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Web-Coin - Revolutionizing e-Payment in China

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***Abstract:** This paper discusses the current status and issues regarding Web-Coin, a newly emerging e-payment form in China. Web-coin has been well accepted in China due to its efficient and convenient payment features. The paper also discusses some ongoing controversial issues with Web-Coin, including regulation problems and the potential risks. This paper is intended to be a valuable reference and implications for the studies in Chinese online payment systems, as well as the development of e-commerce in China.*

***Keywords:** Internet, web-coin, electronic money, electronic commerce, currency, China*

***Track:** ICT Issues in the Greater China Region*

1. Introduction

The growing Internet-based payment services have fostered electronic commerce over last fifteen years. According to iResearch (2006), the E-commerce boom in China since 2005 is mainly due to the availability of the online payment systems in the country with the largest Internet population. Among several widely accepted electronic payment instruments, the popularity of electronic money (e-money), also known as electronic cash, electronic currency, digital money, digital cash, digital currency, cyber money or scrip, in recent years has attracted broad interest (Henckel et al 1999; Arnone & Bankiera 2004). The term e-money has been referred to as being used loosely to refer to a wide variety of proposed retail payment mechanisms (Holthausen & Monnet 2003). Its products are defined as stored-value or prepaid products in which a record of value available to a consumer is stored on an electronic device in the consumer's possession. Its value is purchased by the consumer and is reduced whenever the consumer uses the device to make purchases. Differentiated from many single-purpose prepaid card schemes, such as the ones offered by telephone companies, e-money products are intended to be used as a general-purpose means of payment.

Since 2002, a very similar kind of e-money called "network virtual currency" has emerged in China's electronic market and incurred a number of dispute issues as it is playing a more and more important role in e-commerce. The central bank of China is facing mounting pressures in how to legislate proper regulations and policies for the demand of e-payment from new

form of payment instruments without hindering the growth of the new economy (Berk 2002). At the same time, the fast growing electronic payment services and new e-commerce businesses are demanding a well-established electronic financial system to keep up their businesses. This paper is intended to convey the information about latest dynamics of China's e-commerce to the information systems research community in order to trigger further research efforts in this new IS research area. In this paper, we raise research issues regarding the status of virtual currency in China. To facilitate the discussion, this paper looks at electronic money in China specifically in terms of web-coins, web-coin issuers – (WCIs), and Internet value-added service providers (iVASPs).

This paper is organized a different way from regular papers in information systems because of its specific purpose. Section 2 presents an overview of web-coins in China with more detailed information about the two leading web-coin issuers in China - Shanda and Tencent. Section 3 raises three controversial issues regarding the nature and regulation of web-coin in China. Section 4 covers the detailed discussion of web-coin in accordance with the issues raised in the last section. Section 5 concludes the paper with a few remarks for the further research issues.

2. Web-coins in China

By 2005, a decade after the Internet service was launched in China, China's Internet population exceeded 100 million users and became the largest in the world (Lin 2006). The huge user population has been the main driver for e-commerce development in China (Meeker and Li 2005). 2005 is called the inaugural year of China's electronic payment, because it is the first year the e-payment has reached the breakthrough in China, which has greatly stimulated the growth in e-commerce in China (iResearch 2006). Among various online payment mechanisms and forms available in China, web-coin has been so far the most successful one in China.

The popularization of web-coin is promoted by fast-growing Internet-based value-added services in China, specifically the emerging virtual online products and services, such as virtual self-satisfaction and self-showing. Web-coin also underpins other services, such as online games, social networking, motivation and personal characteristics show, and so on. Various forms of web-coin have become a versatile payment method for these value-added services and have turned out to be profitable to iVASPs. Users of the Internet can purchase web-coin credits or recharge their web-coin accounts via bank cards, pre-paid Internet/telephone service accounts, third-party payment, postal mails, and so on, and spend their virtual money on online gaming, audio/video product downloads, or social networking. So far, all successful Chinese iVASPs have issued their private payment tools, including web-coin. In this sense, iVASP is equivalent to WCI. Within a short period of time these tools have brought in enormous profits to WCIs. For example, Tencent's gross profit in 2006 was 2.8 billion RMB, doubled from that of 2005. Although web-coin has been named differently from WCI to WCI, they are essentially the same kind of payment tool for their issuers in charging on the Internet value-added service. Table 1 shows main types of web-coin issued in China and their issuers.

Among the WCIs in Table 1, Shanda and Tencent are the two most popular ones in China. As we extend our analysis to the financial performance of the two companies, we will see that web-coin has become the pillar revenue source for both of these companies.

Table 1. The Most Popular Web-coin in China¹

WCI	Founded time	Main business	Web-coin	Issuing time	Outstanding amount (mil RMB)	Main usage
Tencent	November 1998	Instant messaging	QQ-coin	May 2002	1,825	Online games, music and movie download, virtual property purchase, e-magazine, network storage space
Shanda	November 1999	Online gaming	Shanda-coin	May 2003	1,543	Online games, music and movie download
Baidu	End of 1999	Search engine	Baidu-coin	October 2006	n/a	Music and movie download
Sina	December 1998	e-portal, advertising	U-coin	April 2004	15.2	Online games, music and movie download, B2C shopping, fortune-telling, chatting, and so on
Kingsoft	August 1998	Computer anti-virus	Jinshan coin, or K-coin	December 2004	n/a	Online games, anti-virus software services, other software download
Sohu	February 1998	e-portal, SMS	Hu-coin	May 2004	21.1	Online games, music and movie download, email account services, fortune-telling
Netease	June 1997	e-portal, advertising	Popo-coin	n/a	1,856	Online games, music download, chatting, virtual mood expression

Information in Table 1 is from the portal sites' official sites:

Tencent <http://www.tencent.com/index.shtml>

Shanda <http://www.snda.com/cs/index.jsp>

Baidu <http://www.baidu.com/about/index.html>

Sina http://corp.sina.com.cn/chn/sina_index.html

Kingsoft <http://www.kingsoft.com/about/index.shtml>

Sohu <http://www.sohu.com/about/>

Netease <http://gb.corp.163.com/gb/about/overview.html>

Additional data were also used from the following sources:

- Hongkong stoch exchange http://www.hkex.com.hk/index_c.htm, published on 21th march 2006. Tencent's 00700 financial report page
- SEC www.sec.gov Shandat's financial report combined with iresearch <http://www.iresearch.com.cn/html/Default.html>
- SEC www.sec.gov Sina's financial report combined with iResearch <http://www.iresearch.com.cn/html/Default.html>
- SEC www.sec.gov Sohu's financial report, combined with iResearch <http://www.iresearch.com.cn/html/Default.html>.
- Netease's financial report until 31th, December, 2006

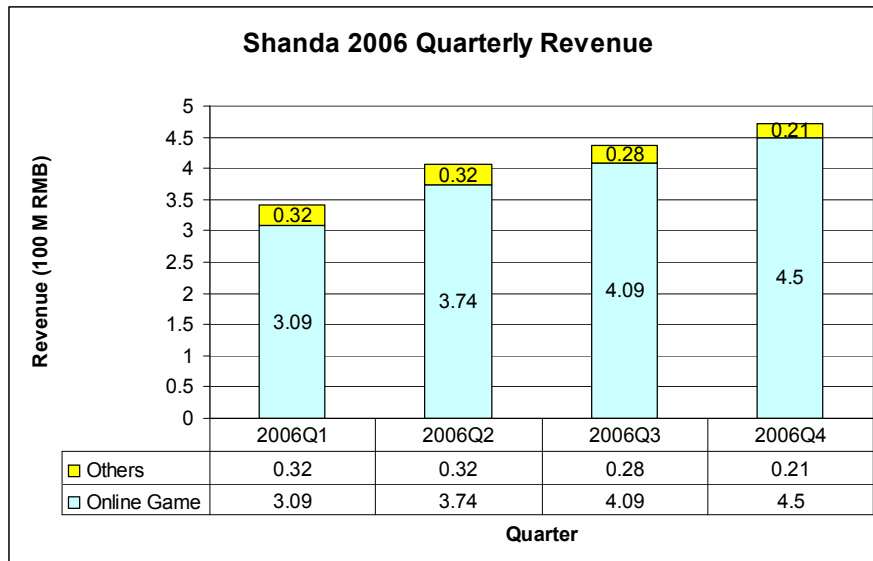


Figure 1. Shanda's 2006 Quarterly Revenue

1) Shanda (Nasdaq: SNDA)

Shanda is the largest online gaming company in Asia. Its services include MMORPG games, casual games, card games, fighting games, wireless games, cartoon, literature, music and so on, attracting consumers in a broad range of age groups. By the second quarter of 2005, it had 460 million registered users and among them 18.5 million active users. Its simultaneous online users reached as high as twenty-five million. Figure 1 gives an outlook at the quarterly revenue growth of Shanda in 2006. From the chart, we can see that in the 4th quarter of 2006, the total net income of cyber games reaches 4.5 billion RMB (576 million US dollars), an increase of 44.3% from that of a year ago, and an increase of 10% from that of the previous quarter. One interesting phenomenon is that Shanda's online game business was growing between 9.2% to 21% every quarter in 2006, while its other businesses were steadily declining.

2) Tencent

Tencent (HKEx Stock Code 00700) is the fastest growing Chinese e-commerce company located in mainland China, and also the number one instant messaging service company in China. It offers cyber IM (instant messaging) service, portal site news, online games, entertainment, consumer-to-consumer electronic commerce, and other Internet value-added services. It entered the online consumer-to-consumer auction market in late 2006. It is now the most profitable electronic commerce company in China. Its most popular product is the cyber IM software named Tencent QQ, which takes nearly 79% market share in China with more than 200 million subscribers and 27 million simultaneous users. The original name of QQ was OICQ. However, because of the possible trademark infringement with another popular instant messenger (ICQ), Tencent renamed its IM software to QQ. Tencent's QQ-coin is used as the means to convert the great attendances to the amount of practical profits. After its popularization by offering free instant message service, Tencent has launched various kinds of new Internet services. From Figures 2 to 4, we can see that Tencent's value-added businesses have been growing rapidly and become the major revenue source.

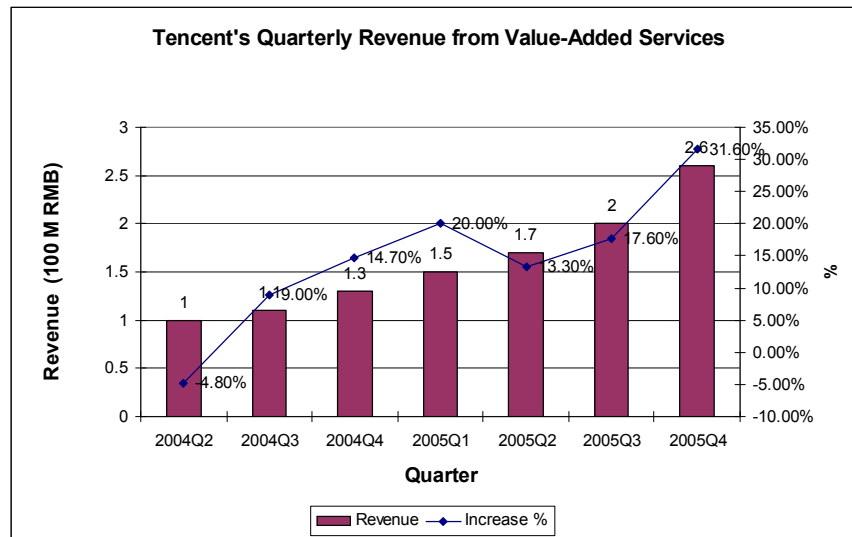


Figure 2. Tencent’s Quarterly Revenue from Value-Added Service during 2004-2005

Based on the above two examples, we draw the following conclusions:

- (1) There is an evident increasing trend of Internet value-added services in China.
- (2) Judging from the data of the increasing rate, both Shanda and Tencent have a strong growth potential.
- (3) As web-coin is the major recognized payment tool for Chinese iVAS services, we can expect that the demand for web-coin will continue to grow.

In general, web-coin has proved its success in last few years, which enable the Internet value-added companies to adapt to the electronic market in China.

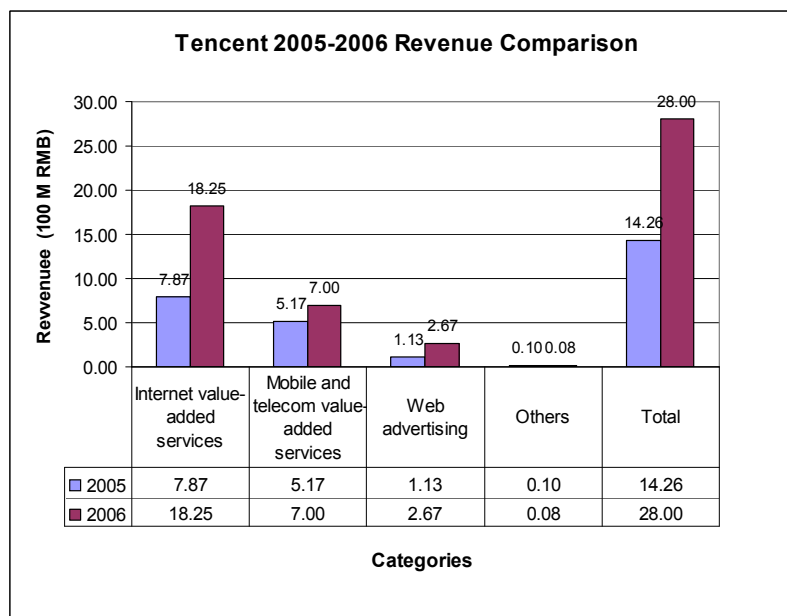


Figure 3. Tencent’s Revenue Structure Change during 2005-2006²

²Data source: Hong Kong Stock Exchange http://www.hkex.com.hk/index_c.htm (Symbol: 00700) March 21, 2007, 16:21, page 7

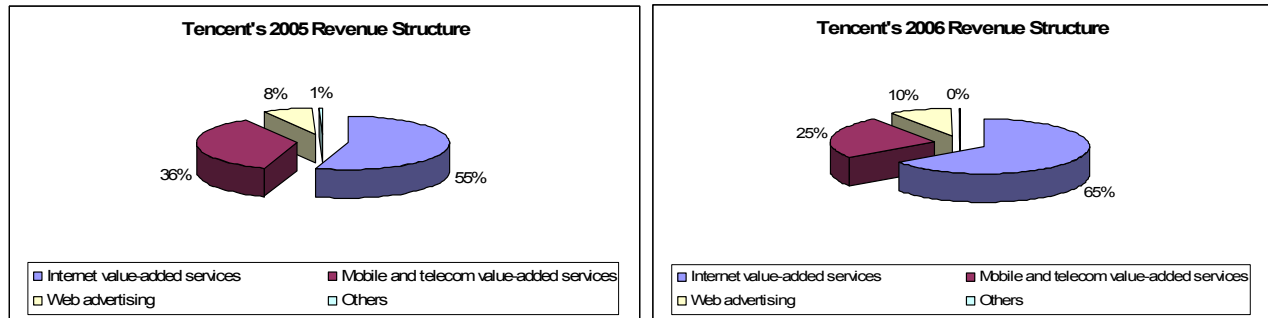


Figure 4. Tencent's Revenue Structure during 2005-2006 (in Percentage)

3. Current Controversy Issues regarding Web-coin in China

The use of web-coin has achieved great success as an online payment instrument and thus has helped stimulate the fast growth of electronic commerce in China. However, its rapid development has also incurred some problems to the operational management of Internet value-added companies. For instance, complaints from consumers that they lost some web-coins unexpectedly, the concern about potential negative impacts on the social and economic system, and so on (Fullenkamp & Nsouli 2003; Li 2007; Wu 2006). All of these not only diminish customers' benefits but can also negatively affect further development of the electronic market. The main concerns are rooted in the relationship between the web-coin and the official currency, the RMB, and the issuance and management of web-coin. This then confronts the Chinese Central Bank and WCIs with critical challenges (Capie et al 2004). To the Central Bank of China – the People's Bank of China – this raises a number of legislation and administration issues, such as how to regulate and monitor web-coin (Li 2007). To WCIs, they are concerned with any negative impacts from the policy changes, which could lead to the collapse of their business if they violate the new regulations. To avoid entering this minefield, WCIs have been very carefully dealing with the strategic decisions regarding web-coin. This actually restricts the development of the growth of WCIs. Therefore, all stakeholders have been closely watching at the progress of the disputes over the controversy issues.

Controversy 1: Is web-coin a kind of legal currency?

This is a fundamental issue. Its outcomes may totally change the fate of web-coin and, therefore, the fate of WCIs. One opinion is that web-coin is a kind of currency as the use of web-coin has been beyond the scope of traditional Internet services (Yang 2006; Zhang 2007). Web-coin offers some functions of a real currency, for instance, as a media of circulation and payment and it also has the character of universal equivalent. So web-coin is a kind of currency.

Alternatively, some have also suggested that web-coin is not playing the role of legal currency (Jiang 2006; Zhang & Tian 2005). In either case, it is issued by one company and circulated within the company's virtual market. As a result, the web-coin can only legally move in a single direction, buying and consuming but no selling, except for transactions of web-coin in the black market. As bi-directional or multi-directional moves of a currency is the basis of circulation, the character of one-way move of web-coin mean that it is not a kind of currency. In this way issuers can say that web-coin is just a kind of credit or a kind of service credence for the convenience of online consumption in a limited scope. In addition, none of the issuers of web-coin provides services that allow the inter-company exchange between different web-coins. This blocks the external circulation of web-coin.

Controversy 2: Will web-coin impact the real currency?

The first dispute logically leads to this issue. On the one hand, some believe that web-coin could exert impacts on the real currency (Yang 2006; Zhang 2007). Web-coin as a kind of universal equivalent used in the Internet already has been functioning as a real currency. If it is used in a large amount of transactions, to some extent, it will impact on the real currency. On the other hand, some argue that web-coin will not impact on real currency (Jiang 2005; Shuai & Zhang 2005). Web-coin never completed a circulation and would not be circulated in the market. It is just used within one company or a special area. So it would not impact on the real currency. Although some kinds of web-coin already performed some currency functions, they do not have the status and the value of real currency. Its use is limited in the Internet, and buying web-coin must use the real currency. In this way, web-coin is just an inter-medium and must be based on real currency.

Controversy 3: In what extend should issuing web-coins be monitored and regulated?

There is no dispute on whether regulations are necessary for web-coin but the issue is that in what extend it will be done. Some believe that the web-coin should be strictly supervised (Li 2006; Wang 2007; Ding 2007). First, some kinds of web-coin can be used in criminal transactions, for example, money laundering. Monitoring and regulating will help reduce the chances for malicious uses of web-coin. Second, web-coin may distort the figure of money demand and effect the traditional way of monetary statistics. This then will influence the demand of currency. Eventually it will impact on currency issuance by misleading the currency policy.

Another opinion is that the web-coin should only be modestly regulated (Zhang & Tian 2005). Web-coins are just a kind of credence which is offered by Internet service providers to the customers for paying the goods and services online. It is like the bread ticket sold by eatery in the campus. Therefore, the government should never supervise web-coin too strictly for the sake of free market policy. Nevertheless, what is the proper extend to regulate web-coin remains an open research issue.

4. Correcting Misconceptions about Web-coin

The above controversies may be caused by a few common misconceptions that are due to insufficient theoretical research. In this section we are to analyze these problems and clarify the fundamental issues.

4.1 The mismatch between the format and the essence of the web-coin

The original purpose of web-coin is to facilitate online payment for certain types of virtual products (Zhang 2004). To attract more consumers this kind of payment tools were named with “coin”, making it sound like a currency. Actually the name of “coin” is misleading, because of which someone may even try to make a profit from the illegal circulation of web-coin (Chang 2007; Yu 2006). We argue that although web-coin indeed has some functions of currency, web-coin cannot be dealt with as a kind of currency. Development of currency has gone through the phase of object currency and the phase of credit currency. Nowadays, all those real currencies we use are credit currency which are issued by central bank or authorized commercial bank. Credit currency that depends on country credit is accepted by society and regulated by laws. Any type of web-coin is issued by a company and depends on not the country credit but the company credit. In fact, web-coin can only be used within the market operated by its issuing company as a statistic symbol, to purchase this company’s virtual products. Therefore, the web-coin has no way to function as a real kind of currency. We should not be misled by its name that was created mainly to attract cyber user – many of them like this name under the illusions of the virtuality. Practically, although the amount of these web-coins in use, for example QQ-coin, is truly a large number, compared with the circulation of real currency, this figure is only a very small fraction.

4.2. The misunderstanding of the purpose of web-coin issuance

With the development of market economy in China and the maturity of Internet based electronic markets, the existing online payment system underpinned by banks can no longer cope with the growing demand and evolving requirements of online payment. The emerging web-coin is inevitably becoming a good choice for electronic businesses. Ironically, the popularization and success of web-coin challenged the traditional banking system (Henckel et al 1999; Swartz et al 2004). To focus on their regular electronic businesses the web-coin issuers employ the web-coin as an approach for online charging not a financial means for arbitrage. From the payment angle, the emerging web-coin is absolutely a necessity for iVASPs to survive in the more competitive electronic market and to sustain the growth of the businesses and the web-coin is the most versatile approach so far. In fearing of the possible regulation impacts, WCIs are very careful in preventing the possible violation of the law. For example, Tencent has taken five major treatments to guarantee QQ-coin in the right track as a normal payment tool only. These include prohibiting buying-back of QQ-coins, restricting the total amount of QQ-coins issued, limiting the amount of legally owned, expiration setting, and duration restrictions.

From the consumer's angle, it will be costly and inefficient if a consumer chooses the remittance or bank card to pay a small amount online, such as 1 RMB, for a virtual product. Also there is a certain level of inherent risk regarding the online payment with an account with larger balances or credit lines. Alternatively, for example, the QQ-coin of Tencent can be safely used for payments in value-added services, such as QQ game, QQ show, QQ zone and QQ pet and so on,. Also the use of QQ coin is flexible and convenient. Therefore, web-coin has been welcomed and widely adopted by online consumers. Thus it can be seen that web-coin is the embodiment of a market demand. It is a payment method with good features that other payment tools cannot compete with, especially for micro-payment.

4.3 The illusive expectation that web-coin will eventually become a kind of electronic money

Based on the above discussion, web-coin issued for the convenience of online value-added services is by no means a kind of statistic symbol or a kind of payoff credence. Taking QQ-coin as an example, Tencent's consumers can buy QQ-coin through several ways, such as QQ card, E-sales and so on. Then they spend QQ-coin for the virtual products or services within Tencent's market. There is no channel for them to pay a product in the market provided by other e-commerce companies or pay something that belongs to the real world. In this way, we can say that QQ-coin is not a kind of currency but a payoff credence which testifies the status of paying off the charge.

Web-coin is not an instrument of payment for the transfer of capital. A transfer process may cause the move of a large amount of funds between different accounts. This may not happen in the context of web-coin. When a consumer purchases a certain amount of web-coin, the consumer spends cash, uses a bank card, telephone or cell-phone to acquire a certain amount of credit of web-coin in electronic form. During this process, a sum of funds is transferred from the customer's bank account or pocket to the merchant, and the balance of cash or bank card, the payment tools or payment means, is reduced. The process to use the web-coin credit to pay virtual products is a process of consumption, not money transfer. The credits of web-coin are exchanged between the different virtual accounts within the iVASP. The only channel to change the credits of web-coin to the real money is when the consumer uses the real money to buy web-coin. So as long as the WCI restricts the use of web-coin inside its market, web-coin is a restricted local payment tool and never has the chance to reach the level of general money transfer instrument.

Regarding whether web-coin has the potential to become a kind of e-money, it is related to the definition of e-money again. Up to now, the two most canonical definitions of electronic money were proposed by Bank for International Settlements (BIS) in October 1996, and by European Central Bank (ECB) in 1998, respectively. These two definitions share several points in common:

- Value of money is deposited in electronic-data form.

- Electronic money stands for the creditor's claim rights to the issuers.
- Electronic money must have an upper limit for deposit.
- Electronic money can be used widely outside the issuer's operational system.
- The process with electronic money need not involve the banks.

The most important attribute of electronic money according to ECB is that it must be redeemable. It means the possessors have the creditor's rights to the issuers. The circulation between the legal money and electronic money must be bi-directional. The possessors have the right to change the legal money back at anytime, no matter what specific method online consumers use.

Based on the above points, although the web-coin shares the mechanism of advanced payment instruments like electronic money, it is just the credence of payoff and cannot be redeemed. The possessors of the web-coin just have the ownership of virtual products or service provided by the issuer but not the ownership of the legal money, which has been circumstanced by the issuer. Therefore, the web-coin is not a kind of electronic money.

4.4 The Nature of Web-coin

The misconceptions about web-coin are fundamentally related to the nature of web-coin, its impacts on the economic system and society. We make the following three points to address these problems.

1) Web-coin is a kind of electronic payment tool with a currency-like name

Based on the above discussion we can define the web-coin as a kind of electronic payment tool with a currency-like name. The emergence of web-coin is inevitable in the course of iVASP development (Swartz et al 2004), especially in China's e-market. Web-coin has so far satisfied the needs from iVASPs, which cannot survive on providing the free service. Actually, web-coin is a kind of recordation of how much the consumers pay in advance. It has the same character as the bread card and payoff credence. And its attributes are similar to debit cards, prepaid cards or some other electronic payment tools. We can say that web-coin is an innovation for micro-payments (McGrath 2006).

Web-coin utilizes the advantage of IT technology as well as the latest e-commerce concepts to provide innovative payment facilities with low transaction costs and high efficiency. It adapts to the peculiarity of Chinese online consumers who are relatively young and have low income. The payment based on web-coin is flexible and sporadic. In this way web-coin is superior to other forms of online payment and that is why it has greatly promoted China's e-commerce market in recent years.

2) Web-coin does not have the attributes of commodity money

In economics, fiat currency or fiat money is the one that enjoys legal tender status derived from a declaratory fiat or an authoritative order of the government (Mishkin 1999). It is often associated with paper money because, without government fiat, bank notes are not a legal tender in payment of debt, and only specie is unlimited legal tender for money debts.³ In China, the RMB is the legal tender. It is the symbol dominion of a country and determines one country's financial stability. So it has an exclusive status that no other form of currency can replace.

Contrast to a fiat currency, web-coin is a private currency that is issued by private institutions – the iVASP. Therefore, it is not currency and does not have the standard currency attributes, and only assumes the payment function in a restricted category. The payment function of web-coin that separates it from the intrinsic value makes it just a payment tool.

3) When properly controlled web-coin has nothing to do with the money laundering

³ See <http://www.answers.com/topic/flat-currency>

Money laundry is the main risk that web-coin may incur (Liu 2004). Although there is such a possibility, as long as there is no bi-directional mechanism for consumers to exchange web-coin with real currency, money laundering by the web-coin cannot effectively happen. However, this does not mean other crimes will also be blocked. There have been some reports that some criminals used web-coin to commit other kinds of crimes repeatedly in last few years. That, however, is not the fault of the payment tools themselves but the completeness of relevant mechanism, regulations, and systems.

5. Conclusive Remarks

There has been a sustained notion in society that an object without intrinsic value that is accepted as a media of payment can be regarded as money (Mishkin 1999). However, if it is not issued by the government or the central bank, there will be doubt over its legal status. Therefore, disputes unfolded on the Internet over several kinds of web-coins and web-based debit “cards” which are issued by some leading iVASPs in China to facilitate online billing and payment. In terms of theory, these kinds of web-coin and cards are generally regarded as a kind of online money. Thus, it leads to much censure and criticism. This paper initiates the readers to the new phenomena in the field of small-value payment and micro-payment in China, implying the payment in the measure of yuan, jiao, fen, and derives the analysis and research of them, for the purpose of offering reference for the future studies on theoretical analysis and applied application.

Although some scholars define currency from many different angles, their thoughts about the essence of the currency are unanimous. They all believe that currency is kind of commodity. With the development of information technology, electronic commerce urges a new instrument to satisfy the demand of online payment, because the traditional ways of payment are unable to cope with the dramatically developed virtual economy. Web-coin becomes a realistic and versatile instrument to solve those problems, particularly for micro-payments.

Some emerging research issues remain for further exploration. For example, there has been an argument that object currency has already developed to a symbol of value. This viewpoint is based on the fast growth of electronic commerce and the widely-accepted online payment systems. A closely related issue is that research on corporeal currency should turn to research on virtual currency in the time of electronic payment. This will lead to further interesting issue that the essential attribute of currency derive from function not from the commodity itself. Finally, it can be concluded that the development of credit currency has already changed from object time to virtual value symbol time. The expected theoretic research outcomes will have profound influence on the monetary policy in the e-commerce age and the reform of the monetary system.

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