Projects in Computing and Information Systems

CH4 **Project planning and risk management**

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Textbook : Projects in Computing and Information Systems A Student's Guide by Christian Dawson

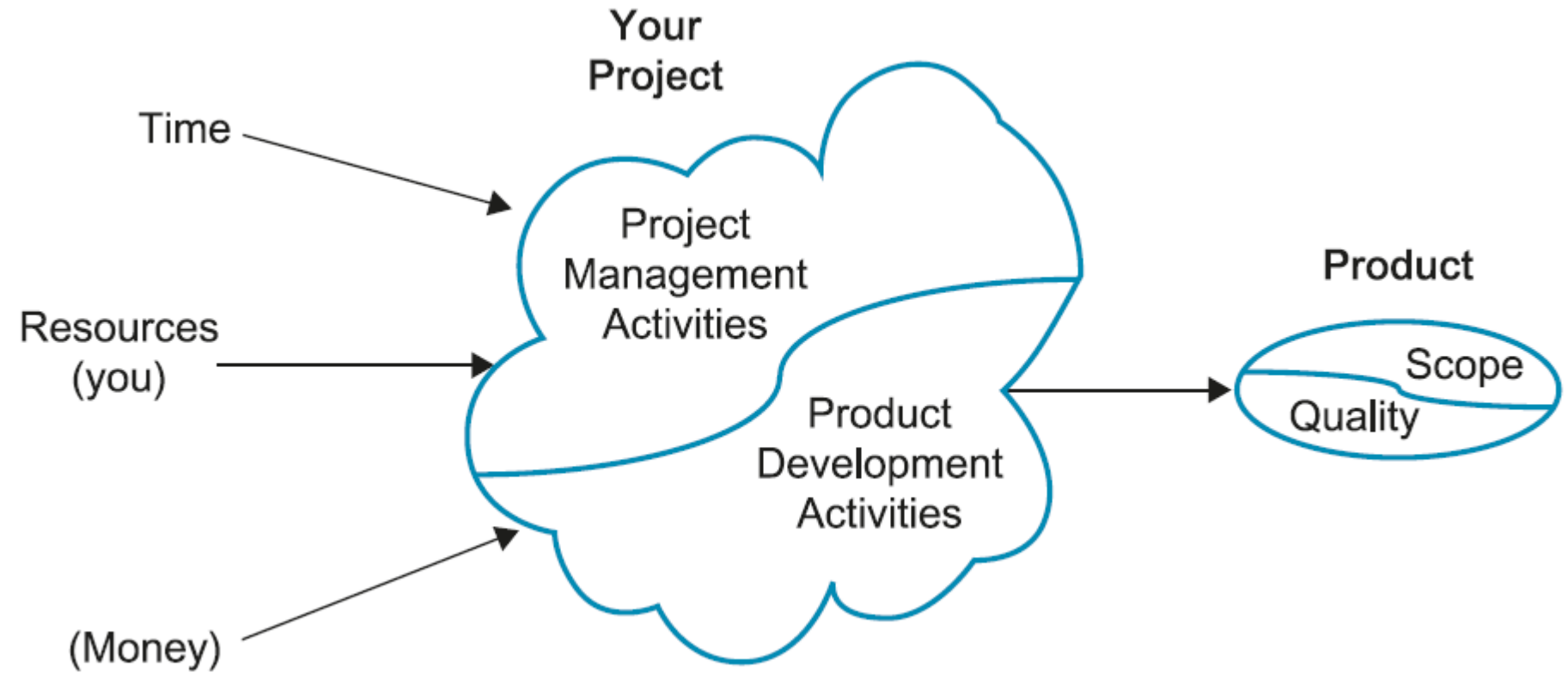# Project planning and risk management

Aims:

- To introduce techniques and approaches to project planning and risk management.
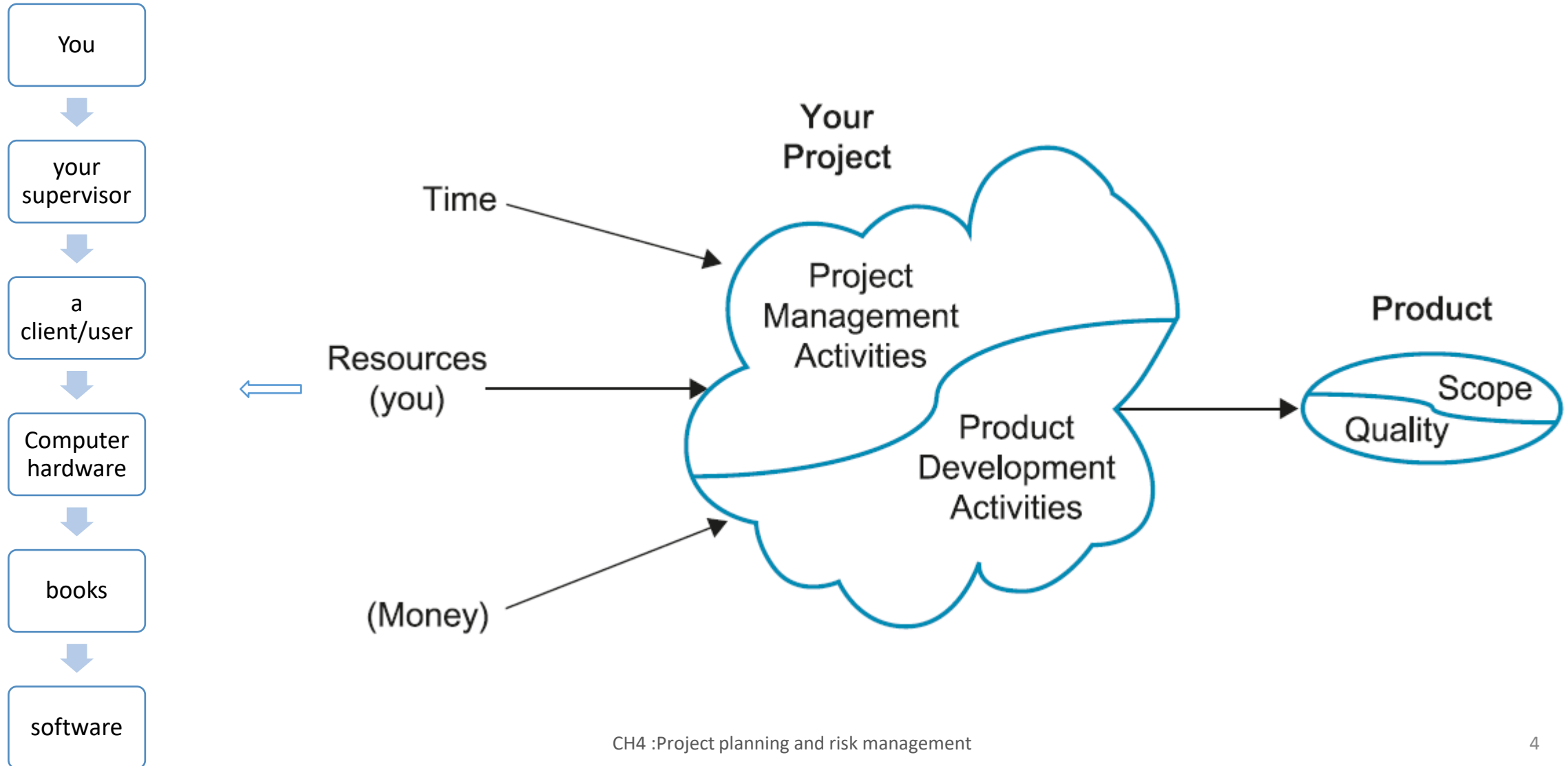
Learning objectives:

When you have completed this chapter, you should be able to:

- Understand the five elements of projects that need to be managed.

- Describe the typical stages of an academic project from a project management perspective.

- Define a project in terms of aims and objectives.

- Discuss the activities performed during the initial planning stage of a project.

- Understand the use of project management techniques for project planning.

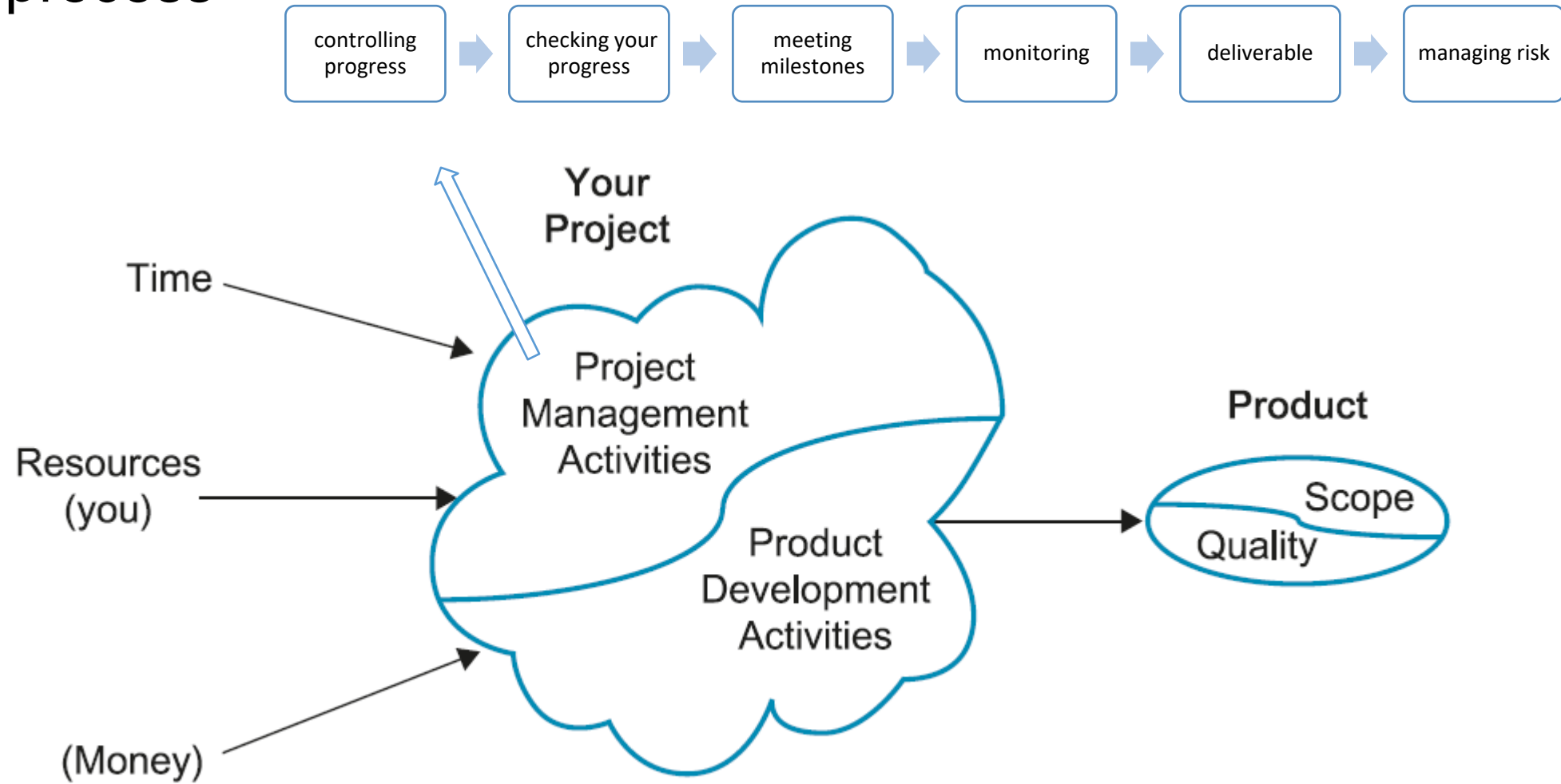- Manage risk in your project effectively using a defined risk management process.

The project process

The project process

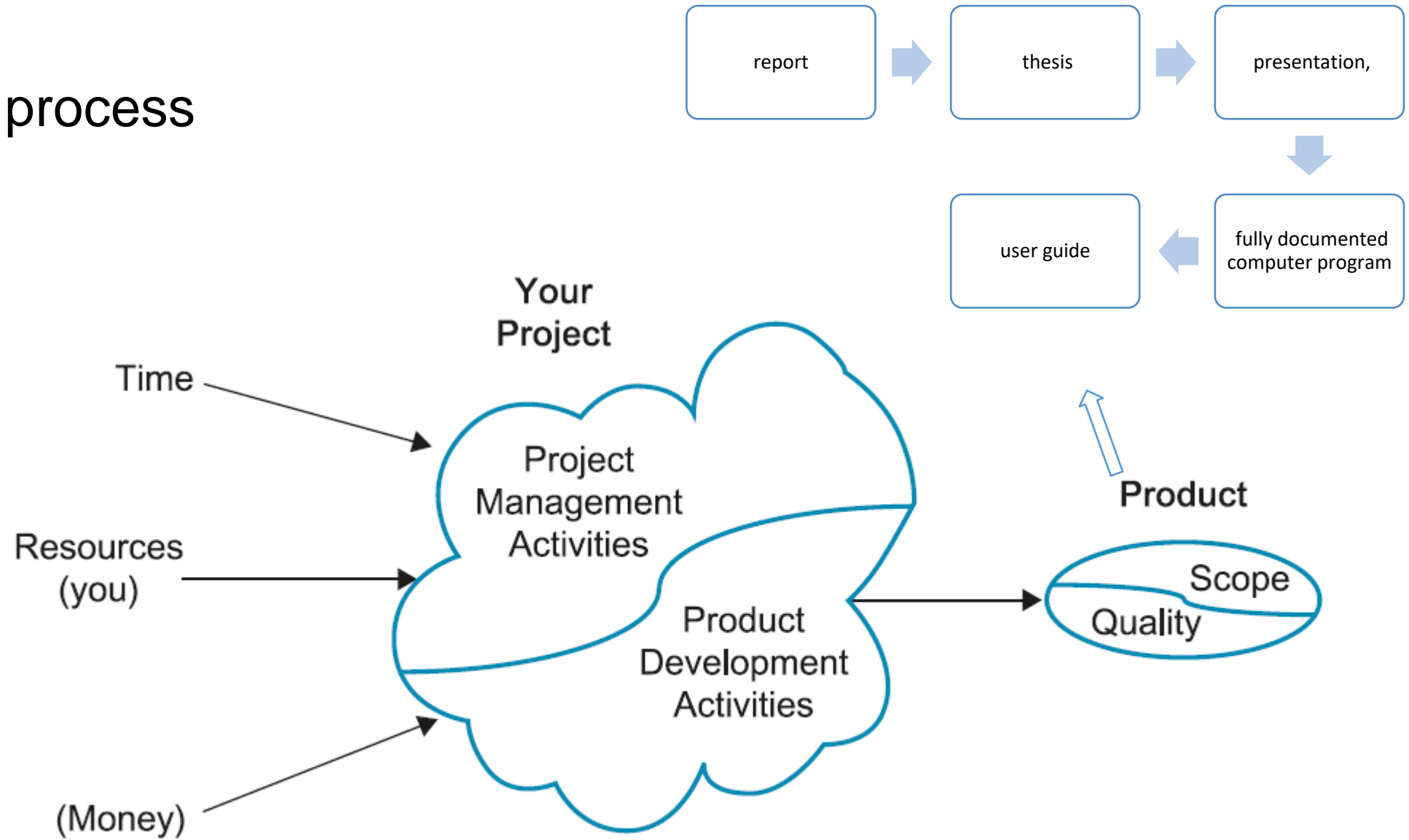|	
You	
your supervisor	
a client/user	
Computer hardware	
books	
software	

Time → Your Project

Resources (you) →

Project Management Activities

Product Development Activities

→ Product: Scope, Quality

(Money) →

The project process

controlling progress → checking your progress → meeting milestones → monitoring → deliverable → managing risk

Your Project

Time →

Resources (you) →

(Money) →

Project Management Activities

Product Development Activities

Product

Scope

Quality

The project process

Time

Resources (you)

(Money)

Your Project

Project Management Activities

Product Development Activities

Product

Scope
Quality

| developing a program | writing reports | Literature searching | meeting clients | quantitative research | qualitative research | seeing your supervisor |

The project process

report → thesis → presentation, → fully documented computer program → user guide

Your Project

Time → Project Management Activities

Resources (you) →

(Money) → Product Development Activities

Product

Scope
Quality

The project process

Your Project

Time

Resources (you)

(Money)

Project Management Activities

Product Development Activities

Product

Scope

Quality

| what it covers | what it does | what it achieves |

The project's stages

| 1. definition |
| 2. planning |
| 3. initiation |
| 4. control |
| 5. closure |

Project definition

- Defining your aims
- Setting objectives (SMART objectives)
  - Specific
  - Measurable
  - Appropriate
  - Realistic
  - Time-related.

Project's aim

● Develop and evaluate an ANN to predict stock market indices.

Project's objectives

1. Complete a literature survey of existing stock market prediction techniques.

2. Develop a suitable ANN model.

3. Identify and collect suitable data for analyses and evaluation.

4. Evaluate the model using appropriate statistical techniques.

5. Complete final report.

Project planning

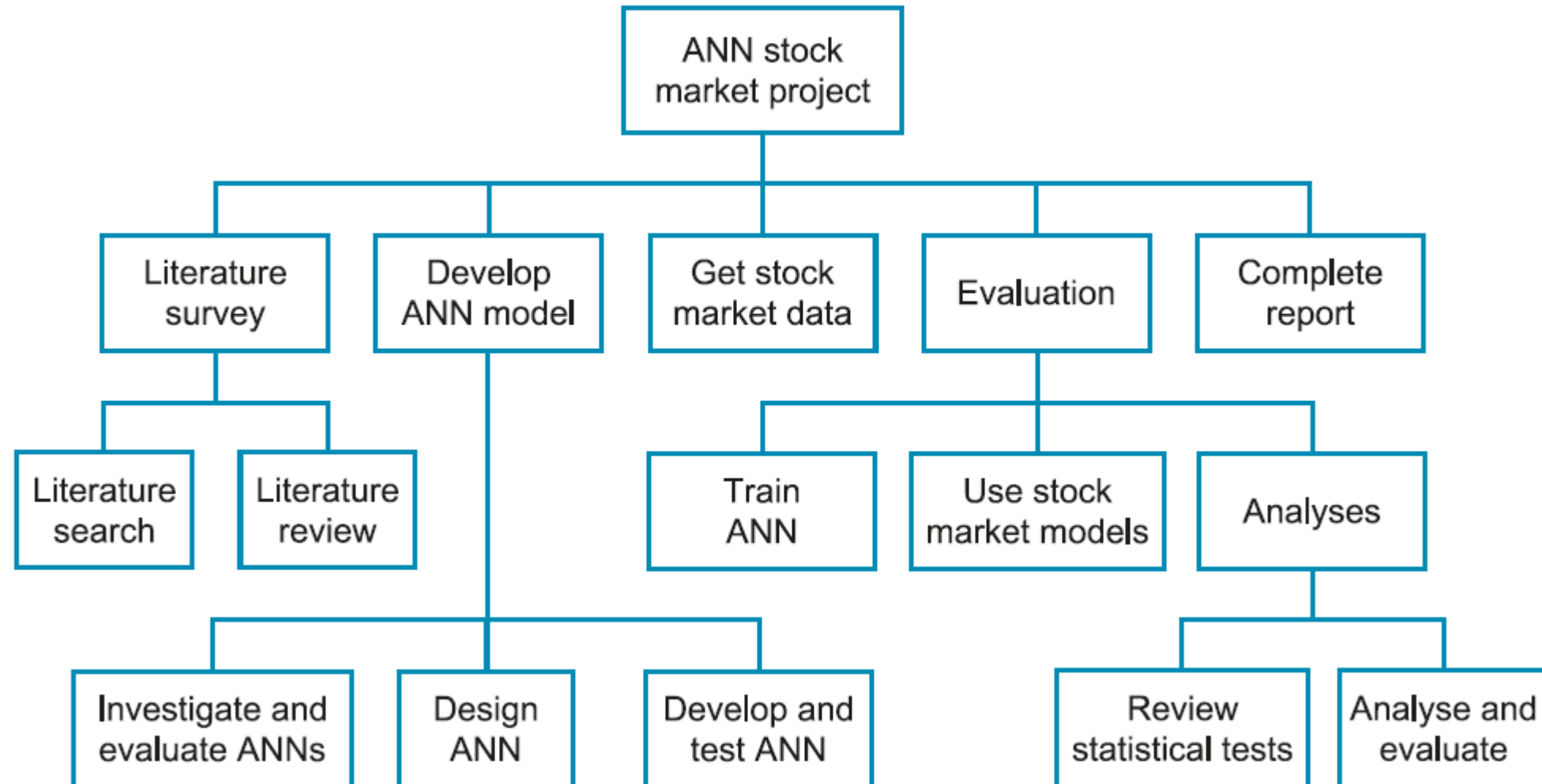|		
1. Work breakdown	2. Time estimates	3. Milestone identification
4. Activity sequencing	5. Scheduling	6. Re-planning

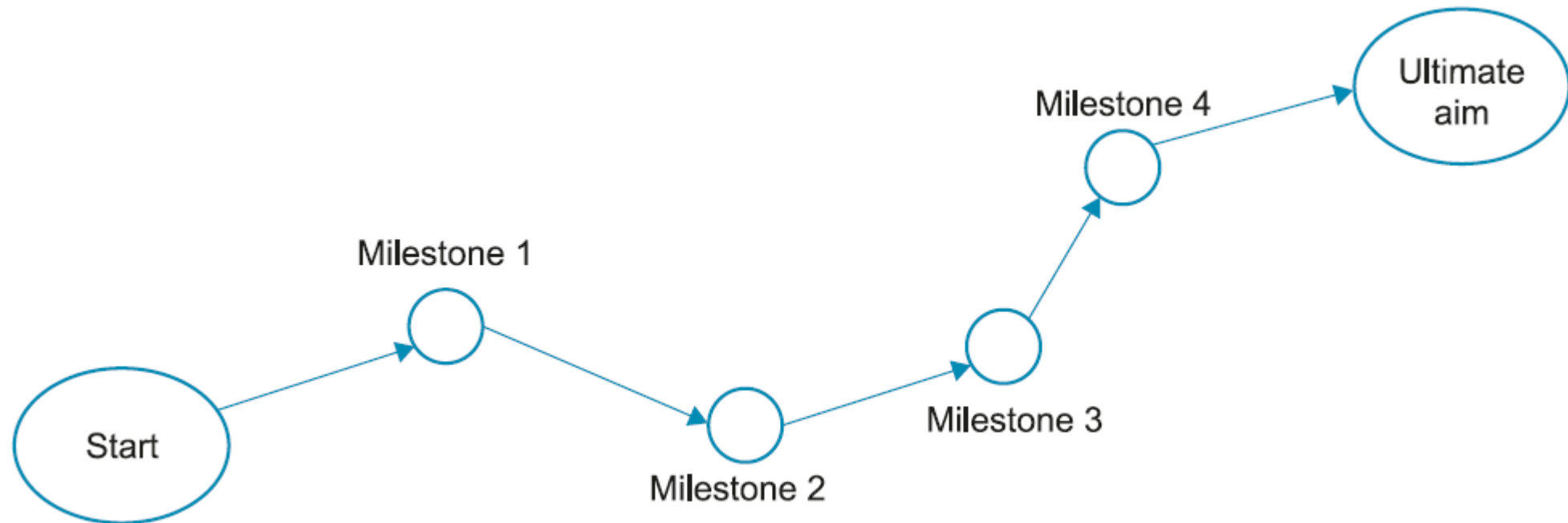# Project planning
(1. Work breakdown)

Project planning
(2.Time estimates)

| Activity	Estimated duration
Literature search	8 weeks
Literature review	4 weeks
Investigate and evaluate ANNs	4 weeks
Design ANN	4 weeks
Develop and test ANN	2 weeks
Get stock market data	1 week
Train ANN	1 week
Use stock market models	2 weeks
Review statistical tests	2 weeks
Analyse and evaluate	4 weeks
Complete report	8 weeks
Total effort	40 weeks (approximately 10 months)

Project planning
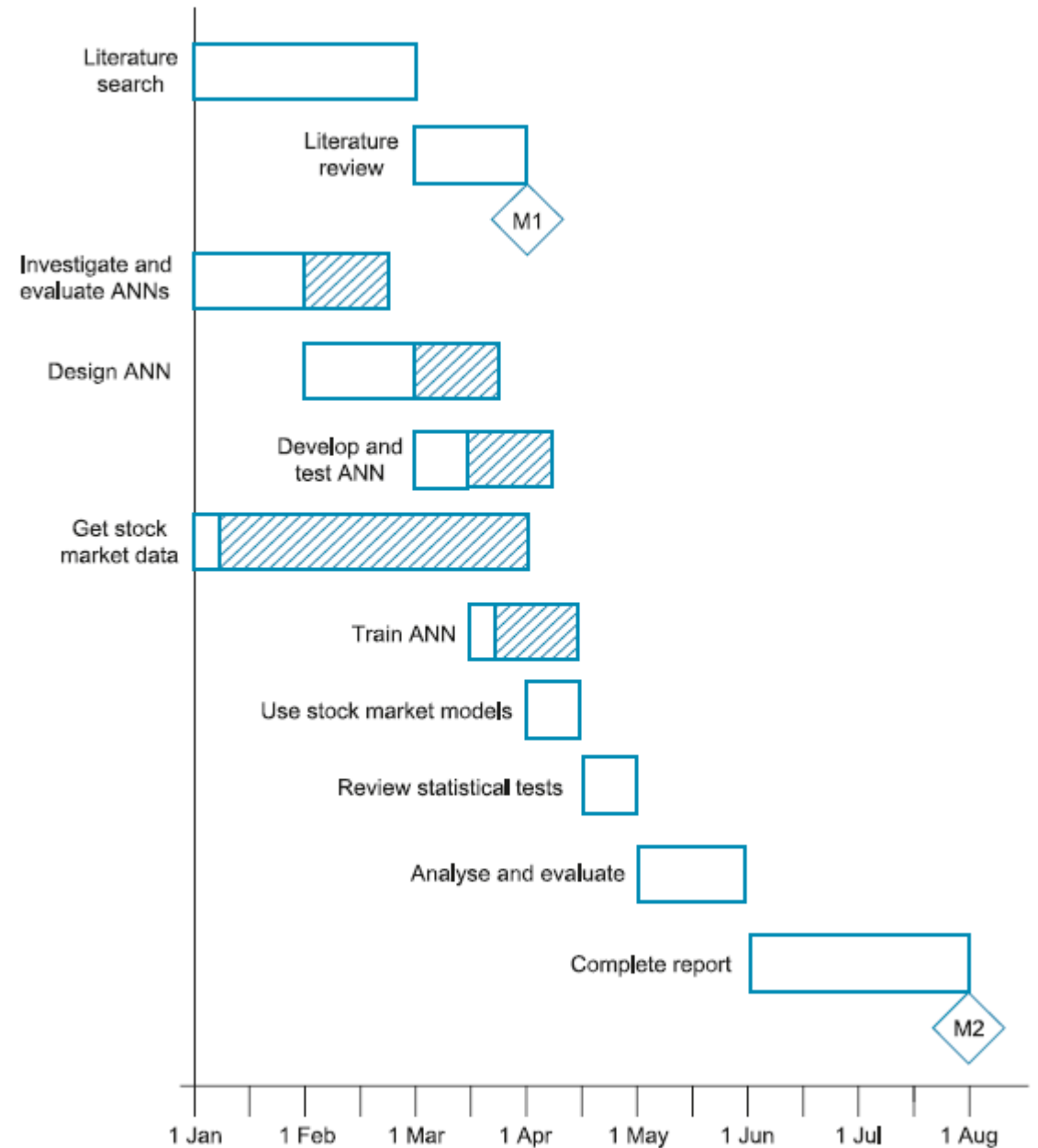## (3. Identify milestones)
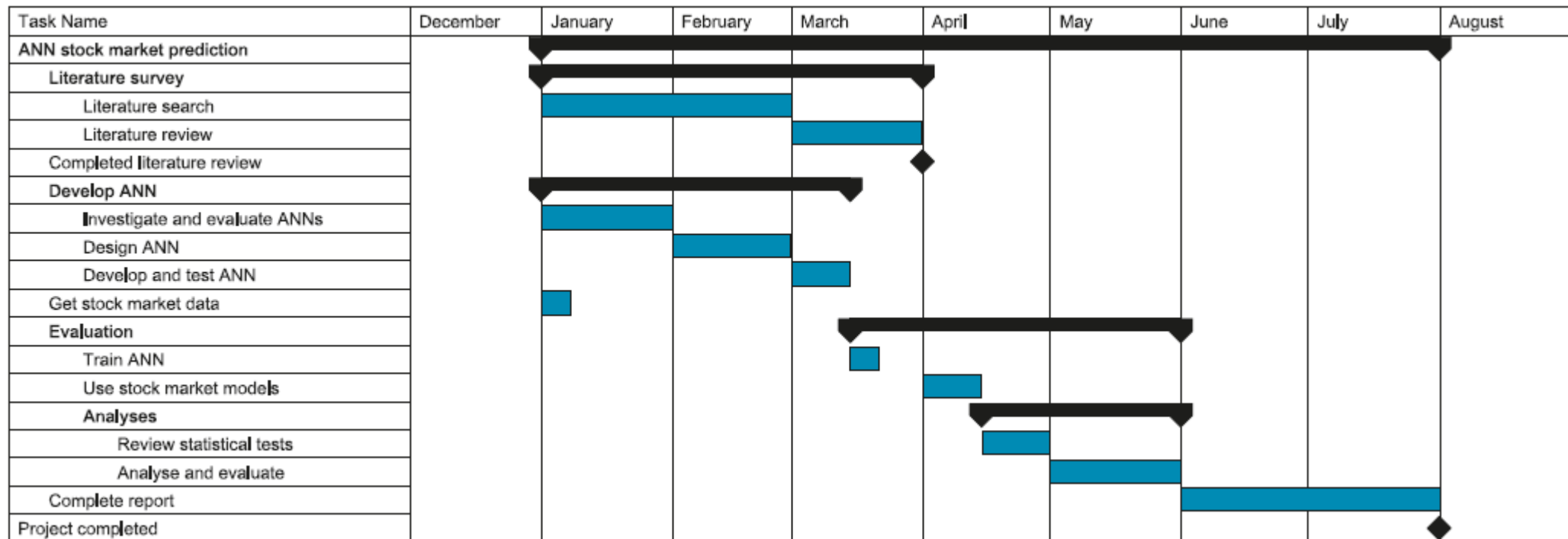
Project planning
(4. Activity sequencing)
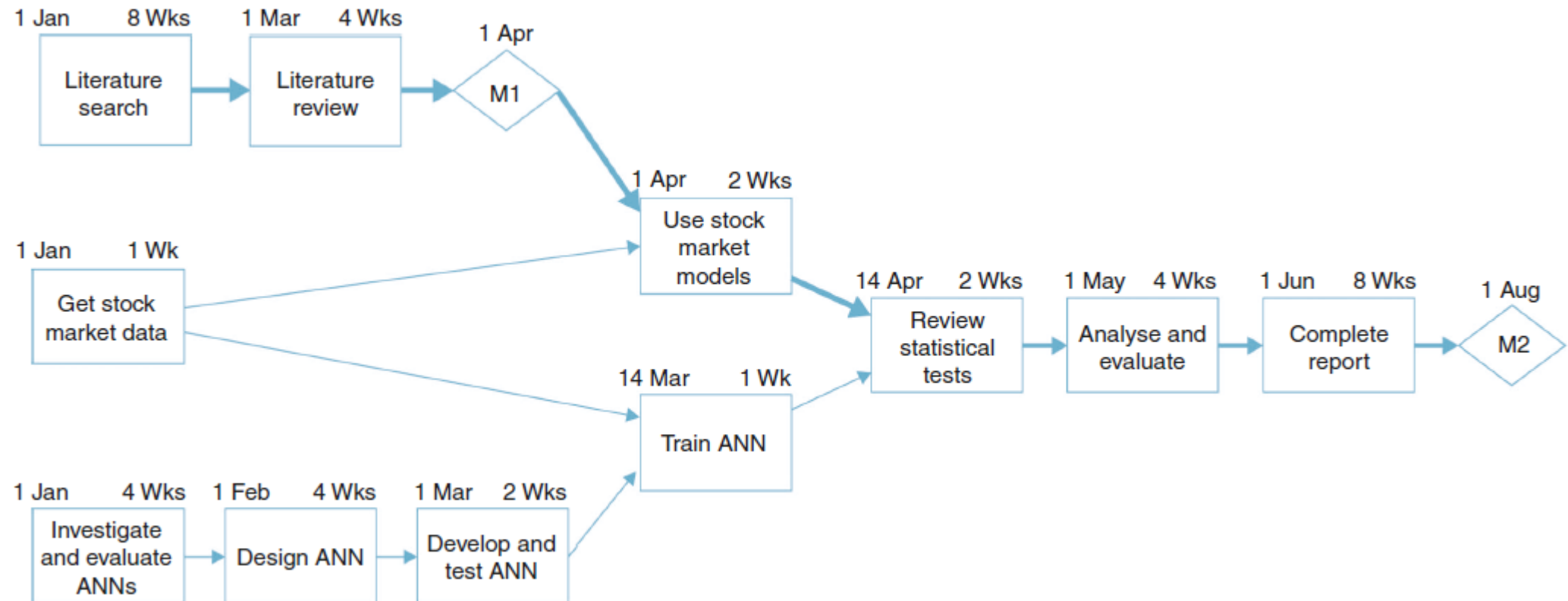
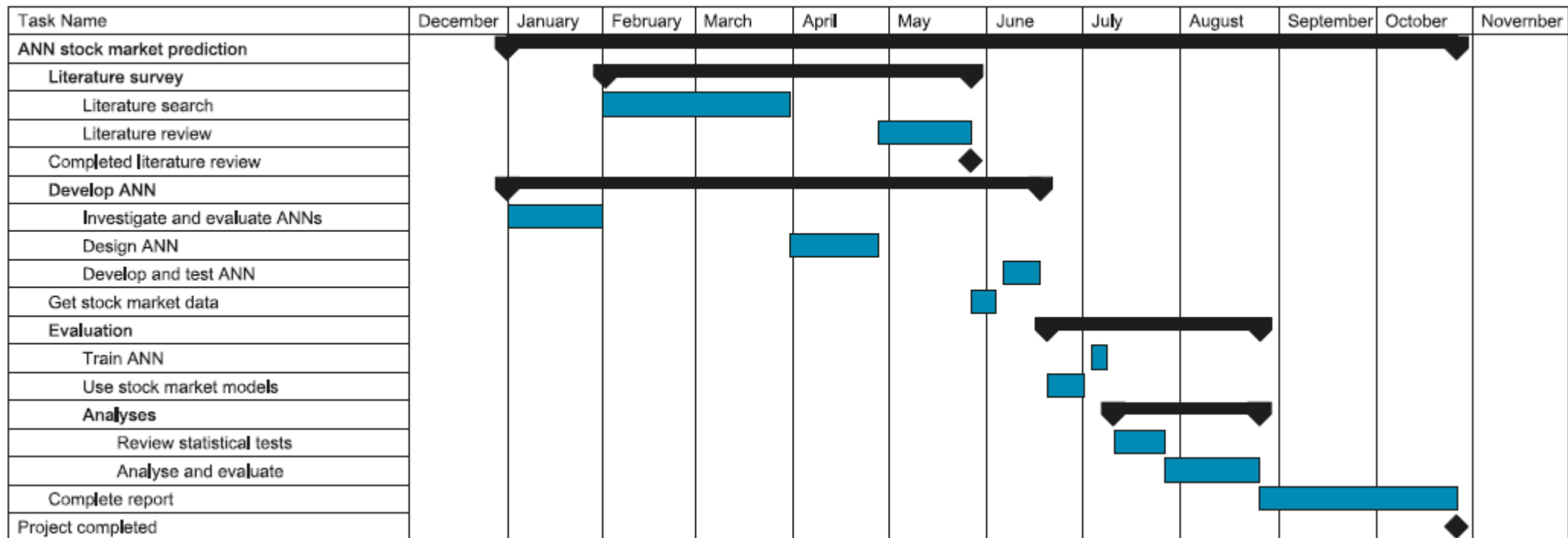# Project planning
(5. Scheduling)

Project planning
(6. – Re-planning)

Microsoft® Project Gantt chart of example project

Project planning
(6. – Re-planning)

Microsoft® Project Gantt chart of example project

Risk management

Risk management process are:

1. *identify risks*

2. *assess impact of risks*

3. *alleviate critical risks*

4. *control risks*

Summary

● Project planning consists of two stages: defining what it is you want to achieve and planning how you will achieve this. Project definition involves identifying your **project's aims** and **objectives**.

● Planning itself consists of **six steps**: identifying the tasks involved using work breakdown structures; estimating the duration of these tasks; identifying critical stages in your project called milestones; identifying the order in which activities should be performed using activity networks; scheduling your time so that you are not trying to do more than you can physically achieve using Gantt charts; and re-planning your project to fit the time available.

● Project management software packages, such as **Microsoft® Project**, can be used to assist you with planning and managing your project. Although you can put together your own Gantt charts and activity networks by hand, such as those shown in Figures 4.5 and 4.6, project management software tools can automate this process for you. However, these packages do take time to learn and you can often find yourself spending more time planning and 'tweaking' your project with these packages than actually doing any real work. Remember – you should only spend around 10% of your time at most on project management.

● **Risk management** is performed in parallel with project management and involves the following four stages: risk identification, risk quantification, risk alleviation and risk control.

Thanks