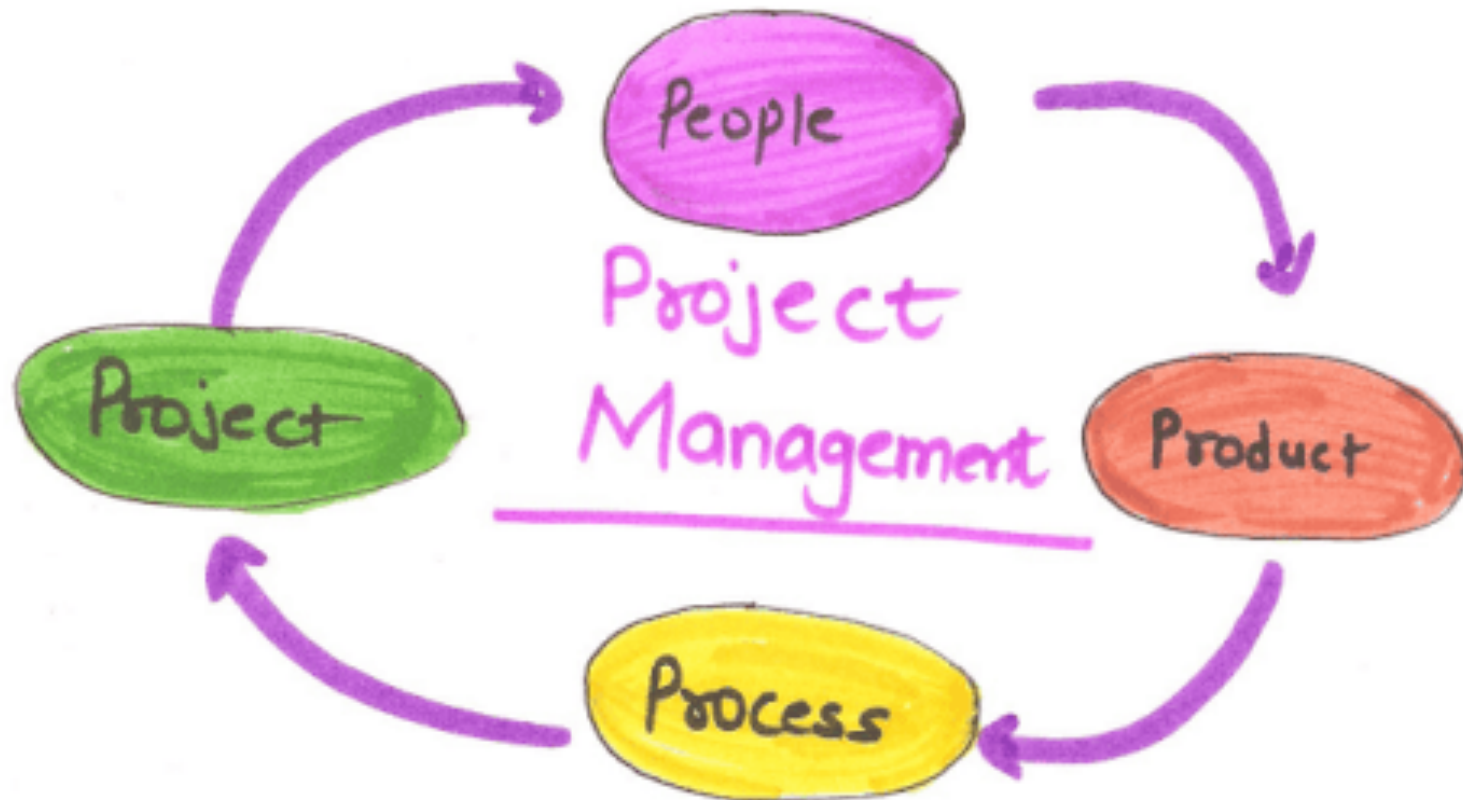# Managing Software Projects

Software Engineering 2

(3103313-1)

Amirkabir University of Technology
Fall 1399-1400

Effective software project management focuses on the four Ps: **people, product, process, and project.**
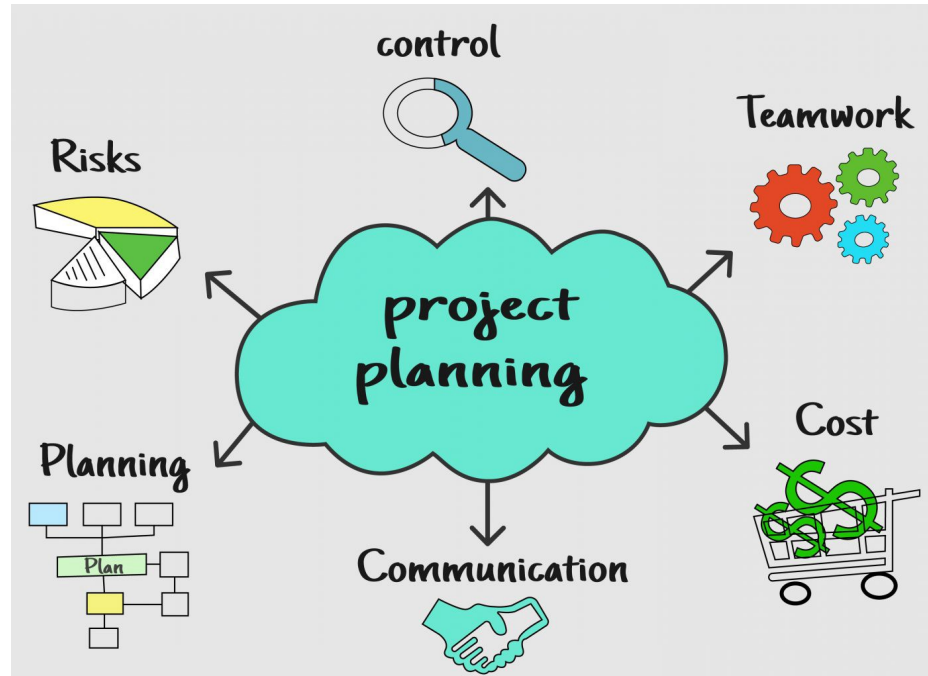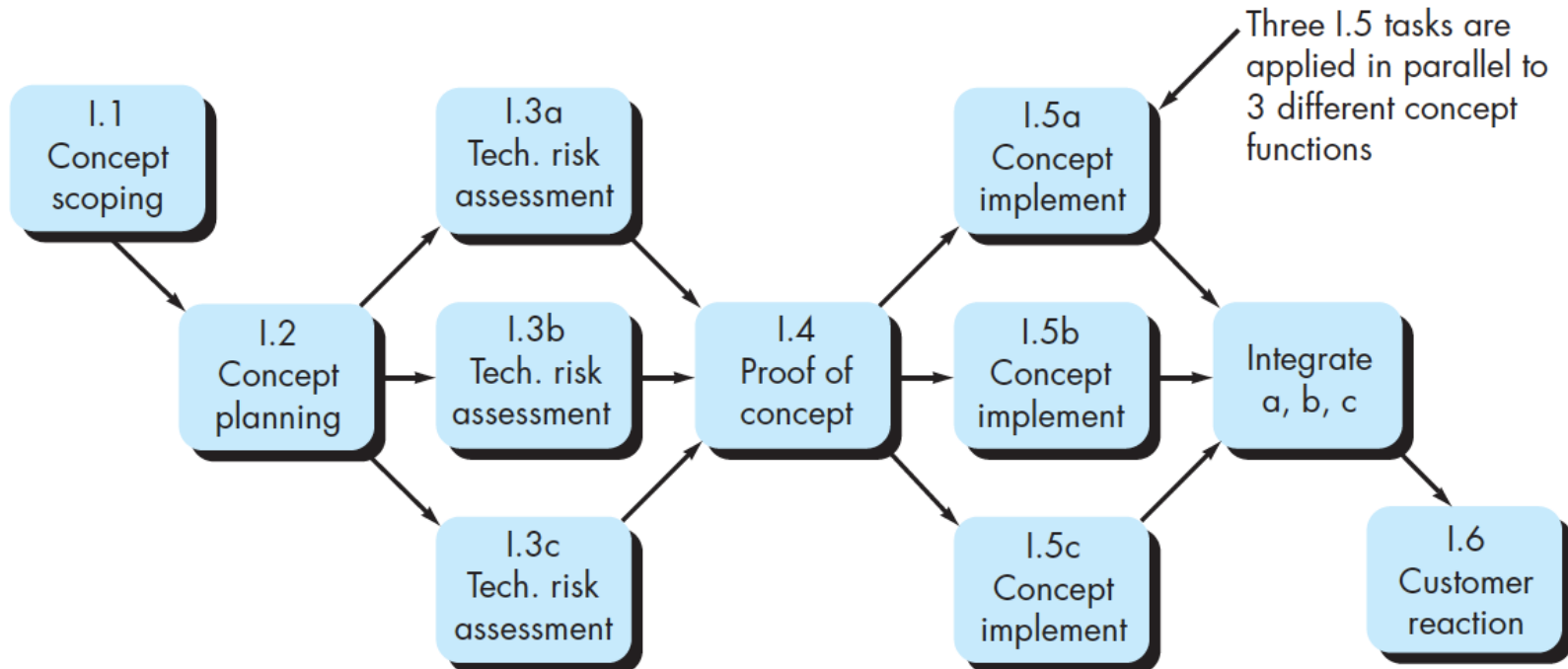
Planning

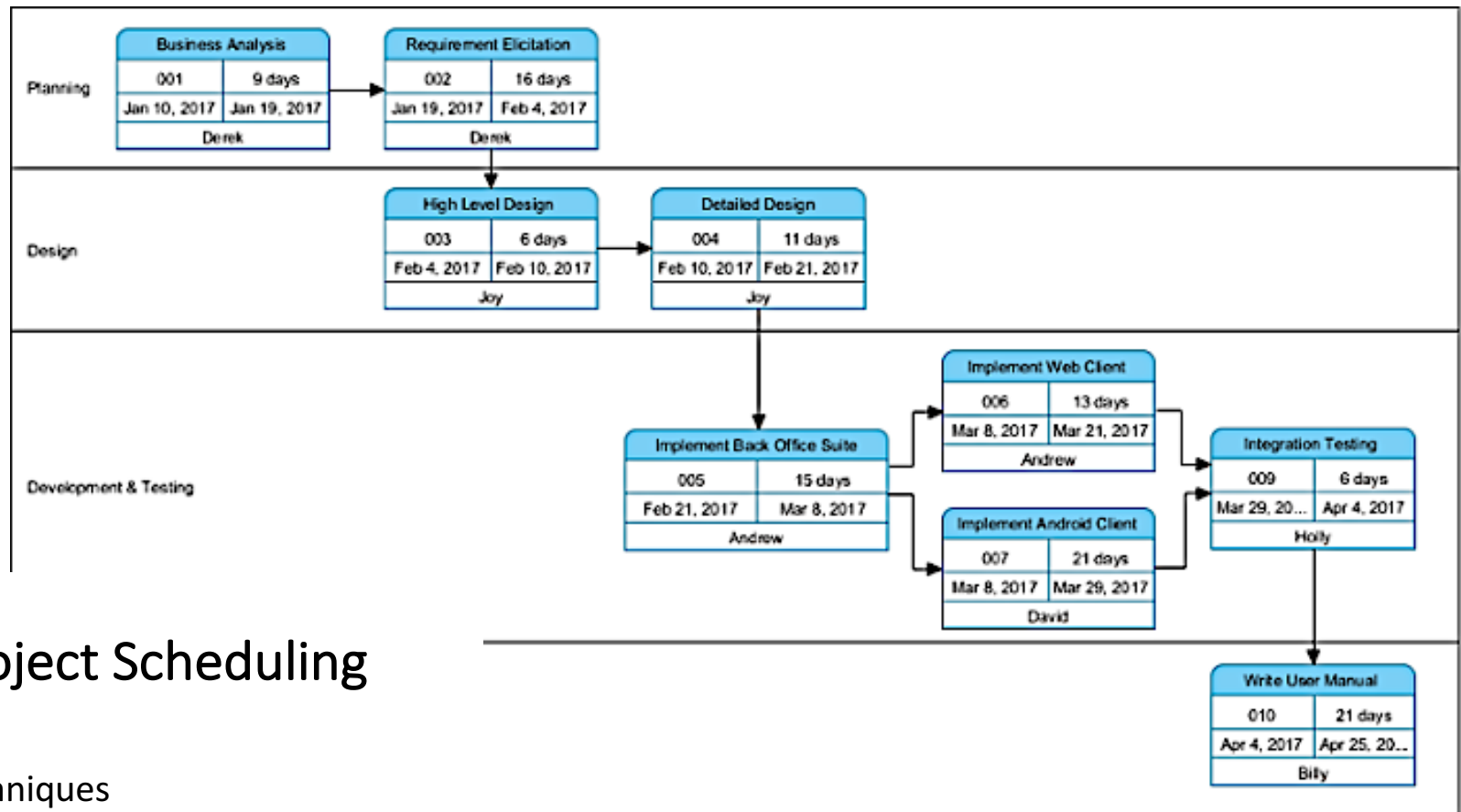Software Scope

Estimation

Project Decomposition

Project Schedule (?!!!)

Task Network

- Task sequence and dependencies
- Major software engineering tasks

Planning	Business Analysis		Requirement Elicitation	
	001	9 days	002	16 days
	Jan 10, 2017	Jan 19, 2017	Jan 19, 2017	Feb 4, 2017
	Derek		Derek	

Design	High Level Design		Detailed Design	
	003	6 days	004	11 days
	Feb 4, 2017	Feb 10, 2017	Feb 10, 2017	Feb 21, 2017
	Joy		Joy	

Development & Testing

Implement Back Office Suite
005	15 days
Feb 21, 2017	Mar 8, 2017
Andrew	

Implement Web Client
006	13 days
Mar 8, 2017	Mar 21, 2017
Andrew	

Implement Android Client
007	21 days
Mar 8, 2017	Mar 29, 2017
David	

Integration Testing
009	6 days
Mar 29, 20...	Apr 4, 2017
Holly	

Write User Manual
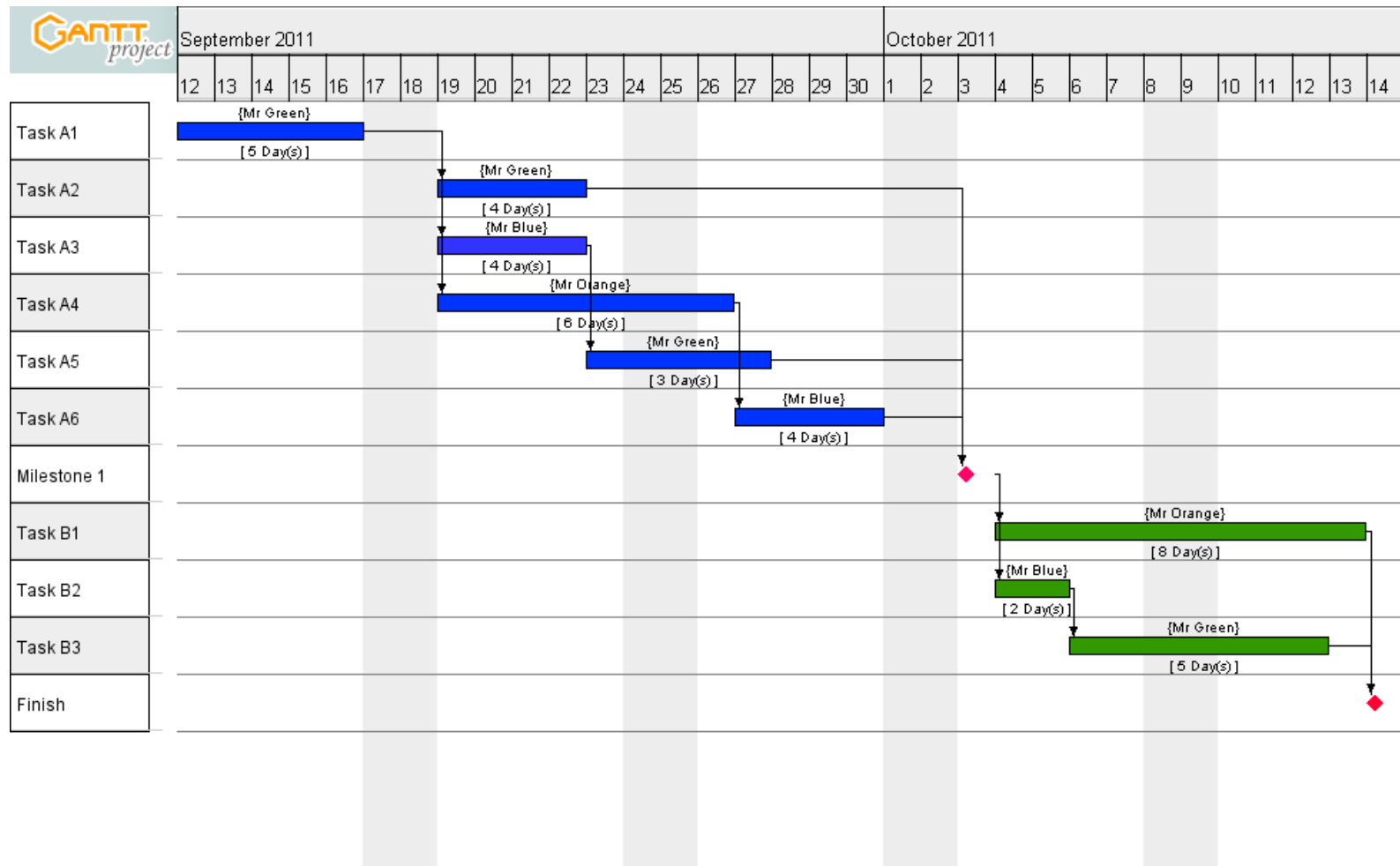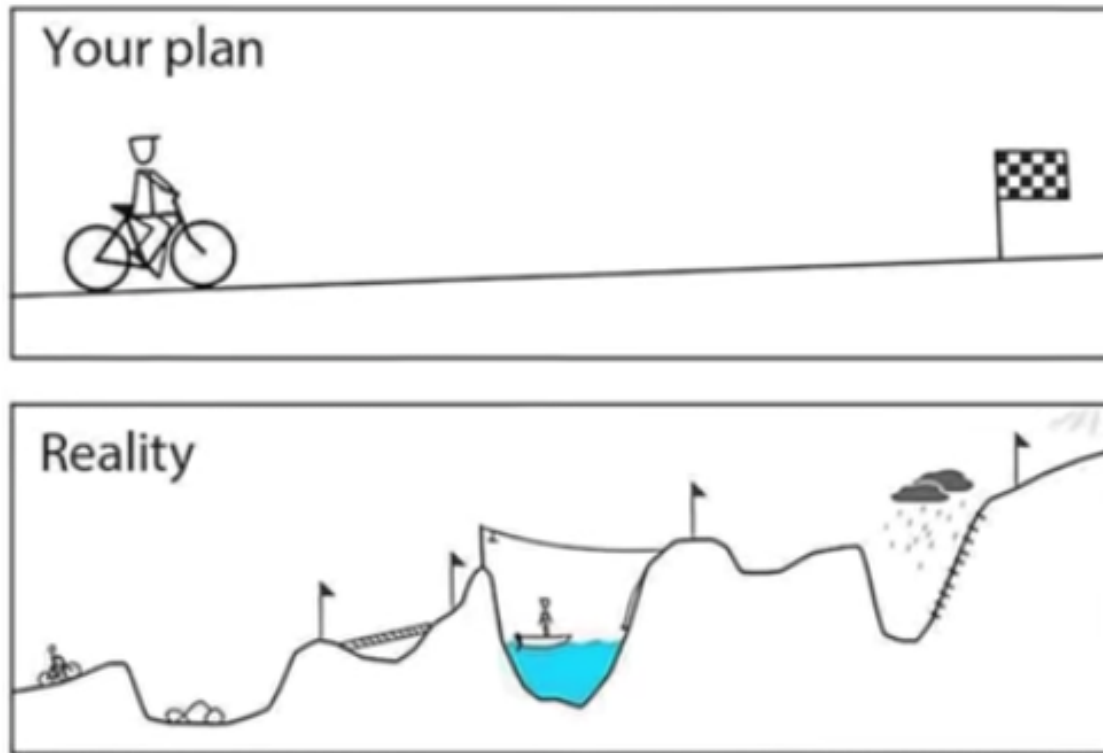| 010 | 21 days |
| Apr 4, 2017 | Apr 25, 20... |
| Billy | |

Project Scheduling

Techniques

- Program Evaluation and Review Technique (PERT)
- Critical Path Method (CPM)
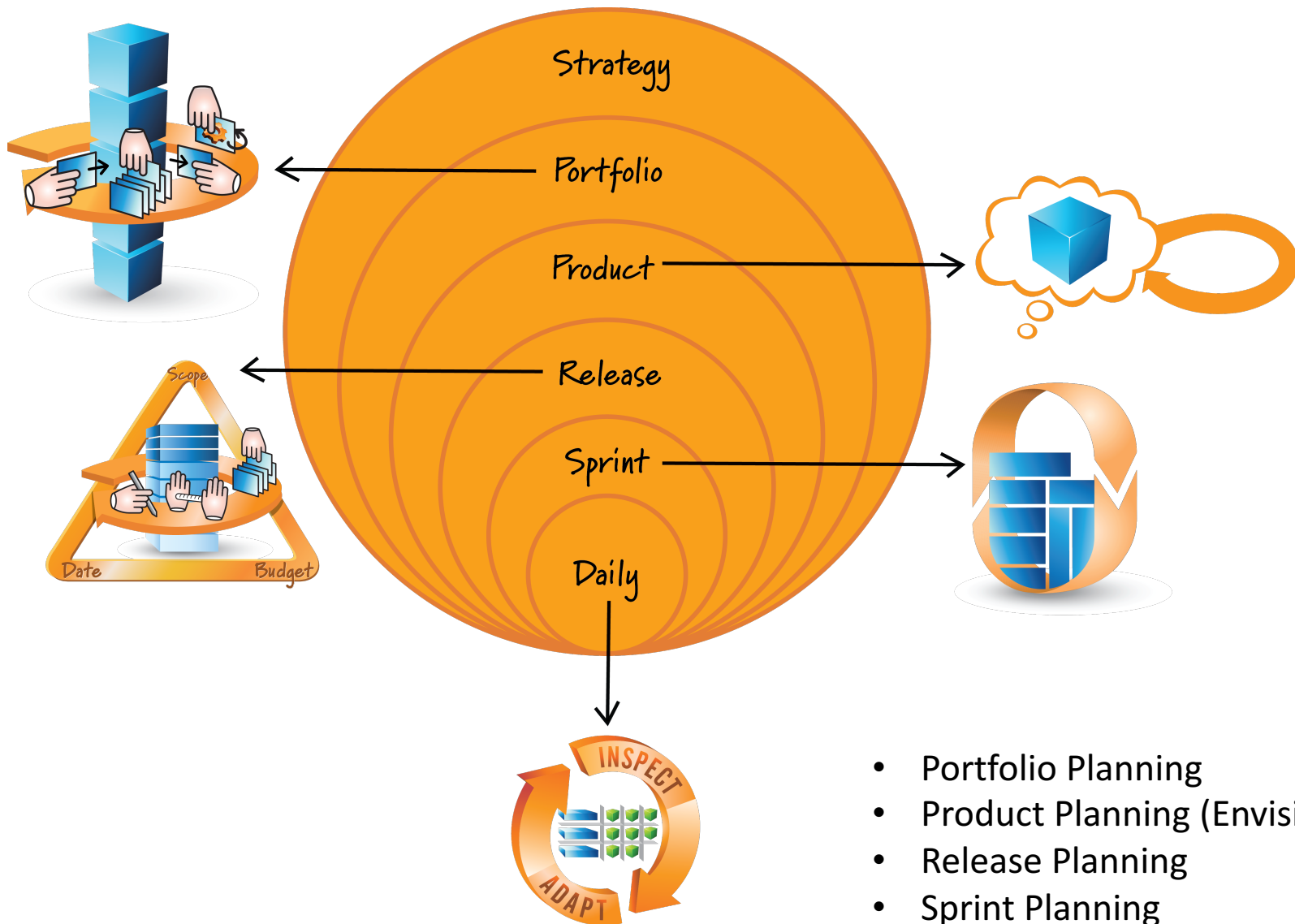
- Work Breakdown Structure (WBS)

Time-Line Chart
Gantt, Calendar-based

Agile Planning

Multi-level Planning

- Portfolio Planning
- Product Planning (Envisioning)
- Release Planning
- Sprint Planning
- Daily Planning

Risk Management

Anticipating risks that might affect the project schedule or the quality of the software being developed, and then taking **action to avoid** these risks.

Software Risks

always involves two characteristics *uncertainty* and *loss*.
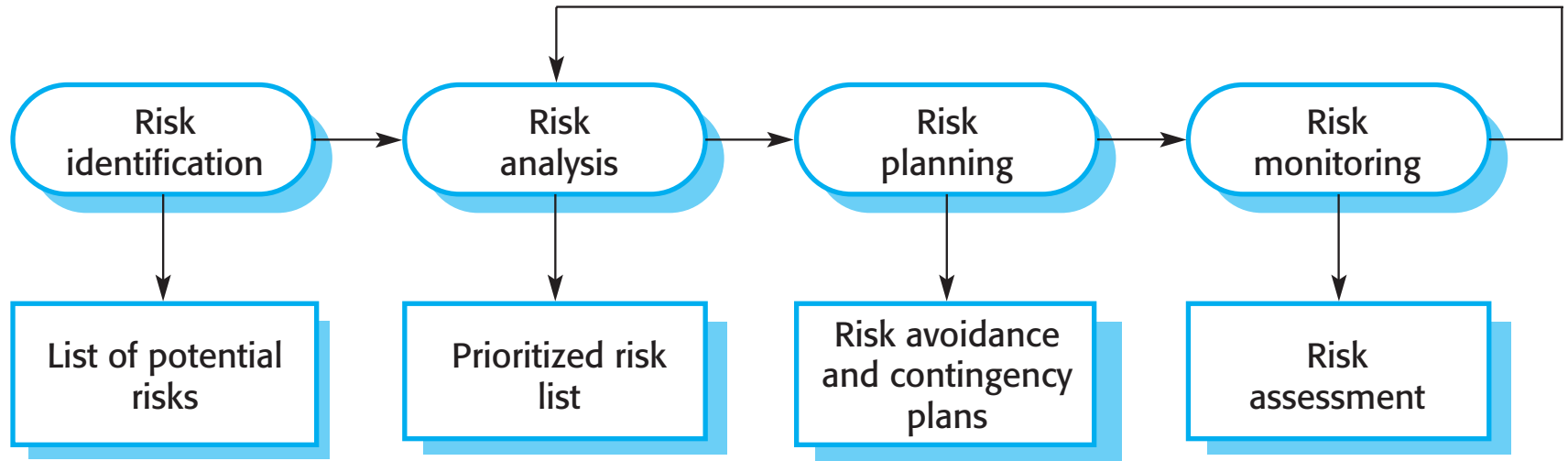
Probability (Likelihood)

- insignificant, low, moderate, high, or very high

Seriousness (Impact)

- Catastrophic, serious, tolerable, or insignificant

- Requirements
- Technology
- Organisational
- Tools
- …

- Project
- Product (Technical)
- Business

- Known
- Predictable
- Unpredictable

Risk Management Stages

Planning strategies
- Avoidance
- Minimization
- Contingency

Risk Table

Result of the analysis process

Risks	Category	Probability	Impact	RMMM
Size estimate may be significantly low	PS	60%	2	
Larger number of users than planned	PS	30%	3	
Less reuse than planned	PS	70%	2	
End users resist system	BU	40%	3	
Delivery deadline will be tightened	BU	50%	2	
Funding will be lost	CU	40%	1	
Customer will change requirements	PS	80%	2	
Technology will not meet expectations	TE	30%	1	
Lack of training on tools	DE	80%	3	
Staff inexperienced	ST	30%	2	
Staff turnover will be high	ST	60%	2	
Σ Σ Σ				