

On-Line Credit Card Transaction Processing and Fraud Prevention for E-Business

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INTRODUCTION

On-line consumers in the United States spend nearly 1 trillion dollars each year using a credit card over the internet (Ray & Ghahremani, n.d.). Accepting credit card payments is essential for any successful e-commerce merchant's web site. Processing credit card transactions over the Internet is one of the fastest growing segments of business transactions in this age of computer technology. This type of transaction or "card-not-present" (CNP) transaction requires a special type of merchant account.

Merchants that sell merchandise and services over the Internet are referred to as e-tailers or e-commerce merchants. In the beginning of on-line credit card usage, to accept credit cards, an e-commerce merchant needed a merchant account through a bank. But currently there are a number of services, generally referred to as credit card processors or merchant account services, which will permit an e-commerce merchant to accept credit card payments on-line or over the phone without their own merchant account. There are three different methods for processing credit card payments on-line using an e-merchant account service. These are:

1. **Real-Time Processing:** Real-time processing allows e-commerce merchants to link their e-commerce shopping cart with a gateway merchant service which automatically processes credit card payments in real-time.
2. **Virtual Terminal (Online Interface):** An e-commerce merchant can also process credit card transactions, manually, 24 hours a day by logging in on-line and submitting a secure form through a merchant account interface. An e-commerce merchant can use this to process credit card payments while taking the customer's information over the phone if the e-commerce merchant is able to access the Internet at high speed while talking with the customer.
3. **Automated Recurring Billing (ARB):** Some e-commerce merchant services need to charge customers on a monthly or account threshold basis. Some e-commerce merchant account services allow the e-commerce merchant to set the time interval or the account threshold level and some services allow an e-commerce merchant to upload multiple subscriptions using a batch file in the form of a spreadsheet such as Microsoft Excel.

PayPal is generally accepted as the most widely used online merchant account service with more than 156 million accounts worldwide (The Statistics Portal, n.d.). VeriSign operates a competing service called Payflow that is typically used by e-commerce merchants with a high volume of transactions each

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month. Although the number of e-commerce merchant account service providers continues to increase, some of the more popular one are listed below (Credit Card Processing Services, n.d.; Merchant Account Solutions. n.d.):

- Flagship Merchant Services,
- Gomerchant Merchant Accounts,
- Merchant Accounts Express,
- MerchantWarehouse,
- Authorize,
- E-Commerce Exchange,
- NorthAmericanBancard,
- Total Merchant Services,
- Merchant Credit Card,
- Bluepay,
- GoDaddy,
- WorldPay,
- 2Checkout.

Credit card processing services make it easy for e-tailers to start accepting credit cards for purchases of their products and services.

BACKGROUND INFORMATION

Who Are the Participants in On-Line Credit Card Transactions?

Consumers and Merchants

The consumer is an individual or an organization that wants to purchase a product or service. Consumers have cash or credit and they desire goods and services from a merchant. The merchant has goods and services and wants to sell them to consumers. Consumers are motivated to select a particular merchant by attributes such as price, service, selection categories, reputation or preference. But the merchant's primary motivation is to make money by selling the goods or services for more money than they paid for them. This money difference between what a merchant paid for a product or service and what they sell it to the consumer for is called their margin. There are a number of different methods for consumers to acquire products and services such as bartering, cash, checks, debit cards, installment payments or credit cards. When credit cards are used, the consumer and the merchant both have banks that they are working with that process the credit card payment transactions.

Issuing Bank (Issuer)

Consumers obtain their credit cards from a bank or a credit union which are referred to as the "issuing bank." Sometimes an issuing bank or credit union is simply referred to as an "issuer." An issuing bank may not only be associated with major credit card brands such as American Express, MasterCard, Visa, Capital One, etc. but also with credit cards called "private label credit cards." Private label credit

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