

eCommerce

Reference Guide to Electronic Commerce

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Synopsis:

A basic reference guide on e-commerce, websites and web based shopping cart applications, online merchant accounts and related payment processing options.

Key Concepts: Host Providers, Domain Name Registration, Internet Merchant Accounts(IMA), SSL Certificates, E-Commerce Software, Payment Gateway & Payment Processor Services.

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NOTE:

Due diligence. A vendor of merchant account services should be able to provide you with client and banking references and have an industry track record (calling the Better Business Bureau and Dunn & Bradstreet may provide you with important information about a vendors history and performance). Even within the same merchant account services company, agents can have vastly different professional experiences. An agent should promptly respond to all account questions and help you understand their billing rates and practices. Contract rates, penalties, terms and conditions are negotiable. Make sure that any changes be typed out clearly in the contract and request copies of any third party riders prior to signing the vendor agreement. Be sure you understand your legal rights and obligations.

Vendors reviewed in this report should not be considered as an endorsement. Please consult the Internet to obtain up-to-date information on merchant account services.

Please send comments, suggestions & corrections to: om@toolmaven.com

What Is E-Commerce?

The United States Census Bureau defines electronic commerce as, “sales of goods and services where an order is placed by the buyer or price and terms of sale are negotiated over the Internet, an extranet, Electronic Data Interchange (EDI) network, or other online system. Payment may or may not be made online.¹”

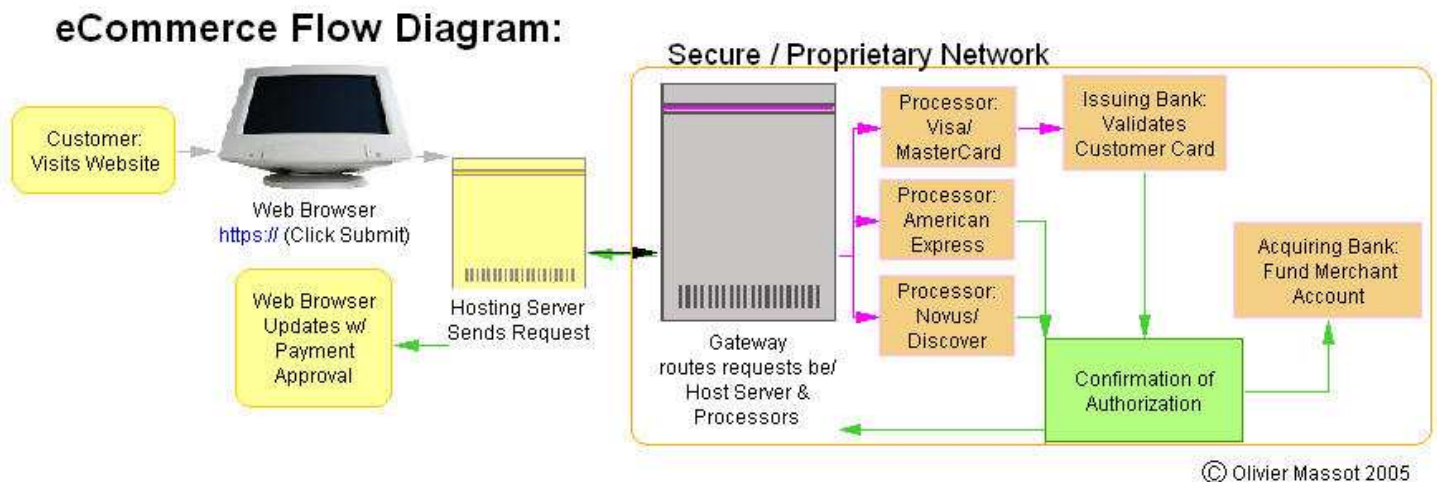
Alternative names for e-commerce include: e-tailing, e-services, online marketplace, virtual storefront, B2C, B2B. In contrast to brick & mortar storefronts, e-commerce can happen anywhere consumers have access to a computer network, typically that network is the Internet. While e-commerce transactions are typically online purchases made using desktop computers, mobile phones are becoming an important devices in handling payments.

Who Handles Electronic Payments?

Large banks, VISA and MasterCard and other member corporations own proprietary interconnected networks forming the payment infrastructure to handle electronic transactions. When you set up an “Internet” Merchant Account, you are given trusted access to this network allowing you to process consumer payments online. Without a Merchant Account, a 3rd party merchant system such as GoogleCheckout or Paypal would handle the payment details, acting on your behalf to debit and fund accounts leaving to you the work of providing the goods and services.

How E-Commerce Works

The diagram below is a simplified version an e-commerce transaction via the Internet.



[Diagram #1] Over a secure online connection, a customer submits payment information in a web browser to the e-commerce hosting server. The hosting server transmits this information to a payment gateway. Connected to a secure proprietary network, the Gateway server routes credit card information for validation to a payment processor (and to an issuing bank if the card is from the Visa/MasterCard network). Once client and card information is verified, the network sends confirmation to the gateway which in turn notifies the hosting server to signal approval onto the customer's web browser. Within 24 – 72 hours, the merchant's “captured” sales are “settled” minus any fees and deposited into the merchant's bank account.

¹ United States Census Bureau, <http://www.census.gov/mrts/www/efaq.html>
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The Benefits of E-Commerce

Compared to walk-ins or phone orders, an e-commerce website provides these advantages:

- Improves local and global access to products & services 24/7/365.
- Permits clients to customize and narrow product search by querying the website.
- Updates pricing dynamically according to inventory or seasonal preferences.
- Setup is easily scalable and allows processing of multiple sales.
- Online interface can be used by you to process online sales, phone orders and point of sale (POS).
- Automates inventory updates and provides customer notification and order status.
- Visualize product purchase patterns in real-time.

In addition to accepting online payments from web users, there maybe additional benefits in setting up an e-commerce website. Suppliers and other vendors may be able to connect the e-commerce website to review inventory, schedule deliveries and payments. To learn more about e-commerce within your industry try contacting your local bank or the Municipal & State Commerce and Census Departments.

Required Documentation

In order to accept and process electronic payments you will be required by banks to provide documentation showing your business status, this includes but not limited to: articles of incorporation, financial history, shipping and customer service policies. As well, the following details will be required in order to negotiate fees with banks, gateways and payment processors:

\$ _____ Average sales order per ticket item or service.

\$ _____ Average monthly transactions (and seasonal fluctuations).

\$ _____ Yearly totals.

Basic Setup Requirements

The following items are required in order to setup an e-commerce website:

1. Domain Name / URL: _____
2. Web Host Provider: _____
3. Internet Merchant Account: _____
4. SSL Certificate: _____
5. Shopping Cart: _____ (Optional)
6. Payment Gateway: _____
7. Payment Processor(s): _____

E-Commerce How-To

1. Registering a Domain Name

To register a domain name you need to visit a domain name registrar or ICANN authorized reseller. Network Solutions was once the only registrar of domain names, but now most host providers can register a domain names for a nominal fee. Domain name extensions help classify your site: **.com, .org, .net, .us, .info, .mobi, .name .biz, .tv, .cc, .bz**. A domain name is registered for renewable blocks of time, from 1 to 10 years.

ex. <http://www.namecheap.com>

ex. <http://www.godaddy.com>

ex. <http://www.networksolutions.com>

Note: If you prefer not to purchase a domain, you can rent a sub-domain (ex: yourstore.yahoo.com).

2. Selecting a “Host Provider” for the Website

Unlike Internet Service Providers (ISP’s) that provide access to the Internet, Internet Host Providers offer web hosting services i.e. server space for your domain name and website as well as specialized software to run a database, email accounts, etc.

Examples of possible Internet Host Providers include:

<http://www.dreamhost.com>

<http://www.hostmysite.com>

<http://www.hostway.com>

<http://www.westhost.com>

<http://www.lunarpages.com>

<http://www.mediatemple.com>

<http://www.pairnetworks.com>

<http://www.simplehost.com>

3. Acquiring an Internet Merchant Account

An *Internet Merchant Account*(IMA) is required for accepting credit cards over the Internet. An IMA is issued by banking institutions and approved resellers (independent sales organizations (ISO)². The IMA is a line of credit, not an actual account, which certifies a merchants suitability to accept online payments. If you already have a merchant account, ask your bank or reseller about an IMA. Because some types of online businesses experience higher levels of fraud, banks may limit Internet Merchant Accounts to merchants with lower risks. In contrast, ISO’s tend to accept new business risks but have higher service and charge-back fees. Banks grade merchant suitability by assessing the type of business (for-profit versus not-for-profit), banking history and the type of goods sold (ex: electronics versus sweaters).

The setup fee for an *Internet Merchant Account* ranges from \$0 - \$99 and is followed by a monthly service fee. Online statements should be free. When an account is prematurely cancelled, termination fees may apply. Note that not-for-profit 501’s must typically register by mail with proof of official status to receive lower transaction fees/rates (consult with your bank for details). If you already have a

² Resellers are also known as ISO’s (independent sales organizations). To understand the risks in using ISO’s visit: <http://www.clevelandfed.org/bsr/Conditions/v4n2/merccard.cfm> and FTC Ruling: <http://www.ftc.gov/opa/2002/02/cms.htm>
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merchant account and POS system you may still require a separate Internet Merchant Account to process online payments.

4. Purchasing an SSL certificate

Protecting the users credit card and account information is a vital part of having a successful e-commerce web site. *Secure Socket Layer (SSL)* is an Internet protocol for encrypting information. *SSL certificates* are unique identifiers which are used to generate public and private keys during an https: connection. Stored on a website's server, SSL certificates help deter theft of customer account information by encrypting communications between a client's web browser and the e-commerce site's web server. In addition, SSL certificates can be used by customers to authenticate the identity of the website and if the site's web address is operated by the legitimate owner.

In addition to SSL certificates, e-commerce sites will need to ensure that their shopping cart, gateway and payment processor are CISP / PCI compliant. Read about these new safety measures:

http://usa.visa.com/business/accepting_visas_ops_risk_management/cisp.html

Prices for SSL certificates vary according to “brand” name, level of encryption, customer service and transactions.

SSL 128 or 256 bit encryption

ex. <http://www.comodogroup.com/products/index.html> (\$139.00 per yr)

ex. <http://www.digicert.com/> (\$ 99.00 per yr)

ex. <http://www.geotrust.com> (\$349.00 per yr)

ex. <http://www.godaddy.com/gdshop/default.asp> (\$89.95 per yr)

ex. <http://www.thawte.com/ssl/index.html> (\$449.00 per yr)

ex. <http://www.verisign.com> (\$995.00 per yr)

5. Basics of Shopping Cart Software³

E-commerce shopping carts are built and designed to run on web servers using specialized computer programming languages such as PERL, CGI, PHP, ASP, Python & JAVA. Your e-commerce website will most likely use a programming language not only to process payments but also to update web page information allowing web users to interact with the shopping cart and your electronic database. As opposed to plain web pages in which content is fixed or static, e-commerce shopping carts are considered to be “dynamic web pages” as the software automatically updates web page content in real-time.

A basic website shopping cart may have a simple order form displaying current item(s) selection, product quantity, price, customer contact, payment & shipping information. More sophisticated e-commerce applications come with a web based administrative login page to allow merchants and employees to: create a dynamic catalogue, register customer preferences, setup payment methods, update sales options and promotions, generate store reports, calculate shipping rates and print labels for packages.

Once you have determined your time frame, budget and preliminary design goals for the e-commerce website, consult with a programmer about your goals. A good programmer should be able to

³ Check shopping cart compatibility with your payment gateway (see topic: 6. Payment Gateways & Payment Processors).
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customize an off-the-shelf software application to suit your needs or hand code a shopping cart function if it does not yet exist.

Shopping Cart Options

Shopping cart applications fall under three categories: “*Licensed*”, “*Open Source*” & “*Hosted Solution*”.

- **Licensed:** Software licenses can be purchased on a one time bases or may be renewable for some period of time. The software license agreement between you and the software maker details where and how to install the application and usually provides limited access to technical support, software updates and a manufacturers warranty. For a fee, software vendors may even customize a shopping cart feature. The downside of licensed software may be poorly designed features, expensive tech-support, proprietary software code or unsuitable security standards. Many web host providers now offer an “e-commerce plan” with similar software pre-installed.

ex: <http://www.miva.com>

ex: <http://www.x-cart.com> (code is customizable by you)

- **Open Source E-Commerce:** Open Source software is an increasingly popular option for building an e-commerce storefront. As the name implies, Open Source is software source code that is open to public review, non-proprietary, and customizable. In addition to being typically free for download, Open Source software programs maintain public license agreements, such as GNU GPL, which stipulate authorship copyrights and that the source code should be made freely available throughout future versions. With the exception of resellers who provide subscription based fees for tech-support, Open Source software offers no warranties and relies on online community forums for technical help.

As with all other software programs, bugs and security vulnerabilities arise during the development cycle of open source applications. Make sure you understand how to update and patch the software.

ex: <http://www.agoracart.com>

ex. <http://www.osCommerce>

ex: <http://www.zencart.com>

- **Hosted Solutions:** If you want to forgo the costs of installing, developing and maintaining an e-commerce software application, you may opt to rent a virtual storefront or shopping cart from a Hosted Solutions provider. A Hosted Solutions provider gives merchants an online storefront along with a sub-domain name, server space, database and pre-designed site templates. The merchant has just to supply a business logo, text, images, product pricing, an internet merchant account number, a gateway id and payment processor id. If you have an existing website you may use pre-coded links embed into your html pages that will then link customers to the shopping cart on the Hosted Solutions’ web server.

Hosted Solutions are subscription based with monthly or yearly options. While renting a virtual store or shopping cart removes the technical burdens relating to the web server and software, there are trade-offs such as: losing absolute feature control, larger monthly fees, data integration & migration issues.

- ex. <http://www.charityfinders.com> (e-commerce for not-for-profits)
- ex. <http://www.digitalriver.com> (for publishers, software & online content)
- ex. <http://www.nexternal.com>
- ex. <http://www.monstercommerce.com>
- ex. <http://www.neoverve.com> (reseller of Kurant's "Store Sense")
- ex. <http://smallbusiness.yahoo.com>
- ex. <http://stores.ebay.com>
- ex. <http://www.volusion.com>

6. Payment Gateways & Payment Processors⁴

*Note: National banks are the primary vendors of payment processing and Internet Merchant Account services.*⁵

Payment Gateways:

The Payment Gateway is a web server that routes payment information between your e-commerce website and the proprietary network of Payment Processors (see [diagram #1](#)). Similar to a firewall, a Gateway shields payment processors from unofficial Internet traffic and adds additional encryption to sensitive customer data and accounts. Just as customers can enter payment information from your e-commerce website, Gateways provide an additional window called a *Virtual Terminal* by which you can manually submit credit card, check and ACH payments for orders received from customers by telephone. Virtual terminals also allow you to verify transactions, authorizations, declined payments, reconcile accounts (chargebacks) and view merchant statements.

Payment Processors:

In concert with the Payment Gateway, a *Payment Processor* validates customer credit card or electronic check payment information against an actual account. Payment processors will also verify the shipping and billing address, flag fraudulent purchases, debit customer accounts and credit merchants. Cards endorsed by either Visa or MasterCard are handled within their respective networks and then processed by the issuing bank. In contrast, all other brands such as America Express, Novus and Discover process their own cards (see [diagram #1](#)). Processors together are sometimes called an *Interchange*.

The "Discount Rate": Non-Qualified, Qualified and Variable

On top of possible setup and monthly fees, both Payment Gateways and Payment Processors each charge merchants a transaction fee called the *discount rate*. The discount rate is a percentage of the sale price of each transaction and is determined by the type of entity (not-for-profit versus for-profit business), the type of goods sold (ex: electronics versus software), total monthly sales, the number of monthly transactions and the fraud protection measures used to verify the buyer. The discount rate for Internet transactions usually hovers around 2.25% - 4.5% depending on the risk of fraud associated

⁴ Take the time to understand the relationships between 3rd party resellers of payment services (also known as independent sales organization or ISO) and their sponsored banking institution. While all resellers must be sponsored by a bank, it does not guarantee that their sales agents adhere to ethical business practices.

⁵ Gateway providers are certified and audited by banks and the credit card industry to handle encrypted data

with the items sold. A higher percentage fee or “non-qualified discount rate” is applied to each transaction if the merchant does not subscribe to services that verify the buyers identity, billing and mailing address. Subscribing to various security and fraud protection measures during the payment authentication process will give you the lower “Qualified Discount Rate”.

Payment Processors may also have a *variable discount rate*, a rate for the first initial 2500 transactions and a higher rate thereafter. In addition, every transaction regardless of sale price is charged a one time transaction fee (usually around \$0.25 cents per transaction). At the end of each month, the total sales transactions must meet the “minimum fee” requirements of the assigned discount rate otherwise a fixed fee will be charged (usually \$8.00 – \$75.00).

Payment Gateways and Payment Processors generally offer free tech-support for basic installation and configuration of their system with a shopping cart but they will not provide coding review for problems relating to the shopping cart software. Contracts for Gateways and Payment Processors range from 1 – 3 years and carry termination fees for early cancellation. Below is a short list of companies providing Payment Gateway and/or Payment Processor services:

- ex. <http://www.authorizenet.com> (gateway)
- ex. <http://www.cybersource.com> (IMA, gateway, payment processor)
- ex. <http://www.globalpaymentsinc.com> (payment processor)
- ex: <https://checkout.google.com/sell/> (payment processor)
- ex. <http://www.firstdata.com> (payment processor)
- ex. <https://www.novainfo.com> (payment processor)
- ex. <http://www.paradata.com> (gateway)
- ex: <http://www.paysimple.com> (gateway, payment processor)
- ex. <http://www.paymentech.net> (payment processor)
- ex. <http://www.wellsfargosecure.com> (IMA, gateway, payment processing)

Summary:

While selling goods and services is a popular motivation behind establishing an e-commerce website, it is also possible to implement the same payment system for coordinating and accepting donations, fund raising, and group purchasing. One such example is the not-for-profit firm Kiva <http://www.kiva.org> which uses its web site to assist low income individuals in acquiring no-interest loans by coordinating individual lenders to collectively fund their small business venture. Alternatively, one could use ChipIn <http://www.chipin.com> (group payments) or Fundables <http://www.fundables.org> (group purchasing) to organize a group fund raiser.

Vendor Services & Fee Comparison Chart

Sample Pricing Structures of E-Commerce Providers

Service Provider	CyberSource	Wells Fargo
SERVICES:		
Internet Merchant Account (IMA)		
Setup Fee: IMA	Free Setup	\$99.00
Integrated IMA (all-in-one package)	Yes	No
Tech Support (Comprehensive)	All Include	Limited to Setup
Gateway		
Setup Fee: Internet Gateway	\$199.00 CyberSource	\$39.95 Payflow Pro
Contract Duration (Cancellation Fee)	2 Years (\$350)	2 Years (\$300)
Monthly Account / Service Fee	\$35.00 CyberSource	\$29.95/Mo. Payflow Pro
Per Transaction Fee	N/A	N/A
Per Transaction Fee After 1000	N/A	N/A
Online Reporting	Included	Included
Virtual Terminal & Web Console	Yes	N/A
Processing		
Setup Fee: Processing	Free Setup	Free Setup
Monthly Minimum (re: Discount Rate)	\$75.00	N/A
Qualified Discount Rate (VISA/MC)	2.15%	2.35%
Per Transaction Fee (visa/mc)	\$0.25	\$0.30
Qualified Discount Rate (AMEX/DISC)	see AMEX	3.50%
Per Transaction Fee (amex/disc)	see AMEX	\$0.20
After 1000 monthly Transactions	N/A	\$0.42
ACH Fee (Automated Clearing House)	N/A	N/A
Statement Fee	Included	\$2.00
Chargeback Fee	\$19.00	\$15.00
Fraud Detection Service		
Setup: Fraud Detection	Included	\$29.95
Monthly Fee	Included	\$19.95
Per Address Verify Fee (AVS / CVV2 / CVC2)	Included	\$0.01

CyberSource Corporation (150 employees, business since 1994)

Primary Offerings: Internet Merchant Account, Gateway & Processing Fees

Toll Free: 1-888-330-2300

Services: http://www.cybersource.com/products_and_services/small_business_edition/?quickpick

Pricing: http://www.cybersource.com/products_and_services/small_business_edition/details/

Wells Fargo

Primary Offerings: Internet Merchant Account, Gateway & Processing Fees

Toll Free: 1-866-269-5545

Internet Merchant Account: <https://www.wellsfargo.com/biz/merchant/options/gateways/ima/>

eCommerce Checklist

Web Host Provider:

Subscription Fee:
Domain Registration Fee:
Back-Up Tape Fee:

Shopping Cart:

Software Purchase: _____ / Monthly License Fee: _____ / Monthly Subscription: _____

SSL Certificate:

Yearly License Fee: _____

Internet Merchant Account:

Application / Setup Fee:
Monthly Service Fee:
Daily Batch Processing Fee:
ACH Fees (Automated Clearing House):
Monthly Statement Fee:
Account Termination Fee:

Gateway:

Application / Setup Fee:
Monthly Service Fee:
Per Transaction Fee: _____ / Per Transaction Fee (after 1000 transactions): _____
Tech-Support:
Credit Card# Testing Fee:
Account Cancellation Fee:

Processor:

Application / Setup Fee:
Monthly Service Fee:
Non-Qualified Discount Rate: _____ / Qualified Discount Rate^{**}: _____ / Variable Rate: _____
Per Transaction Fee: _____ / Per Transaction Fee (after 1000 transactions): _____
Foreign Card Handling:
Tech-Support:
Charge-back Fee:
Additional Fraud Verification Fees: _____ (AVS, CVV2,CVC2)
Credit Card# Testing Fee:
Account Cancellation Fee:

^{**} With regard to internet transactions and “card-not-present” sales a merchant may get a qualified discount rate i.e. the lower rate if the merchant subscribes to fraud protection services that verify the card holder’s address (AVS) and the three-digit value printed on the signature side on the bank of card (CVV2/CVC2) or for AMEX cards, the CID# on the front face.

Consumer Protection Resources:

Background Checks

Better Business Bureau(Consumer / Business Complaints)

<http://www.bbbonline.org/>

<http://www.bbb.org/>

Dunn & Bradstreet (Request credit research on businesses)

<http://www.dnb.com/>

U.S. Federal Trade Commission (FTC)

<http://www.ftc.gov> (main)

<http://www.ftc.gov/bcp/menu-internet.htm#bized> (Business Basics)

<http://www.ftc.gov/bcp/online/pubs/alerts/ecombalrt.htm> (International Ecommerce)

<http://www.ftc.gov/bcp/online/pubs/alerts/intbalrt.htm>

FTC Contact:

Bureau of Consumer Protection

Tel: 202-326-2245

FTC's Consumer Response Center, Room 130

600 Pennsylvania Avenue

N.W., Washington, D.C. 20580

1-877-382-4357 (1-877-FTC-HELP)

Banking & Credit Card Industry Concerns:

Office of the Comptroller of the Currency

<http://www.occ.treas.gov/>

Credit Card Contacts:

American Express: 1-800-528-5200

Diners Club/Carte Blanche: 1-800-525-7376

Discover/Novus: 1-800-347-2000

JCB International: 1-800-366-4522

Online Glossary

<https://www.wellsfargo.com/biz/merchant/glossary>

References:

BAI (financial services publication)

<http://www.bai.org/>

Cybersource (global payment gateway or merchant services provider)

<http://www.cybersource.com>

Electronic Payments Primer (October 2002) National Electronic Commerce Coordinating Council

http://www.ec3.org/Downloads/2002/epayments_primer.pdf

Federal Reserve Financial Services

<http://www.frbservices.org>

Financial Management Service

<http://fms.treas.gov>

Kerberos Network Authentication Services

<http://www.kerberos.info>

NACHA-The Electronic Payments Association (2005 Buyers Guide)

<http://www.nacha.org/OtherResources/>

<http://www.nacha.org/OtherResources/Buyers2005/buyers2005.htm>

The Federal Reserve Board (Payment Systems)

<http://www.federalreserve.gov/paymentsystems/>

WellsFargo

<https://www.wellsfargo.com/biz/merchant/how/>