Telecommunications Policy 41 (2017) 1–11

Contents lists available at ScienceDirect

Telecommunications Policy

journal homepage: www.elsevier.com/locate/telpol

An evaluation of China's evolving broadband policy: An ecosystem's perspective

Chun Liu*

Key Laboratory of Service Science and Innovation of Sichuan Province, School of Economics and Management, Southwest Jiaotong University, China

ARTICLE INFO

Keywords:
China
Broadband
Policy
Ecosystem

ABSTRACT

Although it is generally agreed that governments should have some roles in the development of broadband, questions about the specific role of governments remain unanswered, particularly from the perspective of developing countries. This paper evaluates China's evolving broadband policy by developing a two-dimensional analytical framework, with the different stages of broadband development represented by columns and the four components of broadband ecosystem represented by rows. Generally speaking, China's telecommunications development has been driven by investments from government-allied entities and features a strong industrial policy. However, the Chinese government has chosen a somewhat soft-intervention approach in broadband development and relied on the market itself to grow by creating a competitive market structure. As the market has recently evolved to a certain degree of saturation, there is a seemingly shift of emphasis in China's broadband policy from infrastructure buildup and service provision to application creation and user demand stimulation. However, China's broadband future is uncertain due to unsettled but important institutional and financial issues. Policy changes appear not to keep up with the broadband ecosystem evolution.

1. Introduction

Given its potential to spur economic growth, various programs and projects have been initiated by various levels of governments around the world to develop telecommunications infrastructure in the past decade. According to a research from the International Telecommunications Union (ITU) and Cisco, there had been some 134 national broadband plans in existence around the world before the mid-2013. While those plans might vary considerably in terms of emphasis and take different forms, they all ascribe a vital role to broadband in boosting national competitiveness, and aim to extend the national footprint of broadband networks and drive increased use of broadband-enabled services and applications (The Broadband Commission for Digital Development, 2013). China is no exception. According to China's broadband plan, which was announced in 2013, China aims to build a ubiquitous, fast and advanced national broadband network before 2020.

Conventionally, China's telecommunications development has been driven by investments from government-allied entities and features a strong industrial policy, which arguably made the telecommunications sector the jewel in the crown of the market economy with Chinese characteristics, particularly in the past two decades. It is reported that China's household broadband penetration had exceeded 50% by the end of August 2015 (Xinhua News Agency, 2015). As shown in Fig. 1, China's broadband penetration rate has exceeded the average level of developing countries significantly. However, the growth rate of China's broadband

* Correspondence address: No. 111, Section 1 North, The 2nd Ring Road, Chengdu, Sichuan 610041, China.
E-mail address: psuchunliu@gmail.com.

http://dx.doi.org/10.1016/j.telpol.2016.10.003
Received 25 September 2015; Received in revised form 7 September 2016; Accepted 14 October 2016
Available online 04 November 2016
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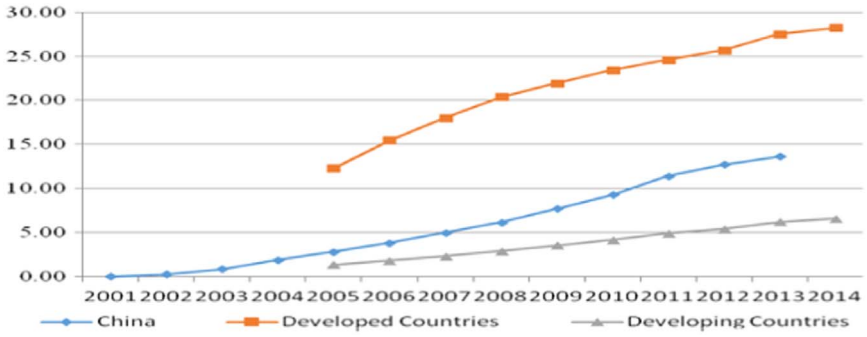

Fig. 1. Comparison of broadband development (fixed broadband subscriptions per 100 people).
Source: International Telecommunication Union, World Telecommunication/ICT Development Report and database.

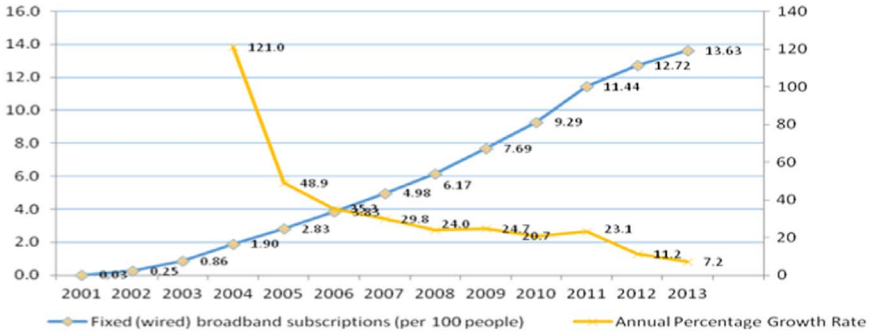

Fig. 2. China's fixed broadband growth.
Source: International Telecommunication Union, World Telecommunication/ICT Development Report and database.

subscription has slowed significantly to single-digit growth since 2013, implying that a certain degree of saturation has been reached in terms of broadband adoption, as shown in Fig. 2.

Although it is generally agreed that governments should have some role in the development of broadband, questions about the specific roles of governments remain unanswered, particularly from the perspective of developing countries. This paper aims to evaluate China's evolving broadband policy. China has outperformed most other developing countries in the world in broadband development. In reviewing the role of the Chinese government in the past and present of broadband, possible lessons could be drawn for other developing countries. On the other hand, since broadband has become so integrated into everyday life that broadband policy is increasingly considered as a social issue, instead of a mere infrastructure issue, will China's broadband policy changes keep up with the broadband ecosystem evolution? This paper also identifies critical challenges and offers suggestions for improved development in the future.

2. Literature review

2.1. The role of the government in broadband development

Generally speaking, the evidence from empirical findings exhibits a certain disunity regarding the role of the government in broadband development (Belloc, Nicita, & Rossi, 2012; Cava-Ferreruela & Alabau-Muñoz, 2006; Falch, 2007; Picot & Wernick, 2007). Some argue that although technical and economic parameters play a role in the development of broadband services, public policy involvement is worthwhile because it provides a clear and significant stimulus for broadband penetration (Belloc et al., 2012; Falch, 2007). A recent study conducted by the United Nation's Broadband Commission for Digital Development found that there had been 134 plans in force by mid-2013 and estimated that the introduction or adoption of a broadband plan was associated with 2.5% higher fixed broadband penetration, and 7.4% higher mobile broadband penetration on average (The Broadband Commission for Digital Development, 2013). On the other hand, Montolio and Trillas (2013) found that indicators of national industrial policy were a weakly positive determinant of broadband deployment and that different measures of centralization, which they called regulatory federalism, were either irrelevant or had a negative impact on broadband deployment.

In practice, the government can play the role of an "enabler" or a "rule maker" in broadband development (Picot & Wernick, 2007). Depending on the extent to which governments were engaged in the broadband deployment, three types of government policy and regulatory strategies can be roughly distinguished: soft-intervention strategies, medium-intervention strategies and hard-intervention strategies (Cava-Ferreruela & Alabau-Muñoz, 2006). Broadband forerunners, such as Sweden, Finland, Japan, Korea and etc., were found to take a proactive interventionist approach when they started their broadband rollout, which features a specific

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