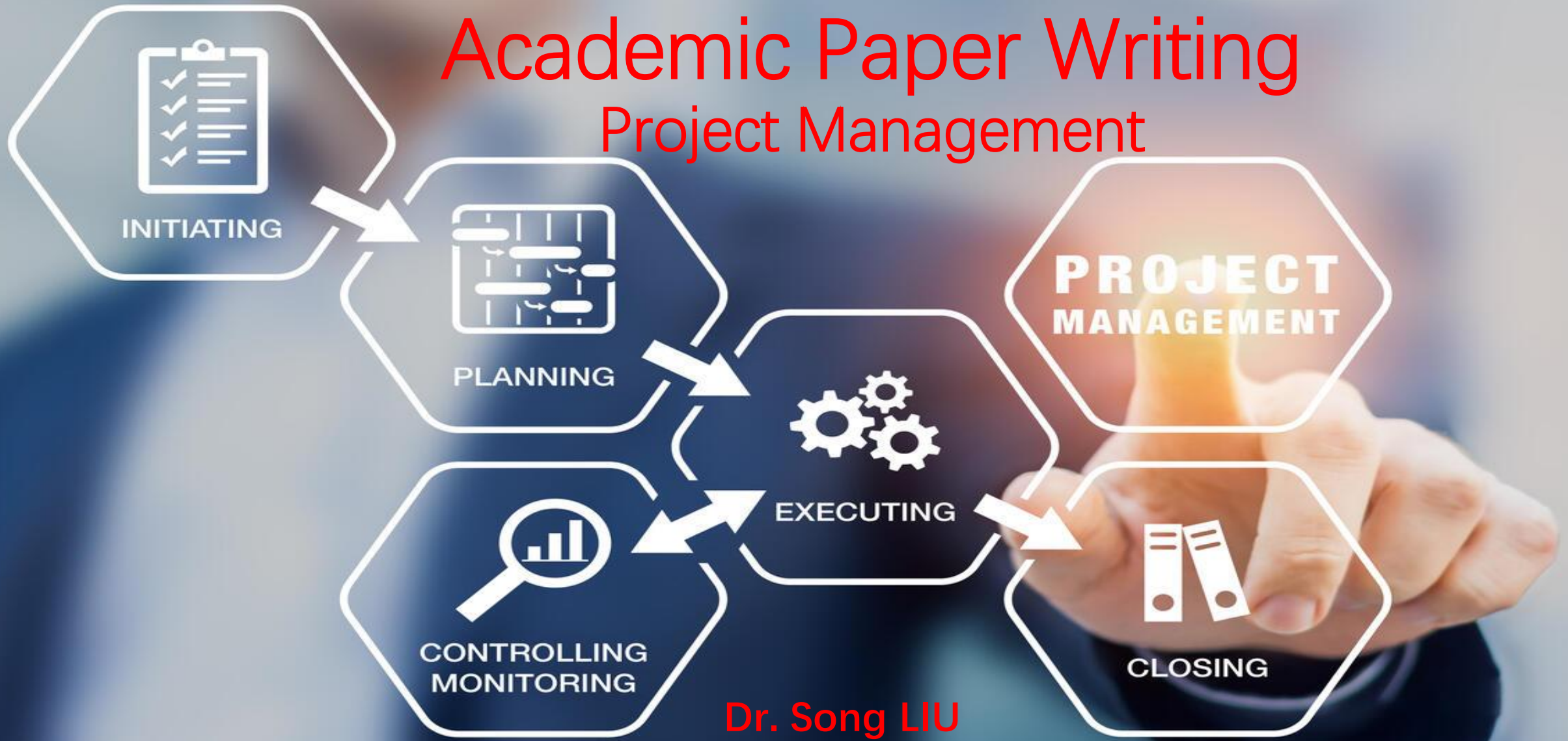
Academic Paper Writing

Project Management



Dr. Song LIU

Director of AMNR Lab, office 2-402.I

liusong@shanghaitech.edu.cn

Do you have similar experience?

What is A Project?

A project is an activity that :

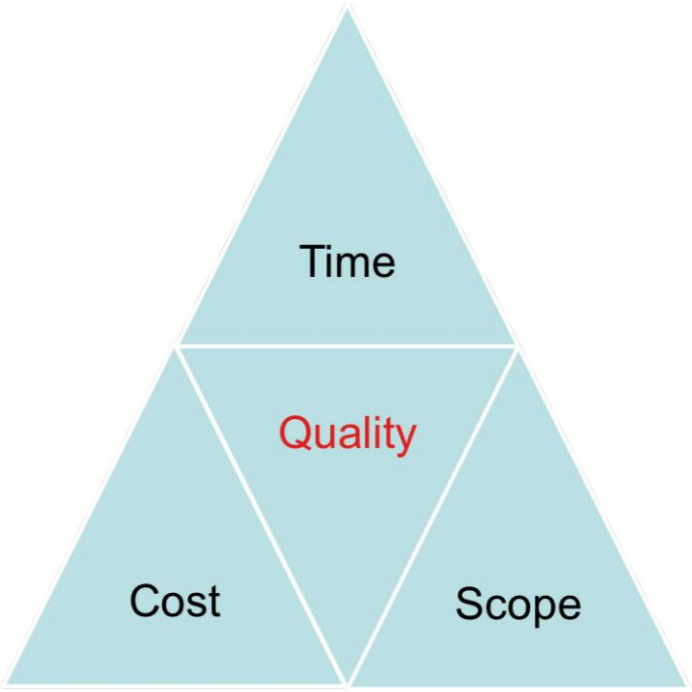
- is temporary having a start and end date
- is unique
- brings about change
- has unknown elements, which therefore create risk.

- Generally projects are formed to solve a problem or take advantage of an opportunity.
- Business as usual activities can often be mistaken for projects.
- Generally it is the uniqueness of the activity that is the deciding factor – do we do this every year? If so, then it is not truly a project – although you can use project methods to get it done

So, why is it a project?

Four aspects of a Project:

- Quality expectations – see assessment requirements
- Time: start and end date
- Cost – do you have financial resources?
- Scope - How much are you planning to deliver



So, why manage research project?

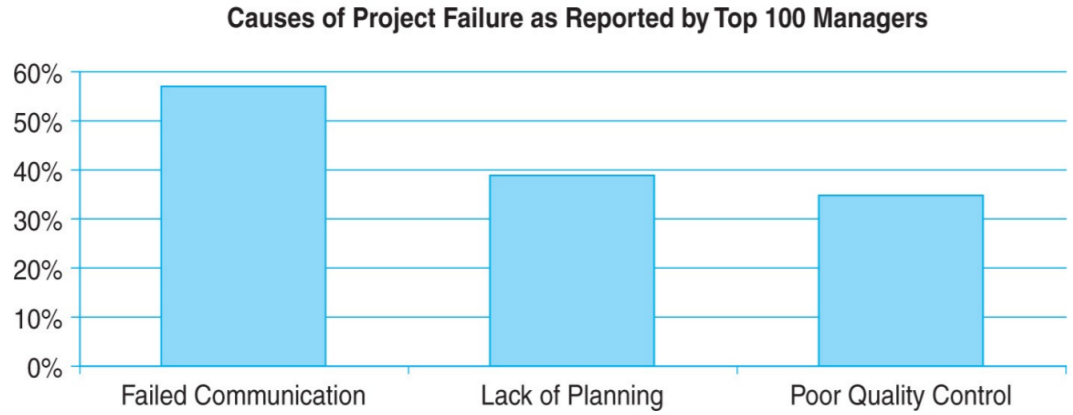
Possible good reasons :

- Research is a complex task which has little prescribed structure
- Everyone has their own research project
- Share your plan with others
- Helps you to estimate and allocate time
- Once noted you don't need to worry about remembering everything that you need to do – time management
- It also contributes to your reflections on the research process

So, why manage research project?

Why do Projects Fail:

- 1. Poor project and program management discipline
- 2. Lack of executive-level support
- 3. Wrong team members
- 4. Poor communication
- 5. No measures for evaluating the success of the project
- 6. No risk management
- 7. Inability to manage change



So, why manage research project?

Why do Projects Fail:

A project has a degree of UNCERTAINTY.

In project planning many assumptions are made regarding:

- access to resources.
- resource capability.
- impact of environmental factors.

- These assumptions are not always accurate.
- Requires project managers to re-assess and trade-offs between requirements, costs, and time. Above all, be PRO-ACTIVE.

What are classic research project stages?

- Identify a research problem
- Refine aim and objectives
- Refine research questions
- Conduct and document a literature review
- Evaluate appropriate research methods
- Design your research tools (survey, questionnaire, observations etc.)
- Pilot test your data collection
- Carry out your data collection
- Compare and contrast data findings with the literature findings
- Draw conclusions by evaluating your research questions, research objectives and research aim
- Reflect on limitations and potential further studies in the area
- Write your documentation

Common Project Terms

- **Deliverables**: Tangible ‘things’ that the project produces
- **Milestones**: Dates by which major activities are performed.
- **Tasks**: Also called Actions. Activities undertaken during the project
- **Risks**: Potential problems that may arise
- **Issues**: Risks that have happened
- **Gantt Chart**: A specific type of chart showing time and tasks.
- **Stakeholder**: Any person or group of people who may be affected by your project

Example: Building a Deck

- Deliverables: A plan, a consent form, the deck
- Milestones:

Plan drafted Plan approved	1 Jun 15 Jun
Plan submitted Plan approved	16 Jun 19 Jun
Materials purchased Resources booked Equipment identified Deck constructed Deck tested Deck quality approved "Deck warming" completed	16 Jul 16 Jul 16 Jul 20 Jul 24 Jul 24 Jul 28 Jul

- Tasks:

tasks	Subtasks
Plan drafted	Requirement gathered Best practice researched Draft 1 prepared Distributed to stakeholders
Plan approved	Feedback gathered Amendments made Final plan prepared Distributed to stakeholders Sign-off obtained

Task Management - Work Breakdown Structure

- Hierarchy of tasks required to complete project
- Each task is broken into smaller tasks that can be managed and estimated
- Define task dependencies
  - Some tasks must begin at the same time, some must end at the same time and some cannot start until the other tasks have finished.
- Estimate task durations and cost
- May be inputted into project management software
- Final WBS plan is called baseline WBS

Risks and Risk Management

- Risks:
  - Plan is not approved after first round of feedback
  - Resources are not available at the required time
  - Plan is not given consent
- Risk Management
  - For each of the above, you should have a contingency plan, or do some activity that may prevent it happening in the first place.
  - What is the Risk Identification?
  - What is the probability of these things happening?
  - How severely will they impact on the completion of your project?
  - Assessment - How important is the individual obstacle (**Probability** × **Impact**)?
  - What can be done to minimize the obstacle preventing you completing your project?
  - Finally – having considered all obstacles - is the project still viable?

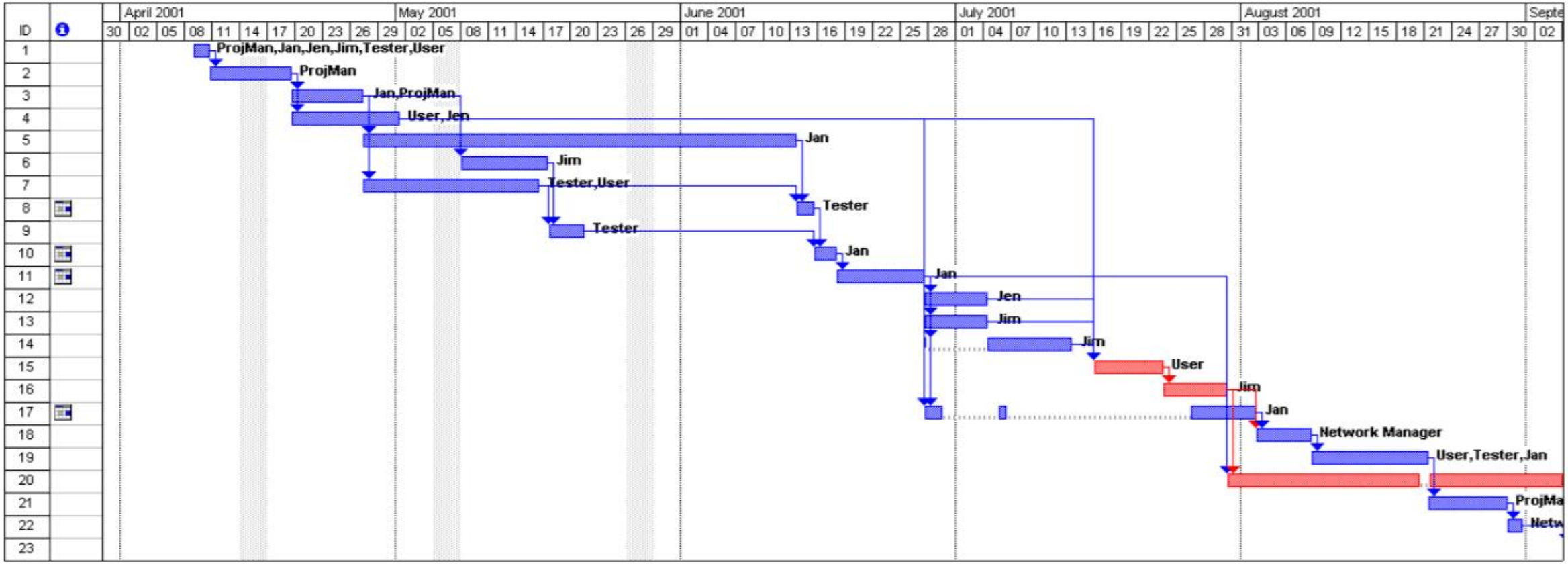
Risk Management Example

Risk Identification:	Probability: (1 [low] – 5 [high])	Impact: (1 [low] - 5 [high])	Assessment	Management / Mitigation
Not being able to access academic journal articles due to paid access	2	2	=2 x 2 = 4	Use online journals and where possible books via GoogleScholar
Computer hard disk drive failure	2	5	=2 x 5 = 10	Daily back up of data and email of latest copy to my Gmail account
Little data available to capture for this project	5	5	= 5 x 5 = 25	Conduct pilot study and revisit research area if not possible to get data

Gantt Chart

- Named after Henry Gantt (1861–1919)
- **Visual representation of tasks/basic elements of the diagram**
- Showing dependence
- Showing parallel activities and overlaps
- Showing milestones
- Building in constraints
- Many other project management features such as adding in costs; dealing with resource conflict …

Gantt Chart Example



Alternative Project Plan?

Project task	*Project Months*											
	1	2	3	4	5	6	7	8	9	10	11	12
Identify problem area												
Attend workshops	X	X	X		X			X				
...												
...												
Primary data collection							X	X		X		
...												
...												
Submission deadline												X

Project manager

- A successful Project Manager must simultaneously manage the four basic elements of a project:
  resources, time, money, and most importantly, scope.

- All these elements are interrelated.
- Each must be managed effectively.
- All must be managed together if the project is to be a success.
- The resource that can be leveraged to the greatest extent in all projects is the **people** involved.

Project manager

A person with a diverse set of skills

- management,
- leadership,
- technical,
- conflict management
- customer relationship

who is responsible for:

– initiating,
– planning,
– executing,
– controlling,
– monitoring,
– closing down a project.

Project Management

Project Managers are essentially jugglers. They must make sure that everything keeps to task, that potential issues are quickly eliminated and the project is delivered on time, all the while making sure everyone knows what is happening and the project quality and budget are acceptable.

Specifically they:

- direct all activities required to successfully meet the project objectives
- manage risk – scanning ahead for potential issues and resolving them before they become a problem
- solve problems - recommending alternative approaches to problems that arise and providing guidance to the Project Sponsor
- track and report project progress
- communicate to all stakeholders in the project

Project Manager – Initiating Project

The Initiation phase of the project is the most important phase. The success of the entire project depends on how clearly and completely the Terms of References are established.

- Project Sponsor
- Lines of Authority
- Participants
- Objectives Constraints
- Costs/Budget
- Resources
- Deliverables
- Phases & Time Scales
- Strategy
- Risks
- Roles & Responsibilities

Project Tracking

- Weekly or at key stages of a project's milestones - a review of the project plan and risks

- Once the project is completed
  – a review of the original and the final version allows reflection on the project's developments
  – what was anticipated and what surprises are there?

- The updated plan and risk can be used by similar projects in the future as a starting point!

Project Success – 12 Golden Rules

Rule #1 Gain consensus on project outcome.
Rule #2 Build the best team possible.
Rule #3 Develop a comprehensive, viable plan and keep it up-to-date.
Rule #4 Determine how much stuff you really need to get things done.
Rule #5 Have a realistic schedule.
Rule #6 Try to do more than can be done.
Rule #7 Remember that people count.
Rule #8 Gain the formal and ongoing support of management and stakeholders.
Rule #9 Be willing to change.
Rule #10 Keep others informed of what you're up to.
Rule #11 Be willing to try new things.
Rule #12 Become a leader

The Research Document/Report

- Title page
- Contents page
- Acknowledgements - personal thanks to those who have helped you
- Executive summary or abstract – why, how and what?
- Introduction
- Literature review – what others have said about this problem
- Research method – what considerations were made when choosing a way to conduct this study
- Data – what have you found from your primary data collection?
- Discussion – comparing literature to data section
- Conclusions - answers to your research questions, limitations and future study advice
- References - cited work - use appropriate referencing – Harvard notation
- Bibliography - sources used but not cited
- Appendices

Contents Page

- Consider setting up any Headers or Footers here
- Section the Report: Part I, Part II, Part III
- State what each part is about e.g. Part I – Overview of relevant Information Security Standards
- Use headings and sub-headings where applicable
- Include the Appendices e.g. Appendix I - Company Accounts, Appendix II - ……

Abstract

- Page Numbering starts here
- Executive Summary usually about one half or two thirds of a page
- What is it? It is a precis of the report
- When do I write it? When you have completed your report!
- Who reads it? It will be read by those who do not have time to read the full report

The Introduction

- Setting the research problem/ background – Why? What? Who? Where? When? How?
- A statement of purpose(s), objectives or aims
- Background information on the report topic
- Why is this report important etc.
- What "problem" are you trying to solve
- Report structure statement at the end of introduction – how are you going to structure the "solution"

Main Content

- Get the information across
- Critical account of the "truth"
- Presentation of facts
- Discussion and analysis
- Should expand on introduction and be foundation for conclusion
- The area where the majority of your references should be found
- Diagrams & Graphs should be used to summarise complicated information
- Remember to cite any data and make clear where tables and diagrams are made by you!
- Complicated data should be put in the appendices
- Develop a research map – Flow of your work

Writing Conclusions

- Conclusions referring to
  - research questions
  - research objectives (outputs)
  - research aims (outcomes)

- Recommendations
  - who are your findings aimed at and who do you want them to be used?
  - How are you suggesting to resolve the research problem?

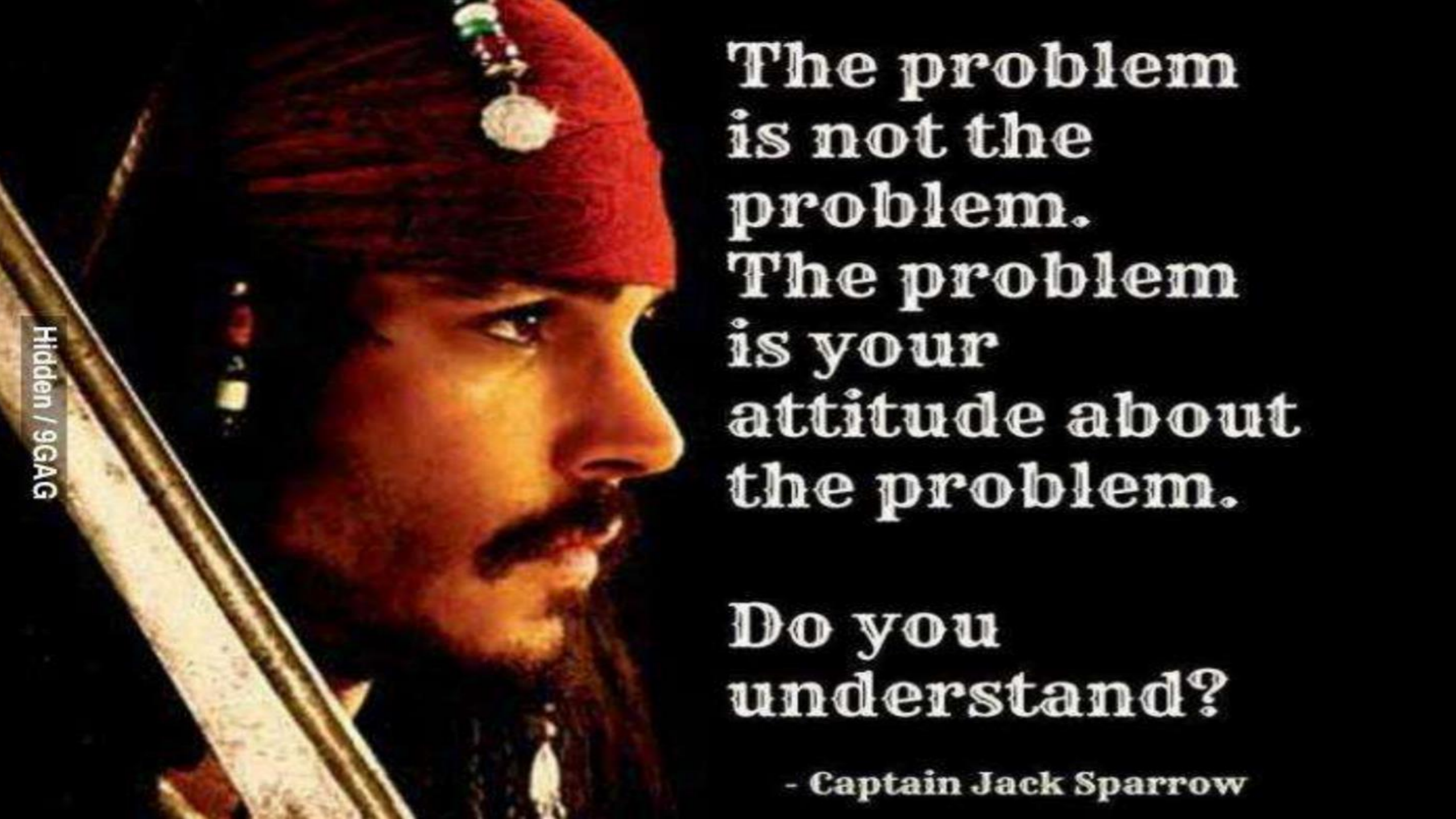
- Limitations of your study
- Suggestions for future work in the area
- Reflection on the research process adopted

Basic Writing Skills

- Top down:
  - Start with a draft structure and fill out the sections and paragraphs
- Bottom up:
  - Write and then re-format and re-structure to present a logical flow of your work
- DPCA:
  - Pre-write
  - Draft
  - Check
  - Submit your work

Writing Style

- Reports are written in third person form, that is, the use of “I” or “We” and their respective cases are not used
- Instead of writing “I found that ….” write “It was evident that ….” “The statistics revealed that ….”
- There are exceptions: – logbooks, personal reflections etc


The problem is not the problem. The problem is your attitude about the problem.
Do you understand?
- Captain Jack Sparrow
Hidden / 9GAG