Impact on ROI for Corporate Decision Making with SD-WAN:

An Exploratory Case Study

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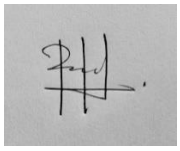

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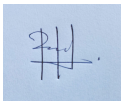

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ABSTRACT

Advancements in networking appear to be in the forefront of the technology revolution of the modern world. Software Defined - Wide Area Network (SD-WAN) technology is one of such advancements which has been promoted by networking solution vendors to replace the widely used but increasingly dated Multi-Protocol Label Switching (MPLS) technology. Before the SD-WAN's appearance, businesses used MPLS, a protocol with reliable and steady network traffic between two or more locations. SD-WAN has been enriched with various features developed to compete with MPLS as well as with competitor products in the market. SD-WAN challenges the consequences of MPLS in terms of network expenditure, capacity, agility, and visibility. The technology promotes dynamic path selection over multiple data services (MPLS, broadband and wireless Communication) and offers direct cloud access possibilities. On-demand provisioning and a pay-as-you-grow model offer flexibility for enterprises where they can simply update or upgrade by accessing new links without altering their infrastructure or network.

This research has been carried out with the intention of investigating the impact on the return on investment (ROI) from the adoption of SD-WAN by large scale Sri Lankan organizations. In this research, it has been attempted to identify the key factors affecting the decision-making process of migration from MPLS to SD-WAN. The research has been inferred on a preliminary survey and a case study conducted within the Sri Lankan context. Throughout the case study, discussion was caried out on whether SD-WAN has the capability to significantly reduce MPLS expenditure by minimizing the hassle of managing infrastructure and connectivity. Further by using software-based management, enterprises can force automation to phase out expensive routing hardware, enhance IT productivity and decrease network operating expense.

A large-scale Sri Lankan organization with the potential to adopt SD-WAN, which has already started evaluating SD-WAN to explore the factors affecting the investment decision, has been subjected to the case study. This organization being one of the leading and scaled out organizations in Sri Lanka, it is believed that the findings and conclusion of the case study can be referenced by similar scale organizations during their evaluation on the adoption of SD-WAN technology.

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ABBREVIATIONS

ACL	-	Access Control Lists
BGP	-	Border Gateway Protocol
CIO	-	Chief Information Officer
CTO	-	Chief Technology Officer
CEO	-	Chief Executive Officer
CE	-	Customer End
CAPEX	-	Capital Expenditure
DMVPN	-	Dynamic Multipoint Virtual Private Network
DSL	-	Digital Subscriber Line
FD	-	Fixed Deposit
FIB	-	Forwarding Information Base
IT	-	Information Technology
IP	-	Internet Protocol
IOPS	-	Input Output Per Second
LIB	-	Label Information Base
LSP	-	Label Switching Path
LFIB	-	Label Forwarding Information Base
LAN	-	Local Area Network
LTE	-	Long-term Evolution
MAN	-	Metropolitan Area Network
MPLS	-	Multi Protocol Label Switching
NaaS	-	Network as a Service
OPEX	-	Operational Expenditure
PoC	-	Proof of Concept
PPF	-	Public Provident Fund
PE	-	Perimeter End
QoS	-	Quality of Service
RIB	-	Routing Information Base
ROI	-	Return of Investment
SaaS	-	Software as a Service
SDN	-	Software Define Network
SD-WAN	-	Software Define Wide Area Network
TW	-	Traffic Engineering
VoIP	-	Voice Over IP
VPN	-	Virtual Private Network
VRF	-	Virtual Route Forwarding
VLAN	-	Virtual Local Area Network
WAN	-	Wide Area Networking