

# SOLUTIONS MANUAL



The cover features a photograph of several coins, some with dollar signs, on a reflective surface. A blue rectangular graphic is positioned in the top-left corner of the image area.

## ELECTRONIC COMMERCE

SEVENTH ANNUAL EDITION

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## Chapter 2 Solutions

### Review Questions

- 1. What were the main forces that led to the commercialization of the Internet? Summarize your answer in about 100 words.**

*Answer:* The Internet was born out of the need for the U.S. government, specifically the Defense Department, to communicate with its weapons installation distributions all over the world. This idea, in the hands of researchers and scientists evolved even further allowing those researchers the capability to communicate with their colleagues at other universities. As personal computers became more popular and affordable, companies increasingly wanted to construct their own networks. This all led to the dramatic increase in business activity, but the commercialization of the Internet was really spurred by the emergence of the World Wide Web. The software that allowed computers to communicate while on the Internet is still the largest category of traffic today

- 2. Describe in two paragraphs the origins of HTML. Explain how markup tags work in HTML, and describe the role of at least one person involved with HTML's development.**

*Answer:* SGML is a software language for describing electronic documents and how they should be formatted as well as displayed. This language is the precursor of HTML, which is used by all documents on the Web. Robert Calliau and Tim Berners-Lee independently invented HTML at the CERN research center in Switzerland. HTML's document type definition is easier for users to learn and use for describing formatting and displaying electronic documents by Meta tag codes.

- 3. In about 200 words, compare the POP e-mail protocol to the IMAP e-mail protocol. Describe situations in which you would prefer to use one protocol or the other and explain the reasons for your preference.**

*Answer:* A POP message can tell the e-mail computer to send mail to the user's computer and to delete it from the e-mail computer; to send mail to the user's computer and do not delete it; or simply to ask whether new mail has arrived. IMAP protocol performs the same basic functions as POP, but includes additional features that can instruct the e-mail server to send only selected messages to the client instead of all messages. It also allows the user to view only the headers and the e-mail sender's name before deciding to download the entire message. One would choose

IMAP if they have a need for a more robust system that allows them to access their email from different computers at different times.

- 4. In about 400 words, describe the similarities and differences between XML and HTML. Provide examples of at least two situations in which you would use XML and two situations in which you would use HTML.**

*Answer:* XML and HTML are similar in that they are both powerful tools for creating web pages that use tags to organize data. However, XML is not a markup language with defined tags, as is HTML. XML is a framework within which individuals, companies and others can create their own tags. These tags do not specify how the text will appear on a web page – the tags convey the meaning of the information included with them.

One would choose HTML if they were building a simpler page that did not require data management capabilities. HTML also allows the developer to embed scripting language code giving them more control over the format of displayed pages.

XML is very useful for sites that have lists that require updating such as inventory items, purchase orders, etc. XML is far superior to HTML for data management. XML also allows developers to create a tag for each fact that define the meaning of the fact.

- 5. Use your favorite search engine and the links in the Online Companion (under the heading “Internet Connection Options”) to search for more information about broadband satellite connections, DSL connections, wireless connections and cable connections. Prepare a four-column table (one column for each technology) in which you list the advantages and disadvantages of each connection method. Include at least two advantages and two disadvantages for each connection method.**

*Answer:* Answers will vary but should include the following:

	Satellite	DSL	Wireless	Cable
<b>Advantages</b>				
Upstream transmission	---	100 – 640 Kbps	150 Kbps	300 Kbps - Mbps
Downstream transmission	500 Kbps	1.5 – 9 Mbps	500 Kbps	Up to 10 Mbps

<b>Disadvantages</b>	Satellite users have to rely on plain old telephone system to upload files	Installation can be quirky	Unusable for people living in large cities	Connection bandwidth varies with the number of subscribers
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## Exercises

1. **You are the assistant to Julie Davidson, the sales manager of Old Reliable Life Insurance Company. Julie is interested in equipping her sales force with the technology they need to sell Old Reliable's insurance products. Most of her salespeople visit customers in their homes or offices. Today, the salespeople carry a laptop computer to show value projections and cash flow summaries for various policies. Many of them also carry a PDA for appointments and a mobile phone. Julie would like to ensure that salespeople have access to the home office server computers while they are making their sales presentations to customers. This access will let salespeople download the latest product information and obtain online assistance from office staff and in-house experts when the salespeople get a question from a customer that they are not able to answer. A correct and quick answer to a customer's question can often help close a difficult sale. Julie asks you to investigate various options for giving salespeople remote access to the home office server computers. She wants you to consider both wireless (directly to the laptop computers or through salespersons' cell phones or PDAs) and wired options. Prepare a report for Julie in which you briefly review at least four options, writing no more than three paragraphs for each option. Then choose the best wired option and the best wireless option and write a one-page evaluation of strengths and weaknesses for each of them. Use the Online Companion links and your favorite Web search engines to do your research.**

*Answer:* Options to consider include:

*iPass* - Offers secure remote access products that let both Palm and Pocket PC-based PDAs connect wirelessly to corporate servers securely. iPass is the solution to choose if you have a mix of users who use both wireless and dialup accounts to reach the corporate server.

*NetMotion Wireless* - A wireless-only provider of secure remote data access services. NetMotion works just with Windows-based PDAs like Windows CE and Pocket PC, but its VPN-based secure data tunnel has a compelling advantage over other solutions like iPass.

- 2. Bridgewater Engineering Company (BECO), a privately held machine shop, makes industrial-quality, heavy-duty machinery for assembly lines in other factories. It sells its presses, grinders, and milling equipment using a few inside salespeople and telephones. This traditional approach worked well during the company's start-up years, but BECO is getting a lot of competition from abroad. Because you worked for the company during the summers of your college years, BECO's president, Tom Dalton, knows you and realizes that you are Web savvy. He wants to form close relationships with the steel companies and small parts manufacturers that are BECO's suppliers so that he can tap into their ordering systems and request supplies when he needs them. Tom wants you to investigate how he can use the Internet to set up such electronic relationships. Use the Web and the links in the Online Companion to locate information about extranets and VPNs. Write a report that briefly describes how companies use extranets to link their systems with those of their suppliers, then write an evaluation of at least two companies (using information you have gathered in your Web searches) that could help develop an extranet that would work for Tom. Close the report with an overview of how BECO could use VPN technologies in this type of extranet. The three parts of your report should total about 700 words.**

*Answer:* Responses can vary significantly in this exercise. Any recommendation for systems development should include the infrastructure required to support a supply-chain management extranet, as well as the costs and the anticipated benefits. The infrastructure for a private network requires a TCP/IP network, Web authoring software, and a firewall server. The benefits include lower communication costs, and more timely and accessible information, as well as convenient use.

- 3. Frieda Bannister is the IT manager for the State of Iowa's Department of Transportation (DOT). She is interested in finding ways to reduce the costs of operating the DOT's vehicle repair facilities. These facilities purchase replacement parts and repair supplies for all of the state's cars, trucks, construction machinery, and road maintenance equipment. Frieda has read about XML and thinks that it might help the DOT send orders to its many suppliers throughout the country more efficiently. Use the Online Companion links, the Web, and your library to conduct research on the use of XML in state, local, and federal government operations. Provide Frieda with a report of about 1000 words that includes sections that discuss what XML is and explain why XML shows promise for the ordering application Frieda envisions. Your report should also identify other DOT business processes or activities that might benefit from using XML. The report should also include a summary of the main disadvantages of using XML today for integrating business transactions. End the report with a brief summary of how the W3C Semantic Web project results might help the DOT operate more efficiently in the future.**

*Answer:* Responses should include the following points:

- XML uses markup tags to describe the meaning or semantics of the text.
  - XML records are embedded in HTML documents.
  - With XML, tags can be created that identify all the record details for the ordering application that Frieda envisions.
  - The extensibility of XML is also its weakness. Sharing data across organizations means that the organizations must use the same tag names. For example, Frieda's organization might create a tag called "PurchaseOrderNumber", and one of her suppliers might call the same item "OrderNum".
  - The W3C Semantic Web will allow XML tags to be read by software agents, which will result in better, less-timely searching on the Web for information. This would allow the DOT to research pricing, availability, etc. of parts from suppliers.
- 4. As you learned in this chapter, XML allows users to define their own markup tags. You also learned that this flexibility can lead to problems when IT professionals who have developed tag sets for their own organizations are asked to share information with other organizations that are using other tag sets. One way organizations can avoid this problem is to agree to follow common standards. A common standard for financial information is XBRL. Accountants and financial analysts around the world have agreed to use XBRL to format financial statements and other reports. In about 300 words, outline the advantages that companies and financial analysts can obtain by using the XBRL standard. You can research this subject in your school library or online using your favorite search engine and the links provided for this exercise in the Online Companion.**

*Answer:* Answers will vary, but some advantages that companies and financial analysts can obtain by using the XBRL standard include: ease of sharing information with other organizations, costs saved by not having to develop a new standard, community of support of organizations using the same standard.

## Cases

### Case 1: Covad

1. Answers may vary, but the main elements to Covad's success with direct access sales include:
  - Lower overhead costs than competitors contributed to Covad's competitiveness. Covad owned an extensive national network infrastructure before they started offering direct sales.
  - By selling directly to consumers Covad must invest in extra staff to offer the services

the ISPs handled, but these costs could be offset by the significant increase in income by charging individuals for access and services..

2. Covad's strengths compared to cable providers include the lower cost to consumers for DSL compared to cable Internet access, and their ability to offer advanced services such as voice over IP telephone service.

Covad's Weaknesses compared to cable providers include the general higher connection speed of cable Internet access and the ability of cable operators to offer Internet access bundled with cable television and/or telephone access at a discount.

3. Covad's strengths compared to competing telephone and wireless companies include the ability to develop and offer novel advanced services such as "line-powered" VOIP telephone service, which overcomes many consumer's perceived limitations of VOIP service. In late 2005 Covad established business ties to larger traditional telephone businesses AT&T and SBC.

Covad's weaknesses compared to competing telephone and wireless companies include smaller size and less investment in wireless services and infrastructure.

## Case 2: Portable Fun Instruments

1. Features of each delivery system are in constant development. Students should use resources such as those listed below to investigate each content delivery system:

DoCoMo: [www.nttdocomo.com](http://www.nttdocomo.com)

BREW: [brew.qualcomm.com](http://brew.qualcomm.com)

2. Answers will vary based on system features found at the above sites at the time of research. One significant factor in the recommendation: at the time of this writing BREW is used internationally, and so may be a good fit for PFI's global game development strategy. NTTDoCoMo however, currently only offers widespread service in certain countries in Asia and Europe.
3. Features of each delivery system are in constant development. At the time of this writing, BREW offers a software development kit that supports XML as well as Java and C/C++. The i-mode system used by DoCoMo networks is also compatible with XML, and in addition to hosting content from business developers such as PFI, even allows consumers to create Web sites that can be viewed using DoCoMo products.