Categorisation of Telecom Circles in India: 
Do We Need to Have a Relook from the Mobile Diffusion Perspective?

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ABSTRACT

Ever since mobile has revolutionized the telecom scenario in India, experts often ask a pertinent question: is the old assignment of twenty-two telecom circles into four categories valid even now? It has become important in the light of variable rates of revenue sharing in different circles as per the policy of the Government of India (GoI). The extant literature is silent on the exact procedure followed by the GoI in classifying the circles, apart from mentioning the rationale of decreasing attractiveness. So we revisit the categorization process afresh from two perspectives: gross domestic product (GDP) and diffusion of mobile telephony. The GDP based clustering of the circles is quite straightforward. However, for the mobile diffusion based method, we take help of a dynamic model based on revenue potential. Interestingly, both the methods generate results, which are almost similar to the existing classification done by the GoI way back in 1999. Thus, our exercise provides a big relief to the policy-makers, thereby pre-empting the demands for immediate relook at the categorization.

KEYWORDS

Categorization, Circles, Clustering, GDP, India, Mobile Diffusion, Mobile Telephony, Revenue, Telecom

INTRODUCTION

Telecommunication scenario in India has transformed quite rapidly ever since the much-awaited liberalization happened in 1994, catapulting the country in the new millennium to the second position in the global ranking of the national mobile subscriber bases at a time when mobile telephony has become the most preferred means of telecommunication (in short telecom) worldwide (Göller, Andersson, & Hansen, 2016). In 1998, India’s tele-density per 100 persons was merely 2.2, which was way below the world average of 14.26 (ITU, 1999). However, things have changed dramatically since then to convert the largest democracy in the world to a virtually “wireless country” with little less than 1 billion mobile phone subscriptions circa March 2015 (TRAI, 2015) (Appendix I). In comparison to its dubbing as a laggard sector before 1995, the growth of Indian telecom industry had been really astounding in the last few decades at a stretch (Gandhi, 2016).

Prior to delving straight into research question posed in this paper, we briefly review here the important policy injections and their magical implications on the telecom growth in India beginning from the last decade of the previous century. This background will help the readers understand the
basic premise of the rationale put forward by us to pose the question. The Government of India (GoI), as a part of its liberalization initiatives, announced its first National Telecom Policy (NTP) in 1994 to allow private sector participation in basic telephone services (TRAI, 1994). NTP-1994 was formulated primarily to achieve the following objectives of the GoI:

- Telephone on demand;
- Provision of world class services at affordable prices;
- Ensuring India’s emergence as major manufacturing/export base of telecom equipment;
- Universal availability of telecom services to all Indian villages.

But, unfortunately, the private sector participation failed to take off as desired due to several constraints, such as high licence fee liabilities for the private operators resulting from competitive bidding process, and the actual market demand being much lower than the projections assumed by the GoI or the operators. Even after the follow-up introduction of value-added services like radio paging, the overall growth and quality of services remained lukewarm because of the lack in user demand. To overcome the jinx, the GoI, after watching and waiting for five years, announced the next National Telecom Policy in 1999 (known as NTP-1999) (TRAI, 1999).

NTP-1999 improvised on NTP-1994 to take into account two broad objectives:

1. Harnessing the technological developments taking place in the telecom sector globally;
2. Supporting the Government’s resolve to make India a global information technology (IT) superpower.

With a view to solving the implementation problem arising out of its predecessor, NTP-1999 incorporated three salient features:

- Cellular Mobile Telephone Service (CMTS) providers would be eligible to obtain licence for any number of areas;
- Licences under the new policy would be valid for 20 years – extendable by another 10 years (against the 10 year period of NTP-1994);
- Fixed licence fee was decided through competitive bidding.

No doubt, riding on mobile telephony NTP-1999 was a huge success triggering a telecom boom in India. Wireless last mile enabled operators to rapidly roll-out services even in remote villages, as Indian population happily lapped up mobile handsets at an unprecedented rate. Tariffs came down to a shivering low value, due to fierce competition among the service providers in a free market. In fact, even today, India stands out in the world of mobile telephony as the most competitive market with razor thin margin in average revenue per user (ARPU).

Subsequently, India has constantly remained as one of the fastest growing telecom markets in the world. Initially, India embraced the use of both GSM (global system for mobile communications) and CDMA (code-division multiple access) technologies. However, later on GSM has outnumbered CDMA significantly, primarily because of the ecosystem-related issues with CDMA. Noticeably, India’s top two cellular mobile operators (Table 1), namely Bharti Airtel (http://www.airtel.in) and Vodafone (www.vodafone.in), provide only GSM service, whereas a few other operators provide both GSM and CDMA. Though GSM is comfortably maintaining its position as the dominant mobile technology with 80% of the mobile subscriber market in India, CDMA has dwindled heavily in terms of its market share hovering around 20% only now-a-days. The three metro cities of India are the biggest bases of subscribers (Table 2). In contrast, the rural penetration is yet to catch up even 17 years after the promulgation of NTP-1999.
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