

Study guide by ExamNotes.net
E-Commerce Exam Notes

These notes are for the CIW E-Commerce Professional course by ProSoft Training. The exam consists of 50 multiple-choice questions and you have 75 minutes to complete the exam. There are two sections: E-Commerce Concepts and Practices (25 questions) and E-Commerce Strategies and Solutions (25 questions). You must receive 72% on each section and a score of 76% or better to pass the entire exam.

These notes are taken directly from courseware provided by ProSoft Training.

BOOK ONE – CONCEPTS AND PRACTICES

1. ELECTRONIC COMMERCE FUNDAMENTALS

- Mosaic was the first graphical browser, next came Netscape.
- The average user spends five hours and 28 minutes per week on the Internet.
- Commerce is the exchange of goods and services for money. Electronic commerce can be defined on two planes: first, as commerce conducted via any electronic medium, such as TV, fax or the Internet. Second, electronic commerce is an integration of communications, data management and security capabilities that allows organizations to exchange information about the sale of goods and services.
- Communication Services – supports the transfer of information from the buyer to the seller.
- Data Management – defines the exchange format of the information.
- Security – authenticate the source of information and guarantee the integrity and privacy of the information.
- Traditional Commerce vs. E-Commerce – information was exchanged via person-to-person contact and e-commerce information is carried through a networked computer system.
- E-Commerce – authentication must be provided digitally. Digital signature and encryption frameworks have been developed to address security issues.

Types of E-Commerce

- Business to Business
 - Commerce is conducted between two separate businesses.
 - Characterized by high volume and low price margins.
 - Expected to reach \$137 billion by 2000.
- Business to Consumer
 - Commerce is conducted between a consumer and a business.
 - Characterized by low volume and high price margins
 - Expected to reach \$10 billion by 2000.

Visit Examnotes.net for all your certification needs.

Visit Cert21.com for the best online practice exams.

Visit CertPortal.com – most powerful IT certifications search engine.

Advantages of E-Commerce

- Always open, simplifies communication, reduced paperwork, reduced errors / time / overhead
- Easy to enter into new geographical regions, new business opportunities, improved market analysis, streamline and automate purchasing.

Issues in E-Commerce

- Protecting intellectual property, confidentiality, taxation, customs, and government regulations.
- Fraud (credit card – cardholder liable for maximum \$50), security, trust (will the company be around tomorrow?), service disruption.

2. INGREDIENCE FOR A WEB STOREFRONT

- Virtual Enterprise – organization unconstrained by geographic location. Can also be referred to as a VPN (virtual private network) or VAN (value added network). Need leased lines and frame relay for virtual enterprise to exist (eg: Internet)

Seven Ingredients to a Successful Storefront:

1. Generating Demand:
 - a. Traffic must be attracted toward the storefront and lookers must be converted to buyers.
 - b. Banner ads and targeted e-mails have failed to attract users. Banner ads make up 80% of web advertising. People are immune to these ads.
 - c. Portal sites sell impressions (banner ads) and businesses pay based on cost per thousand (CPM). Click through rate measures banner ad success (3% is high)
 - d. Referred bonuses, partnerships and contest promotions work well to attract customers.
2. Ordering
 - a. Web site should look and feel consistent, eliminate redundant info, make ordering easy (shopping carts and cookies), variety of payment methods, and include a bailout mechanism.
3. Fulfillment
 - a. Ensure the consumer's expectations of timely, undamaged delivery is met.
 - b. Send customer a confirmation and tracking # via e-mail.
4. Process Payments
 - a. Three models:
 - i. Cash – hardest to implement, they trade electronic tokens, use digital wallets. The advantage is money is transferred immediately and no back-end processing is required. (eg: DigiCash)
 - ii. Check – uses digital wallet, digitized check is encrypted and funds are not transferred immediately. (eg: CheckFree)
 - iii. Credit – just like a credit card, already widely used in e-commerce.

Visit Examnotes.net for all your certification needs.

Visit Cert21.com for the best online practice exams.

Visit CertPortal.com – most powerful IT certifications search engine.

5. Service and Support
 - a. Have an automatic callback – staff to call consumer immediately.
 - b. Click-to-dial – initiates a phone call to Web operator.
 - c. Co-browsing – operator can assist consumer by sharing web page being viewed.
6. Security
 - a. Use certificates authenticating both parties in a transaction and encrypting the transaction.
7. Community
 - a. Build loyalty to encourage repeat customers. E-mail special offers or discounts.

Two Solutions for a Web Business:

1. In-House
 - a. A business must buy, implement the e-commerce software package. Also have Internet connection, payment processing and maintenance of site. Generally for large businesses. The advantage is complete control. Disadvantage is the cost.
2. Instant Storefront
 - a. Gets software package from a third-party.
 - b. Two types:
 - i. Online:
 1. The e-commerce package is on the service provider's infrastructure. The advantage is it can be managed anywhere. Disadvantage is lack of control.
 - ii. Offline:
 1. Installing software on the business' infrastructure and is published on the service provider's end. Advantage is control and speed. Disadvantage is lack of software portability or installation problems.

Hardware

- Need T1 connection, powerful computer to run servers and a desktop computer.

Software

- Need web server software package, FTP/Telnet, certificate, directory servers, payment infrastructure, database.

Inetload – does a stress test on your server, to test its capabilities.

3. LAW AND THE INTERNET

Electronic Publishing – is the use of computers rather than traditional print to produce and distribute info. One drawback is that as more documents (music, games) are on the Internet, intellectual property rights may be at risk.

Visit Examnotes.net for all your certification needs.

Visit Cert21.com for the best online practice exams.

Visit CertPortal.com – most powerful IT certifications search engine.

Electronic Publishing Liabilities:

- Copyright, Trademark and Patent issues:
 - Copyrights have to do with ownership of intellectual property. A copyright lasts 50 years + life of author. The basic elements are expression and originality. Trademark is any symbol, word that distinguishes a company. You can lose a trademark by abandoning it or failing to renew registration. Patent is for inventions. Software patents do not cover entire program – just algorithms and techniques.
- Privacy and Confidentiality issues:
 - No law exists for privacy of individuals on the Internet.
- Jurisdictional issues:
 - Laws are territorial, only applied within that jurisdiction. Jurisdictional issues are difficult to resolve. Example of this is hackers in another country breaking into US computers. Jurisdictional restrictions do not protect patents – must be secured in every country you intend to do business in. Countries have established the WIPO (world intellectual property organization) to help. Internet presence alone can be sufficient to grant jurisdiction to a non-resident (under certain circumstances).

To protect sites against suits:

- Don't sell anything
- Don't advertise that products are available world/nationwide
- Keep interactivity minimum (eg: 1-800 numbers to contact the site)

4. SECURITY

Purpose of Security:

1. Data Confidentiality – is provided by encryption/decryption.
 2. Authentication and Identification – ensuring that someone is who he or she claims to be. Is implemented with digital signatures.
 3. Access Control – governs what resources a user may access on the system. Uses valid IDs and passwords.
 4. Data Integrity – ensures info has not been tampered with. Is implemented by message digest or hashing.
 5. Non-repudiation – not to deny a sale or purchase. Implemented with digital signatures.
- Plaintext/Cleartext – message humans can read.
 - Ciphertext – unreadable to humans, uses encryption. Reverse process is call decryption.
 - A cryptographic algorithm is called a cipher. It is a mathematical function. Most attacks are focused on finding the “key”.

Visit Examnotes.net for all your certification needs.

Visit Cert21.com for the best online practice exams.

Visit CertPortal.com – most powerful IT certifications search engine.

Attacks on cryptosystems occur in one for four ways:

1. Ciphertext-only – has several messages encrypted with the same key.
2. Known-plaintext – has ciphertext and plaintext to figure out the key.
3. Choose-plaintext – has ciphertext and associated plaintext for several messages.
4. Brute force – tests all possible key values until one is found.

Encryption strength is based on three factors:

1. Strength of algorithm.
2. Secrecy of key.
3. Length of key. (key lengths are determined in bits – adding a bit to the length, doubles it.)

Types of Encryption:

1. Symmetric
 - a. Both parties must possess a single secret key. (eg: password on Word document).
 - b. Advantage is speed and security.
 - c. Some algorithms used:
 - i. DES (data encryption standard) – most widely used. Uses 56-bit key.
 - ii. Triple DES – uses 2 keys – two 56-bit keys.
 - iii. Skipjack – 80-bit key
 - iv. IDEA (international data encryption algorithm) – 128-bit key
 - v. Blowfish – variable key length, up to 448-bit maximum.
2. Asymmetric
 - a. Also called public encryption, each person has two keys – one private, one public.
 - b. Public key is published; private key is kept a secret.
 - c. Advantages is no secure channel required to transmit public key, encryption strength very secure.
 - d. Disadvantage the encryption algorithm can be slow.
 - e. RSA is the de facto standard for public key cryptosystems. The key size is normally 512 bits.
3. One-Way
 - a. Also known as hashing, it is easy to compute in one direction, but difficult to compute the other direction. Example is passwords on NT or your PIN # on bankcard.
 - b. Message Digests:
 - i. Specific to one-way / hashing. It is to provide integrity of a message.
 - ii. The message digest is stored in the message itself.
 - iii. The message digest is unique to a message.
 - iv. A good hash function will be difficult to invert and be resistant to collisions.
 - v. Well-known hash functions:
 1. MD5 – results in a 128-bit message digest
 2. SHA (secure hash algorithm) – results in a 160-bit long message digest.

Visit Examnotes.net for all your certification needs.

Visit Cert21.com for the best online practice exams.

Visit CertPortal.com – most powerful IT certifications search engine.

- Note: if a message is to be confidential, the message can be “enveloped”. The sender generates a random key called a session key. It is only valid for that session.
- VeriSign is a certifying authority; also known as a trusted third-party.

5. PAYMENT INFRASTRUCTURE

Business-to-Consumer

- SSL (secure socket layer) Main security protocol used for this model.
- SSL developed by Netscape, provides privacy over the network.
- SSL provides both encryption and authentication and operates at the Transport Layer.
- SSL uses a three-part process: info is encrypted, info is authenticated, provides message integrity.
- In SSL, the client always authenticates the server.

Business-to-Business

- Two main protocols: OBI and OTP.
- OBI (open buying on the internet) – designed for high volume, low dollar. Sponsored by American Express. It ensures the purchaser is identified and their spending capabilities are authorized before purchase is made. Uses EDI (explained below).
- OTP (open trading protocol) – promoted by DigiCash, AT&T, HP, Royal Bank.....defines trading protocol options, which controls how the trade occurs. Eg: may get a discount if you use a certain credit card. Can be used with business-to-consumer model. Uses XML. Uses EDI.

Electronic Data Interchange (EDI)

- Interorganizational exchange of documents in an electronic form between computers.
- Includes purchase orders, invoices, etc.
- It is to reduce errors and ensures faster handling of transactions.
- If your store handles a large volume, on a tight margin, has strong competition, time sensitive environment than you should use EDI.
- Another option to securing EDI is through S/MIME.
 - Enables encrypted e-mail messages among different applications.
 - S/MIME is based on MIME
 - Services offered are authentication and privacy.
 - S/MIME uses “enveloping” – also uses DES, Triple DES and RC2

Visit Examnotes.net for all your certification needs.

Visit Cert21.com for the best online practice exams.

Visit CertPortal.com – most powerful IT certifications search engine.

SET

- Created to maintain confidentiality of payment, verification of account holder, verification of merchant and integrity of payment over a network.
- Cardholder initiates payment using SET. Merchant uses SET to have payment authorized. Authorizing payment is called payment gateway and operated by an acquirer (middle man/bank).
- SET uses both public key and symmetric encryption techniques.
- Used for returning goods or issuing credit to an account.

Participants

1. Customer – the buyer, account holder or cardholder. Initiates the transaction.
2. Merchant – web storefront owner. Sells products or services.
3. Processing Network – intermediary of the transfer of financial data between the storefront and bank.
4. Card/check issuing Bank – the bank that issued the account.
5. Merchant's Bank – bank that holds merchant's account.
6. Trusted Third Party – verifies merchant's identity to the customer and vice versa.

Process – for electronic payment to occur, the following must take place:

1. Account holder registration – account holder needs public/private key. Must register with trusted third party.
2. Merchant registration – must also register with trusted third party.
3. Account holder ordering – the customer needs the merchant's and third party's public keys to send a message to the merchant.
 - a. The customer encrypts the account info and attaches to the order form with public key. Then creates a message digest and digitally signs it. Then encrypts the order form, digital signature with secret key. Then encrypts the merchant's public key with the secret key. Then transmits.
 - b. The merchant decrypts secret key (using public key), decrypts order form and digital signature. Decrypts message digest using customer's public key. Compares message digests for a match. Then processes the order.
 - c. The merchant now needs to authorize the transaction with a third party. Merchant does not have access to customer's account. The merchant sends the third party the documentation.

Visit Examnotes.net for all your certification needs.

Visit Cert21.com for the best online practice exams.

Visit CertPortal.com – most powerful IT certifications search engine.

6. IMPLEMENTATION

Phases to a Web Storefront approach:

1. Information-Only Web Site – First stage. Least intrusive and fastest way to get web presence and to attract customers. Doesn't sell anything.
2. Limited Transaction – Limited selling. Gets customer used to web site. Payment done through credit card or sending a cheque.
3. Full Transaction – Complete digital purchasing option. Product support, security, catalog, searching.
4. Legacy System Integration – Back-end databases are linked to the site. Full transaction.

Catalogs

- Start online catalog slowly. Can get iCat (online catalog company) to build it for you.
- Best designed catalogs are for people who access your site using 14.4 or 28.8 Kbps modems.
- Should be searchable and indexed.
-

BOOK TWO – STRATEGY AND SOLUTIONS

7. ELECTRONIC COMMERCE FUNDAMENTALS

Creating a Site

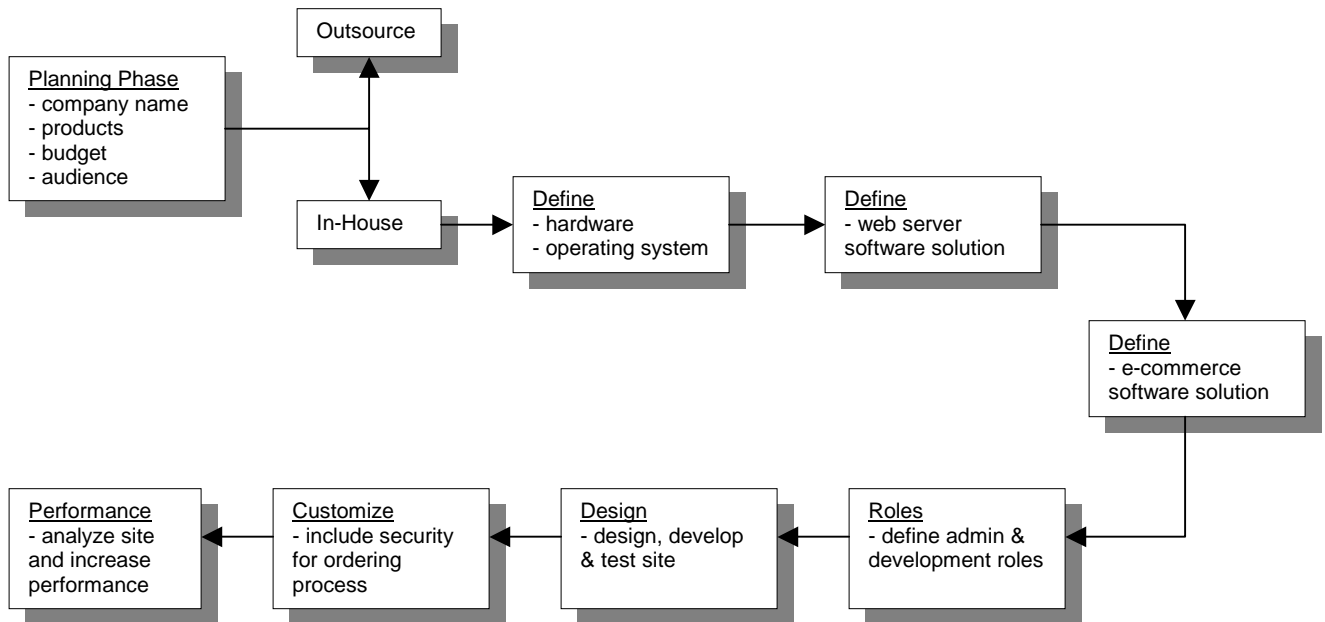
- Design your goals.
 - Target audience, advertising, payment, company name
- What products/services will you sell?
 - Hard goods – physical items such as books, auction items (ebay), computer hardware
 - Soft goods – software, music/videos, documents
 - Services – stocks, travel reservations, employment services, e-mail services
- Determine server components you need.
- Develop a storyboard. (three types)
 - Linear – like a book. Pages are sequential (1, 2, 3). Best for tutorials or tours.
 - Hierarchical – main page lead users down different paths depending on topic.
 - Random – main page linked to other pages in no specific order.
- Develop, test and implement your site.
 - Test hyperlinks, check database connectivity, review for security breaches, etc.

Visit Examnotes.net for all your certification needs.

Visit Cert21.com for the best online practice exams.

Visit CertPortal.com – most powerful IT certifications search engine.

Storyboard Layout



Archetype – E-Commerce web sites present certain standard elements:

- Catalog/Shopping Cart – best suited for hard and soft goods. Adds items to a shopping cart.
- Time or Usage-based – best suited for selling services. Charge fee based on connection time.
- Subscription – best suited for soft goods or services. Fixed time period where fee is charged.
- Advertising – best suited for soft goods or services. Charging for advertising based on the number of users who visit the site in a given period.

Visit Examnotes.net for all your certification needs.

Visit Cert21.com for the best online practice exams.

Visit CertPortal.com – most powerful IT certifications search engine.

BOOK THREE – STRATEGY AND SOLUTIONS

14. MICROSOFT INTERNET INFORMATION SERVER (IIS)

Background:

- Runs only on Windows NT platform, takes advantage of NT security structure and has a familiar interface as with other Microsoft programs.
- Can generate and manage your own certificates.
- Active Server Pages – allows you to create through client-side scripting.
- Built-in FTP and search engine.
- Integrates well with other Microsoft products.
- Allows you to map to virtual directories.
- Some remote administration abilities.

Examining IIS:

- IIS creates anonymous user account. Default name is IUSR_ *computername*.
- Microsoft Management Console (MMC) provides the framework for network administration. The MMC hosts programs called snapins – for administrators to manage their network.
- You can point the server towards your default document – usually default.htm.
- IIS allows anonymous access.

15. SITE DEVELOPMENT SOFTWARE IMPLEMENTATION

Three types of accounts for SQL server:

1. Local system
2. Local user
3. Domain user (best one)

Installing Microsoft Site Server Commerce Edition - SQL must be installed first and you must have installed Site Server 3.0 before the Commerce Edition.

16. DEVELOP E-COMMERCE SITE USING SITE SERVER COMMERCE EDITION

Administering Site Server Commerce Edition:

Three different administrative features:

- Microsoft Management Console – user interface.
- Web-Based – admin functions can be done from any connection.
- Command Line Utility – to accommodate legacy environment – done through DOS.

Visit Examnotes.net for all your certification needs.

Visit Cert21.com for the best online practice exams.

Visit CertPortal.com – most powerful IT certifications search engine.

17. TRANSACTION SECURITY AND PAYMENT USING SITE SERVER COMMERCE EDITION

Three tasks must be done to implement online transactions:

1. Prepare server and site – must be capable of handling requests and integrate a database.
2. Set up online merchant account – need both merchant ID and terminal ID.
3. Install payment software – Site Server does not have a payment software included.

NOTE: to use electronic cash, a consumer and merchant need the same types of wallets.

Electronic Commerce Security Myths:

1. Myth 1 – Hackers can copy any credit card information transmitted across the Internet. Some truth to this, but a packet sniffer must be installed on the same physical wire.
2. Myth 2 – The encryption used on the Internet is easily broken. The effort involved far exceeds the benefit.
3. Myth 3 – All that is needed to protect a web site is to install a digital certificate and use SSL. It only protects the data in transit, but does not protect the server.
4. Myth 4 – Securing a site is impossible. Nothing is 100%, but you can achieve a high level of security.

Four types of certificates currently in use:

1. Certificate of authority – such as VeriSign.
2. Server certificate – identifies the web server and company.
3. Personal certificate – issued to individuals.
4. Software publisher certificate – sign and identify the release code of software.

* All four types use the X.509v3 standard. Certificates can be revoked because of privacy key compromise, wrong certificate issuance or no longer valid.

18. WEB SITE MANAGEMENT AND OPTIONS

Webmasters have three primary tasks:

1. Maintenance of the site and its contents. Updating, check for broken links, etc.
2. Maintenance of security of the site. Security must be constantly evaluated and tested.
3. Monitoring the performance of the site. Measuring and optimizing the site performance.

Visit Examnotes.net for all your certification needs.

Visit Cert21.com for the best online practice exams.

Visit CertPortal.com – most powerful IT certifications search engine.

Bottlenecks – methods of correcting:

- Speed up the component or replacing it with improved version.
 - Distributing demand for service across multiple servers.
 - Increasing capacity of the queues. (Queues is a sequence of requests)
- * remember, when you solve one bottleneck, that usually exposes a new one.

Banner Advertisements:

- Place at top of the page
- Make them large
- Place on the home page
- Keep with topic of site
- Change it often
- “Click Here” or “Last Chance” features
- Prizes and giveaways.

19. **OUTSOURCING**

Independent Storefront Vendors Solution:

- Independent storefront vendors: ShopBuilder, MerchandiZer, Complete Merchant.
- Better for small businesses offering small range of products.
- Independent storefront allows business to have fully qualified domain names.
- No software involved, all on-line.

Portal or Community Storefronts:

- Once referred to as cybermalls.
- Offered for entry-level e-commerce sites and are inexpensive.
- Vendors include: GeoShops, Jumbomall.com, Yahoo!

Mid-Level Solution:

- For more experienced e-commerce marketer and is more expensive.
- Packages include: iHTML, INEX Com, ShopZone.
- Uses specific software, but is hosted on-line with them.

High-Level Solution:

- Mid-sized to large businesses. Gives business most control, but is very expensive.
- Packages include: ICat, Open Market, Thomas A. Edison, Sterling Commerce.
- Use any software.

Auctions:

- Another type of e-commerce site. Eg: ebay. Can get auction site software from FairMarket.com.

Visit Examnotes.net for all your certification needs.

Visit Cert21.com for the best online practice exams.

Visit CertPortal.com – most powerful IT certifications search engine.

Post Exam Thoughts:

This exam was a lot tougher than I expected. Though, in my situation, I have never been exposed to e-commerce or security issues before.

This will summarize the types of questions I had on my exam. Definition of e-commerce and types of e-commerce (B2B, B2C). Legal issues in electronic publishing. Virtual enterprise, what is needed to establish a VPN. Definitions of asymmetric and symmetric and their common names. Definitely know SSL and SET. Questions on instant storefronts and their features. Electronic publishing liabilities, especially jurisdictional issues and the WIPO. One question on S/MIME and e-mail applications. Know the storyboard layout, had three questions on that. Know the e-commerce archetypes. With Net.Commerce, know the components and the site/store administration functions. There were probably four or five questions on Net.Commerce, including the catalog and site customization. Know that Microsoft IIS runs ONLY on Windows NT. One question on Site Server Commerce Edition was the administrative features. Know the four e-commerce security myths. Understand what tasks a Webmaster is responsible for. One question on bottlenecks. And finally, one question on Mid-Level Solution.

The questions on this exam consisted on one possible answer or "choose all that apply". Which can be tough, since if you choose one wrong answer, the entire question is wrong. One hint I will give that seemed a little tricky, when the exam refers to a distributor, they are talking about B2B. When they talk about customer, they are referring to B2C. I had one question that made reference to obtaining a Digital ID from a trusted third party, I was confused because I didn't know whether they meant a digital certificate or digital signature. Probably got that question wrong.

Overall, the exam was pretty straightforward. Put in some good study time and you are bound to do well.

Good luck to everyone!

Visit Examnotes.net for all your certification needs.

Visit Cert21.com for the best online practice exams.

Visit CertPortal.com – most powerful IT certifications search engine.