ELECTRONIK MONEY

Yulia Denisenko, *student, gr. E-53*

Electronic money (also known as e-money, electronic cash, electronic currency, digital money, digital cash or digital currency) refers to money or scrip which is exchanged only electronically. Typically, this involves use of computer networks, the internet and digital stored value systems. Electronic Funds Transfer (EFT) and direct deposit are examples of electronic money. Also, it is a collective term for financial cryptography and technologies enabling it.

While electronic money has been an interesting problem for cryptography, to date, use of digital cash has been relatively low-scale. One rare success has been Hong Kong's Octopus card system, which started as a transit payment system and has grown into a widely used electronic cash system. Singapore also has an electronic money implementation for its public transportation system (commuter trains, bus, etc), which is very similar to Hong Kong's Octopus card and based on the same type of card (FeliCa). A very successful implementation is in the Netherlands, known as Chipknip.

Technically electronic or digital money is a representation, or a system of debits and credits, used (but not limited to this) to exchange value, within another system, or itself as a stand alone system, online or offline. Also sometimes the term electronic money is used to refer to the provider itself. A private currency may use gold to provide extra security, such as digital gold currency. An e-currency system may be fully backed by gold (like e-gold and c-gold), non-gold backed, or both gold and non-gold backed (like e-Bullion and Liberty Reserve). Also, some private organizations, such as the US military use private currencies such as Eagle Cash.

Many systems will sell their electronic currency directly to the end user, such as Paypal and WebMoney, but other systems, such as e-gold, sell only through third party digital currency exchangers.

Some community currencies, like some LETS systems, work with electronic transactions. Cyclos Software allows creation of electronic community currencies.

Ripple monetary system is a project to develop a distributed system of electronic money independent of local currency.

Using cryptography, anonymous e-cash was introduced by David Chaum. He used blind signatures to achieve unlinkability between withdrawal and spend transactions.

In cryptography, e-cash usually refers to anonymous e-cash. Depending on the properties of the payment transactions, one distinguishes between on-line and off-line e-cash. The first off-line e-cash system was proposed by Chaum and Naor. Like the first on-line scheme, it is based on RSA blind signatures.

The main focuses of digital cash development are 1) being able to use it through a wider range of hardware such as secured credit cards; and 2) linked bank accounts that would generally be used over an internet means, for exchange with a secure micropayment system such as in large corporations (PayPal).

Theoretical developments in the area of decentralized money are underway that may rival traditional, centralized money. Systems of accounting such as Altruistic Economics are emerging that are entirely electronic, and can be more efficient and more realistic because they do not assume a zero-sum transaction model.

Although digital cash can provide many benefits such as convenience and privacy, increased efficiency of transactions, lower transaction fees, new business opportunities with the expansion of economic activities on the Internet, there are many potential issues with the use of digital cash. The transfer of digital currencies raises local issues such as how to levy taxes or the possible ease of money laundering. There are also potential macroeconomic effects such as exchange rate instabilities and shortage of money supplies (total amount of digital cash versus total amount of real cash available, basically the possibility that digital cash could exceed the real cash available). These issues may only be addressable by some type of cyberspace regulations or laws that regulate the transactions and watch for signs of trouble.

So, modern, quickly developing world impossible to present without electronic money. Quite soon they will become integral part of our life. Electronic money is really incredible invention of humanity.

Gladchenko O.R., *adviser*