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Merchant Processing 102  
By Richard Spies, VAR Relationship Manager, e-onlinedata, Inc.  
[rspies@e-onlinedata.com](mailto:rspies@e-onlinedata.com)

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### *Shopping Carts, Gateways and Payment Processors: Anatomy of an Online Purchase*

Years ago, an exchange of cash was all it took for a customer to make a purchase from a merchant. How things have changed! Today, most businesses offer their products or services on the Internet – clearly, they can't be restricted to cash-on-delivery practices anymore. E-commerce has emerged as a lucrative channel for merchants to boost sales and grow their bottom lines. Many consumers have Internet access both at work and at home, and browsing an online catalog can be faster than browsing the aisles of a physical store – and customers get the added convenience of shopping 24 hours a day, seven days a week.

Merchants should understand the value of operating in multiple channels. For those who haven't yet incorporated e-commerce into their business but want to, there is much to learn. They must educate themselves on how payment processing works in order to best accommodate their online shoppers and serve the needs of their business. Though paying for an online purchase takes just a few seconds, it involves a complex chain reaction of behind-the-scenes processes.

Merchants can increase revenues and reach more customers by offering an efficient, successful e-commerce solution. This article examines what must be in place in order to complete a transaction that is both secure and offers superior customer service.

#### **What Makes an E-Commerce Solution Possible?**

In addition to the range of software and hardware that companies use to support the sale of products and services online, there are three vital components that make online shopping possible: the shopping cart, payment gateway and payment processor. Each is critical to ensuring successful implementation of e-commerce functionality.

- **Shopping cart.** The shopping cart acts quite literally as a virtual shopping basket. It holds the items customers select from a Web site until they are ready to proceed to the checkout stage, where their credit card information will be processed. The shopping cart:
  - Keeps track of items until they are purchased
  - Automatically totals the amount of a customer's order, including shipping and tax
  - Allows shoppers to securely enter address and credit card information
  
- **Payment gateway.** In order to accept credit cards through the Internet, a payment gateway is critical to transport the credit card information from the shopping cart to the payment processor once the consumer clicks the "Buy" button. In most cases, this transaction happens almost instantaneously. The payment gateway receives encrypted transactions from the merchant's shopping cart. An encrypted transaction simply means that credit card numbers can't be read by people who are not supposed to read those numbers. Authentication is then provided and the decrypted payment information is transmitted for authorization. The payment gateway:
  - Fulfills the same function as a point-of-sale (card swipe) terminal at a physical retail location
  - Takes information provided through a shopping cart and transmits it electronically and securely to a payment processor to be routed for authorization of payment
  
- **Payment processor.** The payment processor transmits a customer's credit card information via the Internet to the merchant bank for authorization. It also sends data back to the merchant's bank to approve payment or the transfer of funds. Specifically, a payment processor:
  - Acts as a link from the merchant to the acquiring bank or merchant bank
  - Receives information from the merchant through the payment gateway and packages the information for delivery to the acquirer, ensuring that all necessary transactional data is present and valid

- Later transmits information back from the acquirer for delivery to the merchant to settle the transaction

With the shopping cart, payment gateway and payment processor in place, merchants have all they need to offer convenient e-commerce solutions that deliver superior security and service. With a little research and education, merchants can find the best providers to accommodate their business needs and those of their consumers. It just makes sense – with online shopping projected to account for \$116 billion, or five percent of all retail sales this year – e-commerce provides merchants an opportunity to make more money and succeed in an increasingly competitive marketplace.

#### SIDEBAR

The tenth annual Shop.org report, *The State of Retailing Online 2007*, conducted by Forrester Research states that e-commerce has come of age and its profitability throughout the channel has stabilized. Eighty-three percent of respondents to the survey reported making more money and 78 percent said they were more profitable than just two years ago. The report found that apparel, accessories and footwear reached \$18.3 billion in 2006 for online purchases and is expected to hit \$22.1 billion by the end of 2007.

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