Appendix A: Documentation

# A.1. Description of the artefact

This study proposes the development of a communication web application that can easily be viewed in an office by all employees to allow easy access to important communication regarding specific software development projects. Where the primary objective is to develop a web application for a South African software development company that allows for easy access to important communication relating to specific project.

The design of the artefact has to satisfy the requirements as set out in Chapter 4, the suggestion phase. Along with the requirements and specifications, the artefact also followed the human-computer interaction rules to provide the best user experience as discussed in Chapter 3 of this study.

# A.2. The life cycle followed and its different phases

With regards to Design Science Research this study used the Vaishnavi process model. The process model established the design as a coherent discipline (Mohammad Abooyee Ardakan, 2009) and aided to establish in what phase the project is at any given time.

Diagram

Description automatically generated

Figure 19: Vaishnavi Process Model (Vijay Vaishnavi, 2004)

The figure represents the process model by Vijay Vaishnavi (2004) an entails awareness of the problem, suggestion, development, evaluation, conclusion and will be discussed next.

1. Awareness of problem

Multiple sources can be used for an awareness of a research problem. This includes identifying problems in a reference discipline or a new development in the industry. Part of this phase is becoming aware of the main problem and considering criteria for evaluating the artefact when it is done.

This study proposes to develop an artifact that will allow project managers and project developers to have access to a way of communicating and to access important information during the day with ease. The criterion for a successful artefact is a web application that enhances communication.

1. Suggestion

This phase is where new functionality is envisioned. Non-repeatability has been criticized in this phase of the design science research method. A Tentative Design of a prototype forms part of the proposal if approved by the researcher. In all research methods, this creativity step has necessary analogs, as it creates curiosity to develop an artefact.

The artefact needs to be built according to what the end user expects, this phase of the study is there to define the requirements properly and do an analysis on what is intended for the artefact. In this phase it was established with the use of open coding, that the most common requirements and specifications were easy communication method, improve productivity, artefact should focus on communication between employees and about their project, create a relaxed environment, and the user experience comes first.

1. Development

If the Tentative Design is approved by the researcher further development and implementation take place in this phase. Implementation techniques will depend on the artefact that will be created. Formal proof may be needed to show the correctness of the design, for example constructing an algorithm.

1. Evaluation

By following the criteria set in the awareness of the problem phase, deviations of what was expected are noted and must be tentatively explained. The result in this phase can lead to a new design because the criteria are not met.

1. Conclusion

This phase is the end of the research cycle. The result of the research effort is typical, that of satisficing, where some deviations of the behavior of the artefact are revised.