

Computing networking

Technology



Cost And Benefit Analysis - Swindon Office Using the Star Topology for networking the company's computers, the Swindon office, which consists of 39 workstations, should have a network diagram as shown on the figure below (Figure 1). The network structure should have at least 2 switches interconnecting the different departments of the office. As shown in Figure 1, a 16-port switch connects Senior Management, Management, and Clerical divisions, maximizing all the available port of the equipment. A 24-port connects Distribution, Marketing, R&D and Production division workstations. Instead of using 2 16-port switches, it is better to use a single 24 port to maximize as much ports available. This will save extra cost and will save ports that will not be used. The 2 switches will then be connected to the central hub/switch, interconnecting the different offices of the company. Each workstation will have a 10/100 PCI LAN Card. The UTP CAT5 cable that will be used will have an RJ45 jacks connected on both ends of the cable. If there are 39 workstations, there are 39 UTP Cat 5 cables, and thus, there are 78 RJ45 jacks. The length of the cables will depend on the location of the workstations, but as per 'UTP Cat 5 cabling standard, the maximum length should be between 90 - 100 meters. [SCAB2005]

The detailed specifications for the network are as follows:

Networking Equipment

Number of Pieces

PCI LAN Card

39

RJ45 Jack

78

UTP CAT5 Cables

<https://assignbuster.com/computing-networking/>

39 cables with total 90 - 100 meters length

16-port Hub/Switch

1

24-port Hub/Switch

1

Figure 1. Swindon Office Network Diagram

Cost Analysis

Networking Equipment

Unit Price1

Quantity

Total Price

PCI Lan Card

\$22

39

\$858

16-Port Switch

\$40 -\$69

1

\$40 - \$69

24-Port Switch

\$78-\$130

1

\$78-\$130

RJ 45 Jack

1 Cent

78

\$7. 8

UTP CAT5Cable

3 Cent/meter

90 - 100 meters

\$27-\$30

Sub Total: \$1, 010. 8-\$1, 694. 6

Estimated structured cabling and system installation cost: \$300 - \$1000

Grand Total: \$1310. 8 - \$2694. 6

Benefits

As shown in the above specification, we can have the benefits of a networked office for as low as \$1200, depending on the equipment and labor cost. This is a very low investment considering the amount of time that will be save on each work process for each division, and the increase in office productivity that networked computers can offer.

Reliable and fast exchange of information in a company is very critical in the productivity of a company. Without the proper utilization of each available technology, a company will most likely to fail on its business goals and objectives. That is why building a network infrastructure in every company is a must to enable them to achieve their most critical corporate mission and vision.

References:

PC Express (2005) [Online]. [Accessed 1st September 2005]. Available from World Wide Web: [SCAB2005] Structured Cabling Basics (2005) [Online].

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