MCS FINAL THESIS REPORT

WIRELESS LOCAL LOOP (WLL): AN ALTERNATIVE SOLUTION IN ACCESS NETWORKS [WLL TECHNOLOGIES]

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In partial fulfillment of the degree of MCS.

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CERTIFICATE

We accept the material contained in this report as confirming to the required standard for the partial fulfillment of degree of MCS.

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ABSTARCT

The Wireless Local Loop (WLL) is an economic alternative to the traditional copper wire access cable. It replaces the last few hundred meters of the access network cable that runs to the end user's home with a radio system. The WLL provides an effective means to deploy telephone service, In areas where geographical limitations make conventional cable installation difficult like rural, mountain or port areas and In suburban residential districts with fast-growing service demands.

In comparison to the alternative of deploying copper lines, WLL technology can generically offer a number of key advantages: faster deployment, sooner realization of revenues, reduced time to payback, lower construction, lower network maintenance, management, and operating costs, greater flexibility to meet uncertain levels of penetration and rates of growth.

This thesis presents about the generic features, economic analysis, future markets and regulatory aspects of WLL. It reviews different technologies for WLL systems and applications for urban and rural environment. The thesis will provide with up-to-date information on the WLL systems and markets worldwide and focus on Pakistan for matters regarding WLL.

Due to the mature of WLL technologies, the communication requirements in Pakistan can adopt the WLL systems, to quickly improve its teledensity. In Pakistan, WLL systems may be deployed to provide only basic telephone service. From scope and market potential, CDMA WLL systems seem to be feasible in rural communication sector. PTCL is planning to install 160,000 WLL lines in different areas of Pakistan, through a project, worth US$ 225 million in the next 2 years. The areas include cities and rural areas of 48 districts, and a total population of 103 million, 67.4 million in rural and 35.77 million in urban localities.

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