

CHAPTER 1

INTRANETS

CHAPTER OBJECTIVES

In this chapter, you will learn about:

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Web-based intranets provide the same ease of use and ready access to information as the external World Wide Web. The difference is that information on an intranet is shared within and across an organization.

In this chapter, we'll start by defining what an intranet is and how the intranet can be used by your organization. You have probably heard the term *intranet* used and may have used one in your own organization. Now, you are in a position to understand the options your organization has in the design and use of an internal network. Whether you are in a position to determine how the intranet is used throughout your company or in one part of the company, you need to understand various facets of intranets. You may be involved in a steering committee or you may be the one solely responsible for mapping out your organization's strategy for an

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intranet and for intra-company Web sites. Whatever your role, you should understand what intranets are, how they function, and what options should be considered when analyzing your organization's requirements and determining your organization's strategy for Web sites on the organizational intranet. Understanding the budgetary issues and costs involved in setting up and maintaining an organizational intranet will help you in your decision-making process. You can also see what other organizations are doing with their intranets. In order to illustrate the issues and concepts discussed in this section, we will use case studies based on an established computer company, which we'll refer to as A Corporation, and on a start-up Web company, BJ. These real-life examples will help you understand some of the tradeoffs involved in the development and deployment of your organization's intranet.

In the lab exercises throughout this part of the book, you will be asked to answer questions regarding your organization. For these exercises, choose an organization with which you are familiar. This organization can be where you work or another organization to which you belong. Because the lab exercises build on each other, you will find them more meaningful if you base your answers on the same organization throughout the exercises. For the answers to the lab exercises, we will use the case studies of A Corporation and BJ with which you can then compare your answers to the exercises.

In order for you to understand the case studies, we'll first describe the companies and each one's business model. A Corporation is a computer company, which was founded in the 1970s in order to provide lower-cost computers with advanced technology while maintaining compatibility with IBM computers, which then dominated the market. By the 1990s, A Corporation was an established computer manufacturer, software systems developer, and service provider with an international market. Customer companies were generally other large, established companies in the insurance, financial services, health care, manufacturing, and service industries. A major problem that A Corporation faced was in maintaining communication between corporate headquarters and research and development, both based in California, and the field sales offices located throughout the world. In the following six chapters, we will explore the use of intranet, extranet, Internet, and electronic commerce technology and approaches to assist A Corporation in its communication challenges.

The case study of BJ differs from that of A Corporation. BJ is a new Web-based start-up in online education, with a virtual organization building and deploying the technology. The company primarily uses contractors and consultants rather than full-time employees. As a start-up, BJ does not face the legacy systems issues that A Corporation faces, but BJ does not have the resources to commit to expensive solutions. While technical people can implement their own in-house solutions since they understand the technology, their time is needed to develop the product technology. Therefore, BJ faces a different set of challenges from A Corporation, but both companies have benefited from a strategic approach to the implementation of intranet, extranet, Internet, and electronic commerce technology plans. We will discuss more of the approach that BJ, as a start-up, has found to be effective.

LAB 1.1

LAB 1.1

INTRANET BASICS

LAB OBJECTIVES

After this lab, you will be able to:

- ✓ Define and Describe an Intranet
- ✓ Understand the Facilities Provided by an Intranet

First let's define what we mean by the word *intranet*. The term was coined from the Latin "intra," which means "within," to mean an internal network. In a way this is a misnomer, because it's not really "within a network," it's logically "within an organization." The term "Internet" makes more sense, since the Latin word "inter" means "between" and the Internet is indeed a network of networks. The term intranet caught on because it's easier to say than internal network and it's related to the Internet by using Internet protocols. Also, people like a term that sounds like the Internet but indicates that the network uses an Internet-type of network as an intra-organization or internal network. We define an intranet to be a network employing standard Internet protocols, such as TCP/IP (transmission control protocol/Internet protocol) and HTTP (hypertext transfer protocol), to connect a set of clients within an organization or a group of associated clients supporting a community of interest. An intranet can also be defined as a network using IP (Internet protocol) connecting multiple nodes behind a firewall. A *firewall* is a hardware/software combination that provides security for the intranet by separating network nodes into those on the inside and those on the outside. An intranet may reside behind more than one firewall and may have nodes that are connected by secure networks. The secure networks may themselves be virtual private networks (VPNs). A *virtual private network* refers to a network that sends encrypted data across the public Internet. Encryption provides privacy across a public channel, thereby providing a network, which is "virtually" private rather than "physically" private.

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LAB 1.1

Other definitions of the term *intranet* also exist. The CommerceNet industry consortium takes the approach that an intranet includes other technologies in use for in-house purposes. According to this approach, an intranet is defined as Internet technology services used on a LAN or within an organization. The term *intranet* may be used to encompass the complete information network of an organization. By this definition, an intranet is not limited to the use of Internet technologies; an intranet also includes client/server networks and data warehouse integration, as well as support for mobile communications and connectivity between PCs and mainframes.

An organizational intranet provides facilities to:

- Share information within the organization
- Transfer information between departments or other entities within the organization
- Make information accessible across geographic and organizational boundaries
- Collaborate with other people in the organization
- Automate internal operational processes
- Provide a single user interface to organizational information resources and tools
- Train and educate individuals within the organization

With these facilities, an intranet offers the opportunity for an organization to:

- Provide ready access to information needed to make informed decisions
- Increase awareness of other projects happening within the organization
- Support geographically dispersed individuals and departments
- Stay abreast of the latest advances in fields related to the organization's mission

An organization can use these capabilities to:

- Improve the quality of its decisions
- Expedite decision making
- Eliminate duplication of effort
- Improve communication throughout the organization
- Increase the cohesiveness of the organization
- Facilitate collaborative efforts

- Enhance competitive advantage
- Boost morale and increase employee retention
- Increase productivity

Now let's look at how the phrases *internal Web* and *corporate Web* are used. The term *Web* is used to mean an unstructured client/server network with HTTP as its transaction protocol. If we look at the public Internet and the World Wide Web, the HTTP nodes on the public Internet comprise the World Wide Web. An internal Web, on the other hand, is made up of all the network nodes on a private network connected via HTTP as the transaction protocol. A private network can be an organizational LAN (local-area network) or WAN (wide-area network). The phrase "corporate Web" indicates that the internal network is run by or for a corporation. Internal Webs are also referred to as intranets. It is important to understand that these networks or Webs are intra-organizational or internal to a company, organization, or community of interest in a logical sense. In a physical sense, the network nodes in an intranet may be spread around the world. Indeed, an intranet may be composed of many Web sites and network nodes, any or all of which may reside in different physical locations. In fact, geographically dispersed organizations benefit the most from intranets because individuals can share data via Web sites on the intranet, helping people and departments feel part of the overall organization despite their physical distance from corporate headquarters or other departments within a multinational corporation. We think of an intranet as serving a specific community of interest, which may be referred to as a COIN (community of interest network), rather than a specific physical location. An intranet can be very large and very dispersed. While the scale of the intranet needs to be taken into account for performance and availability, an intranet can, in reality, be as large as the community of interest that the intranet serves. An intranet may consist of just one Web server in a small organization, hundreds of departmental Web servers spread around the country, or even multiple thousands of Web servers in various corporate offices around the world.

With this flexible structure, intranets can provide facilities to share:

- Strategic plans
- Budgets and financial analyses
- Benefits information
- Product development documents
- Comments on collaborative projects
- Competitive analysis
- Data sheets
- Personnel data

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LAB 1.1

Intranets are logically centralized and physically distributed. An intranet provides a common entry point for data collection and information dissemination. At the same time, the intranet distributes the processing of data onto various application servers connected via the intranet. This is an efficient and user-friendly way for the intranet to perform the operational tasks of the organization and allow for cost-effective sharing of resources throughout the organization. You can put security measures in place to protect confidential documents and the intranet can then be used as a repository for the increasingly valuable knowledge assets of the organization.

The intranet can thereby support intra-organizational efforts in the following areas:

- Internal communications
- Collaborative and cooperative projects
- Intellectual capital management
- Business process reengineering

LAB 1.1 EXERCISES

1.1.1 DEFINE AND DESCRIBE AN INTRANET

a) What is an intranet?

b) What does it mean for an intranet to be logically centralized and physically distributed?

1.1.2 UNDERSTAND THE FACILITIES PROVIDED BY AN INTRANET

a) What documents does your organization or could your organization share via an intranet?

- b) How can your organization benefit from using an intranet?
-
-

LAB 1.1 EXERCISE ANSWERS

1.1.1 ANSWERS

- a) What is an intranet?

Answer: We define an intranet to be a network employing standard Internet protocols, such as TCP/IP (transmission control protocol/Internet protocol) and HTTP (hypertext transfer protocol), to connect a set of clients within an organization or a group of associated clients supporting a community of interest. The intranet at A Corporation was the first commercial intranet to be based on the World Wide Web and to use the HTTP protocol. The intranet at BJ uses TCP/IP and HTTP to support a group of web browser clients located in geographically dispersed facilities.

- b) What does it mean for an intranet to be logically centralized and physically distributed?

Answer: Servers and services can be located in various locations with the home page for the organization providing hyperlinks to the services and information. To the user, it appears that the services and information are centrally located but, in fact, the resources can be distributed on various servers, without requiring the user to know their physical location. The A Corporation intranet home page provides links to various lines of business and departments, including human resources, benefits, technical publications, engineering, professional services, software, and international field sales offices. While these organizations physically reside in various locations around the world, the home page for the corporate intranet provides a logical centralization point. The home page itself resides on a server located in the corporate Information Services facility in California, but the main point is that users see the corporate intranet home page as their logical central link to other resources. While the other resources are physically distributed, users do not need to know the address or location of the other resources since links are provided from the intranet home page. The BJ intranet provides a jumping-off point for project planning and software development efforts that are produced and stored on systems in various locations. Again, the user is not required to know the physical location of the resources as long as he or she knows the name of the intranet home page, which provides links to all the other resources.

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LAB 1.1

1.1.2 ANSWERS

- a) What documents does your organization or could your organization share via an intranet?

Answer: Any documents that are currently physically copied and distributed are candidates for dissemination on an intranet, including personnel policies, organization announcements, information about products and services, competitive analysis, and project plans. The A Corporation human resources department was an early adopter of the corporate intranet, providing information on health, dental, and life insurance plans and vacation and sick leave policies to employees. The corporate and marketing libraries adopted the intranet to provide facilities for checking the library catalogs and requesting marketing reports while the market analysis department set up searchable repositories on the intranet for competitive analysis. The PR (public relations) group decided to post announcements on the intranet and enhanced the announcements through the addition of audio and video clips of announcements by the president of the company. BJ provides contact information for all staff people via the intranet. A major use of the intranet by BJ involves sharing of project requirements and development plans.

- b) How can your organization benefit from using an intranet?

Answer: Your organization can use an intranet to:

Share information across departments and groups

Support collaborative projects

Add to the organizational knowledge base

BJ uses its intranet to support collaboration among developers on project teams, while A Corporation primarily uses the intranet to share information across various departments and lines of business within the corporation.

LAB 1.1 SELF-REVIEW QUESTIONS

In order to test your progress, you should be able to answer the following questions.

- 1) Intranets are differentiated by which of the following?
- a) _____ Physical location
- b) _____ Content

- 2) Intranets are _____ centralized and _____ distributed.
- a) _____ physically, logically
 - b) _____ physically, physically
 - c) _____ logically, logically
 - d) _____ logically, physically
- 3) Intranets can be used to facilitate collaborative efforts.
- a) _____ True
 - b) _____ False
- 4) Intranets usually are not used to share information within an organization.
- a) _____ True
 - b) _____ False

Quiz answers appear in the Appendix, Section 1.1.

10 *Lab 1.2: Intranet Management***LAB 1.2****LAB
1.2****INTRANET MANAGEMENT****LAB OBJECTIVES**

After this lab, you will be able to:

- ✓ Understand Management Issues Related to the Adoption of an Intranet Throughout Your Organization
- ✓ Engage Management in a Discussion of Organizational Issues Related to the Deployment of an Intranet in Your Organization

Let's consider some interesting statistics about corporate adoption and acceptance of intranets from major market research firms, including IDC, Forrester Research, and Zona Research.

- More than half of the larger corporations now have an intranet in place.
- The majority of corporations are considering implementing an intranet if they don't have one yet.
- By 1998, corporations were spending close to \$11 billion on intranets.
- With intranet expenses accounting for approximately one-quarter of the money spent on Web initiatives by U.S. companies, the amount spent on intranets continues to rise.

In addition, intranets are in use in many nonprofit organizations, academic institutions, and government agencies. Many organizations realize the benefits of an intranet no matter how little, how much, or even whether they use the public Internet and the external World Wide Web.

Lab 1.2: Intranet Management II

LAB 1.2

Web technology has made the hardware and software for an intranet affordable and easy-to-use by organizations of all sizes and types. As organizations downsize and refashion themselves with flatter management structures, cross-functional teams, and collaborative projects with strategic partners, intranets become critical to the communication and effectiveness of the organization. Management consultants are encouraging a move toward virtual organizations for flexible deployment and use of resources. At the same time, management consultants are encouraging organizations to empower each individual in the organization. In the past, the old adage “knowledge is power” encouraged some people to hoard knowledge. Many organizations now realize the value of their intellectual assets, the knowledge base of the organization. Understanding that it is in their best interest to build the knowledge base of the entire organization, many organizations now encourage sharing and dissemination of information throughout the organization to increase the awareness and effectiveness of each individual in the organization. Intranets support empowerment by providing ready access to needed information and resources at each person’s desktop. At the same time, many organizations are encouraging their people to follow the “keep it simple” principle. Intranets powered by Web servers, browsers, and WYSIWYG (what-you-see-is-what-you-get) publishing tools provide straightforward ways to disseminate and share information across departments and throughout organizations.

Your intranet may already be in place, thanks to your own initiative or that of one or a few people in your organization who understand its benefits. If this hasn’t happened yet in your organization, you may become the “intranet evangelist” who can spread the word. Whether your organization’s intranet is a grassroots effort or a project managed by the IS (Information Services) department, the intranet is a tool that supports decentralized decision making and control. Since an intranet is ideally a resource for everyone in the organization, it’s a good idea to establish a World Wide Web Council or Intranet Steering Committee.

■ FOR EXAMPLE

When my team developed the corporate intranet for our company, we found that the formation of our World Wide Web Council was a key to the success of the deployment and acceptance of the intranet. Bringing together representatives of each major group, such as engineering, IS/MIS, manufacturing, marketing, corporate communications, human resources, legal counsel, or whatever comparable groups make up your organization, really pays off. If you want your intranet to be a tool to help your organization increase its effectiveness and communication, make sure that your World Wide Web Council is involved in the definition and planning of your organizational intranet.

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LAB 1.2 EXERCISES

LAB 1.2

1.2.1 UNDERSTAND MANAGEMENT ISSUES RELATED TO THE ADOPTION OF AN INTRANET THROUGHOUT YOUR ORGANIZATION

- a) What impact do you think an intranet might have on the knowledge capital of your organization?

1.2.2 ENGAGE MANAGEMENT IN A DISCUSSION OF ORGANIZATIONAL ISSUES RELATED TO THE DEPLOYMENT OF AN INTRANET IN YOUR ORGANIZATION

- a) What impact do you think an intranet might have on the control of your organization?

LAB 1.2 ANSWERS

1.2.1 ANSWER

- a) What impact do you think an intranet might have on the knowledge capital of your organization?

Answer: Sharing knowledge not only serves to increase the knowledge of individuals in the organization, it also fuels an increase in the overall knowledge base of the organization. This is a situation in which the whole is greater than the sum of its parts. We definitely experienced an increase in the understanding of competitive and marketing issues among the engineering teams as well as in the field sales offices when we made competitive analysis and market research data available via the A Corporation corporate intranet. The BJ engineering team has an increased understanding of strategic planning issues as well as of the cognitive psychology foundation of the online learning environment.

1.2.2 ANSWER

- a) What impact do you think an intranet might have on the control of your organization?

Answer: An intranet is highly distributed and tends to support decentralized decision making and control. If your organization has a hierarchical management structure in place, an intranet can serve to break down some of the barriers between management levels, increasing communication and making people at each level more responsible for the success of the organization. Adoption of a corporate intranet facilitated A Corporation's move toward lines of business from a centrally controlled vertically integrated business model. With the information it needed to operate as separate profit and loss (P&L) centers, each line of business could make decisions on a local level, reporting results to corporate management. While BJ started as a decentralized effort, control can be shared more easily through communication via the corporate intranet.

**LAB
1.2****LAB 1.2 SELF-REVIEW QUESTIONS**

In order to test your progress, you should be able to answer the following questions.

- 1) Hardware and software for an intranet are affordable.
- a) True
 - b) False
- 2) Intranets are best when
- a) In wide use
 - b) Used only by select groups
 - c) Used only by engineers
 - d) Used only by human relations and marketing groups
- 3) It is best to
- a) Make intranets complex
 - b) Keep intranets simple

Quiz answers appear in the Appendix, Section 1.2.

14 *Lab 1.3: Strategic Intranets***LAB 1.3****STRATEGIC INTRANETS****LAB
1.3****LAB OBJECTIVES**

After this lab, you will be able to:

- ✓ Understand How an Intranet Supports Your Organization's Mission
- ✓ Pose Questions in Order to Design an Intranet for Your Organization

The first step in determining what your organization should do with an intranet is to consider your organizational strategy. The strategy comes first, then tools to implement the strategy come next.

Let's talk about your organizational strategy. If you don't have one, it's time for people to sit down and determine the mission and function of the organization. What is the mission of the organization? If you have a mission statement, ask your World Wide Web Council or Intranet Steering Committee to review the mission statement and make sure that it reflects the overall goals of the organization. If you don't have a mission statement, now is the time to develop one.

There's no use developing an intranet to help your organization carry out its mission unless you know what mission the organization is trying to accomplish. What role does your organization play in the overall landscape? What internal structure and facilities are needed to support the work that is being done within the organization? Is the current organizational structure and strategy effective? If so, you can design an intranet to support the current functioning of the organization. If not, this is a good opportunity for your organization to reassess the organizational structure and strategy and design a structure and strategy to help the organization accomplish its intended mission. There are excellent resources and guides for developing or refining your organizational mission statement and your organizational strategy. For the purposes of our discussion, we will assume that you now understand and can state the organization's mission and the organization's

Lab 1.3: Strategic Intranets 15

strategy to accomplish its overall mission. With these two important pieces in hand, you are ready to formulate your strategy for your intranet.

Let's pose a number of questions for your organization to answer.

1. How does an intranet support your organizational mission?
2. How can an intranet assist your organization in information sharing?
3. What data processing functions are currently performed within the organization?
4. What additional data processing functions need to be performed within the organization?
5. Which of these functions can be performed on application servers on the intranet to distribute the load, improve the user interface, or make the data or application more accessible throughout the organization?
6. How can an intranet streamline your data processing operations?
7. What business processes can you reengineer by implementing them on the intranet?
8. What are your organizational requirements in the following areas?
 - Collaborative and cooperative projects
 - Sharing information
 - Protecting information
9. What content do you want to make available on the intranet? What form is the content currently in?
 - Strategic planning documents
 - Budgets
 - Sales data
 - Beta test products
 - Product specifications
 - Technical reports
 - Research results
 - Reports
 - Other organizational information
10. What existing internal databases do you want to make accessible via the intranet?
11. What internal publications do you want to put on the intranet?
12. What external databases and publications (for instance, competitive information) do you want to make available on the intranet? Do you have the appropriate licenses? Is the information

**LAB
1.3**

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LAB 1.3

- licensed for individual use or do you have a site license? If you have a license to share the information within one department or organizational entity, do you have a way to limit the use to people within that group? What information do you want to share throughout the organization and, according to the terms of your licensing agreement, what information can be shared freely throughout the organization?
13. What type of shared content do you want to make freely available on the intranet?
 14. Will your intranet include employee-developed content?
 15. What style of intranet fits your organization? Are there separate organizations within the overall organization that may have their own styles and information sharing requirements?
 16. Do you want a corporate bulletin board with departmental Web sites?
 17. Do you want your intranet to be an informal community kiosk on which everyone can post and share information? If so, who decides what is and isn't appropriate? Do you have a moderator for discussion groups? Who ascertains if certain content is offensive or inappropriate? What action is taken when someone posts offensive or inappropriate information?
 18. Are the people in your organization capable of posting information on an internal Web site? Do they have the tools and expertise to make the information available on a Web site?
 19. Do you have a style guide governing the format of internal Web sites?
 20. What security measures do you currently have in place? Do you have a firewall (or multiple firewalls)? Do you require the use of difficult-to-guess passwords? Do you have a callback system? Is your information sensitive enough to require encryption? We will return to security questions when we discuss technical decisions in Lab 1.5.

LAB 1.3 EXERCISES

1.3.1 UNDERSTAND HOW AN INTRANET SUPPORTS YOUR ORGANIZATION'S MISSION

- a) What is the mission of your organization?

- b) How does an intranet support this mission?

1.3.2 POSE QUESTIONS IN ORDER TO DESIGN AN INTRANET FOR YOUR ORGANIZATION

Take time to consider each of the questions posed in this lab.

LAB
1.3

- a) Which of the questions posed in this lab can you answer for your organization?

- b) Which ones need answers from other people within the organization?

LAB 1.3 EXERCISE ANSWERS

1.3.1 ANSWERS

- a) What is the mission of your organization?

Answer: This needs to be defined by each organization. If you need help in defining a mission, there are consultants who work with organizations as well as books to read to assist in mission development. The A Corporation mission is to deliver innovative systems, software, consulting, services, and support for data centers. The BJ mission is to provide an educationally sound online adaptive learning environment, based on research in cognitive psychology, educational methodologies, and effective learning strategies.

- b) How does an intranet support this mission?

Answer: Intranets can support an organization's mission by facilitating communication, enhancing cooperation, and promoting collaboration. Examples of ways in which an intranet can support an organization's mission include:

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Providing competitive analysis to marketing so that the company can fulfill its mission of remaining the market leader in a particular product arena.

Supporting the sharing of information and case loads in an organization with a mission to offer low-cost community legal services to those in need of legal aid.

Facilitating technology transfer from a research and development group to a number of product divisions in a large corporation.

For A Corporation, the intranet supports the corporate mission by providing new product information to the field sales offices so that the sales force can offer the latest technology solutions to customers whether they are located in Australia, Ireland, or in the United States. For B, the intranet provides information on current research in cognitive psychology, educational methodologies, and effective learning strategies to support development work in online adaptive learning.

LAB 1.3

1.3.2 ANSWERS

- a) Which of the questions posed in this lab can you answer for your organization?

Answer: Even if you can answer all the questions, take time to meet with others and discuss these questions and their answers. Input from various constituencies in your organization will pay off in realizing the benefits of an intranet designed to fulfill the objectives of your organization.

We discussed how the intranet supports the mission of both A Corporation and B and how the intranet supports information sharing among lines of business in A Corporation and across development teams in B. At A Corporation, we found that while our web engineering team needed to address each of the questions in this lab, members of the World Wide Web Council needed to provide input on each of the questions since various departments had their own specific concerns. In addition, each department was able to contribute by addressing different questions raised in this lab. At B, which is operating in start-up mode, the answers to these questions come primarily from the founders, though input has been solicited from others in the organization to make sure that the intranet satisfies the needs of all members of the team. Since the intranet is such an important communication vehicle for B, it is important that the design and contents reflect the requirements and wishes of everyone in the organization.

- b) Which ones need answers from other people within the organization?

Answer: Create or use an existing task force to form a World Wide Web Council or Intranet Steering Committee. This group, with representatives from each major group in the organization, can help you determine the answers to these questions. Participation from this group is critical to the success of an intranet.

The A Corporation World Wide Web Council provided information on data processing functions currently performed within the organization, which additional data processing functions needed to be but weren't being performed within the organization, and which functions could be performed on application servers on the intranet. This led to a cooperative effort between the web engineering team and the corporate Information Services department. At B], various team members provided input to questions of interest to that particular team member. It is helpful to solicit input no matter how large or how small your organization is, so that the intranet will support the mission, strategy, objectives, and operation of your organization.

LAB 1.3 SELF-REVIEW QUESTIONS

LAB 1.3

In order to test your progress, you should be able to answer the following questions.

- 1) What should be done first?
 - a) Identify and purchase tools
 - b) Create a strategy for an intranet

- 2) Information in "legacy" (old and outdated) databases can be integrated into a new intranet.
 - a) True
 - b) False

- 3) An intranet should be centered around your organization's mission.
 - a) True
 - b) False

Quiz answers appear in the Appendix, Section 1.3.

LAB 1.4

INTRANET COMPONENTS

LAB 1.4

LAB OBJECTIVES

After this lab, you will be able to:

- ✓ Understand the Components of an Intranet
- ✓ Compare the Internet and an Intranet

Let's map out the components that may be part of your intranet. Your intranet may be as simple as individual browsers on people's desktop machines, connecting to one organizational Web server. Or your intranet may be much more complex, including multiple Web servers and multiple application servers, each performing a specific function, such as time card processing, benefits tracking, and other intra-organizational tracking and planning tasks. In addition, your intranet may use CGI (common gateway interface) to accept data through forms and pass the data along to a back-end relational database server. Alternatively, your intranet may incorporate servers, hosting applications that have been developed within your organization; these servers may communicate via custom APIs (application program interfaces). In this way, organizations can protect their investment in software developed for applications strategic to the organization's mission or critical to day-to-day operations. If an application is performing its function well, there may be no need to replace it with an entirely new application, incurring development, training, and data filtering expenses. People in your organization can use their browsers as the common interface and access these proprietary applications via CGI scripts, JDBC (Java Database Connectivity™) drivers, or, if necessary, proprietary APIs. JDBC is an industry standard for database-independent connectivity between the Java platform and a wide range of databases. CGI scripts and JDBC drivers allow people in your organization to access and manipulate data in organizational database management systems via their browsers.

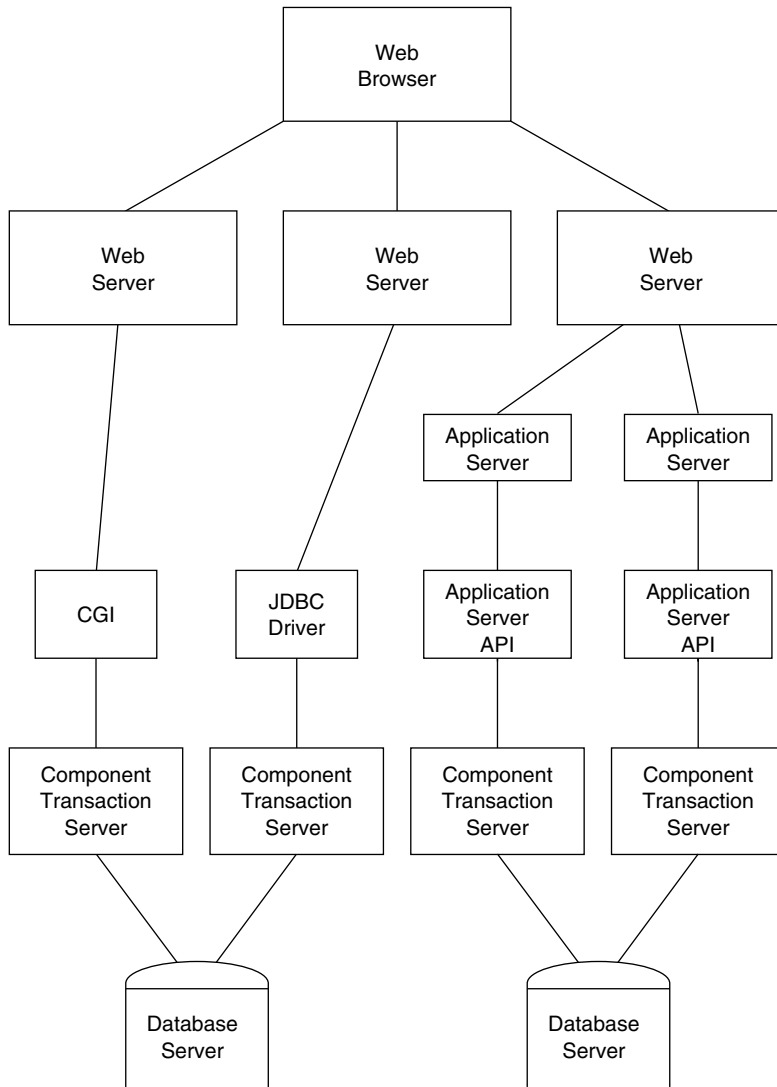


Figure 1.1 ■ Logical View of an Intranet

To better understand this view of an intranet, we can map out a rough correspondence between the components of an intranet and the architecture of a multi-tier client/server system (Fig. 1.1).

Top Tier—Browser corresponds to the client layer.

Second Tier—Web server and optional application server(s) are part of the business logic tier.

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Third Tier—Middleware layer, which most commonly contains CGI scripts. The middleware layer may also include JDBC drivers as well as specific application server APIs, most often developed in-house to connect to operational applications.

Fourth Tier—Transaction manager layer, which may consist of a component transaction server. Component transaction servers function as an interface to the back-end database servers.

Database servers are often connected into the intranet via transaction servers. Therefore, the lowest tier constitutes the back-end data stores or, in intranet parlance, the database servers.

Search and retrieval tools developed for the Internet can be used on the intranet to locate specific pieces of data. One of the important advantages of using Internet technology for your intranet is that you can use the same tools you use to access information outside your organization when you're accessing information within and across your organization.

LAB 1.4

LAB 1.4 EXERCISES

1.4.1 UNDERSTAND THE COMPONENTS OF AN INTRANET

a) Which components are found in most intranets?

b) What components are optional?

c) What components (if any) does your organization have in place?

1.4.2 COMPARE THE INTERNET AND AN INTRANET

- a) How are the Internet and an intranet the same?

- b) How does an intranet differ from the Internet?

LAB 1.4 EXERCISE ANSWERS**LAB
1.4****1.4.1 ANSWERS**

- a) Which components are found in most intranets?

Answer: An intranet usually contains at least one Web browser and at least one Web server.

- b) What components are optional?

Answer: Additional Web servers, application servers, CGI scripts, JDBC drivers, application server APIs, component transaction servers, and database servers are all optional. They add power and flexibility to the intranet, but some of these components may not be appropriate to your organization's intranet configuration.

- c) What components (if any) does your organization have in place?

Answer: This answer depends on the status of the intranet in your organization. Many organizations have at least one Web server in place but may not have connected database servers to the back-end. Many organizations have not extended their intranet throughout the organization and therefore have not yet realized the true benefits of an organizational intranet.

At A Corporation, the first components implemented in the intranet were the Web browsers and servers, along with CGI scripts and component transaction servers. These were connected to corporate database servers. Application servers were developed for specific applications once the intranet was up and running. BJ, with its Java development environment, implements Web browsers, Web servers, CGI scripts, and JDBC drivers on the intranet.

24 Lab 1.4: Intranet Components

1.4.2 ANSWERS

- a) How are the Internet and an intranet the same?

Answer: The Internet and the intranet use the same protocol, IP (Internet Protocol).

At A Corporation, the public Web site on the Internet is supported on a different system from the internal Web site on the intranet. The Web servers are set up the same but support different contents and different application processes. The intranet communicates with non-IP-based mainframes via CGI scripts and application servers. BJ's communication and systems are entirely IP-based.

- b) How does an intranet differ from the Internet?

Answer: An intranet serves an organization or a community of interest and restricts access to members of the organization or community. The Internet is the public network of networks and servers connected via IP (Internet Protocol) around the world.

At A Corporation, the intranet supports application processing while the Internet public site provides information on the corporation and products. At BJ, the intranet provides confidential information on product development plans and allows access to code under development, while the Internet provides access to information released to the public.

LAB 1.4

LAB 1.4 SELF-REVIEW QUESTIONS

In order to test your progress, you should be able to answer the following questions.

- 1) When creating an intranet, all servers, databases, and so on should be updated or else they will not be able to be a part of the intranet.
 - a) True
 - b) False
- 2) Web browsers connect directly to application servers.
 - a) True
 - b) False
- 3) Many Internet technologies can also be used in an intranet environment.
 - a) True
 - b) False

Lab 1.4: Intranet Components 25

- 4) CGI can be used to interface between _____ and _____.
- a) _____ Web browsers, Web servers
 - b) _____ Databases, proprietary applications
 - c) _____ Web browsers, proprietary applications
 - d) _____ Web servers, databases

Quiz answers appear in the Appendix, Section 1.4.

**LAB
1.4**

LAB 1.5

INTRANET TECHNICAL DECISIONS

LAB OBJECTIVES

After this lab, you will be able to:

- ✓ Pose the Technical Questions That Need to Be Answered to Formulate Your Intranet Strategy
- ✓ Make Technical Decisions Within Your Organization Regarding Your Intranet Strategy and Security Requirements

LAB 1.5

There are a number of technical decisions to make when you formulate your intranet strategy.

Let's look first at existing applications and information systems.

1. What components of an intranet are currently in place in the organization?
2. Do all members have Web browsers on their desktop systems?
3. Is connectivity in place for all members of the organization to access all Web sites on the intranet?
4. Does your organization have existing internal Web sites? Can existing Web servers accommodate additional Web sites? Can existing Web sites accommodate additional content?
5. What hardware is available for use within the intranet?
6. What software is available for use within the intranet?
7. Which existing applications and legacy systems are worth maintaining?
8. Which of these can be easily connected to the intranet?

Lab 1.5: Intranet Technical Decisions **27**

9. What interface is required to connect each existing application/system?
10. What technical expertise and resources exist to develop and deploy the intranet?
11. What technical expertise and resources exist to maintain, update, and enhance the content of the intranet?
12. What technical expertise and resources exist to enhance the capabilities of the intranet?
13. What security measures are in place and what additional security measures are required to effectively protect any sensitive information on the intranet?

Now that you've considered the technical issues that need to be addressed, let's focus on the security requirements of your organization. Unfortunately, the accessibility of data on the intranet increases the risk of unauthorized changes to data, unauthorized distribution of information, corruption of data through viruses brought into and passed around the organization, and actual stealing of data by those who gain access to the intranet. Part of developing an intranet development strategy is to assess the risks and costs associated with protecting the organization's data. There are four aspects to a comprehensive security plan:

- Deterrence
- Protection
- Detection
- Response

LAB 1.5

Volume 2 in this series, *Supporting Web Servers, Networks, and Emerging Technologies*, describes security technologies that can be used to address each of these four aspects of your organization's plan to protect its valuable information assets.

In order to develop a specific set of security policies and procedures for your organization, consider the following questions for your organization:

1. Does your organization have in-house expertise to design, implement, and manage your security policies and security technologies?
2. What software, documentation, data, and resources does your organization rely on? These are the resources that need protection.
3. Which group(s) of people pose the greatest threat to your organization's resources: people internal to the organization, those who are external but are in established relationships with the organization, or external parties? Determine how much risk each group poses and how you would like to protect your resources from each of these groups threatening the integrity of your resources.

28 Lab 1.5: Intranet Technical Decisions

4. Who has access to passwords and network documentation? It is important to put security measures in place to safeguard and severely limit access to passwords, which serve as the “keys to the kingdom.” These include root passwords on servers, router passwords, database passwords, and other passwords that allow people to change configurations, access data anywhere on the network, or act as a “super user.”
5. How much would it cost for you to secure your valuable resources? If you don’t know enough about security technologies, you can refer to Volume 2 in this series, *Supporting Web Servers, Networks, and Emerging Technologies*, which provides information on security technologies. Once you understand the options available, look at the costs and make sure that the value of the resources that need to be protected justifies the cost of the security technologies and procedures. That is, do risk assessment. The financial services industry balances the risk of losing financial assets against the costs associated with protecting them. In the same way, organizations need to evaluate the risk of losing information assets and other resources on the intranet and balance the costs of securing them against the risks associated with losing them.
6. Who develops your information security policies and procedures? Your organization needs a person or a small group to develop, disseminate, and monitor information security policies.
7. Once you’ve developed security policies and procedures, which members of the organization will have responsibility for enforcing and monitoring them? Organizations often keep logs to show who accesses what, but no one has the time to review the logs and identify intruders. Make sure that you budget for the means and the personnel to monitor security exposures and breaches.

LAB 1.5

LAB 1.5 EXERCISES

1.5.1 POSE THE TECHNICAL QUESTIONS THAT NEED TO BE ANSWERED TO FORMULATE YOUR INTRANET STRATEGY

Consider the list of questions posed in this lab.

- a) Which of these questions need to be addressed in your organization?

Lab 1.5: Intranet Technical Decisions 29

- b) Which of these questions can you answer today? Which ones do you need help answering?

1.5.2 MAKE TECHNICAL DECISIONS WITHIN YOUR ORGANIZATION REGARDING YOUR INTRANET STRATEGY AND SECURITY REQUIREMENTS

- a) What is the difference between deterrence and protection?

- b) What problem might you encounter if you implemented deterrence and protection mechanisms without implementing detection procedures?

- c) What problem might occur if your organization decides to encrypt all data that is transmitted?

**LAB
1.5****LAB 1.5 EXERCISE ANSWERS****1.5.1 ANSWERS**

- a) Which of these questions need to be addressed in your organization?

Answer: This will differ within each organization. Even if all the technical decisions have been made in your organization, take time to review them with members of your World Wide Web Council. Those questions that relate to security policies and technologies need to be addressed by your task force so that you are in agreement on which security technologies will be implemented and supported.

30 Lab 1.5: Intranet Technical Decisions

- b) Which of these questions can you answer today? Which ones do you need help answering?

Answer: Again, look to members of your World Wide Web Council to assist in answering these questions. They need to be involved in the technical decisions, particularly those that relate to information security.

1.5.2 ANSWERS

- a) What is the difference between deterrence and protection?

Answer: Deterrence involves trying to keep people out. In the same way as a double bolt lock on your front door deters unwanted intruders, firewalls, routers, and filters make it more difficult for network intruders to gain access to your intranet. Protection includes measures to ensure that the sender and receiver of data are who they say they are (authentication) and measures to safeguard the confidentiality of data if it is seen by other than the intended recipient (encryption). Authentication and encryption technologies can be used together to protect the integrity of the data, that is, to ensure that the data has not been altered.

At A Corporation, we used firewalls, routers, and filters to limit access to development servers, that is, for deterrence. While we used multiple levels of authentication for protection, we did not usually encrypt the data we were sending within the corporation. BJ, as a start-up, has more limited means, but in some ways more sensitive data. Therefore, we combine deterrence in the form of firewalls, routers, and filters with protection in the form of authentication and encryption to keep network intruders out and to safeguard the integrity of the data.

- b) What problem might you encounter if you implemented deterrence and protection mechanisms without implementing detection procedures?

Answer: An intruder could get past your firewall, get authenticated using some one else's login and password, and not be noticed until something catastrophic, such as the destruction or disappearance of data, occurred.

Both the A Corporation and BJ network administration teams regularly scan the logs to see if any intruders have gained access to the gateway systems, which would allow them access to other systems. Without such detection procedures in place, data corruption could occur before the company was aware that there was a break-in.

- c) What problem might occur if your organization decides to encrypt all data that is transmitted?

Answer: Since it takes time to encrypt data on the sending side and to decrypt data on the receiving end, performance may be degraded more than is acceptable to users.

Lab 1.5: Intranet Technical Decisions 31

Since SSL (secure sockets layer) encryption encrypts and decrypts each packet of data, it is important to weigh the potential loss or compromise of confidential data versus the adverse impact using SSL for all data would have on performance.

A Corporation chose not to encrypt all data being transmitted to avoid performance degradation. BJ uses encryption on a selective basis to avoid performance degradation as well.

LAB 1.5 SELF-REVIEW QUESTIONS

In order to test your progress, you should be able to answer the following questions.

- 1) Security is an issue with intranets.
 - a) True
 - b) False

- 2) Security policies are best when developed by the whole company.
 - a) True
 - b) False

- 3) Firewalls are an example of a protection.
 - a) True
 - b) False

- 4) Encryption is an example of a protection.
 - a) True
 - b) False

Quiz answers appear in the Appendix, Section 1.5.

LAB 1.6

INTRANET POLICIES

LAB OBJECTIVES

After this lab, you will be able to:

- ✓ Understand the Need for Policies Governing Your Intranet
- ✓ Develop Guidelines and Policies for Intranet Usage

LAB 1.6

Many organizations have policies in place to protect certain confidential documents. Markings on documents may indicate the level of confidentiality associated with a particular document. At times, people are specifically instructed to keep certain pieces of information confidential for a specified period of time. In certain circumstances, people are only allowed to share documents and information within the organization but not with people outside the organization. Some organizations have developed specific markings—such as confidential, proprietary, secret—each of which connotes a different level of protection and requires authorization and approval for dissemination. Some documents are restricted to viewing by only certain members of the organization. Yet another set of documents may be available for viewing but not for reproduction.

The organization may have an Acceptable Use Policy (AUP) already in place. The AUP defines how people are allowed to use certain documents and information. The AUP also defines the policies that control dissemination of the organization's knowledge assets. Organizations are increasingly aware of the value of their intellectual capital, the information and knowledge acquired and managed by members of the organization. Developing a sensible policy to protect and use these knowledge assets is a worthwhile exercise for the organization to undertake.

Some organizations also have developed policies and procedures to back up and maintain data stored on magnetic tapes, disk drives, and various other electronic media. Critical data may be available on mirrored sites with hot backup so that people can use the mirrored site if one site is not available. Other critical data

may be stored on-site or off-site. Sometimes, tapes with critical data are stored in fireproof safes or at a geographically distant location in case of earthquakes or other natural disasters. In order to develop your intranet, you need to examine any organizational policies that have been developed for backing up, storing, and sharing data, whether the data's in print or on electronic media. If your organization has no policies in place, it's time to develop such policies in keeping with your organizational strategy. Your organization's information, documents, and data are valuable knowledge assets. Categorize the documents, information, and data that your organization generates, develops, distributes, maintains, and/or owns. Determine which of your current data and document protection policies should be applied when the data moves to the intranet.

■ FOR EXAMPLE

At our company, we placed a red "internal use only" mark on each page of company-confidential documents on an internal Web site. This indicated that the data should not be shared with anyone outside the corporation. We also marked certain documents "not for distribution" since we had licensed this information and our licensing agreement precluded sharing the data with customers and others who were not employees of the corporation. In addition, we had a password-protected internal Web site for corporate strategy documents that were under development. This site had restricted access; only members of the strategic planning and corporate management teams were allowed access to this site. The group decided that these documents should not be reproduced while they were under development. Therefore, the documents were marked with the words "Do not reproduce" on the Web pages. In these cases, the policies that were used for hard-copy documents were applied directly to the documents when they resided on the intranet.

LAB 1.6 EXERCISES

1.6.1 UNDERSTAND THE NEED FOR POLICIES GOVERNING YOUR INTRANET

- a) What is an AUP?

- b) Does your organization have an AUP? If so, describe it. If not, what do you think your organization's AUP should cover?

34 Lab 1.6: Intranet Policies**1.6.2 DEVELOP GUIDELINES AND POLICIES FOR INTRANET USAGE**

- a) Does your organization have policies regarding confidentiality or use of documents? If so, what are they? If not, what do you think they should be?

- b) Do you think the same policies that apply to your hard-copy documents should govern the use of the intranet? Why or why not?

LAB 1.6 EXERCISE ANSWERS**1.6.1 ANSWERS****LAB
1.6**

- a) What is an AUP?

Answer: AUP is the acronym for Acceptable Use Policy. This policy describes what is allowed and not allowed by your organization regarding the use and dissemination of information and documents. It is important to develop such a policy regarding the use and dissemination of information and documents for your organization's intranet.

At A Corporation, there were licensed marketing databases, which could not be shared with people outside the company. It was important to include a notice in the AUP for the intranet that this information was for internal use only. Since BJ is a start-up venture, the AUP for the intranet provides guidelines for protecting software and project plans that are under development and not ready for release yet.

- b) Does your organization have an AUP? If so, describe it. If not, what do you think your organization's AUP should cover?

Answer: This answer depends on the state of your organization's policies. If your organization has one, review it with your World Wide Web Council and make sure that it covers use and dissemination of information and documents on the intranet. Your organization's current AUP may only cover hard-copy documents and may need to be

updated to cover the intranet. Or, your organization's AUP may cover Internet usage but not intranet usage.

It is important to cover:

Confidentiality issues

Distribution of documents and materials developed by the organization

Dissemination of documents and materials that were not developed by the organization

Markings on documents to indicate appropriate usage and distribution

The A Corporation AUP was extended to include information on the policies regarding site licenses for marketing databases, to cover in-process strategic planning documents that were only shared within the strategic planning group, and to define markings on internal use web pages. At A Corporation, the Internet AUP statement was extended to cover corporate intranet guidelines, whereas at B, the AUP was developed to cover Internet and intranet usage from the start.

1.6.2 ANSWERS

- a) Does your organization have policies regarding confidentiality or use of documents? If so, what are they? If not, what do you think they should be?

Answer: Check on confidentiality policies and make sure that they apply to documents that are available on your organization's intranet. Develop or update confidentiality policies with members of your World Wide Web Council so that each group understands the ramifications of making documents available on your organization's intranet.

A Corporation and B both developed policies for confidentiality and for internal use of documents that were posted to the intranet. A Corporation modeled its intranet policies after its hard-copy document policies, while B developed its document policy along with its intranet and Internet policies when the company was started.

- b) Do you think the same policies that apply to your hard-copy documents should govern the use of the intranet? Why or why not?

Answer: In some cases, you can apply the same policies to hard-copy documents as to intranet documents. Sometimes, merely marking a document "Internal Use Only" is sufficient. Sometimes, password protection is required to control access to confidential documents. It is important to review license agreements for information and documents that have been purchased from external sources. Your organization may be required to limit access according to the terms of the license agreement, or you may need to

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renegotiate the terms of the agreement if you want to offer wider distribution of such materials within your organization.

At A Corporation, the document policies were translated from hard-copy to web-accessible documents. The corporation decided not to make all documents available on the intranet. However, at B, all documents are available on the web and can be printed on an as-needed basis. The same confidentiality and distribution requirements pertain whether the document is online or on paper.

LAB 1.6 SELF-REVIEW QUESTIONS

In order to test your progress, you should be able to answer the following questions.

- 1) Acceptable Use Policies (select all that apply)
 - a) are vital for companies that have intranets.
 - b) set access and reproduction guidelines for company content.
 - c) deter hackers from breaking into company servers.
 - d) none of the above

- 2) AUPs can include guidelines on marking documents to show appropriate usage and distribution.
 - a) True
 - b) False

- 3) It is possible to mark electronic documents confidential.
 - a) True
 - b) False

Quiz answers appear in the Appendix, Section 1.6.

LAB 1.7

INTRANET BUDGETS

LAB OBJECTIVES

After this lab, you will be able to:

- ✓ Understand the Cost Factors Involved in the Development, Deployment, and Maintenance of an Intranet

Experience within different organizations has demonstrated that Web site costs can vary by at least a factor of 10. These costs vary widely due to major differences in the functionality desired for different Web sites. An internal Web site can serve as the portal to your organization's intranet. However, this internal Web site is only one of the line items in the budget for your organization's intranet.

Intranet costs include the following items:

- Technology—hardware and software
- Management
- Network security
- Training
- Learning curve
- Maintenance and update
- DBMS and legacy systems integration
- Human resources—headcount and expertise

Many organizations budget for the hardware and software but fail to take into account the other items on this list. One item that has caused major headaches in organizations is the human resources area. Often the organization does not budget for the people who need to maintain the intranet. Another area that is often

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ignored is search facilities. If your organization's intranet contains lots of information, but there is no way to locate what's needed, the intranet will not serve its purpose. A search engine should be included in the technology line item.

Consider the cost of training and the time involved in everyone's learning how to use the intranet. Working with members of your organization's World Wide Web Council, you can determine who needs training to publish information on the intranet. If someone in your organization can develop templates, a style guide, and/or a set of publishing guidelines, there will be a more consistent appearance. These guidelines can give the new "publishers" a jump-start for making their information available via the intranet. Budget for someone to develop "online help" to assist the new "publishers" in your organization. Your "online help" facilities can and should be part of your intranet so that new people can take on these "publishing" tasks in the future.

Table 1.1 outlines the costs involved in developing and deploying an intranet for your organization. These amounts reflect costs as of the publication of this book. Over time, personnel costs are apt to rise and technology prices are apt to fall.

Table 1.1 ■ Projected Costs for Year 1 of Intranet

Component	Low	Medium
Web Server	\$5,000	\$50,000
Firewall	\$5,000	\$50,000
Router	\$5,000	\$25,000
Internet Connection	\$10,000	\$120,000
Content Development	\$25,000	\$500,000
Licensed Content	none	\$120,000
Creative Design	\$10,000	\$150,000
Update and Maintenance	\$25,000	\$250,000
Intranet Management	\$50,000	\$150,000
Technical Management	\$50,000	\$150,000
Customization	\$10,000	\$250,000
Legacy Systems Integration	\$50,000	\$1,000,000
Training	\$10,000	\$100,000
Total Year 1	\$255,000	\$2,915,000

LAB 1.7

In examining the amounts listed in this table, you may feel that some of the amounts are too high or too low for your organization. You may be able to combine the function of Intranet Manager and Technical Manager. You may decide not to do any programming for your initial rollout of the intranet. Or, you may be in a large organization that has decided to deploy an intranet that integrates the organization's ERP (enterprise resource planning) and accounting systems. This may require significant programming effort. Use this table as a planning tool to determine what the budget for your organization's intranet should be. Whether the total figure is lower or higher, it is important to decide what resources you are budgeting for each task and each line item.

LAB 1.7 EXERCISES

1.7 UNDERSTAND THE COST FACTORS INVOLVED IN THE DEVELOPMENT, DEPLOYMENT, AND MAINTENANCE OF AN INTRANET

- a) What item is the most often forgotten in an intranet budget?

- b) What does the item "learning curve" entail?

LAB 1.7 EXERCISE ANSWERS

LAB 1.7

1.7 ANSWERS

- a) What item is the most often forgotten in an intranet budget?

Answer: Maintenance and update are areas that are often ignored. It is important to budget for people to maintain and update the intranet and for software enhancements and hardware upgrades as your intranet grows.

This was a real problem in transferring the market analysis intranet application from the development team to an Information Services group at A Corporation. Though we developed the intranet to minimize needed maintenance, it still needed someone to keep up with upgrades and enhancements. After the intranet gained acceptance and more people were using it in their daily work, money was budgeted for maintenance

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and upgrade. That is the reason that pilot projects help in gaining acceptance and in realistically budgeting for ongoing use.

- b) What does the item “learning curve” entail?

Answer: This budgetary item includes time and resources for people to become familiar with the use of the intranet for disseminating information. It may not take very long for people to learn to locate personnel policies, reserve conference rooms, or file expense reports on the intranet, but it does generally take some time for people to change the way they do these day-to-day tasks. It will also take time for people to learn to “publish” their information on the intranet.

“Learning curve” items, including training and becoming comfortable with moving applications and practices to the web, were critical to realistically moving processes and information to the intranet at A Corporation. At B, everything was started on the intranet from scratch and everyone in the organization is comfortable using the web. This is a major difference between moving to an intranet in a large, mature organization and implementing an intranet in a start-up at the beginning.

LAB 1.7 SELF-REVIEW QUESTIONS

In order to test your progress, you should be able to answer the following questions.

- 1) It is not necessary to allocate money to maintain a new intranet.
 - a) True
 - b) False

- 2) What are necessary costs in setting up an intranet (select all that apply)?
 - a) search facilities
 - b) training
 - c) security
 - d) hardware
 - e) software

- 3) Intranet content publishers can figure the tools out on their own.
 - a) True
 - b) False

- 4) Not much programming is needed to create an intranet.
 - a) True
 - b) False

Quiz answers appear in the Appendix, Section 1.7.

LAB 1.8

INTRANET PILOT

LAB OBJECTIVES

After this lab, you will be able to:

- ✓ Understand a Pilot Intranet Deployment
- ✓ Understand the Reasons for a Pilot Project

In 1993, our company needed a way to share competitive analysis information with people in sales, marketing, and engineering. At that point, information came into one location in corporate headquarters and there was no effective way of sharing the information. If an individual salesperson in the field requested competitive information, email or fax communication could be used, but then the information was forwarded to only one specific individual. A marketing library in corporate headquarters was available to people in the area but sales and marketing people were located in field sales offices all over the world. An additional problem resulted from the sales force's urgent need for information. In the middle of developing a sales proposal or bid for a major account, field sales offices had little time to search for information. At that time, a competitive analyst found out about our World Wide Web project and asked me if I could help disseminate the competitive and marketing information. After discussion with the marketing library, vendors of market research purchased by the company, marketing management, and engineering management, we decided to develop a pilot intranet application, which we named the Marketing Information Repository (MIR). The steps that we took are overviewed in the following sections.

**LAB
1.8**

DEVELOP A PROJECT PLAN

Our first step was to develop a project plan. We mapped out the steps involved in defining, developing, testing, training, and deploying our intranet pilot. We decided that in order to be successful, we needed to understand both the needs of the users and the information providers.

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ASSEMBLE A TASK FORCE OF INFORMATION PROVIDERS, USERS, AND INTRANET DEVELOPERS

We assembled a task force consisting of representatives from the intended user group of field sales and marketing staff and from the group of information providers, including the marketing library, competitive and marketing analysts, and corporate marketing staff. Our task force included the lead software engineer responsible for the development of the intranet marketing application. After successfully overseeing the development of this initial intranet marketing application, the task force formed the core group for our World Wide Web Council. Over time the World Wide Web Council oversaw the deployment of the intranet throughout the corporation's international locations. In addition, we used the corporate World Wide Web Council to move the public corporate Web site from an engineering project to a corporate resource.

WORK OUT VENDOR RELATIONSHIPS AND LICENSING AGREEMENTS

The next step involved talking to the vendors of market research information. Since we wanted to make this information available on our intranet, we needed to modify our licensing agreements. In addition, at that point, the information arrived in different forms—via fax, e-mail, and hard copy. We worked out agreements for each vendor to send us updates electronically and we determined the format of the information by asking each vendor's technical staff.

AUTOMATE CONVERSION AND POSTING OF INFORMATION

At that point, none of the market research vendors had moved to the Web, so my group developed an HTML converter to take the information from each vendor and convert it to HTML to post. We automated all the processes so that they were performed automatically during the night. We determined that 2 AM, 3 AM, and 4 AM were good times for the automated processes to occur. Thus, the information was received from each vendor and converted to HTML, indexed for the search engine, and posted to the appropriate Web pages. In the morning when people came into work, they found that the repositories were populated with updated market research and competitive information. From the beginning, we developed an automated system that required minimal maintenance or support.

FROM DEMONSTRATION TO PROTOTYPE TO PILOT IMPLEMENTATION

Since people in the organization were not familiar with intranets or the World Wide Web at that point, we developed a demonstration to illustrate what we were developing. Whenever we presented our plan, we allowed them to use the demonstration system. From user feedback, we realized that we needed to provide powerful search capabilities along with repositories of information that were structured for easy browsing. Once we had a prototype working, we presented our prototype system to small groups and encouraged each person to search for a particular piece of information or to browse through a repository of interest. We incorporated their feedback into the pilot implementation. As soon as our pilot was available, we offered training sessions so that people could become familiar with the application. At this point, since we had presented our demonstration and prototype, we already had support in other parts of the corporation. The phased development effort allowed us to incorporate valuable user feedback into our implementation and to gradually build acceptance by both users and management.

We found that implementing our intranet pilot in this way provided the corporation with a strong foundation on which to build other components of the intranet. By the end of the project, we had:

- A representative task force in place that served as the basis of the World Wide Web Council
- A working pilot implementation with automated tools that required minimal technical support
- A growing group of active users, providing regular feedback
- A trained group of information providers
- A group of evangelists who understood the intranet and wanted to extend its use throughout the corporation

LAB 1.8 EXERCISES

1.8.1 UNDERSTAND A PILOT INTRANET DEPLOYMENT

LAB 1.8

- a) What do you think is the most important component of intranet pilot development?

44 Lab 1.8: Intranet Pilot**1.8.2 UNDERSTAND THE REASONS FOR PILOT PROJECT**

- a) With so many people excited about intranets today, why is it important to develop a pilot?
-
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LAB 1.8 EXERCISE ANSWERS**1.8.1 ANSWER**

- a) What do you think is the most important component of intranet pilot development?

Answer: Involving users and information providers from the beginning of the planning process is the best way to ensure that your system meets the needs of both the users and the information providers.

For A Corporation, it was critical to engage members of various departments in the development of an intranet pilot. The BJ community is much more comfortable using intranet applications and the main pilot project is the development of the online learning software for internal and external deployment. Once again, the needs of the user community are the most important factor to consider in developing a pilot intranet project.

1.8.2 ANSWER

- a) With so many people excited about intranets today, why is it important to develop a pilot?

Answer: Pilot implementations allow organizations to:

Build user and management acceptance

Incorporate feedback into their plans and development

Understand costs and resources required to maintain and manage an intranet

Establish and support a group of trained users and information providers over time

Excitement is contagious and can get people to use the intranet, but a pilot implementation allows the organization to test out its assumptions and plans. With A Corporation, we had to prove the capabilities and usefulness of the intranet, but at BJ, a pilot

implementation served as a testing ground for a new approach to online learning. Thus, whether you're involved in an established organization that may be uncomfortable moving to an intranet or a new organization that includes an intranet in its initial network facilities, there is a need for a pilot implementation of the intranet. The pilot implementations at A Corporation and BJ have been used to test assumptions, figure out appropriate policies and procedures, plan and check out budget figures, and try new applications before deployment to a larger group.

LAB 1.8 SELF-REVIEW QUESTIONS

In order to test your progress, you should be able to answer the following questions.

- 1) For an intranet to succeed it must be accepted by the users and corporate management.
 - a) True
 - b) False

- 2) User feedback is useless.
 - a) True
 - b) False

- 3) Intranets do not change over the course of their lifespans.
 - a) True
 - b) False

Quiz answers appear in the Appendix, Section 1.8.

CHAPTER 1

TEST YOUR THINKING

Outline a plan for an intranet pilot of a fictitious organization. Remember that all aspects of the pilot must center on the organization's mission.

- 1) Does the organization already have a World Wide Web Council?
- 2) What is the goal of the intranet?
- 3) What facilities are already available in the organization? Which of these facilities would work better when coupled with the intranet? Should certain existing systems be replaced or upgraded?
- 4) What facilities will be available on the intranet? To whom?
- 5) What content is currently available in the corporation? Is the existing content going to be integrated into the intranet?
- 6) Will the deployment of the intranet alter the management practices of the organization?
- 7) What type of monitoring and approval mechanisms will be necessary?
- 8) Will individuals and groups create content for the intranet? Do they need tools to do this? What tools?
- 9) Will there be style guidelines for sites within the intranet?
- 10) What security measures are already in place within the organization? What security measures need to be added?
- 11) What software and hardware is needed for the intranet? What will be developed in-house? Will servers be located in-house or co-located at an ISP?