

China telecom operators' flow management

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Abstract—This paper firstly studies that Chinese telecom operators are facing three major challenges in the context of mobile Internet: One challenge is that OTT subverts the business model of the telecom operators; The second challenge is that nowadays people use data instead of calling, which puts much pressure on the operators' growth; The third one is that "The flow increase not added income" becomes the operators' urgent problem. Secondly, the paper proposes "Mobile Internet strategy" of Chinese operators: One is that the operators should build intelligent pipe to enhance the intelligent support capabilities, improve IntelliSense capabilities and enhance cooperation capabilities. The second is that the carriers should manage the traffic well: they must take advantage of the good chance of triple play to develop mobile TV; they should give reasonable guidance and diversion of large data flow and build new network incubator platform.

Keywords- mobile internet; telecom operators; operational strategy

I. INTRODUCTION

In recent years, the mobile internet has become the fastest growing in the IT field and it is also the largest new business which changes people's lives. It has created a number of Internet miracles and wealthy people. However, we found that the rapid development of the mobile Internet also poses great challenges for the former telecom operators.

II. MOBILE INTERNET CHALLENGES TELECOM OPERATORS

A. OTT has subverted the operator's business model

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B. Data's substitution for voice has intensified pressure on the operators' growth

At present, voice softwares such as "chat in meters" and "We Chat" are constantly emerging. As long as the software was installed in the mobile phone, you can send message to anyone in your contact list for free. This will directly affect the operators' most profitable business in the 2G era: SMS.

But what is more frightening is that a large number of these softwares occupied and eroded the operators' network capacity, resulting in cyber source over occupied, thus affect the users' normal communication services. This condition will always be followed by numerous complaints from users, some even leave the network, which is the deadly blow for the telecom operators. However, at present, the operators do not seem to have effective measures to deal with the condition.

C. "The flow increase not added income" is carriers' urgent problem

with the 3G network coverage expanded continuously,, 3G application enriched constantly and the popularity of 3G terminal, China's mobile data flow enlarged rapidly, which greatly increases the operators' revenue. But at the same time, the problem that the flow increase doesn't add income and the amount doesn't match the income is also increasingly apparent. According to Europe's 3G operation experience in the past 8 years, simple data flow monthly pricing model often leads to 5% of the high-traffic users consuming 50% of the network capacity, which means the loss of income [1].

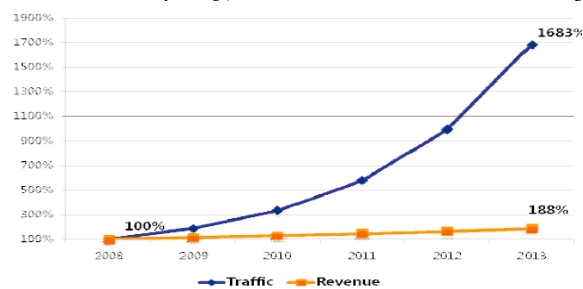


Figure 1. Data Traffic and Revenue Growth prediction

All of China's three operators have emphasized the problem of "traffic management" in their own 2012 working conference. Among them, China Mobile proposes to accelerate strategic transition in 2012 and has planed to change from "voice operation" to both the voice and traffic operation; China Telecom proposes to insist on two main strategies of the scale operation and traffic operation, and lead in innovation and service, so as to promote scale development; and China Unicom has said to promote its ascendant 3g network construction continuously, optimize 3g network layout and improve the value of the existing network. For the domestic operators, it is a must and urgent

task to do "traffic management" well and make the data flow match the income. The world's well-known publisher "Informa" has given global mobile data traffic and revenue growth prediction graph objectively from the view of history and data (Figure 1).

III. THE DATA FLOW MANAGEMENT STRATEGY OF TELECOM OPERATORS

A. Build the smart pipe

Smart pipe is users' demand oriented and could be applied to various kinds of fixed and Mobile networks. Based on user's using behavior characteristics, it could recommend specific business portfolio to users. It can also make intelligent search in line with users' searching requests. For telecom operators, it is to rebuild the connection between traffic growth and revenue growth. In concrete terms, if the operators want to build intelligent pipe, they might improve themselves in the following three aspects:

Firstly, Improve network intelligent-support ability. The transform of mobile data need to be based on high bandwidth. It provides high quality networking and innovative business experience to users through establishing differentiated controllable end-to-end pipelines. To be specific, they should increase the speed of internet access, especially to broaden the bandwidth in the access network, metropolitan-area network and the backbone network. Then, they have to alleviate the network traffic pressure through network upgrading and traffic division. Thirdly, they should speed and improve network signal coverage to please users.

That is to build a combined mode of "3G+WIFI", which means to guarantee the 3G coverage first, and at the same time build extensive WIFI coverage in major commercial centers, large transportation hubs, restaurants. At present, china telecom operators are building WIFI independently, but all of them are with poor user experience and the lack of clear business model. This could neither please the users nor drive the telecom operators to build high quality WIFI.

So, it is recommended that the three giants should cooperate with each other to build and share the WIFI, and to take backward charging forms, so as to extend WIFI coverage and enhance the users' experience. This is because cooperating and sharing could not only avoid the waste of resources, but also rapidly expanding WIFI coverage, while backward charging can make a clear business model for operators' mobile Internet services, and foster new mobile internet companies.

Secondly, Enhance intelligence capabilities. The reason why the smart pipe "smart" is based on its perception on users' needs and behaviours, and then to match and dynamic resource according to the perception. The smart pipe could support the development of new business, provide users with demand-oriented and flexible experience, as well as more convenient, personalized services. Operators in China could learn from at&t in this aspect.

At&t optimized its traffic management and charging when building smart pipe. First, it set up a no-cap multi-classified data pricing system to replace the original unlimited monthly pricing, and operated the data ARPU well;

Second, it distinguished users' data demands on different intelligent terminal, such as resettling the charging between mobile and wireless Internet, which were originally the same; Third, it optimized other intelligent terminal's flow mode. For instance, at & t changed the "bare-channel" mode of the "Kindle" 3G version, and now the users need to pay the cost of accessing to all internet applications themselves except those connecting to Kindle Store paid by Amazon[2].

Thirdly, Enhance cooperation capability. The telecom operators should abandon monopoly thinking in the 2G era and open their mind to cooperate with intellectual terminal manufacturers, web applications providers, etc, so as to create a win-win atmosphere and guarantee a fine user experience

B. Data flow management

Data flow operation will be put to the foreground after the smart piping construction. In 2011, China Telecom was the first one to open the 100G system test project. After that, domestic operators have accelerated the pace of carrying out 100G. China Mobile has officially launched the current network 100G pilot. Experts predict that 100G will be deployed in 2013, and full applied in 2015. Specifically, traffic management can be organized in the following four aspects.

Firstly, Grasp the opportunity of the triple play to develop the mobile TV. The core of the triple play is a two-way access to telecommunications and broadcasting services, and its essence is to broaden business scope of telecommunications and broadcasting, so as to form a market structure of fully competing and cooperating with each other, and ultimately to provide users with liberalized, multi-medialized and personalized service. The opportunities that the triple play brings for mobile TV is mainly in the following three aspects:

First of all, it can realize the complementary advantages of telecommunications and broadcasting, and provide users with a seamless up-downlink network.

In China, The Radio & TV network has a high-bandwidth downlink channel, but the lack of up-stream channel leads to the failure of customers' interaction, so users' information cannot be uplinked to the radio and television operators.

The telecommunications network has a reliable and stable uplink channels, however, because of the limitations of the downstream transmission capacity of the cellular network, network quality is affected when users increased. After the triple play, we can make full use of the advantages of the two networks --- high-speed downlink channel and uplink channel interaction --- to build a two-way interactive, manageable, and chargeable network.

Then, the triple play provides wider channels for the development of mobile TV. IT revolution brought by the triple play has spawned a variety of new media forms, including Internet TV, mobile TV and time-shifting TV, etc. So, the triple play promotes the innovation on the value chain and business model of mobile TV.

The triple play is the perfect combination of the content industry and telecom industry, it could increase the

interaction between users and content providers, realize scientific CRM and accurate charging, in a word, and it builds the foundation for mobile TV industry to create the new value chain and business model. The telecom operators can make use of their advantages, combine content providers, equipment manufacturers, terminal manufacturers and users, etc to create a new profit model and a value chain with great potential.

Secondly, Logical guide and distribution of large data flow. Distribution, which is to use WIFI for relieving 3G network traffic, is the way that commonly taken by operators world-wide. Nowadays, over 60% data flow used by iPhone has been shared by a WIFI network. The essence of this approach is to use cheaper and richer optical network resources to alleviate the burden of limited network resources.

According to Analysis Mason, the application of Fair Usage Policy to large-flow users can reduce the average flow by 30% -50% per user, and thus enhance the unit flow gain. Since the second half of 2010, several European and American mobile operators have adopted a flow oriented classified charging mode to replace the unlimited monthly pricing. In terms of flow management, this measure could increase the traffic unit revenue by 10% -20%, especially for P2P service [3].

Thirdly, build the ecosystem of application and development. First of all, grassroots wisdom could be integrated. Outstanding content that meets the demand of users is the key of a vibrant value chain. In order to enlarge the data flow, telecom operators must produce the audio and video programs that fit mobile phone viewing. Secondly, focus on the star business based on the Pareto Principle. The mobile internet business model is a typical one- many business, that is, a star application can attract large-scale users. The star business often will take up 20% of the period but show a 80% profit, which is the so-called "Pareto Principle".

Forth, create a new network incubator. First, to found the mobile SNS. The mobile SNS will become the most important platform business, because of its more accurate simulation of social relations, and will also become accurate personal access to information. Chinese telecom operators can take advantage of subscriber numbers as the natural resources of the SNS to develop the SNS business. Secondly, to make every effort to develop the App Store vigorously. App Store has strategic significance, which means the rapid changes from the new software application to consumer adoption.

Operators can apply different strategies to develop this business, such as the industry standard thirty-seven mode. To increase new business such as mobile music, mobile TV, e-readers to further enrich the 3G business applications and

make them a new growth point for driving the company's development.

Finally, to explore the implementation of new network communication applications. User demand for new network communication has been highlighted. The superposition of mobile communications and Internet services will facilitate the development of new network communication.

C. Try to meet the users' all kinds of needs

Firstly, lock the high-value users, such as people in business center, airport crowds and high ARPU crowd. The crowd is generally using more flow, so we can find out the potential high-value 3G users by analyzing their flow contribution.

In this way, can we create intelligent influential end and improve the penetration rate of the terminal.

This thesis focuses on the challenges faced by operators in the mobile internet era, as well as the main coping strategies, and it is hoped to be beneficial to the transformation and development of telecom operators. If there is any inadequacy, please correct me.

ACKNOWLEDGMENT

First and foremost, I would like to show my deepest gratitude to my supervisor, Dr. Tingjie Lv, a respectable, responsible, courteous and accessible and resourceful scholar, who has provided me with valuable guidance in every page of the writing of this thesis. Without his enlightening instruction, impressive kindness and patience, I could not have completed my thesis. His keen and vigorous academic observation enlightens me not only in this thesis but also in my future study.

I shall extend my thanks to Mrs. Wu for all her kindness and help. I would also like to thank all my teachers who have helped me to develop the fundamental and essential academic competence. My sincere appreciation also goes to the students from department of economics and management, Beijing University of Posts and Telecommunications, who participated this study with great cooperation.

Last but not least, I'd like to thank all my friends, especially my lovely roommates, for their encouragement and support.

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