

Discussion on An Innovative Broadcasting Type Government Affairs Opening System Based on Tel-Radio and E-Government

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Abstract Network Innovation and Information Creating have become the common awareness of Chinese fixed network Carriers. This paper presents the evaluation on the new-created TEL-RADIO service and discusses in detail how this technique further plays its role well in the application of government affairs opening. The Innovation dimension we choose is the combination of Tel-Radio and E-Government (Electronic Government Affairs). By making use of Tel-Radio technology, constructing a government information electronic platform, and improving the terminal broadcast device, the system is considered efficient, cost-saving and useful. The paper also provides some proposals for the telecom operators and especially for the fixed network carriers in their continuous innovation of the system.

Key words innovation; fixed network carriers; tel-radio; E-government; government affairs opening

1 Introduction

Tel-Radio is a new application that makes full use of the existing telephone network and available radio broadcast information resource. It has important significance to extend the life of the fixed network carriers' Public Subscriber Telephone Network. In Chinese rural areas, esp. the western region, E-Government has not been widespread yet and the present transmit procedure of Government Affairs Opening is from government at higher level to lower level by paper files, and finally report to the villagers by the rural loudspeakers or announcement board. The defect is very obvious, low efficiency, long transmission delay and information distortion. By making use of Tel-Radio technology, constructing a government information electronic platform, and improving the terminal broadcast device, an innovative Broadcasting Type Government Affairs Opening System can be invented and solves the problem.

2 Network Innovation and Information Creating Have Become the Common Awareness of Chinese Fixed Network Enterprises

Under the new situation of competition, the internet has achieved great development; mobile voice has quickly taken the place of fixed voice, the value of new users continuous reducing. All these unfavorable factors lead to great challenges for fixed network operators who run PSTN. For the profit space is dwindling, the operators' great effort can only delay the withdrawal of fixed PSTN Income, but it can not provide changes from the root. Therefore, new sustainable development method is urgently needed.

Different operators hold quite different opinions towards PSTN. For some Radicals, the former PSTN should be totally abandoned and transfer into NGN (next generation network) . For instance, 21CN project of BT has realized this method in Britain. While for the reformists would start from the angle of safeguarding existing investment, improving resource-utilization-rate, prolonging use life of PSTN, and exploiting potentialities of PSTN in order to promote its value.^[1]

How to promote the value of PSTN? Base on the national conditions in China, we can generally assume to two methods:

2.1 Network Innovation

Upgrade of PSTN network and make it possible to support more services. The Intelligentized PSTN is just an outstanding representative of this method. Its key technology is centric user data management and users'service attributive data inquiry system before every Call-Connection, through which the network can realized the automatic identification and automatic triggering of intelligent services for users. By Intellectualized Reconstruction of fixed network, various new services can be

provided, including Number Services such as Mixed Telephone Number Service, Number Portability Service, Dual Number Service, etc.; Trigger Feature services based on user attribute data such as Pre-Charge Service in Fixed Telephone Network, Color Ring Back Tone Service, “One Phone call”, Multi-Service Nesting, etc; Cross-network Services whose service can cross many networks such as PSTN, PHS, NGN.

2.2 Information Creating

Information contents will be filled into PSTN so as not only to make PSTN network a communication carrier but a information carrier as well. The Number Message Service (China Telecom: Voice Information Enquiry Service; CNC: Telephone Navigation) provided by fixed network operators in recent years is an example to this method. TEL-RADIO is another typical case of information Creating. The next part mainly discusses the innovative idea of TEL-RADIO and how to further develop this TEL-RADIO service in the future.

3 TEL-RADIO Service -- Providing Satisfactory Information for Clients at Low Cost

There is no doubt that information filling and providing are very important elements in promoting the value of fixed network. But there are also two problems presented in front of us:

- 1) What kind of information can be accepted by the clients? This is foundation of this service.
- 2) Whether the cost of providing information lower than the profit so as to possess Product Profitability.

When providing Number Message Service, the two largest fixed network enterprises (China Telecom, China Netcom) in China are rather troubled by these two problems. In the initial stage of Number Message Service, it provided some information so closely related to people's everyday life that was widely favored by clients. However, as the time elapsed, the important information source may change and cause difficulties in information maintenance. Because of the quick swift of address, contact and promotion programs, fixed network enterprises have to pay great effort on maintenance. Even door-to-door investigation has been adopted in some areas, which is highly cost.^[2]

TEL-RADIO Service solves these two problems. TEL-RADIO Service is a kind of voice integrated information service that makes use of wide-spread Telephone Network and advanced audio play technique, to provide radio programs home and aboard as well as other unidirectional and interactive audio programs through telephone terminal listening.^[3] Its service framework as follow:

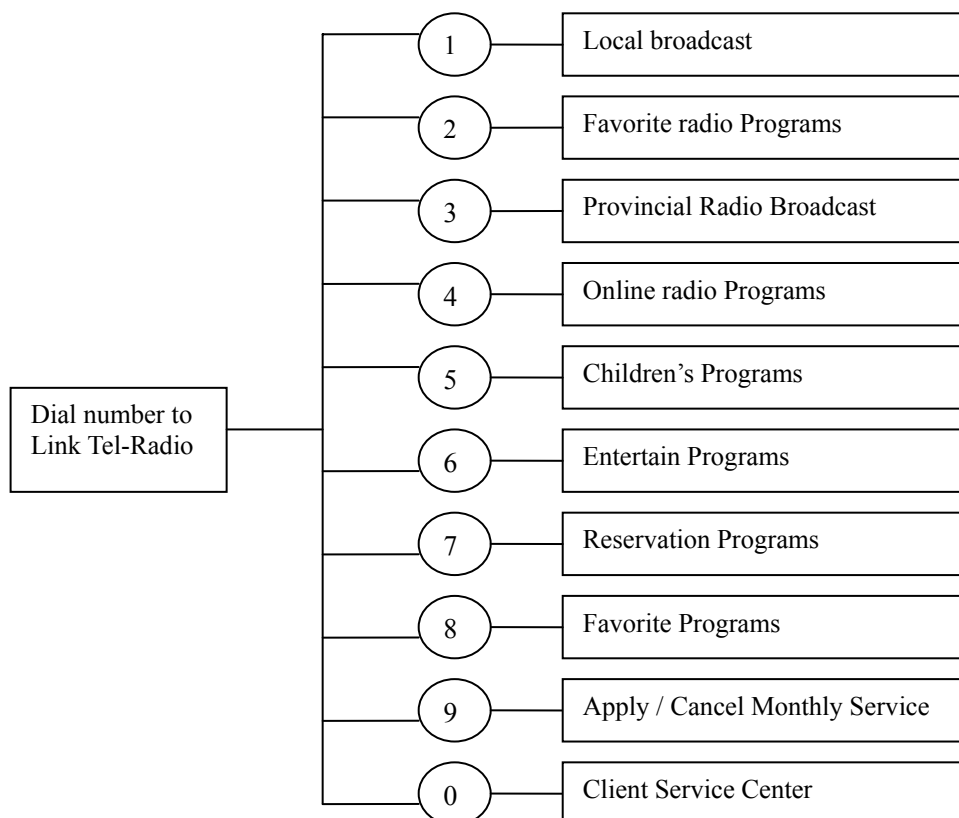


Figure 1 Tel-Radio Business Framework of a telecom operator^[4]

According to this framework, there were no significant differences between TEL-RADIO and traditional telephone information service. However, in the aspects of information sources, cost and profit, TEL-RADIO have its unique characteristics:

1) The information sources: most information comes from public broadcasting which has a fixed target group who would be limited by time and space that are inaccessible to the information in certain occasions. If the clients adopt Tel-Radio Service, by dialing the numbers the client can hear the broadcasting information in any telephone line available location, which can meet the requirement of the client to a large extent.

2) The information cost and profit: Most traditional telephone information service is provided through SP(service provider), whose profit is shared according to the used service amount. The Telecommunication Tariff of traditional service is so high (10 times as much as Local fixed telephone call charges or even more than that) that the users are relatively less and the income of telecom operators will be even smaller after second allocation.^[5] The public broadcasting – oriented TEL-RADIO Service is quite different. The profit model of public broadcasting is not by selling broadcast relay right but from the advertisements. Under this model, telephone will be used as a new way of public broadcasting by the fixed network operators, and the cost of receiving information is much lower. Because of the less investment on the network transformation of providing TEL-RADIO, the profit of providing this service will be much better.

Therefore, the major innovation of TEL-RADIO service is combining the cheap public broadcasting information and the wide-spread communication channel of fixed network, providing information needed by the clients at low cost. It not only makes full use of existing network resources but also gets high audience rate and realizes "multi-win" cooperation mode among telecom operators, broadcast facilitators and clients so as to get better market prospects.

4 Development and Innovation of TEL-RADIO Service -- Broadcasting type government affairs opening system based on Tel-Radio

4.1 The problems existing in the process of Government Affairs transmission.

Although E-Government is extensively popularized by governments at all levels, but it has not yet been completely transferred to the village level. The present transmit procedure of Government Affairs Opening System is from government at higher level to government at lower level, and finally report to the villagers by the rural loudspeakers or announcement board, just as the dashed lines shown in Figure 2. The low information transmission efficiency, long transmission period and information distortion are problems existing in this procedure.

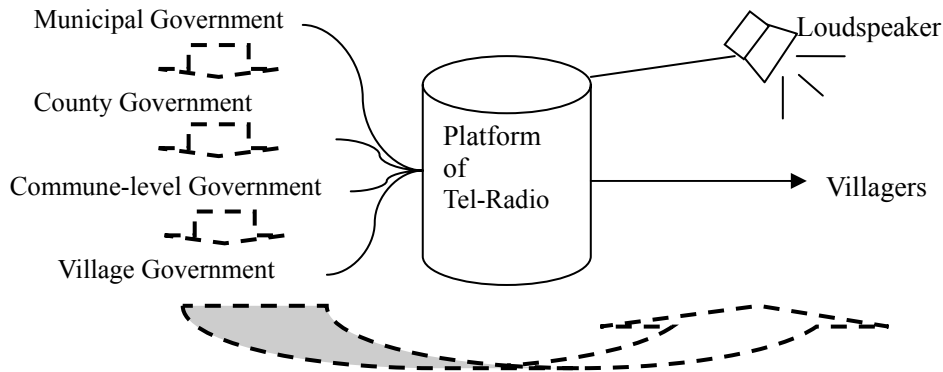


Figure 2 Procedure of Broadcasting type government affairs opening system based on Tel-Radio

4.2 Broadcasting type government affairs opening system based on Tel-Radio

In order to deal with the problems we mentioned above, Broadcasting Type Government Affairs Opening System based On Tel-Radio can be adopted.

4.2.1 System Structure

The system consists of 2 parts.

Part 1. Government Affairs Opening System platform based on Tel-Radio Service

Build a multi-levels government affairs opening system platform based on Tel-Radio. Governments at all levels can add and manage the public information according to the requirements of the government. By connecting the Tel-Radio platform, villagers can receive the information about Government Affairs and latest policies. In fact, the construction of the platform is not that complex. Only needs one user interface can Governments at all levels upload and manage the information broadcast. In addition, the carriers should manage the information broadcast authority and transform text information into vocal information etc..

Part 2. Explore special apparatus to link Tel-Radio to rural broadcasting loudspeakers.

Because the Tel-Radio platform can only be received by telephones, and even at present much information in rural areas is still transformed by broadcasting loudspeakers, conversion equipment is quite necessary. (If put the telephone receiver directly to the microphone of the loudspeaker, the effect will be rather unsatisfied.) To realize the link of Tel-Radio and rural broadcasting loudspeakers, a simple audio output on the telephone terminal would be enough. In fact, the present Tel-Radios sold in the market have already possessed audio output.

According to the two parts we have mentioned above, we can draw a new Procedure of broadcasting type government affairs opening system, as showed in the full lines shown in Figure 2.

4.2.2 The advantages and significances of the system.

Tel-radio can help fixed network carriers deal with the information acquisition and transfer function. However, the information acquisition is an active process; i.e., the clients have to dial certain access numbers to receive the relevant information.

Present distance education platform in Chinese countryside is still based on visual information. And villagers have to go to see the information at certain places, and should be broadcast through broadband communication systems, which will lead to high cost and will not be suitable in the rural areas, and because of these, the audience group is rather small.

Although mobile communication operators grasp the opportunities in the rural government information flow, and transmit network government and livelihood information through an information machine, at the same time, realize streaming broadcast function on the machine. But the clients should also actively browse the screen of the machine to receive the information. Another shortcoming of rural

information machine is that it is based on digital information not on the analog voice signals, so it's difficult to be transmitted by audio broadcast.

On the whole, in order to transmission of rural government information, the clients should either visit the information sources (Tel-Radio and information machine), or the particular platform (distance education platform) that the procedure is too long and lack of management. (from government at higher level to government at lower level). However, through the combination of broadcast, telephone and terminal, the broadcasting type government affairs opening system based on Tel-Radio solve effectively the difficulties in the management, transmission and receiving. it is of vital realistic significance and utility value for government affairs informationization in Chinese rural areas.

4.3 Discussion on the charge and profit model of the system.

Now that we put forward this system, how the carriers will charge for these services becomes a major point. As a whole, In view of the fact that newly-increased investments are unnecessary to be put in, the public welfare form can be used to promote this system to our governments at all levels. However, if we adopt the public welfare form, is it any significance of this system? The answer is definite. It just like the question "Does informationization make money". The answer is also positive. And under the current circumstances, the informationization in some specific market should with a view to the explosion of present clients and traffic.

Since fixed network operators promote informationization in rural areas, they also set some demonstrating villages. But these demonstrations are mainly with village-level color-ring and OA, and they haven't been fully applied in the government process. (Of course, this could also be realized if the village-level OA is well operated, and hardware conditions in ordinary peasant families permit)

How to apply this system to the rural government process? For one thing, the rural government process should be carefully analyzed, to find out whether there are any links can be replaced by information mediums. For another, it is necessary to consider the actual situation of current fixed network operators, and it is not suitable to make the scale too large that the investment will fall behind. After all, in the rural telephone market, the most urgent target for fixed network operators is not explosion but preservation.

The realistic significances of the broadcasting type government affairs opening system based on Tel-Radio we have mentioned above mainly lie in two parts: firstly, when we try to apply this system to the rural government process, the government information can be undertaken by the platform of telecom operators and transmitted by the platform of fixed network carriers to the terminal clients. This is a win-win road, because the government could improve office efficiency without much input; at the same time, the use of fixed network platform could bring good fame and increase confidence degree to the carriers, which is just what our fixed network carriers need in this preservation stage. Secondly, the system is based on Tel-Radio platform that this business mode conforms to present capital situation of fixed network carriers in China without too much investment.

5 Conclusion

The transformation of mode is the necessary choice that telecom operator, especially fixed network carriers should take. However, transformation needs creativity. In order to be creative, consider how to conduct strategy of information management and administration under the current situation that the network transition capital is limited is quite urgent.

As a very successful innovation case of the telephone information, Tel-Radio can be used as a instructive reference of the further work of fixed network operators. However, in order to make fully use of Tel-Radio, the depth and width of information management should both be improved. This paper spread the discuss on how to apply Tel-Radio platform into E-government to establish creative broadcasting type government affairs opening system based on Tel-Radio and the electronic government affairs, in the hopes of providing enlightenment to the industry.

Reference

- [1] Tang Xiongyan, Jiang Nianling. Intelligent Reconstruction of Fixed Network, Telecom Technology, 2006(3):10-13(In Chinese)
- [2] Le Ning. China Telecom Hainan Branch Push forward the Informationization of Middle and Small Enterprises, <http://tech.sina.com.cn/t/2006-05-29/1645963383.shtml>(In Chinese)
- [3] China Telecom Corporation Limited Beijing Research Institute. What is the Tel-Radio Service of China Telecom?, http://xdjdkp.shkp.org.cn/detail/index_font.asp?id=238(In Chinese)
- [4] China Telecom Corporation Limited Beijing Research Institute. Training Material of Telecom.

- <http://anan.sxny.gov.cn/Upload/Files/NewsAttatches/2118/.20081811347.ppt>(In Chinese)
- [5] Voice Message Telephone: A Convenient, Colorful and Professional Information Service.
<http://www.cnii.com.cn/20030218/ca151458.htm> (In Chinese)