Project Management Methodology or Approach. Explain the chosen project

management methodology and provide a WBS (PM methodology) that identifies

phases and key activities (including project handover). Include a rationale and

justification for why the choice matches the purpose or goal of the project. What

phases/tasks/deliverables does it involve? Why does this chosen approach suit this

particular project, team and client? Ensure that all material you use is appropriately

referenced using APA 7 (i.e. you should be referencing a resource that your team will

refer to during the project's lifecycle).

## Rational/Justification:

The choice of a hybrid approach has been carefully reviewed after considering all types of projects management methods along with the different subsects of Agile. Waterfall was a method evaluated for this project, but it had clear drawbacks due to its fixed structure which didn't allow for changes and adjustments requested by clients or supervisor and agile lacked the documentation process that this project requires.

The objective and goals of this project showcase evaluation on three different OS systems set up as software routers being tested against a range of packet sizes, due to the nature of the various variables, review and adjustments are predicated to occur which given the hybrid model allows us to undergo along with key documentation to document findings and avoid scope creep.

Provide a table of different methods and compare and contrast. The pragraph should be only an explanation of the reason for selecting the method

Project summery:

This project evaluates the IPv4 and IPv6 network performance of three Linux-based software routers using iPerf/D-ITG. Performance evaluation, encompassing throughput, delay, jitter, and packet loss, will be conducted across 12 packet sizes on a network comprised of four computers.

The project, estimated at 300-360 hours, acknowledges potential risks such as Linux networking experience and hardware limitations, and includes a cost analysis for mentor support and necessary equipment.   
Some of the risks and constraints to consider include lack of team experience with Linux networking, possible hardware failure, and potential budget restraints.   
The total project cost is budgeted at NZD$125,721.31, which covers the hardware, labour, and tools needed for the project.

Rational:

The transition to IPv6, while crucial for internet expansion and advanced features, introduces increased data overhead. This can create performance bottlenecks, particularly in resource-constrained software routers. To address this, we will conduct a controlled experiment measuring the performance differences between IPv4 and IPv6. Using TCP and UDP protocols across 12 packet sizes on four Linux systems configured as software routers. We will evaluate on 3 different Linux operating systems which include, Ubuntu, Fedora, and Kali. We will analyse throughput, delay, jitter, and packet loss. The resulting empirical data will provide valuable insights for network performance comparing IPv4 to IPv6.