Shop Online in Peace
By Izwan Iskandar Ishak

CyberSecurity Malaysia

(This article was published in The Edge, 12th March 2007)

Consumer trust and confidence in e-commerce is critical for the sector to develop. After all, without consumer participation, e-commerce will not be successful. The online phenomenon — where many things that used to be done in the physical world are now being done online — will not flourish if consumers do not have faith. Over the years, e-commerce has been taking shape — from simple online shopping to Internet banking. Everyday transactions can now be performed online and this has changed the way people see their lives. One of the key elements in performing online transactions is the method of paying for goods purchased. Consumers are naturally concerned about the safety of such method. The common perception is that online transaction may be risky. People tend to feel more secure purchasing goods in the real world. Actually, shopping online is the same as buying a pair of shoes from the local shop.

Online payment systems have been developed to cater for the needs of the new environment in the cyber world. Consumers should be able to trust these new methods because they are practical, easy, and secure. Online payment systems may be categorised into two major types — electronic money and account-based e-payment services. With the advent of Internet technology and e-commerce, an e-payment system has been introduced — digital cash or e-cash. It has been described by the European Union Parliament as a replacement for coins or banknotes. One of the advantages of electronic money is that it is only information; hence geographical location is not important. Once the value is loaded into smartcards, it can be used online. There are many examples of electronic money systems available, but most of them are software-based virtual cash and smartcards. Software-based virtual cash refers to money stored in software to be used when a payment is made online. The value will be

deducted from the software. However, credit cards are used to add value to the amount of money in the software. The smartcard, on the other hand, has a specific feature called a "microchip" where value is stored in the chip. The microchip or microprocessor is built into the cards and gives them a certain processing and memory capacity. A personal card reader may be installed in a computer or a digital television set top-box to enable the person to shop online. Again, the value of the card may be loaded by using credit cards or from a cash machine.   This type of payment is designed for small amounts. Credit cards may not be suitable to pay for smaller sums; and further, this type of payment plays the role of replacing cash. An example of this method is Visa Cash, a chip-based card that comes in two forms — reloadable or disposable. The former may be reloaded to add value to the card and can be reused while the latter is preloaded and is used until the value finishes. The card can be reloaded at specialised terminals or any automated teller machine (ATM) that provides the service.

Another form of electronic money is the online account-based e-payment services. Here, a user is required to open a virtual account. Funds may be added to that account by credit cards, debit cards or bank accounts, and later this account is used to pay for goods online. This is an alternative to credit cards because it is secure and easy to use. It is secure in the sense that credit card details are not required for every purchase. Once entered during "top up", a customer's details will be stored securely and will not be disclosed to the merchant. Application is easy because it will lead the consumer through the entire shopping session without the hassle of having to key in the credit card's details every time he shops online. An example of this type of alternative Internet payment is PayPal. It uses email to inform the recipient that a payment has been made. Opening a PayPal account is free. It is not only available to pay for goods online but may be used to send money to anybody in 56 countries provided that such persons hold a valid email account. Payments may be made in Canadian dollar, euro, pound sterling, US dollars, yen and the Australian dollar. Payment may be made in any selected currency and it will automatically be converted to the desired currency. With this feature, consumers do not have to hold a balance in another currency. If a consumer receiving the money is not a PayPal member, he will receive an email to open a PayPal account. The

member can then withdraw the money through his bank or let it stay in his PayPal account. He then uses the same account to shop somewhere else. PayPal accepts money from the purchaser by credit cards, debit cards or from the purchaser's bank account. It uses secure technology to provide protection against fraud; hence consumers should not be afraid of entering their financial details online. For instance, PayPal automatically encrypts the confidential information in transit from the consumer's computer to theirs, using Secure Sockets Layer protocol (SSL) with an encryption key length of 128-bits. Before logging in to the site, their server checks that the consumer is using an approved browser, one that uses SSL 3.0 or higher. Furthermore, PayPal has developed a new security feature called the PayPal Security Key. It's a small electronic device that generates a unique security code for the consumer's account every 30 seconds. The consumer may use that code to access his account. It's like a combination lock for the account, except that the combination always changes. The security key creates the account access code by using a complex algorithm that's unique to the consumer's device. When the consumer enters that code after logging in with the user ID and password, PayPal's secure servers can verify his identity. This helps prevent unauthorised access to the account.

The development of the Internet sees the emergence of new methods of payment. These methods are carefully designed to suit the public's need and the public is at liberty to choose which one they want. Each method is made to support the individual needs and preference of each consumer and is developed to ease the process of online payment so that the consumer feels secure. Basically, this extends the capacity of payment systems to work in the cyber world. The aim is to enable the positive growth of e-commerce globally.