


CHAPTER 7

Conclusion and Recommendation

7.1 Conclusion

A highly accessible, efficient telecommunication network is an essential infrastructure for a growing economy. Advanced technologies are also important for economic growth as they provide new opportunities, reduce the cost of production and enhance the productivity and efficiency of services. Telecommunication facilities help people, businessmen and also educational purposes, in different ways. Specially, businessmen / farmers in rural areas could get information / assistance via telephone such as negotiating prices for their products and arranging transport for pickup & delivery of goods/products etc. Also, more information could be obtained via internet to do electronic transactions rather than visiting each and every place individually.

 University of Moratuwa, Sri Lanka.
Electronic Thesis & Dissertations
www.lib.mrt.ac.lk

In many countries, competition is increasingly perceived as viable mechanisms for realizing technical innovation, reducing costs, increasing affordability and providing greater variety of services. Sri Lanka too needs to practice the above and it has to be initiated by TRC.

Before CDMA was introduced to the rural areas, people there did not have a choice of service providers and they had to specifically depend on SLT. Basically, every rural district acquired telephone services from SLT. Now, it has changed and people have a choice in selecting a telecom service provider considering the price, service requirements and also the special features such as SMS, CLI, Internet and Fax that have been introduced with CDMA.

Encourage development of telecommunication services in rural areas by extending affordable prices and suitable tariff structures has to be made mandatory, for all fixed services providers.

SLT does not enjoy BOI facilities but being the market leader and having a large customer base and high return on investment, SLT has a duty towards rural coverage since Government has an ownership of 49.2% shares. TRC has already requested SLT to reduce new connection charges throughout the country but the request was not successful. Since other operators' new connection charges are low compared to SLT, TRC can further demand SLT to reduce new connection charges at least for rural area subscribers.

Growth Analysis

Growth analysis indicates a drastical increase in giving new connections after the second quarter of 2005. In other words, this growth can mainly be attributed to the introduction of CDMA technology in mid 2005. Improvement in Teledensity from 2004 to 2006 indicates that telecommunication industry in Sri Lanka is making a progress. It was apparent that usage of data is at minimum level. In other words CDMA phones have mainly used for calling purposes.



University of Moratuwa, Sri Lanka
Electronic Theses & Dissertations
www.lib.mrt.ac.lk

Rural area coverage was significantly low prior to the introduction of CDMA. As CDMA created a very competitive market environment, all three operators were focusing on expanding the coverage. Due to this healthy competition except for few rural areas, majority of rural areas have been covered.

Private operators with BOI facility were able to reduce the new connection charges and they were also able to introduce pre-paid system and credit facility to attract more customers. Due to the flexibility of these options, people with low income were able to purchase CDMA phones that resulted in expansion of customer base of private operators. However, SLT could not reduce the connection charges due to various reasons.

Usage of telecommunication services in rural areas could be improved to a certain extent by introducing affordable prices and suitable tariff structure. If government could make rural communication as mandatory for all fixed services providers that will further improve rural telecommunication.

7.2 Accomplishment of Objectives

Objective 1: Identify the Coverage of un-served and underserved areas

Five rural districts were selected and checked the coverage of each district separately before and after introduction of CDMA with regard to fixed operators. Further, to check the validity of statistics provided by operators, the number of base stations constructed was checked with the statistics available with TRC, district wise.



University of Moratuwa, Sri Lanka.
Electronic Theses & Dissertations
www.lib.mrt.ac.lk

Objective 2: Assessment of Data usage of rural areas due to introduction of CDMA

Assessed the data usage of three year time period, to see the annual growth in the country. Further, managed to collect district-wise data of two operators for the purpose of analysis. Since the operators were not willing to provide data usage statistics, district-wise as well as quarterly basis, the gathering of the data was extremely difficult.

Objective 3: Identify the barriers / problems encountered at present, for faster growth of CDMA connectivity in rural areas.

To identify the barriers, a process model was defined with regard to rural connectivity and assessed the barriers in such process that will delay the faster growth. Apart from that, problems related to CDMA technology were also discussed.

Objective 4: Recommendation / suggestions to overcome the barriers /problems in order to achieve faster growth in rural areas.

Barriers identified during the research study have been discussed in detail in Chapter 5 and possible solutions are given in Chapter 6. The duties of the government, TRC and operators towards the development of rural telecommunication were identified. Further, strategies used for the faster growth in rural telecommunications of other countries were analyzed and applicability of such successful strategies were discussed in Sri Lankan context.

7.3 Achievements of CDMA technology

With the introduction of CDMA technology in the country, most of potential customers who were in the waiting list for decades were able to own a CDMA phone within a very short period of time. With the advanced technology in CDMA, once the phone is purchased, there is no necessity to wait until the connection is given, it is just a matter of connecting the phone to the power supply and from there onwards phone could be used. Due to the high market competition, the customers who purchased CDMA phones from private operators were able to enjoy new connections at a comparatively low price.

More than 600,000 new connections were granted within a 12 months period. However, there had been a delay in granting licenses for the operators for two years due to various reasons discussed in previous chapters of this study. Further, it was identified that so many barriers in relation to approval process too exists. If the relevant authorities could have overcome such delays / barriers within a considerable time, then, by now CDMA technology would have widely spread throughout the country.

Due to the introduction of CDMA, all three operators have been able to increase their revenue significantly and thereby make recorded profits. Success of private operators was such that, the total number of connections given from the inception up to 9 years had exceeded within one year after introducing CDMA phones. Therefore, CDMA had made a greater impact to the operators as well.

As per the positive impacts discussed above in respect of customers, operators, TRC and the Government one could conclude that introduction of CDMA technology in the country is fairly successful. Introduction of CDMA technology in Sri Lanka was a good decision made by TRC.

7.4 Further Study

Operators have paid money to TRC as well as to the government by way of licenses and taxes. A portion of the funds so collected had been used in developing the telecommunication facilities in rural areas. SLT has paid rupees 511 million during the first quarter of 2006, by way of tax on international incoming calls. The dominant fixed-line operator has to share USD 0.038 per international incoming traffic minute with the government, which goes into a fund to subsidize rural connectivity. A further study could be carried out to assess the efficient usage of collected funds from the operators for the development of rural telecommunication in throughout the country.

SCDMA (Synchronous Code Division Multiple Access)

This is a highly efficient technology, costing only about one tenth of the cost of a CDMA or GSM network. Further, fewer base stations are required to cover a large geographical area. Therefore it is suggested that TRC to carry out a feasibility study to assess the applicability of SCDMA technology in Sri Lanka, in order to provide highly advanced technology at a fairly low price.

REFERENCES

Advantages of CDMA2000 [Online], Available: <http://www.cdg.org/> [Accessed 20th June 2006]

CDMA Subscribers Statistics. CDMA Development Group [Online], Available: http://www.cdg.org/worldwide/cdma_world_subscriber.asp [Accessed 20th June 2006]


CDMA Technology. CDMA Development Group [Online], Available: <http://www.cdg.org/technology/index.asp> [Accessed 20th June 2006]

CDMA 2000 for wireless in local loop networks. Qualcomm, December 2004

Economic Infrastructure Policies: Institutional Set up and Performance. Central Bank annual report, 2005

Final Report :Specialised policy advice for Nepal. Teleplanning A. Wirzenius Ltd, November 2003,

Jain, Rekha & Raghuram, G. Study on Accelerated Provisions of Rural Telecommunication Services. India , April 2005.

 University of Moratuwa, Sri Lanka.
Late start for Sri Lanka Telecom's CDMA network roll out Lanka Business Online 23rd August 2005 [Online], Available: <http://www.lbo.lk/fullstory.php?newsID=523978348> [Accessed 5th September 2006]

Marketing of CDMA phones. [Online], Available: <http://www.lankanewspapers.com/news/2005/8/3115.html> [Accessed 12th July 2006]

Ranasinghe, Sudatta and Fonseka, Mangala. Research Methods in Management. Colombo: Postgraduate Institute of Management University of Sri Jayawardenepura, 1998

Recommendation on Growth of Telecom service in rural India. Telecom Regulatory Authority of India, 3rd October 2005.

Recommendation on Issue pertaining to Next Generation Network. Telecom Regulatory Authority of India, 20th March 2006.

Samarajiva, Rohan . Institutional design for rural Internet connectivity in low Tele-Density countries and region. Regulatory, June 2000

Sekaran, Uma. Research Methods For Business A Skill Building Approach. India : John Wiley & Sons, Inc, 2006

Sri Lanka Telecom to roll out Rs 200 million high end data service next month. Lanka Business Online 20th June 2006 [Online], Available:
<http://www.lbo.lk/fullstory.php?newsID=222313566> [Accessed 25th September 2006]

Sri Lanka Telecom net profit up by 42% on higher CDMA sales. Lanka Business Online 15th May 2006 [Online], Available:<http://www.lbo.lk/fullstory.php?newsID=1297404577>
[Accessed 10th November 2006]

The Indian Telecommunication Experience: Its relevance for the world. A. Shosteck Group, September, 2004

Wattegama, Chanuka. Bridge the Analogue and Digital divides : The unique experience of Sri Lanka, 2005 [Online], Available:
<http://www.i4donline.net/events/2ndi4d/chanuka1.htm> [Accessed 30th September 2006]



Electronic Theses & Dissertations
www.lib.mrt.ac.lk

ANNEX : Data Collection

1 Quarter Wise New Connections

Under this, it was basically analysed the subscriber base of fixed line operators for new connections for the selected 5 districts Anuradhapura, Polonnaruwa, Hambantota, Moneragala and Kurunegala. Further, same data was gathered for the Colombo District for comparison purposes.

Quarterly data was collected from SLT, Suntel and Lanka Bell to identify the “new connections provided before CDMA” for the period from 1st quarter of 2004 to 2nd quarter of 2005, “new CDMA connections given” during the period from 3rd quarter of 2005 to 3rd quarter of 2006 and “connections other than CDMA” for the period from 3rd quarter of 2005 to 3rd quarter of 2006.

2 Quarter Wise Data Communication (Internet and Email)

Data was gathered from 1st quarter of 2004 to 3rd quarter of 2006 about the number of subscribers for usage of internet and emails from the 3 operators for the country.



University of Moratuwa, Sri Lanka
Electronic Theses & Dissertations
www.lib.mrt.ac.lk

3 Area Wise Coverage and No. of Subscribers Before and After CDMA

Assessed the coverage of divisional secretariat in the 5 selected districts before and after CDMA. Anuradhapura, Polonnaruwa, Hambantota, Moneragala and Kurunegala districts had 22, 7, 11, 11 and 30 divisional secretariats respectively.

