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ECONOMICS OF NEPALESE TELECOM INDUSTRY

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ABSTRACT

This paper aims to investigate the economics of Nepalese telecom industry with special reference to Nepal Telecom. The study is undertaken with the objectives to analyze Nepal Telecom as the market leader, drive an aggressive pricing model and to explore reliable telecommunication service in Nepal and with the lowest cost provider. Telecommunication at present, is the transmission of information, voice or data per time and space through electronic device. Efficiency gains and cheaper phone calls are possible from telecommunications from aggressive pricing and effective customer care. The telecommunications revolution has arrived to the 21st century wireless communication with fiber to the home (FTTH), 4G and 5G. The overall telecommunication market is huge. Majority of market share is needed to become a market leader. Telecom management needs to formulate effective plan to achieve the target within the period of five years. Fiber to the home service, which includes three in one as voice, internet and IPTV, has been expanded within 62 districts. Nepal Telecom has been able to expand 4G network in all 77 districts of the country with the wide coverage of 654 local bodies and 85% of the total population. FTTH is an important project as it supports the fifth generation mobile internet (5G) which is coming to Nepal in the near future.

Keywords: telecommunication - infrastructure - fiber to the home (FTTH) - ICT - internet 4G and 5G - revenue

INTRODUCTION

Communication sector helps to promote commercial activities, acceleration in E-commerce, industrial development, government revenue, tourism development and educational development and GDP of the country. The business activities in the domestic economy along with foreign countries can be accelerated and promoted with the help of electronic means of communication. It facilitates throughout the planning

process. Communication is an effective mechanism for coordination and decision-making at different levels. All these components help to promote and maintain economic development of the country.

The Nepalese telecommunications sector has emerged as a dynamic key sector for the economic development of our country. Telecommunication sector is significant to the development of multiple aspects of economic sectors as education, agriculture, banking, commerce, healthcare, environmental management and energy. Information technology is a driver of socio-economic development and is a vital issue for developing countries like Nepal (Pradhan 2002). Declining hardware and software cost, increasing benefits and intense competition have made telecommunications companies to diversify their offers and propose varieties of services at the public level (Hadjiantonis *et al.* 2012). Information technology includes transmission of data, voice and video through electronic media.

In Nepal, telecommunication facilities were started in 1970 BS as a luxury of the Rana Rulers. Telecommunication Department was established in 2016 BS with the aim of expansion and promotion of telecom services in Nepal, as provisioned by first five years periodic plan 2013 BS. The Telecommunication Department was changed to Telecommunication Board in the year 2026 BS after the formulation of the third five year plan (2023-2028 BS). Under the Communication Corporation Act, 2028 BS, Nepal Telecommunication Corporation (NTC) was born in 2032 BS as fully state owned corporation for providing telecommunication services in Nepal (Nepal Telecom, 2015). Nepal Doorsanchar Company Limited was registered in 2061 under the Company Act, 2053 with its brand name as "Nepal Telecom". At present, there are six telecom service providers in operation in Nepal. Out of them five are cellular mobile service provider (NTA, 2021).

Nepal Telecom is the only company providing the PSTN service in Nepal. The company is providing these services at very affordable price so that every people can get access over telecommunication service. Besides this, Nepal Telecom also works for the welfare of the nation and its people. The company has taken the initiative of providing all types of telecommunication services depending upon the geography and the scope of the services in different parts of the nation. Not only this, targeting the rural and hill areas of the nation , Nepal Telecom is working as an active company under the supervision of government and assuming all of its

necessary responsibilities and proper strategies, for the development of telecommunication services all over Nepal. Hence, the company is working as the reliable service oriented telecommunication in Nepal with the motive to provide services to its customer (Nepal Telecom 2015).

The Constitution of Nepal guarantees right to information and communication as fundamental rights to its citizens. Nepal Telecom, as a government owned company, is responsible and obliged to make the communication and information sector more competitive, dignified, professional, capable, and strong as this sector serves as a driver and catalyst of economic development for the country. Sustainable Development Goal 4 has outlined quality education, for which information and communication technology plays pivotal role to cope with the adverse situation caused by Covid-19 pandemic. Access to internet, information and communication has become inevitable to facilitate educational system in the present lockdown situation. Nepal Doorsanchar Company, established with its brand name as Nepal Telecom or NTC. It is state owned telecom service provider in Nepal having 91.49% of government share while general public own 8.48% share, Nagarik Lagani Kosh owns only 0.03% share. The company exercised monopoly and power until 2059 BS. It was transformed to public limited company on Magh 22, 2060 BS with its head office at Bhadrakali Plaza, Kathmandu having 184 branches, exchanges and other offices throughout Nepal.

Nepal Telecom is dedicated towards quality service of this digital era with its full endeavours to satisfy demand for customer. Present day Nepal Telecom has come up with primitive practices to the present day digitized technology and is well established as progressive, competitive, dynamic and highest revenue generating company in Nepal (Nepal Telecom, 2015). At present, there are 2 lakh 20 thousand FTTH customer. It started 4G service from Kathmandu and Pokhara for the first time in 2073 BS and has successfully expanded its 4G network coverage to all districts with major cities and areas of the country. Infrastructure for FTTH is an important project as it supports the fifth generation mobile internet (5G) which is coming to Nepal in the near future. Three services as voice, internet and TV can be provided using fiber to the home (FTTH) technology and replaces the old technology that runs on copper wires.

This study aims to explore and analyse economics of Nepal Telecom industry in general and to analyse Nepal Telecom as the market

leader and drive an aggressive pricing model as well as to explore reliable telecommunication service in Nepal and become the lowest cost provider.

METHODS AND MATERIALS

Nepal Telecom is providing basic telephone, CDMA, cellular and internet services. It has covered all 77 districts with its various services. Partial ownership by public sector itself has made this company a big player in the industry. But competitive market today has made it a second choice. So, the company should look after the enormous opportunities to grab and gain its old first position and make better plans for future to compete directly with its competitors (Bhattarai 2010).

Among public enterprises of Nepal, Nepal Telecom stands at the top in terms of tax payer and revenue generation (Gautam & Sharma 2020). It had generated the revenue of 17480 million in FY 2074/75 and 7450 million in FY 2077/78. Expansion of services is responsible for decreasing trend of revenue.

Despite various challenges, Networked Readiness Index and Information Communication Technology Development Index have proved that Nepal has made remarkable achievement on ICT infrastructure development (Shrestha 2017).

Nepal Telecom has expanded 4G network coverage successfully to major areas and cities of 77 districts of Nepal. The company started 4G service from Kathmandu and Pokhara for the first time in 2073 BS, Telecom's 4G service is being provided in 1,800 MHz and 800 MHz (NTA 2077).

Nepal Telecom has increased its investment for aggressive expansion of fiber to the home (FTTH) based internet service across the country amid tough competition in internet expansion. Infrastructure for FTTH is an important project as it supports the fifth generation mobile internet (5G) which is coming to Nepal in the near future. Fiber to the home (FTTH) technology, replaces the old technology that runs on copper wires. All three services as voice, internet and TV services can be provided using this technology (MoCIT 2019).

Information and communication technology is a key issue for the development of the countries. It plays significant role and provides tools of socio-economic development of all economic and social sectors

as agriculture, education, commerce, banking, health, environment, management, energy, trade and tourism (Pradhan 2002).

Telecommunication industry in India is one of the fastest growing sector and has stood as the world's second largest network after China. Indian telecom market can be split in three segments as: wireless, wireline and internet services. Airtel, Jio and BSNL have remained as the major market players at present (Japee 2021).

In India, customers have alternatives to sweep from one player to the other, if their expectations are not met. The providers have to deliver the highest possible levels of service quality and performance to satisfy the demand for customers. The success of service providers lies in positive customer experiences with rich, value-added services and comprehensive service quality management which are also the most important determinants of consumer price (Sahai 2020).

Telecommunications network in Pakistan is inadequate, it is due to low investment, technological backwardness and institutional constraints. The density of telephone there is lowest in Asia. Pakistan government needs to overcome the existing political and economic instability to attract foreign investment, generate revenue and to create job opportunities (Imtiaz & Khan 2014).

Bangladesh, Sri Lanka and Pakistan have adopted liberalization policy to reform and development of telecommunications. Each countries has decided to franchise specialized telecom services as cellular mobile phones and data as well. Liberalization policy reforms helped to improve access to private capital market (Looney 1998).

Growth in telecommunications results to economic growth through the growth in service sector, which ultimately leads to high demand for telecom services. Effective regulation, balanced expansion of network, quality of service, cost effectiveness are keys to promote sustainable growth of telecommunications sector which ultimately enhances the growth of other sectors as well. So, formulation of effective policy to regulate the sector can maximize the benefits of telecommunications sector in Sri Lanka (Thamarpani, 2013). Government of China has realized the importance of liberalization and moving beyond the central state monopoly control for the development of telecommunications (Harwit 1998).

Chinese telecommunications involves different interest groups and no single factor is responsible for the development of the telecom industry. Telecom market competition depends on operators, their relative strength and many other forces which include state considerations, foreign influence, domestic politics and technological advancement. The ever growing market demand may not be manifested as the impact of market forces rather competitive bahaviour and strategies of the operators may be detrimental (Loo 2004).

Conceptual framework

SWOT (strengths, weaknesses, opportunities and threats) analysis is a powerful tool for strategic management and evaluation of any organization based on analyzing internal and external factors underlying within the organization. Internal factors generally comprise of strength and weaknesses, while, opportunities and threats are external factors. Organisation should analyse SWOT factors for strategic development. Nepal Telecom can enhance its company strengths and opportunities identifying weaknesses and threats to adopt and achieve desirable goals.

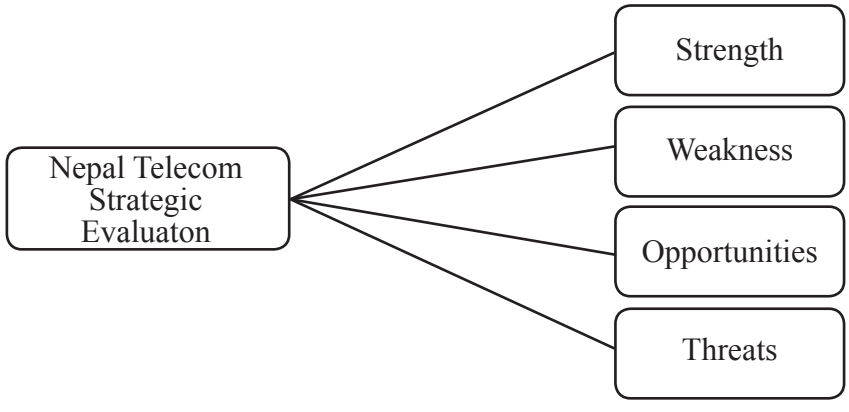

Figure 1: SWOT analysis

SWOT (strengths, weaknesses, opportunities and threats) analysis is a mode of analysis. In this method, internal strength and weaknesses and external opportunities and threats are identified and analyzed to help providing current and future operation guideline and development of long term strategic goal.

The study follows mixed method design. It is based on primary and secondary data sources. For quantative analysis secondary data sources were used. The secondary data were obtained from different volumes published in annual report of Nepal Telecom and verified by officials. Primary data were collected for qualitative analysis. The study method follows the qualitative research paradigm as done by Denzin & Lincoln in 2005 and descriptive research design as applied by Wiersma & Jurs in 2009. To verify information, the purposive sampling method was applied to select ten samples from among higher management officials having at least twenty years of working experience in Nepal Telecom, for interviews to gather lived experiences in the diversity management practices for primary data (Miles *et al.* 2013). Qualitative results helped to establish, justify and interpret quantitative results.

This SWOT analysis provides a framework to evaluate Nepal Telecom's current status, competitive position and future strategic plan. It analyses internal and external influencing factors and potentialities of telecom industry in Nepal. This analysis is more realistic, fact-based, data based to diagnose the strength and weaknesses underlying Nepal Telecom and provides a strong guideline to lead telecom sector.

RESULTS AND DISCUSSION

Status of Telecommunications in Nepal

Nepal Telecommunications Authority (NTA) has presented the fact that, as of July 2021, internet service has reached to 90.56% of the total population in Nepal with digital literacy rate of 40%. Telecom industries in Nepal have prioritized to increase access to internet and communication services as per the development and achievement of global standard. This is equally important for the development of overall dimensions of socio-economic sectors. Development of communication and information technology is inevitable to ensure good governance and to enhance knowledge, skill level and capacity building for the overall development of a nation.

Nepal Telecom as the market leader provides varieties of services as voice, data, videos and internet application via fixed and mobile network to its customers/consumers. Optical fiber cable is a backbone for all telecommunication services currently provided by Nepal Telecom. With the expansion of high capacity optical fiber network and other technologies have lowered down the cost and met the increasing demand of bandwidth.

Optical fiber is the future proof technology in telecommunication development. Nepal Telecom is a well-established brand and one of the leading company in telecommunication service providers in Nepal, and is able to provide all types of telephony services including GSM, CDMA, PSTN, WLL, VSAT, Cellular mobile and FTTH service.

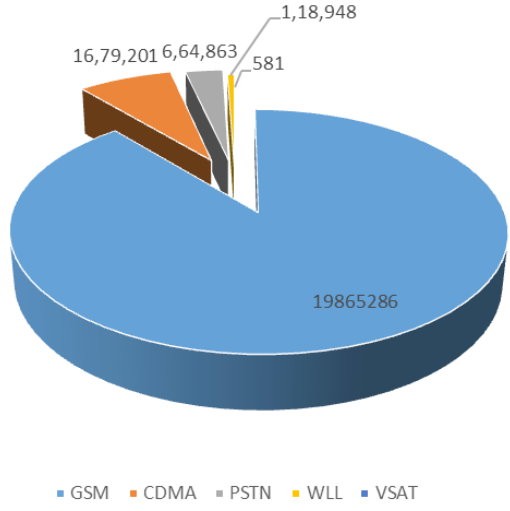

Figure 2: Services of Nepal Telecom and users
Source: NTA MIS Report, 2021.

Nepal Telecom offers various services and benefits as fixed telecommunication or traditional landline communication service PSTN, fixed broadband facility, data service, to cellular mobile and fiber to the home. Nepal Telecom has been providing three-in-one service (telephone, internet and net TV) through the expansion of FTTH network in Nepal.

The vision of Nepal Telecom is to be the unique choice for all clients by applying worldwide standards and achieving win-win relation to all stakeholders. It is dedicated to satisfy every customer by providing extensive, uninterrupted and reliable services throughout Nepal. One of Nepal Telecom priorities is its human resources as it is the most valuable asset to keep reliable and lucrative. Nepal Telecom believes that its differential work is model for its clients and competitors.

Mission statement of Nepal Telecom is: To become a company that understands expectations and needs of the customer, thereby offering them the best solutions in reasonable tariff and value recommendations from the

proper channel. It aims to be a leading company that provides a wide array of professional services in the field of telecommunications. A company that is valued by its customers, shareholders, employees, and the community in which it exists.

Nepal Telecom has risen as one of the top most telecommunication of Nepal. This is the only company of Nepal which is able to reach all over the nation from urban to rural. Telecommunication expanded its services even to non-viable remote areas of Nepal. Beginning from the landline service in the past, the company is now providing different types of telecommunication services in Nepal such as 4G/ LTE service in all 77 districts, covering more than 710 local levels. Fiber to the Home (FTTH) service which includes three in one as voice, internet and IPTV, expanded within 62 districts.

Financial and business status

Nepal Telecom (NTC) has generated *revenue* of 17480 million in FY 074/75, 10210 million in FY 075/76, 9750 million in FY 076/77 and 7450 million in FY 077/78 with a strong financial profile. Financial status of Nepal Telecom shows that the revenue has been decreasing per year. The senior employee viewed that revenue per year has been decreasing due to expansion of different modern services as 4G, 5G and FTTH Networking.

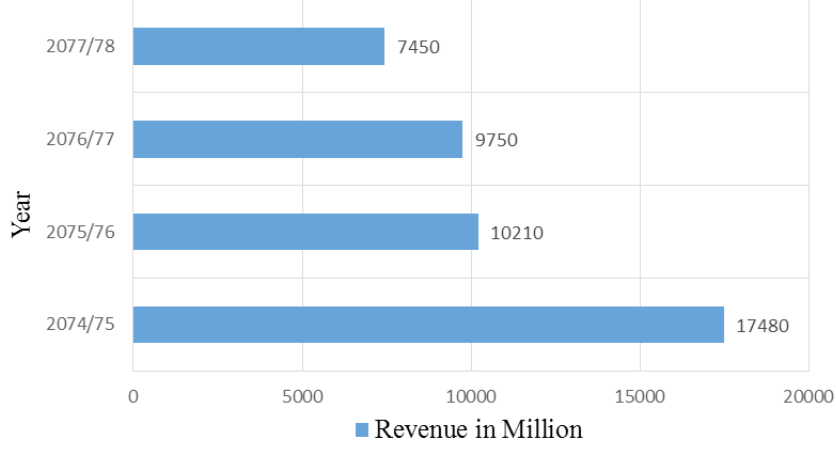

Figure 3: Revenue generated by Nepal Telecom in different fiscal years

Source: NTA MIS Report (2019-2022).

Economic indicators of Nepal Telecom

Macroeconomic indicator and measurement tools are used in analysis to understand current financial status and future economic prospects and opportunities of Nepal Telecom. All businesses are there to make **profit**. However, whether they thrive, or cease depends on external circumstances as much as internal. Widely used economic indicators of Nepal Telecom are as follows:

1. The Paid up capital of Nepal Telecom is15 Arab, Paid up value is100**.**
2. Reserve is more than 79 Arab compared to previous reserve around 78 Arab
3. EPS is 40. 47 as of Fiscal Year 077/ 078, PE Ratio 31.1 times (Relatively high due to expansion)
4. Book value per share is 631.04 and Price to Book Value Ratio 1.98
5. Return on equity (RoE) is 6.41%.
6. Return on assets (RoA) is 4%.
7. Liquidity Ratio 2.00 short term liability

Infrastructure development for the expansion of services

Development of FTTH Network supports the infrastructure for 5G. To develop the network by coordinating with the Road Division becomes sustainable for long distance trunk network for Nepal Telecom. With the concept of Smart City, make the fiber network underground by coordinating with different agencies of the government.

1. Expansion of Services with new technology: To increase 2 Lakh FTTH customer to 8 Lakh within 4 Years.
2. Quality Enhancement and to make copper less (All Fiber Network) network within three years.
3. To expand mobile 4G Network coverage.
4. NTC should test 5G using different bands under trial operation, once the piloting is successful NTC will start to begin its 5G project.
5. To increase revenue from 42 Arab to 70 Arab by leasing the company owned infrastructures as land, building, shelter, tower, power, and fiber network.
6. Service Delivery: Uninterrupted quality service delivery (365*7*24hrs) with timely and effective maintenance.
7. Customer Care: Assurance of prompt, responsive, quality customer care services.

Human resource management

Research and development (R&D) Analysis: Nepal Telecom is independent in terms of human and financial resources. Research and development activities are becoming more and more important for the development of Nepal Telecom. R&D determine the competitive position of telecommunication and develop technological competence under increasing national and international competition.

SWOT analysis of Nepal Telecom

Strengths

1. Nepal Telecom is the senior most, popular and strongest of all telecommunication service providers in Nepal.
2. Nepal Telecom has successfully jumped from 3G, 4G to 5G. This has helped to enhance the company standard.
3. Among various services of Nepal Telecom, cellular mobile services have become the top primary choice of the customer to communicate due to mobility and accessibility.
4. Cellular mobile phones have become quite accessible and affordable for average Nepalese citizen.
5. Nepal Telecom is established as well-known brand name in the country with affordable cost, effective management, creative digital marketing with excellent policy in service distribution and committed as well as high skilled employees.
6. Human capital: Nepal Telecom has its own human resource development policy to produce and recruit potential and competitive human capital as managerial excellence, high level technical manpower, sales and marketing exports.

Weaknesses

1. Mobile network of Nepal Telecom is still not effective in remote regions of Nepal.
2. Weak network coverage and accessibility and signal strength are major issues in remote as well as high traffic density regions of Nepal.
3. Internet service cost is not justified with respect to the quality of service.
4. Lack of adequate research and development programs for overall institutional development.
5. Inadequate motivation programs to the employee.

Challenges

Nepal Government should prioritize communication and information technology based industry to deliver services throughout the nation especially to scattered settlements and facilitate telecom infrastructure sharing, invest in research and development.

Major opportunities are: constitutional guarantee to right to communication and information, provision of digital Nepal framework, use of ICT in education to cope with the adverse situation created by Covid-19 pandemic, attraction of private investment in ICT, growing demand for ICT in service delivery, attraction among youths to work in ICT sector, additional employment opportunities, information communication technology as a driver of rapid economic development, increasing number of mobile users, gradual increase in access to communication services, reduction of cost of service delivery as a result of the use of ICT, growing digital literacy and emergence of new technologies in the field of telecommunication.

Opportunities

The most important role of telecoms sector during the crisis of Corona Virus is enabling people working from home. Self-isolation, loneliness and social distancing could harm mental health. Telecoms has the potential to ease the case. Telecoms provided alternative learning opportunities to the students during the lockdown.

1. Nepal Telecom has infrastructure of its own throughout the nation. The government has the policy of infrastructure sharing. So, we can share this existing infrastructure and generate additional revenue for the company.
2. Telecom has offered motivation programs and incentives to the staffs to enhance their performance level. It can facilitate national and international level specialized training and skill development programmes to enhance employees' performance and to ensure successful implementation of new systems and services.
3. Nepal Telecom builds and enhances customer relationship by providing a bundle of services along with more attractive data plans in reasonable tariff structure.
4. Nepal Telecom has high investment capacity so, the regular investment in their network up gradation facilitates them to offer better customer care and services.

Major problems

In spite of the strengths and opportunities, Nepal Telecom has some problems. The problems are as listed below:

1. Universal access to the means of telecommunication.
2. Inadequate institutional arrangements for the development of communication and information technology.
3. Lack of scientific billing and tariff adjustment.
4. Increasing cybercrime and cyber security problem.
5. Inadequate use of information technology in public service delivery is the major problem in telecommunication in Nepal.
6. Lack of coordination between government agencies and weak institutional capacity remains the top challenge for Nepal Telecom.
6. The main threat of Nepal Telecom is growing competition and competitive environment.
8. Latest technology enhancement.
9. Increasing abuse of social network in the context of increasing use of social media.
10. Delay in customer response.

CONCLUSIONS

The vision of Nepal Telecom is to build a nation equipped with information technology, to become leading player in telecommunication sector in Nepal with the extension of prompt, reliable and cost effective services to all. It struggles hard to stand as the technologically superior communication system in Nepal.

Nepal Telecom is strongly guided by its mission as to be progressive, customer spirited and consumer responsive entity and committed to provide nation-wide reliable, uninterrupted telecommunication services to serve as a key to social, political and economic development of a nation.

Nepal Telecom is heading towards achieving its goals as to bring qualitative changes in people's living standard by enhancing universal access to telecommunication and ICT by maximizing their use as well as to provide cost-effective telecommunication services to every nook and corner of the country.

Latest 4G service has covered all 77 districts covering 654 local units in the country. Telecommunication service has reached to 85% of the total population. Financial status of Nepal Telecom shows that the revenue

has been decreasing per year due to expansion of different modern services as 4G, 5G and FTTH Network. Key to success for Nepal Telecom is to generate sufficient sales volume and adopt an aggressive pricing model for targeting planned profitability protections. FTTH is an important project as it supports the fifth generation mobile internet (5G) which is coming to Nepal in the near future.

Nepal Telecom has successfully jumped from 3G, 4G to 5G and is established as well-known brand name in the country with lower cost. Competitors and competitive environment are major threats to Nepal Telecom.

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