

# **Advertisements of China Unicom's CDMA Service for the People's Liberate Army: the Effects of Category-Based Stimulus**

**Suyu LIU**

**(Department of Social Policy and Social Work, Oxford University)**

## **I Introduction**

### **1 Background review**

China has the largest population consuming mobile communication services (MCS). According to the statistics of Chinese National Department of Communication Industry (CNDCI), in 2007, there were 547 million mobile users in China<sup>1</sup>. We also notice that such great development only happened in the recent years, because in the mid 1990s, mobile phones (hand sets) were still defined as one of 'luxury goods' and only a small proportion of richest people can afford them. Even that the MCS at that time was in a poor quality, given a most obvious example, the hand sets in the mid 1990s in China were much heavier and larger than they are now. Perhaps before the 1990s the majority of Chinese people did not know what a mobile phone is and how can people talk on the phone without a line.

The era for the third-generation (3G) MCS has begun since the late 1990s. The 3G MCS can provide consumers with the most stable, diverse and functional services by connecting wireless services to the internet and satellites. The 3G MCS is totally different from the second-generation (2G) MCS which is based on GSM services, and the first-generation (1G) mobile service which only focused on the wireless talk, the basic function of hand sets. CDMA is the only official-recognized norm of the 3G MCS in China<sup>2</sup>

According to the governmental regulations and the results of market competition, there are now 6 corporations sharing the Chinese telecom market. Two of them: China Mobile Communications Corporation (China Mobile) and China United Telecommunications Corporation Limited (China Unicom), can provide mobile services. Generally speaking, this is a typical oligarch-monopoly market, in which China Mobile shares a larger portion of the market, for example, in 2006, it had an overall revenues of 286.3 billion RMB with 317 million customers. In that year, China Unicom earned 82.1 billion RMB with 144 million customers, both less than half of China Mobile's achievements<sup>3</sup>. But it is important to point out that China Unicom is the only provider of CDMA mobile service in China, thus we can conclude the Chinese CDMA market is a perfect-monopoly market. It is necessary to introduce China Unicom before thoroughly examining relevant advertising strategies of its CDMA service.

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<sup>1</sup> Mobile news from <http://www.chinaunicom.com.cn/profile/xwdt/yjdt/file2022.html>

<sup>2</sup> The definition and interpretation of this issue is complicated and the Chinese officials may update this issue from time to time. 'Code Division Multiple Access' abbreviates as CDMA, which is a typical modern mobile communication technology that can provide 3G mobile services to consumers.

<sup>3</sup> See the Annual Report of China Department of Information Industry, 2006, p15.

China Unicom is a large corporation which provides mobile communication services to all customers in China (including Macau but excluding Taiwan). It is a provider of both CDMA and GSM services. It has the register capital of 21.1966 billion RMB and the largest share of stock of China Unicom is owned by the state (61.74%)<sup>4</sup>. The State-Owned Assets Supervision and Administration Commission of the State Council (SOASACSC) represents the country to monitor the state-owned assets in China Unicom and prevent them from being illegally and incorrectly treated. In short, China Unicom is a state controlled corporation with an oligarch-monopoly status in the Chinese telecom market and a perfect monopoly status in the CDMA service market in China.

## **2 Pilot studies of MCS related advertisements**

Classical economic theories consider that the perfect monopolist in the market can earn extra profits without making too much effort on sales promotion/advertising, if the monopolist can maintain its monopoly power in the market. However, the practices in the market competition fail to support this conclusion, because we frequently see that producers with perfect monopoly power still trying their best to advertise their products in the monopoly market. Robinson (1933) in her epic *The Economics of Imperfect Competition* argues that monopoly products can still be substituted, and monopoly producers' inertia can also weaken their advantages in the market. Though it is a good explanation why advertisements are necessary in the perfect monopoly market, it does not address on specific problems, nor can it provide sufficient analysis from the side of consumers in a perfect monopoly market. Hence, it is essential to discuss relevant studies on producer and consumer behaviors, and their relation to advertising in the telecom market. In this paper, we mainly examine three categories of past research.

A group of researchers falls into the first category, which strictly follows a motto 'Best technology is the best advertisement'. They push the importance of technology and quality to the extreme, and consider quality itself as an advertisement. Under this idea, scholars and researchers serve in the industry put great efforts in promoting the mobile communication technology, especially the hand sets and the networks. For example, theoretists argue that cable patrolled transmission networks can directly attract consumers to choose its provider's services and urge telecom corporations to build up those networks (Xiao and Xu, 2005; Huang and Zhong, 2005; Hu, 2004; Jiang et al, 2004; Ma, 2003) Each large corporation in China telecom market maintains a large R&D team, for example, China Unicom had a large technology team with 11,750 members in 2004, which counted more than 29% of its employees<sup>5</sup>. Scholars and practitioners in this category of research and practices try to consider customers' needs on the quality of products, however, they neglect the important step of demonstrating the quality of products to the consumers. The quality really improved, but the consumers did not realize it as the advertising was omitted. The sales results failed to support purely improvements in quality can replace advertisements. Thus we can see the motto gradually disappeared though the corporations still keep their research teams. Researchers and managers finally realize that it is incorrect to ignore the process of 'letting customers know

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<sup>4</sup> See Half Year Report of China Unicom, 2007, p6. This proportion remains more or less the same from the foundation of China Unicom in 2002.

<sup>5</sup> See Annual Report of China Unicom, 2004, p12.

us/the products’.

Significantly different from the scholars who over-emphasize the importance of technology or products’ quality, another group of researchers pay most attention to how to make sales promotion on the basis of consumer behaviors. Particularly, theoretists argue that consumers’ emotions, which are directly affected by cultural issues, play an important part in their purchasing decisions. Singelis (1994) raises a sophisticated measurement to assess the effects of advertisements under both individualism culture and collectivism culture, which show significant different results. Aaker and Williams (1998) further give a few factors to explain the difference in advertising results under different cultures, in which novel stimulus is adopted to answer the question why interdependent consumers may not act as anticipated. They consider that China is a country which has a strong collectivism culture. The most popular research methodology in this category is ‘Hypothesis-test’, which means authors raise relevant arguments or issues, and then choose specific samples to test those arguments. Statistics is widely adopted in the experiments designing and sample choosing processes. After the analysis of the test results, researchers start to discuss the possible factors which contribute to the results, and finally provide practical advices.

More specifically, researchers gradually pay more attention to the dual-nature of MCS. More and more researchers realize that on one side, MCS is the objective in advertisements, as service providers try to advertise their MCS to consumers. But at the same time, MCS itself can be considered as the means to achieve the advertisements. Many scholars (e.g. Stone, 1996; Barwise and Strong, 2002) illustrate that short message service (one sub-type of MCS) can be widely used to promote the sales of MCS. Trappey and Woodside (2005) further provide a discussion on the benefits and costs of short message service in advertising, though they fail to provide a true experiment to empirically support their conclusion. More recently, Okazaki et al (2007) thoroughly examine the process of mobile advertising. They find according to empirical results, trust is the key factor which links the dual-nature of MCS in advertising

It is important to acknowledge the research paradigm of producer and consumer behaviors under advertising is contributory to examine the advertising strategies of CDMA services of China Unicom. Also, this paper uses an important concept provided by the past research: Category-based stimulus, to analyze the successful advertisements of China Unicom’s CDMA service the People’s Liberate Army (PLA).

## **II The Advertising of China Unicom’s CDMA Service for the PLA**

Before discussing China Unicom’s advertisements on its CDMA services, it is essential to point out that the PR China Law of Advertisement prohibits derogating the products and services provided by other producers/providers<sup>6</sup>. Thus we can conclude that China Unicom cannot make any advertisement to derogate its major competitor, China Mobile, which captures the largest share of mobile service market, and also provides substitutes (such as GSM mobile services and IP services) of CDMA services. Meanwhile, according to the nature of CDMA services, whose

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<sup>6</sup> See Chapter 12 of the PR China Law of Advertisement, approved by National People’s Congress in 1994, <http://www.gdgs.gov.cn/cyfg/GGf.htm>, accessed on 21<sup>st</sup> Feb, 2008.

installment and connection cost will be greatly reduced if the service is consumed by a large group of customers who resident in same areas or register in same periods, we find that in China, the PLA is an ideal consumer of CDMA services in consideration of that.

## **1 PLA as a consumer of MCS**

Similar with any other army, the PLA has its main function to defense its country from being invaded. As China is such a large country, the PLA has a significant size, which makes itself as a large group of consumers whom needs a great sum of goods to maintain itself and keep its fighting ability. MCS is essential for the PLA in both the peace and war times, and we can easily realize the market of mobile communication service for the PLA is quite broad.

According to the nature of the PLA, it is not hard to find it is a consumer which put quality at the topmost place when it makes purchasing decisions. In purchasing MCS, the PLA pays most attention to the security of its potential (and also current) mobile communication, such as the ability to prevent wire tapping from the enemies. Meanwhile, the PLA also greatly emphasizes the stability of its mobile communication, as it realizes that the army needs to use mobile communication under any circumstances (conditions) during the war or other urgent times.

The PLA is fully maintained (funded) by the country. The purchasing decisions of the PLA are made by its senior officers. Their subordinates, mainly middle-class officers of the PLA, who are in charge of each individual army corps, have the responsibility and right to report to their senior officers on what equipments they need and whether the equipments work well in their army corps. The PLA runs a very strict 'subordinates obey seniors' principle, which means senior officers have the absolute power in making purchasing decisions. Normally, both the senior officers in charge of purchasing, and their subordinate officers who lead each individual army corps have been trained with anti-wire tapping and wireless communication skills under different circumstances. Most of those officers are graduated from special military colleges/programmes, which offer compulsory courses to equip their students (army officers) with necessary anti-wire tapping knowledge and examples of wire tapping cases (e.g. the Battle of Midway). Some of the PLA officers have even being involved in the past wars or military conflicts, such as the war with Former Soviet Russia, Vietnam, etc, and they may have better understanding/skills in anti-wire tapping and mobile communication from their personal experiences in those military conflicts. Therefore, we are confident to conclude that those PLA officers (or at least most of them) have a deep cognitive and emotional category in the security, as well as the stability of military mobile communication (especially in war times). This paper analyzes China Unicom's advertisements on its CDMA service for the PLA with the framework of category-based stimulus.

## **2 The advertisements**

Based on the purchasing decision-making procedures of the PLA, China Unicom chose to persuade the senior and middle class officers of the PLA by providing them with familiar examples, as well as extreme results in the advertisements. The advertising was carried out in the PLA General Office in 2003. According to the China Unicom CDMA Developmental Report

(2003), the detailed advertising were performed as below:

- 1) Invite relevant PLA officers to the bidding room, where advertising took place. According to the regulations of the PLA, those officers are required to make an overall comment of the product by giving a score of it (the measurement are given by senior army officers but not available to China Unicom). The score is a key factor to decide whether to buy or not.
- 2) China Unicom's advertising staff began to play a prepared short video, which starts with the facts (statistics) of battle-loss caused by insecurity of military communication in the past wars from 1939. That video continued to interview some veteran who survived from the Battle of Midway (an example that wire tapping can change the result of a war) to discuss the importance of the insecurity of military communication in a vivid way. This step lasted 8 minutes.
- 3) Immediately after the video, the staff turned to play another prepared video, which documents that in a battle in the Anti-Vietnam War (1979), a Chinese scout successfully found a large corp of enemies and then he tried to contact his superiors via his wireless communication set. However, no matter how hard he tried, he failed to contact his superiors due to the wireless disturbances from the enemy. Finally he threw his wireless communication set into the river and rant 'If I have a good wireless phone, no enemy can escape under my eyes!' in a despair<sup>7</sup>. The video lasted 6 minutes.
- 4) Noticing those PLA officers were shocked by the above two videos, China Unicom's staff stopped 3 minutes before continuing to play a documentary. This is about the PLA in the 1999 military rehearsal against Taiwan. It shows that a group of PLA soldiers are trenching in the mountains where the quality of wireless communication facilities is poor. One of the soldiers, who wanted to report his leader via his handset, suffered the problem of bad connection. The documentary shows he tried again and again, but his leader could not hear anything due to the poor connection. Finally he sighed 'Probably China Unicom is better!' This documentary lasted 5 minutes.
- 5) China Unicom's staff announced that the videos ended up and immediately the screen shows 'Yes, China Unicom is better!' Immediately each of those officers were given a brief prospectus which emphases that China Unicom's CDMA service's strength in security of military communication and the stable quality of communication under all circumstances. It does not mention other issues such as the cost, etc. Meanwhile, the key contents of the prospectus were also shown on PowerPoint slides, which had 5 pieces and were introduced in 10 minutes.
- 6) China Unicom's staff gave the conclusion remarks and the PLA officers left to start making their comments, suggestions, or maybe even decisions, which were not known by China Unicom until the announcement date of decisions. After the advertising finished, China Unicom was not permitted to continue providing other information to affect the purchasing decisions.

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<sup>7</sup> The language is originally Chinese, in which the sentence is much stronger than after being translated into English.

### **3 Results: An Excellent Contract**

Within one week, the PLA made the decision to purchase the CDMA service from China Unicom. The contract can be summarized as that the PLA buys 1.1million CDMA handsets in the contract year, while the PLA continues to purchase another 1.1 million CDMA handsets in the next two years given that China Unicom provides sufficient updates in its CDMA networks for the army. The updates and installments of networks are charged separately, and the prices of CDMA handsets vary according to their modes. The contract lasts three years.

Such a contract brings China Unicom a sale of at least 6.50 billion RMB for the CDMA handsets. ‘...And estimably, the installment and updates of CDMA networks for the army can also contribute around 1 billion RMB to China Unicom’<sup>8</sup>. This is a large amount because in 2004, China Unicom had a total business income of 66.59 billion RMB<sup>9</sup>. The contract making process is rather quick as well, which can also save China Unicom’s transaction cost and provide it more time to prepare the services. In short, this is a great success for China Unicom’s CDMA business, and we argue that this success can be partially ascribed to the wisely wielding of category stimulus in the advertisements of China Unicom’s CDMA business for the PLA.

## **III The Theory and Discussion**

### **1 The theory of category-based stimulus**

Theories of category-based stimulus assume that human beings have their own cognitive and emotional categories, which vary according to past experiences, previous purchasing decisions, educational background, etc (Sujan, 1985; Chaiken et al, 1989). These cognitive and emotional categories will lead categorization when perceiving and processing information which are from outside. That means, the perceiver of information will automatically attempts to match the information with its categories in head. Also, ‘Categorization can occur at any level, which can lead to different evaluations’ (Pavelchak, 1989, p354). Some scholars further demonstrate that all evaluations are derived from perceivers’ cognitive and emotional categories, as well as their following categorization in face of information or perceptions (Fazio, 1986; Lingle and Ostrom, 1981; Ostrom et al, 1980; Wyer, 1973). Accentuation Theory (Eiser and Stroebe, 1972) states that category based stimulus have a self-reinforce mechanism, through which categories will be maintained by past evaluation process. But it is important to emphasize that categories stimulus is conditioned by a series of factors. ‘Categorization is likely to be successful if there is a close enough match between the stimulus and a schema stored in memory’ (Pavelchak, 1989, p355). Therefore we can see that memory plays an important part to provide strong stimulus to categorization. Researchers further divide memory into two kinds: explicit and implicit memory, which relevantly refers to a person when consciously retrieval back to previous exposure and tries to access past information, and a person when recall prior encoded information without deliberate attempts to access those information (Shapiro and Krishnan, 2001; Lee, 2002). The Two-mode

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<sup>8</sup> See the 2004 China Unicom Annual Report, p17.

<sup>9</sup> As above, p16.

Model (Fiske and Pavelchak, 1986) demonstrates that consistency is another condition to stimuli categorization in processing information. In short, category-based stimulus is a framework which analyzes human being's reaction/evaluation process when face to information or objectives.

Behavioral economics adopts this framework into advertisement research. Goodstein (1993) believes that advertisements with category-based stimulus are effective to increase the likelihood of consumers to purchase the product, and also helpful to attract potential customers to watch the whole advertisement (Goodstein uses television advertisements as experiments) instead of giving up on the half way. A hypothesis test is also given to demonstrate the validity of category-based stimulus in advertising. Prelec (2006) considers category-based stimulus as one preliminary to construct consumer behavior model under competitive marketing interactions. Ho et al (2006) use behavioral economics as a tool to add category-based stimulus into a model of the interaction of consumer and firms' behaviors. Also, scholars consider category-based stimulus as an important factor in the advertising market competition when firms try to promote new products which aim to capture the potential market under great uncertainty (Tyagi, 2006). He further illustrates the relation between category-based stimulus of consumers and uncertainties in the market. The following passages examine how category-based advertisements mentioned in the previous chapter (advertisements with category-based stimulus) help China Unicom to win the contract from the PLA.

## **2 Discussion on the effects of China Unicom's advertisements with category-based stimulus**

Vakratsas and Ambler (1999) raise the issue that advertising must have some mental effects on consumers. China Unicom's advertisements successfully created and exploited such effects to attract those PLA officers to purchase its CDMA service by including category-based stimulus.

Before the advertisements, China Unicom clearly understood that CDMA service was a novelty in the market at the moment and thus the consumers, including the PLA, knew little about it. However, according to the nature of the PLA, China Unicom examined an important point of the PLA as a consumer of MCS: quality-centered, which is different from other consumers who need to consider a variety of factors, such as 'utilitarian and hedonic considerations' (Sullivan Mort and Drennan, 2007, p303). Hence, China Unicom successfully found that the PLA officers have unchanged cognitive categories in purchasing MCS, which determined their evaluation/decision process of CDMA services provided by China Unicom.

As analyzed in the previous chapter, we know that those PLA officers have a stable cognitive and emotional category to purchase reliable and high quality MCS, while pay less attention to prices. Therefore, the staff of China Unicom added category based stimulus into the advertisements step by step in order to evoke and match those PLA officers' cognitive and emotional category.

At the beginning, the short video provided statistics of battle-losses caused by insecure military communication. This was the fundamental step because it aimed to evoke those PLA officers' cognitive category by dropping a hint of what will be introduced in the following steps. As the information contained in the video well matched the PLA officers' cognitive category, based on

Goodstein's classical experiment results (Goodstein 1993), this step can also help to attract those officers to watch the following advertisements instead of dropping away.

The second video and its followed documentary provided most category-based stimulus to those PLA officers in a vivid way. The Anti-Vietnam War and the military rehearsal against Taiwan (1999) are two of the most significant military actions of the PLA since the foundation of the PRC, and the majority of those PLA officers have been involved in at least one of them. Therefore, we are confident that the information contained in the second video and the documentary can serve as strong category-based stimulus to persuade the PLA officers by matching their personal experiences. Also, we should mention the method to convey the stimulus is good. Numerous psychological papers have demonstrated that videos can provide vivid information to perceivers and have stronger ability to recall perceivers' past experiences, which can attract perceivers in a better and more reliable way (Sullivan Mort and Drennan, 2002; Heckler and Childers, 1992; Houston et al, 1987 etc). In this case, visual information may also convey stronger stimulus.

The advertisement sentence 'China Unicom is better' served as a unique context to successfully convert the previous introduction of the importance of the security of military communication to the advertising of the CDMA service provided by China Unicom, after realizing the previous videos and documentary had already provided those PLA officers with strong stimulus to match their categories. Meanwhile, noticing that there are only two mobile service providers in China, this context also beat China Unicom's competitor, China Mobile, in an obvious but clever way without breaking the PR China Law of Advertisement. In consideration of this, this context may also contribute to reduce some possible prejudices of 'China Mobile should be better in quality as it captured a larger market share' in some of those officers' mind.

To strengthen the category-based stimulus, China Unicom even intentionally omitted stating other privileges of its CDMA service in the final advertising step. For example, China Unicom did not mention the relevant lower communication price between CDMA service users. As Schoenfelder and Harris (2004) illustrate that consumers' ration can be oppressed by their emotions and past experiences while it can be aroused or strengthened by rational factors, such as prices of products, we notice that China Unicom skillfully avoided from wasting their efforts of previous advertisements by only concentrating on the quality and security of its CDMA service, which fall into those PLA officers' cognitive and emotional categories evoked by the advertisements. This last advertising step guaranteed that those PLA officers perceived the maximum amount of category-based stimulus, while it minimized other factors that can evoke consumers' ration. All those steps in advertisements matched the PLA officers' cognitive and emotional categories and provided them with strong category-based stimulus. These steps were coherent and each had its own functions without contradictions between each other.

It is also essential to point out that the staff performing the advertisements played an important role to achieve the strong effects of category-based stimulus. They must pay attention to the reaction of the perceivers and thus try to catch the self-involvement of those perceivers, which is a preliminary to convey category-based stimulus. Also, they need to control the time in order to keep consistency and then maximize the category-based stimulus. China Unicom staff adequately



controlled the advertisements by stopping 3 minutes after the two videos which contained a lot of category-based stimulus. This stop provided those PLA officers with a short time to briefly processing the stimulus they received, but cannot thoroughly think about it with great ration. Also, China Unicom staff cleverly controlled the time length of the full advertisement, as it is clear too long advertisement can make perceivers bored and reduce their incentives to purchase.

#### **IV Conclusion**

This paper argues that China Unicom achieved a great success of its CDMA business on the PLA from the angle of category-based advertisements. During the contract period, we believe that China Unicom may take some further actions to strengthen its advantages and privileges in the PLA. For example, we suggest that China Unicom may use CDMA service as a platform to make advertisements which are especially for the PLA, so that the division of advertisement can be achieved in a relatively costless way. These advertisements can strengthen the category-based stimulus as well.

The successful advertisement of China Unicom's CDMA service for the PLA can serve as a good example of using category-based stimulus to design effective advertisements in order to promote the sales of novelty products/services. Also, it is an example of making suitable advertisements to attract quality-centered customers, who have cognitive and emotional categories on paying great attention to the quality of products/services.

This paper is a qualitative research which does not provide enough empirical analysis to support its arguments. For the security of national defense, relevant laws and regulations do not permit any person/organization to make experiments on the PLA (especially on its senior officers). Also, though we examine the decision making procedures of the PLA, the detailed process to achieve the final results is still not available to us. For example, the Arrow Impossibility Theorem (Arrow, 1951) demonstrates that it is impossible to make an optimal decision without breaking its 6 preliminaries, but we do not know how many officers participated in the final decision, and we do not know how they argue/compromise with each other to reach the final decision.

We hope that future research in this field can provide first hand data sets to analyze the effects of category-based stimulus in advertisements. Meanwhile, we call for experiments and hypothesis tests to examine the detailed process of how category-based stimulus can be effectively conveyed to perceivers. In such a complex research field, we may need to think whether there is a new paradigm can replace the traditional Neo-classical analysis framework which tries to separate different factors and components of the research objectives.

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