

## ABSTRACT

Nowadays, Internet and VPN network is seeing more popular use by users on the network. That is because they can serve the customer need in both the private network and more secure data transmission on the network. There are many types of VPN network which the user can choose that is the most appropriate type that is compatible with their needs.

Anyway, VPN network has some limitations of usage. The new solution is proposed to reduce the limitations of the network. MPLS technology is proposed for use on VPN network. When we apply MPLS Technology to VPN Network, it can improve routing distribution and quality of services on the network. But a limitation of VPN network is about dealing with billing system. The current billing system is based on the fixed-rate cost of usage; which is monthly fee or pre-paid billing for a dial-up account user. So the new billing system is proposed for reducing the limitation in billing. New billing system is based on customer usage. Customer who has high usage will pay more than customer who has low usage, while customer is paying the same monthly fee in current billing system even if they have low usage.

The computerized system is developing to help in classifying and analyzing customer usage on the network. Some calculation is shown to prove that customer can gain the different benefit from the current billing system. It's unfair for a customer who has low network usage that he pays at the same rate as a customer who has high network usage. Fairness is given by the proposed system because their payment is based on their usage. The proposed system is appropriate for customers who have low network usage

but it's not appropriate with customer who has high network usage, because their expense is increasing. Comparison between the current billing system in VPN network and new billing system that is proposed on MPLS VPN network is done. The difference in many aspects of the current billing and proposed system is discussed.

Finally we conclude that this billing system is appropriate for a customer who has low network usage than a customer who has high network usage. We can gain more benefits from this system such as fairness, full function of network equipment usage and can adapt to other IP networks, etc. Finally, recommendation for further research is shown in the last chapter.

