
Community Projects: A Network Development Plan

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Abstract

At Christchurch Polytechnic Institute of Technology the Bachelor of Information and Communication Technology (BICT) degree has a 400 hour Capstone project that every student must complete. This is an industry based project that draws on the theory that the student has learnt over the three years of the degree. The School of Computing has for many years had strong liason with a number of Christchurch Secondary Schools. These schools from time to time are a source of industry based projects that are then assigned to suitably skilled degree students.

Keywords

Network, High School, Infrastructure, Development Plan

Introduction

This network development project for Rangiora High School was assigned to an extremely capable networking student and supervised by the author of this poster. The school had several ongoing and important requirements.

- To create accurate documentation of the existing network which had grown in a some what ad hoc manner.

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- Development network specifications for a new building about to be constructed
- Research requirements for an overall new network
- Develop a new network plan that was future proof and would work existing technologies until replacement time.

Methodology

A questionnaire was devised and distributed amongst key staff members to allow as much knowledge about the existing network and requirements to be gathered as possible. After researching industry standards and having discussions with the project supervisor regarding current documentation requirements the project was based around two main industry standards

- CISCO standards were used to document the existing and new network infrastructures
- Ministry of Education fibre optic cabling standards were used for fibre optic diagrams

Formal Project Management and Risk Management plans were implemented.

Results

Current and future network requirements were documented. In addition a cost benefit analysis was produced and existing major network weaknesses of missing or incorrect documentation, fragmented network expansion plans and multiple file servers were identified as the project progressed.

Conclusion

Capstone projects which have clients who are outside the normal business model are more prone to failure because of lack of expertise of the contact staff involved. This project suffered none of these weaknesses and provided the customer with a set of documentation that has allowed expansion to commence already. If it was not for the fact that this research was completely cost free the school would not currently be enjoying the benefits of this project.