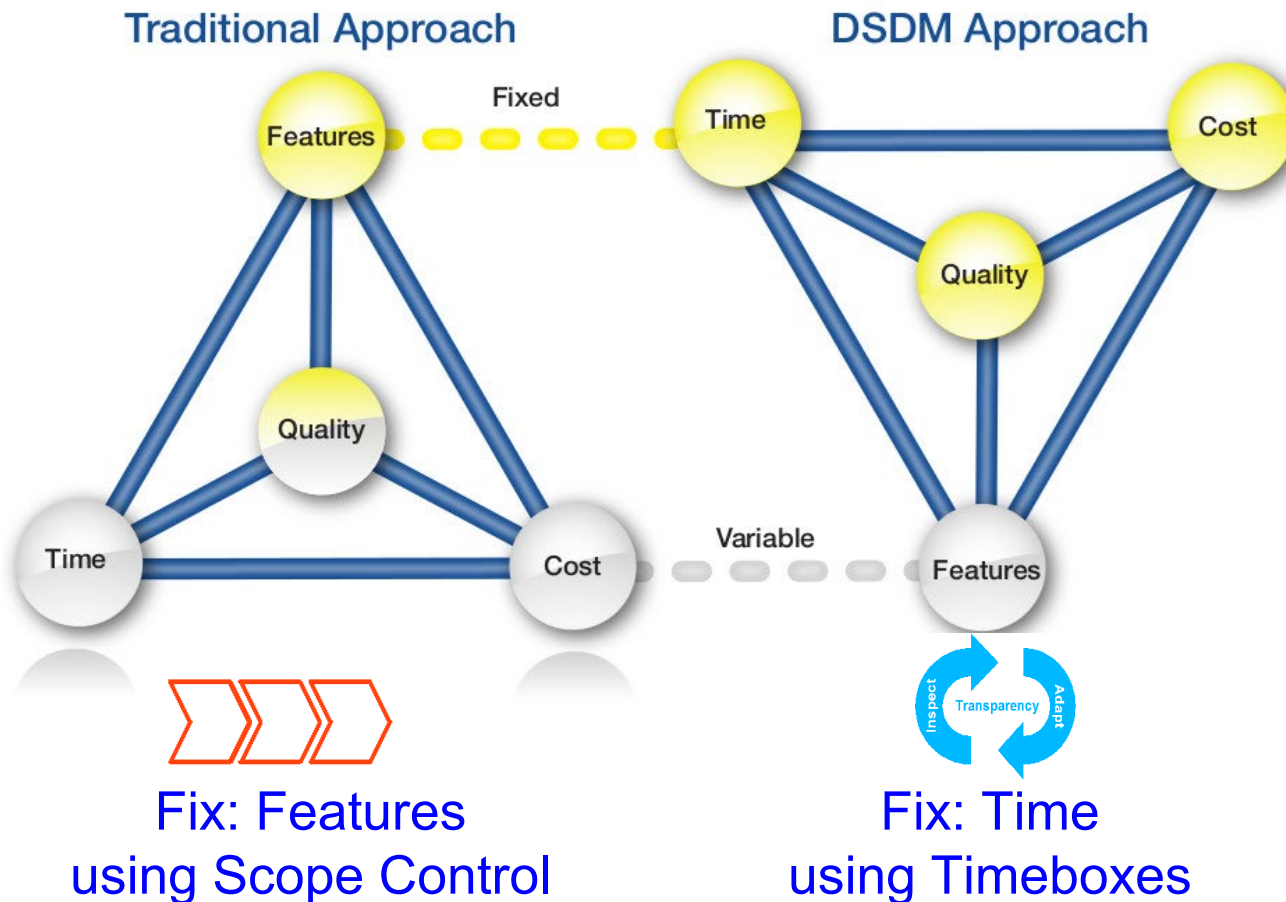
Product Engineering - process of designing and developing a device or system ready for production.

	DSDM	PRINCE2	Scrum	XP
Program/ Portfolio Management				
Project Delivery				
Product Delivery				
Product Engineering				

Project Management Paradigms

Waterfall

DSDM / Agile

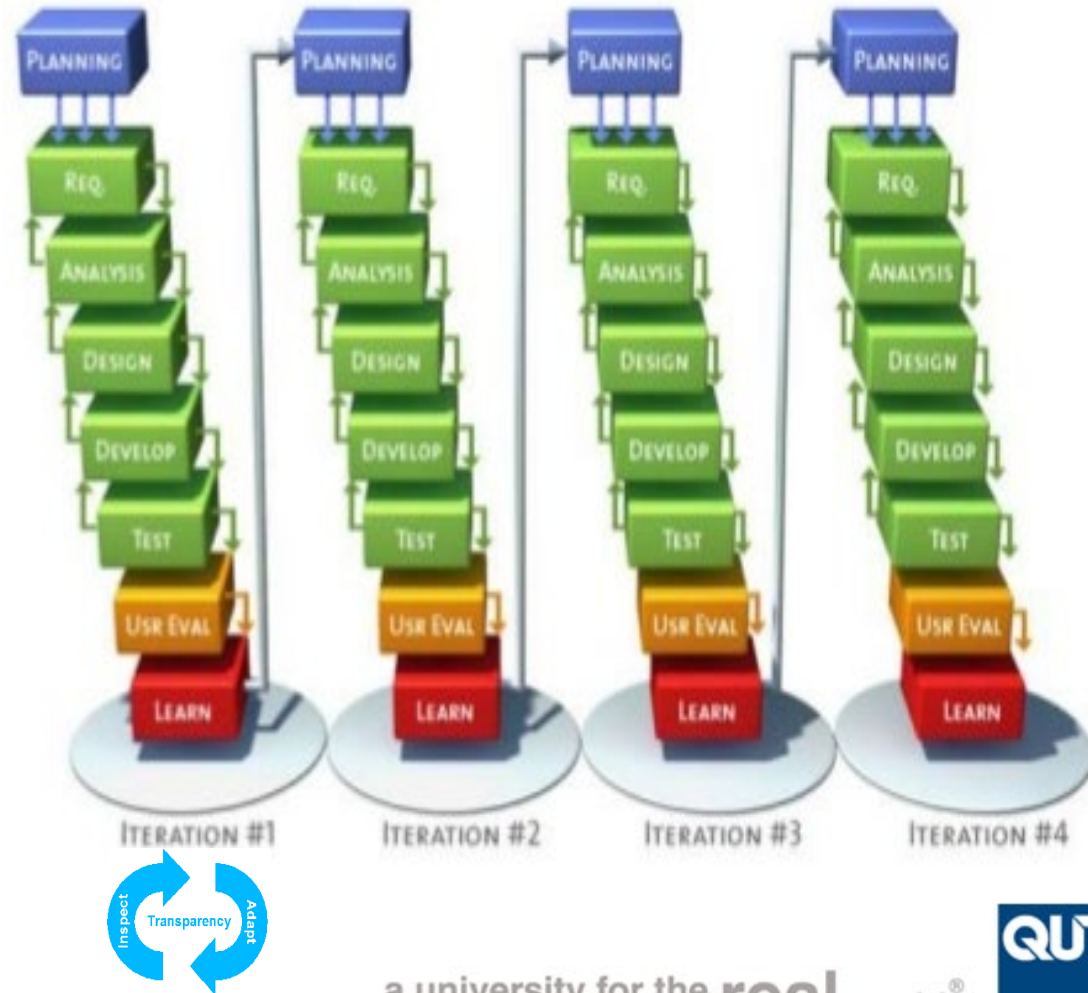


Project Management Paradigms

Waterfall (planning first)

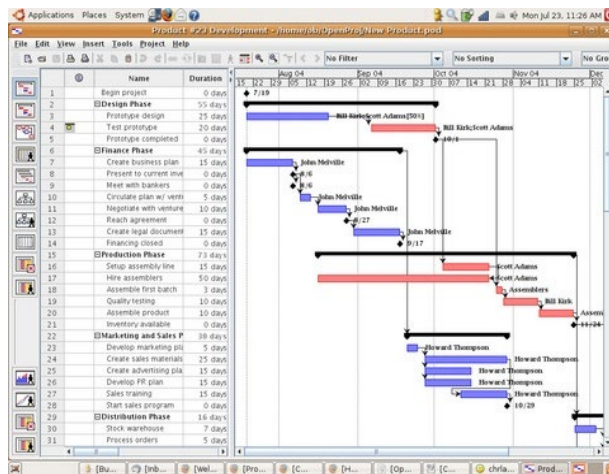


Agile (iterative and incremental)



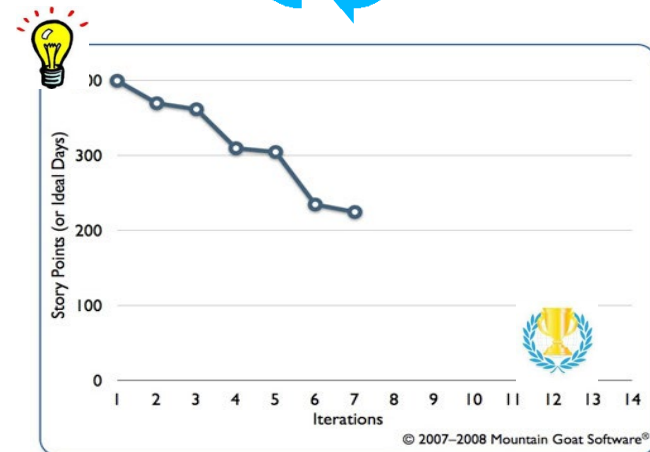
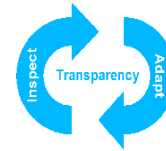
Project Management Paradigms

Defined Process Control



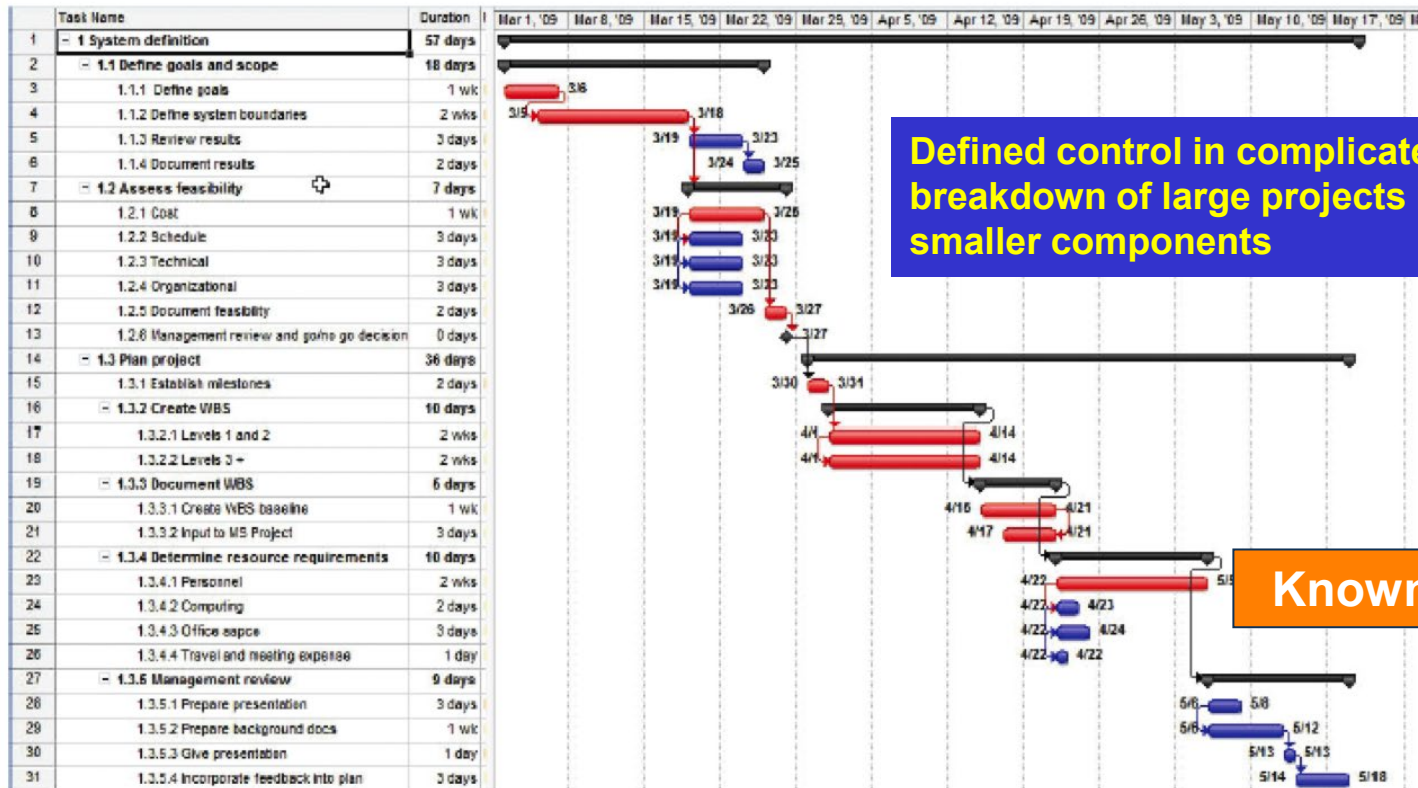
Gantt Chart

Empirical Process Control



Burndown Chart

Defined Process Control Gantt Chart



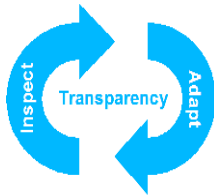
Defined control in complicated environments:
breakdown of large projects into manageable
smaller components

Project
Manager

Known-Unknowns

Henry Gantt - founder of modern Project Management

Empirical Process Control Release Burndown Chart



Empiricism in complex environments: what will happen is unknown so only what has happened may be used for forward-looking decision-making

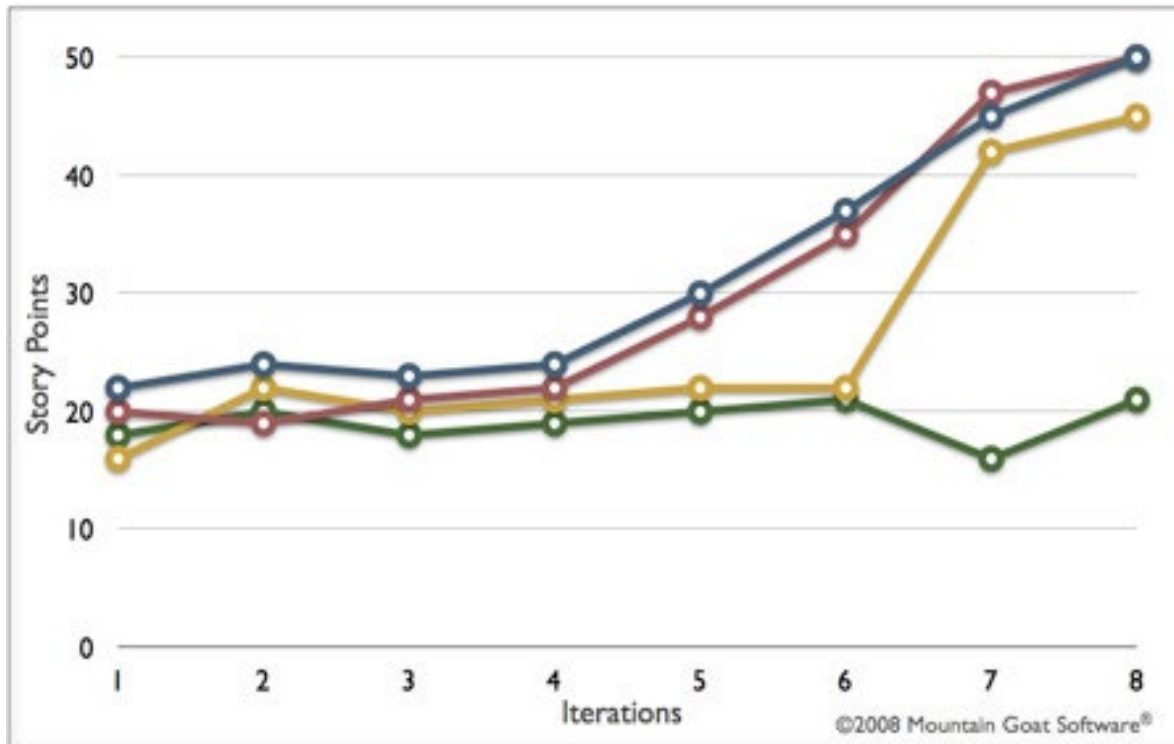


Product Owner

Unknown-Unknowns

Trend charts to visualise progress

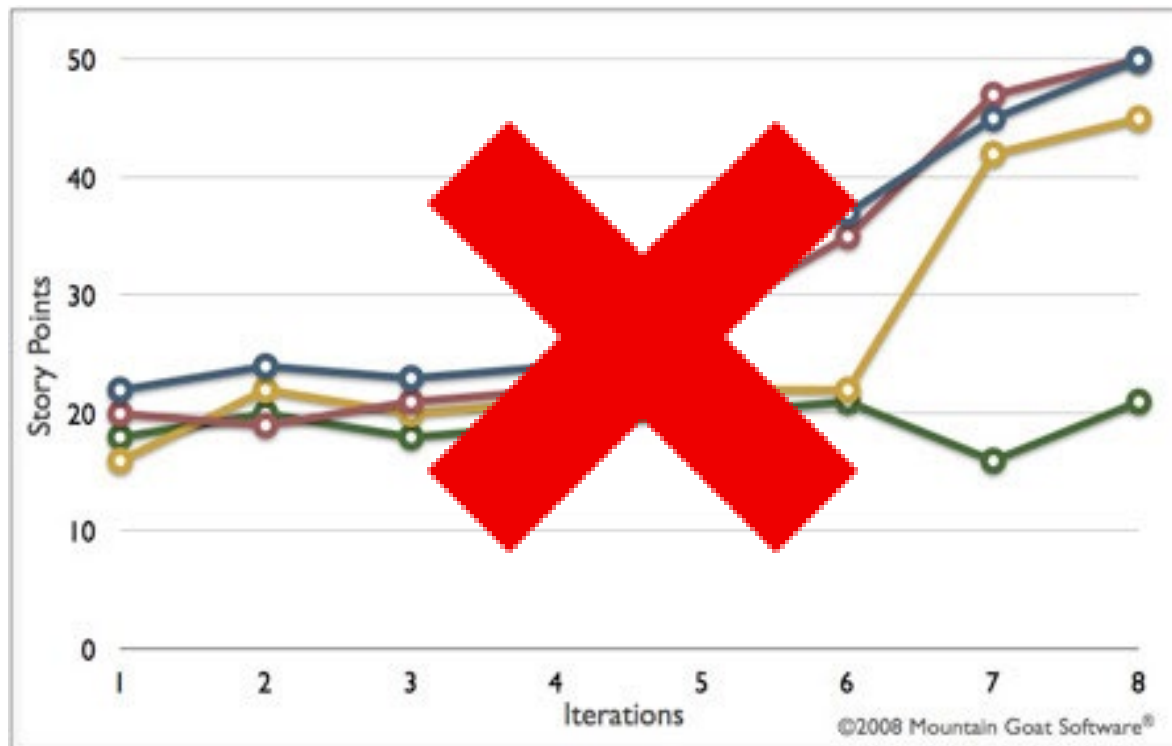
Compare Team Velocities



Burn up charts from different teams can be used for performance management?



Compare Team Velocities



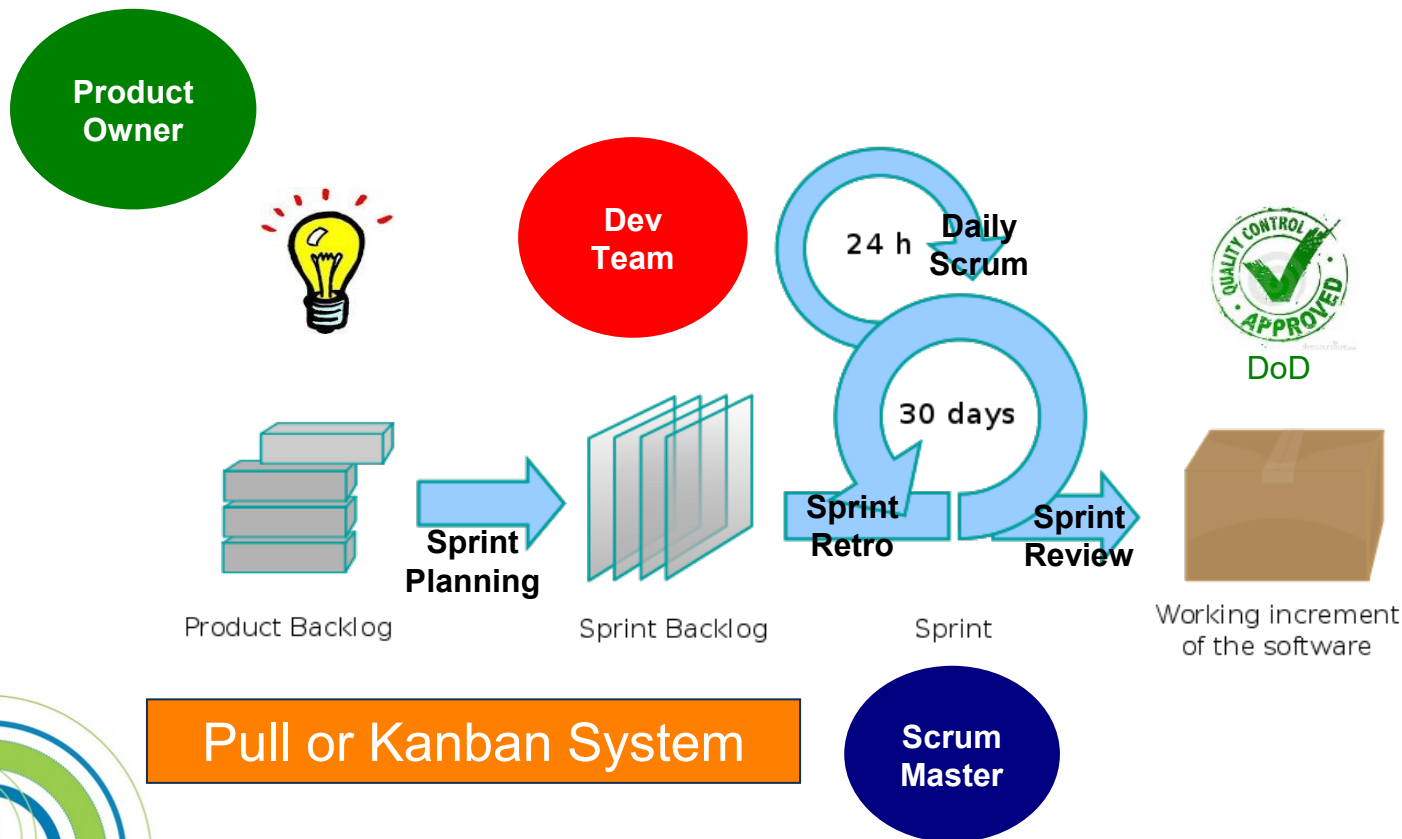
Velocity measures team's delivery capacity and is used for planning (NOT performance)

The Scrum Framework: Fast Flexible Flow

3 Artefacts: Product Backlog > Sprint Backlog > Product Increment

3 Roles: Product Owner > Development Team > Scrum Master

5 Events: Sprint Planning > Sprint > Daily Scrum > Sprint Review > Sprint Retro



The Scrum Principles

Developing and Sustaining Complex Products

SCRUM PRINCIPLE #1



Incrementally
deliver Value
each 30 Days
(or less)

Optimise Value

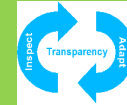
SCRUM PRINCIPLE #2



Foster
Self-Organising
Teams
[6 +/- 3 People]

Optimise Productivity

SCRUM PRINCIPLE #3



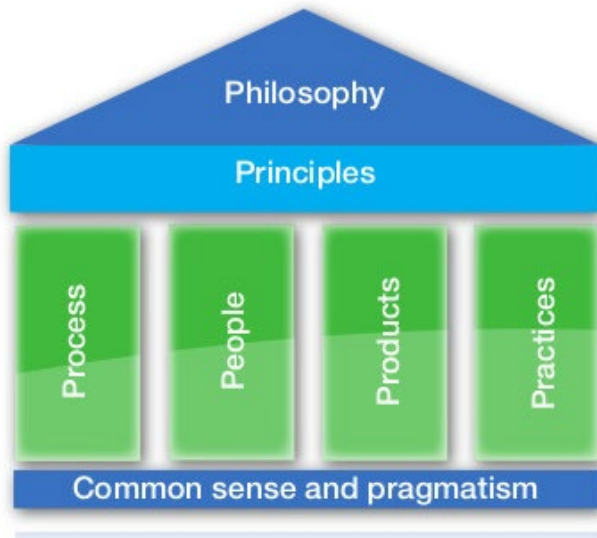
Use
Empirical
Process
Control

Optimise Predictability

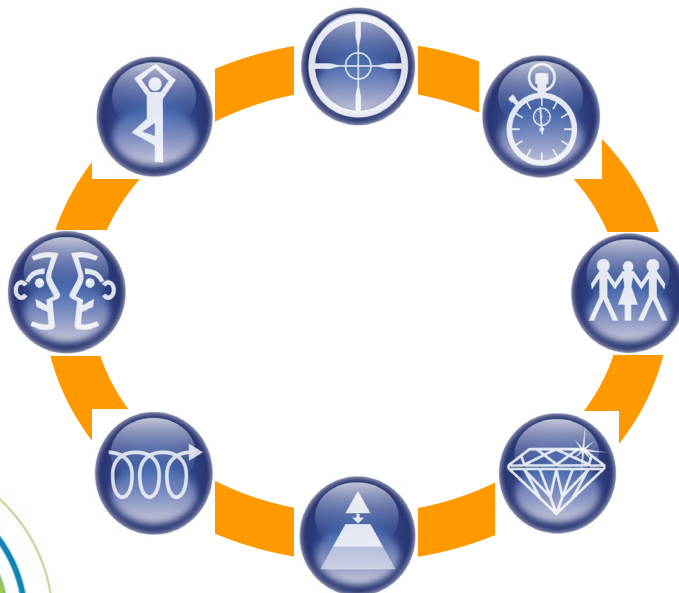
Agile Manifesto

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

DSDM Framework



“best business value emerges when projects are aligned to clear business goals, deliver frequently, and involve the collaboration of motivated and empowered people”



8 principles

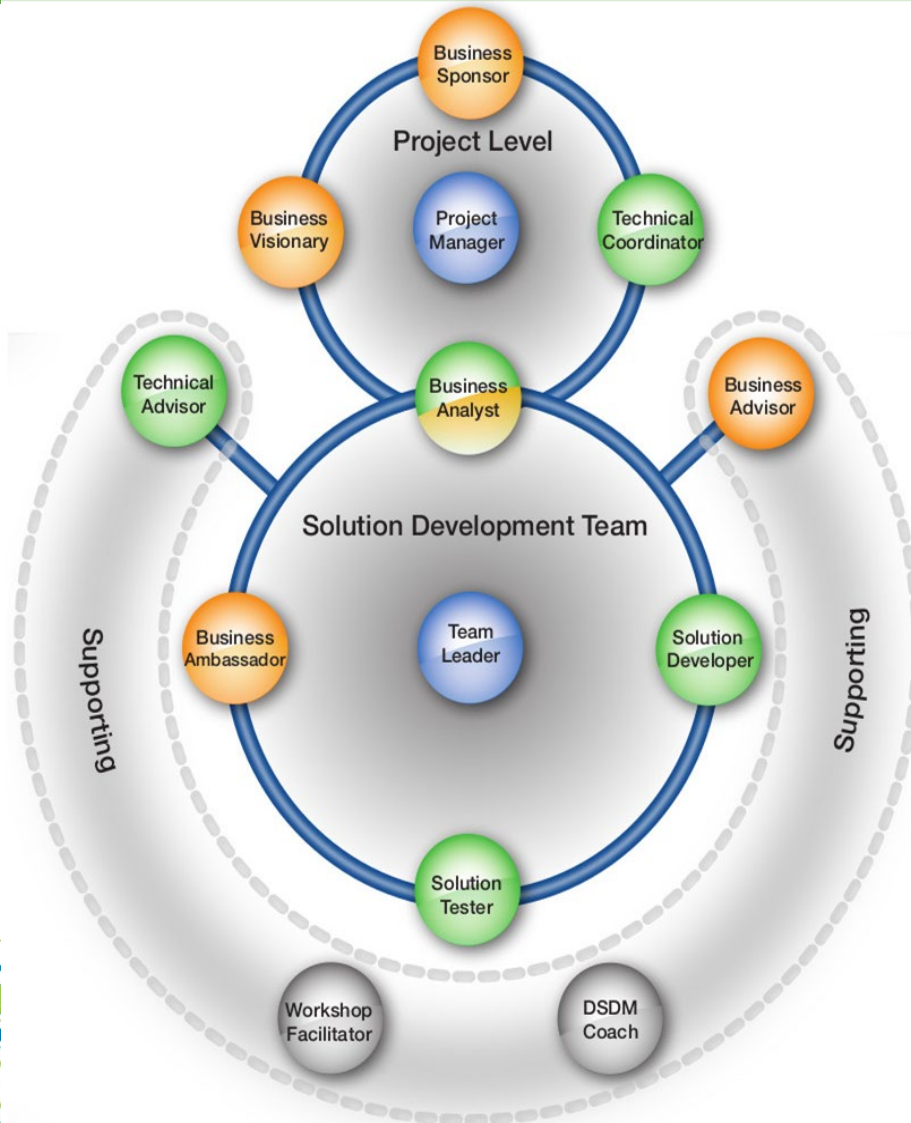
1. Focus on the business need
2. Deliver on time
3. Collaborate
4. Never compromise quality
5. Build incrementally from firm foundations
6. Develop iteratively
7. Communicate continuously and clearly
8. Demonstrate control

Non-adherence

= increased risk

= reduced benefits

DSDM Framework - Roles



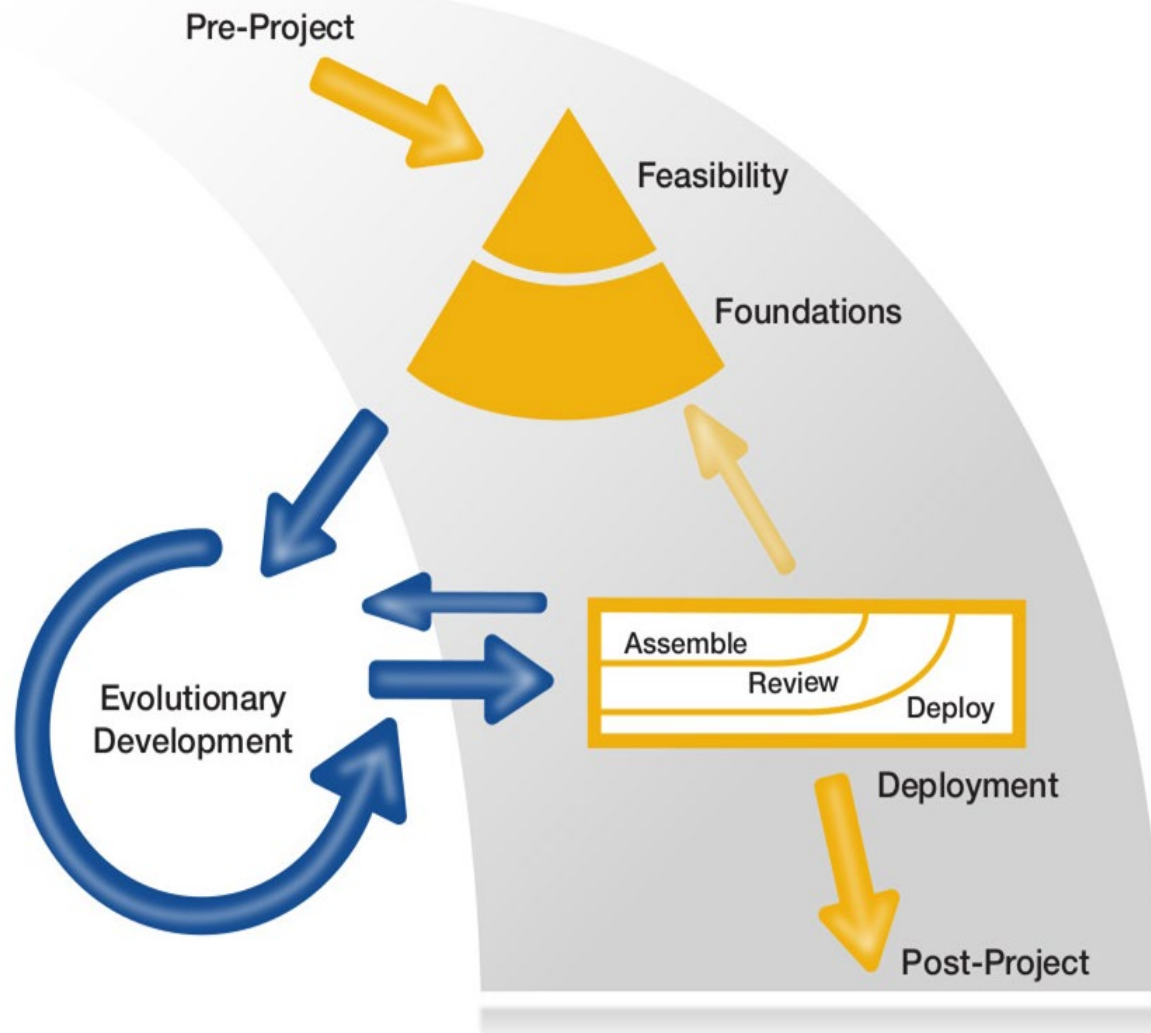
Roles

- Project Level
- Solution Development Team
- Supporting

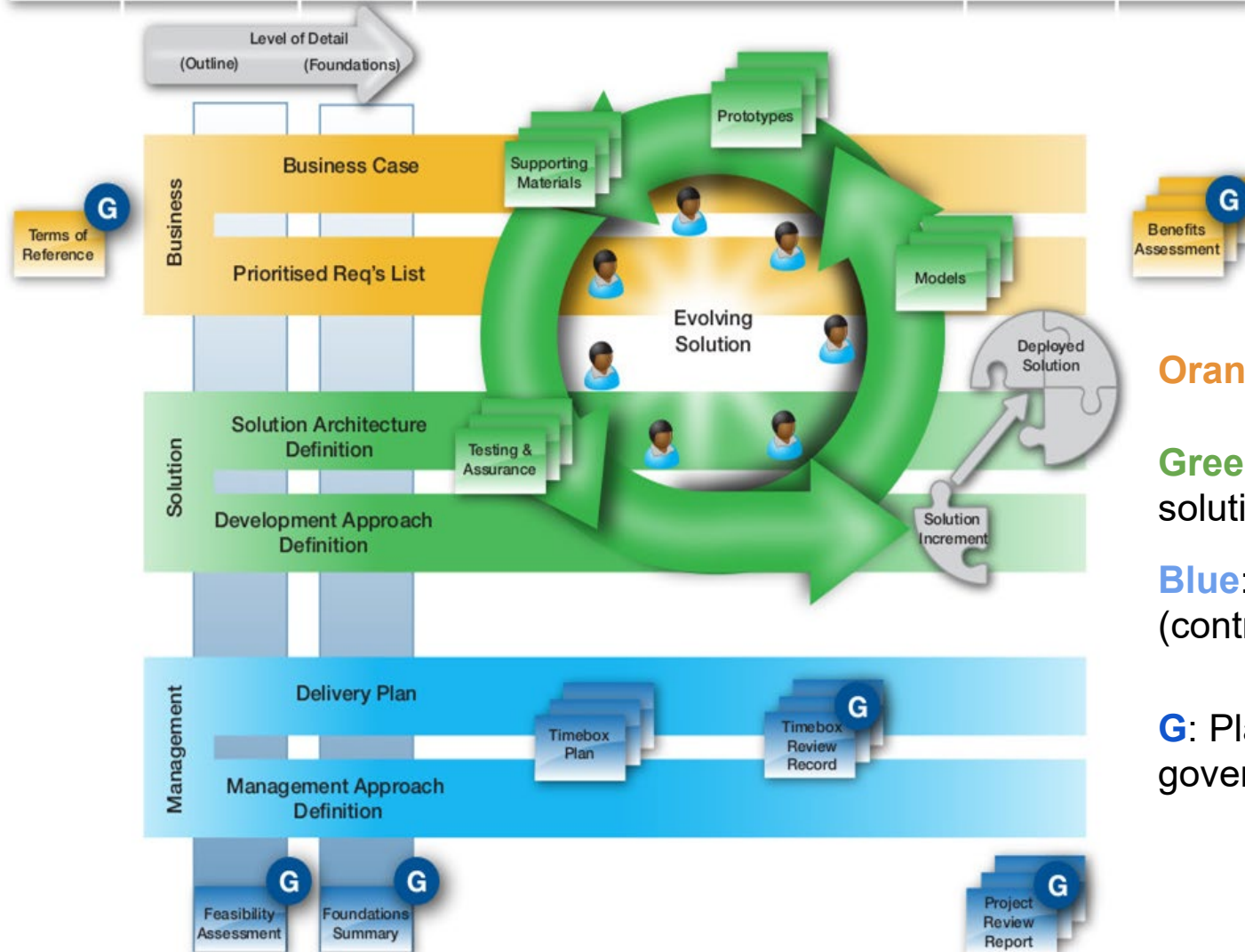
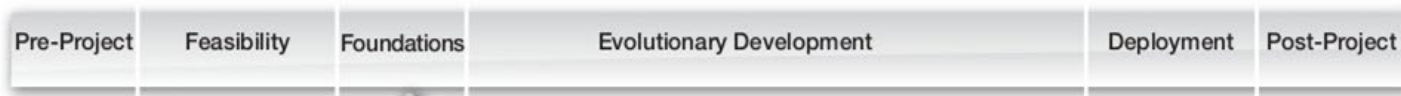
Orange - Business
Green - Solution/technical
Blue - Management
Grey - Process interests

- Business vs solution vs process
- Project vs team level
- Full-time vs part-time

DSDM Framework - Process



DSDM Framework - Products



Lets do this again

Gravity Test: DO YOU AGREE?

1. Requirements need to be identified and locked-down upfront
2. Detailed work breakdown is needed to increase accuracy of estimates
3. More upfront planning is needed to minimise changes downstream
4. Project managers need to assign work to team members
5. Project managers need to minimise disagreements between team members
6. Team members need clear roles and responsibilities to increase their productivity
7. Team members need comprehensive documentation and work instructions to effectively develop products
8. Team members need to work on multiple projects to minimise downtime and increase efficiency



Have you changed compared to week 1 ?

Unit Themes

1. ISO 21500:2012 Guidance for project management
2. Traditional methods and global standards of project management
3. Project Leadership Framework: You choose the path!
4. The DSDM Agile Project Framework: The Right Solution at the Right Time
5. Scrum Framework: Developing and Sustaining Complex Products
6. Agile Project Management Workshops: To Be or Not To Be Agile



Unit Aims

1. Develop skills and experience in
 - a. Project management & leadership
 - b. Team management
 - c. Communication
2. Understand project management from traditional and Agile perspectives
3. Apply international project management standards & techniques for managing projects in the real world



Unit Learning Outcomes

1. Critically evaluate different project management methods and select which is appropriate to apply to a specific project
2. Apply a project management approach, demonstrating leadership skills within a team environment, to deliver a sophisticated IT system
3. Argue the benefits of shifting from a process and technology oriented approach to project management towards a people oriented approach with self-organising teams and motivated individuals

Preparation for further study facilitating skill development for those seeking industry accreditations in Agile or Prince2 project management.



Done

Definition of Done

All content has now been covered!

