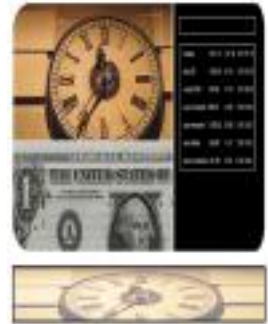




## E-Commerce: an Indispensable Technology

by Wael A. Hassan



Trading has evolved from barter and coinage to credit cards and electronic cash. The first notions of e-commerce came with the invention of the first e-cash system by David Chaum in 1985, but e-commerce and electronic identification systems have evolved greatly since then.

E-commerce is about using a digital means of transmission to conduct business across a network. Products and services are delivered based on the customer-client agreement where a digital compensation, paid by the client, can be exchanged for a widely used monetary value. Electronic payments are of several types: electronic cash, electronic checks, electronic credit card payments, and micro-payment systems. In an electronic payment system, banks exchange electronic cash units with customers for an equivalent value. Customers store these e-cash units in their electronic wallet. These units are transferred over to the merchant who redeems them for monetary value from an e-cash-issuing bank. Electronic checks work in a very similar way. Electronic credit card systems are a little different; they introduce the notion of a Certificate Management Center (CMC) that issues and revokes public key certificates. A micro-payment system is generally domain-specific, targeted at environments like the stock market where delay and overhead is not tolerated.

The internet is an insecure and unreliable medium; thus certification and data protection are needed. Certification Authorities are agents that associate public keys to identities. This form of certification is often referred to as a public key certificate, whereas an Attribute Certificate is one that binds characteristics to an identity.

Dangers to e-commerce include forgery and infringement of privacy. Preferences, tastes, personal habits, and spending patterns are examples of what marketing

agencies use to direct their advertising. Everything from news postings to credit cards purchases, personal and financial interests, e-mail and political opinions can be archived and sold. Privacy protection systems are of two types: Anonymous, where no one can trace your electronic connection; and pseudonymous, where you have a digital identity that has some properties attached.

Electronic trading is becoming a need in our daily life and will continue to grow in the future. Let us introduce you to some of the features of e-commerce in this issue of ACM Crossroads!

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## Biography

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