

# Intranets: Internet Technologies Deployed Behind the Firewall for Corporate Productivity

Lee Levitt <[levitt@process.com](mailto:levitt@process.com)>  
Process Software Company

## Abstract

This paper and accompanying presentation will discuss the opportunities for deploying intranets--Internet technologies used on the corporate network--for a variety of strategic and tactical communications purposes. This paper and accompanying presentation will explore the usage of intranets and provide a series of recommendations on the business, social, and organizational issues involved in rolling out an intranet site.

## Introduction

While 1995 was clearly the "Year of the Internet," 1996 is well on its way to becoming the "Year of the *Intranet*." Thousands of organizations have already found that internal intranets can help empower their employees through more timely and less costly information flow. This empowerment bolsters the company's competitive advantage, improves employee moral and assists in getting more timely information to customers and suppliers.

This paper will explore the business, organizational, and technical issues behind the setting up of an organizational intranet. In addition, it will provide some pointers in how to successfully deploy and manage an intranet.

Before we explore the opportunities and issues in setting up an organizational intranet, let's explore why Internet technologies are so effective behind the corporate firewall.

## A little background

The technologies that support the Internet provide the following benefits:

- connected computers can share or transfer information among one another;
- connected computers are heterogeneous--that is, they run a variety of operating systems and hardware from multiple vendors;
- common user applications--e-mail, Web browser, etc., are available across most commonly used platforms; and
- hypertext links simplify navigation and information retrieval.

It is this last principle that has driven the tremendous increase in Internet usage over the past year. Users can simply point and click to navigate across the World Wide Web. Today Web traffic outdistances all other traffic on the Internet and the increasing use of graphics, audio, video, and other data types on Web servers will continue to drive growth in Web traffic.

Similarly, this increasingly rich information environment is drawing new users to the Internet daily. Users can get realtime stock quotes, register for training courses (and take them) online, listen to "All Things Considered" from National Public Radio, read *The Wall Street Journal*, check the Manchester United/Leeds football match scores, or even watch the sun go down over the Santa Cruz pier.

## Browser as ubiquitous window onto information

Similarly, the explosion in information resources has driven the development and deployment of browsers over a wide

range of computing platforms, including Windows (all variants), Macintosh, OS/2, Unix (most, if not all variants), and many other lesser known platforms.

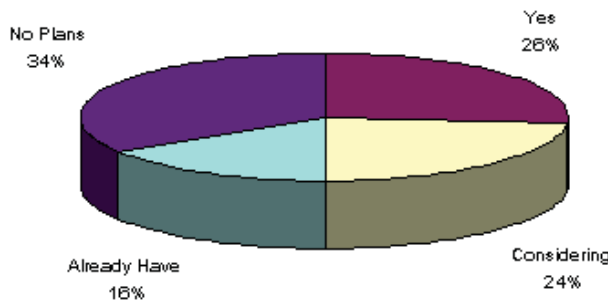
Users are becoming increasingly used to retrieving information through their browser. As Microsoft Windows once was positioned as the universal interface to all applications residing on one's Wintel (Windows/Intel) computer, today, the ubiquitous browser is becoming the universal interface to all information types, whether these resources reside out on the Internet, on one's personal computer, or on the corporate local area network (LAN).

And the Web server has become the ubiquitous host or coordinator for all of these information types. Using Hypertext Markup Language (HTML) and various add-on software and servers, whether they be Structured Query Language (SQL) database servers, RealAudio servers, CU-SeeMe videoconferencing, or multithreaded discussion or conferencing software, today several hundred thousand Web servers provide simple point and click access to an incredible range of information resources.

## Intranet explosion

Information systems (IS) and functional department managers quickly identified the power of this new communications medium as a resource to be leveraged on the corporate network as well. Many are installing Web servers on their corporate networks (intranet applications) for internal usage only. Forrester Research interviewed 50 Fortune 500 companies and found that fully two-thirds already have or are considering some involvement with intranet applications. These companies have identified the intranet as a powerful mechanism to make information more readily available. (See Figure 1.)

**Corporate Plans for Use of Intranet**



Source: Forrester Research, 1996

Figure 1: Corporate plans for use of intranet

With corporations under tremendous pressure to empower employees and to better leverage internal information resources, intranets provide a highly effective communications platform, one that is both timely and extensible. A basic intranet can be set up in hours or days and can ultimately serve as an "information hub" for the entire company, its remote offices, partners, suppliers, and customers.

Intranets offer the following application feature set:

- rapid prototyping (can be measured in hours or days);
- scalable (start small, build as needs, requirements allow);
- easy navigation (internal home page provides links to information);
- accessible via most computing platforms;

- can integrate distributed computing strategy (localized Web servers residing closer to the content author);
- can be tied in to "legacy" information sources (databases, existing word processing documents, other groupware applications); and
- extensible to a variety of media types (audio, video, interactive applications).

The benefits to these features are many, including:

- inexpensive to start, requires little investment either in dollars or infrastructure;
- significantly more timely and less expensive than traditional information (paper) delivery;
- distributed computing strategy uses computing resources more effectively;
- users familiar with link metaphor from surfing experiences; and
- open platform architecture means large (and increasing) number of add-on applications available.

## New information paradigm

Intranets leverage the concept that the Web browser is quickly becoming the universal information interface. An increasing number of workers gain Internet access from their work desk every day and are becoming accustomed to retrieving information through the now ubiquitous browser. While most of this information today comes from beyond the firewall, International Data Corporation (IDC) reports that, even in 1995, sales of Web servers for intranet use outdistanced those sold for Internet use. (See Figure 2.)

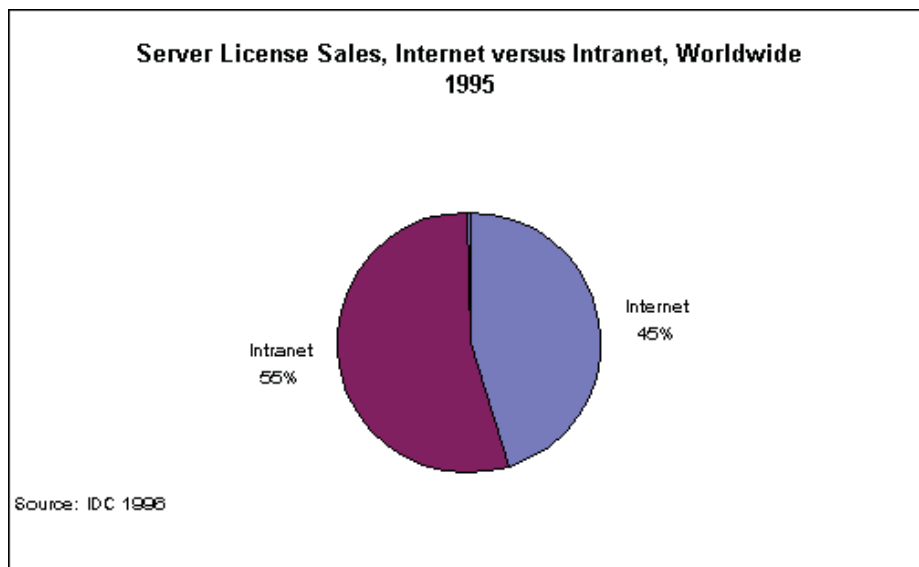


Figure 2: Internet versus intranet usage

Furthermore, IDC forecasts that by the year 2000, server licenses sold for intranet usage will outdistance those for Internet usage by a factor of 10 to one. Clearly, many organizations are quickly adopting this new information delivery paradigm.

## Calendar-driven versus event-driven publishing

One of the key drivers in this adoption curve is that intranets allow organizations to evolve from a "calendar-" or "schedule-" based publishing strategy, to one of an "event-driven" or "needs-based" publishing strategy. In the past, companies published an employee handbook once a year, whether or not policies changed to coincide with that publication date. Traditionally, even though these handbooks may have been outdated as soon as they arrived on users' desks (and were promptly misplaced), they would not be updated until the following year.

With an intranet publishing strategy, information can be updated instantly. If an organization adds a new mutual fund to

its 401K program, content on the benefits page can be immediately updated to reflect that change, and the company internal home page can have a brief announcement about the change. Then, as soon as employees look up the 401K program, they have the new information at their fingertips. Content can be changed or updated to reflect new information at any time.

## **Intranets reduce cost, time to market**

Just as importantly, intranets dramatically reduce the costs (and time) of content development, duplication, distribution, and usage. The traditional publication model includes a multi-step process including:

- creation of content;
- migration of content to desktop publishing environment;
- production of draft;
- revision;
- final draft production;
- duplication; and
- distribution.

The intranet publishing model includes a much shorter process, skipping many of the steps involved in the traditional publication model:

- creation of content and
- migration of content to intranet environment.

In this latter model, revision becomes part of the updating process while the original content is available to the end users, thus dramatically reducing the time it takes for the information to become available to the user of that information. As the information is centrally stored and always presumed to be current, the company will not have to retrieve "old" information from employees to be replaced with new information, thus saving any expenses incurred in updating.

This new publishing model can dramatically reduce both costs and the timeframe involved. Assuming that the corporate LAN environment can support intranet activities (and most can), the information technology (IT) infrastructure is already in place. In addition, most popular intranet Web servers can run on platforms widely found in most organizations (Wintel 80486 or Pentium computers, Apple Macintosh, Novell NetWare, etc.), so that little if any additional infrastructure is needed.

Organizations estimate that the traditional model may entail physical duplication and distribution costs of as high as \$15 per employee, costs separate from the content development or testing phases. An organization with 100,000 employees may find potential cost savings of moving to an intranet strategy for a single application-the employee policies and benefits manual-of \$1.5 million alone. And this cost savings does not reflect the additional value in an intranet solution which makes information more readily available to employees, thus raising both their productivity and job satisfaction.

## **Intranets support distributed computing strategy**

An additional driver in the growth and speed of this adoption curve is the fact that intranet applications can fully support a distributed computing strategy-one that places the server and content closer to the owner of that content. Ultimately, basic Web servers may be included as utilities shipped with every operating system, in effect allowing everyone to be a publisher.

Until that time, intranet servers may be located strategically at the group or department level to minimize administrative delays in posting content. (See Figure 3.) In addition, for strategic or technical reasons, intranet servers will continue to be located centrally in departments or organizations to provide coordinated access to legacy databases and other external resources, with individual users conducting "secondary" publishing roles.

This distributed computing strategy allows the content developer or functional department manager to both develop and maintain the content, and thereby avoiding having to deal with different departments that may have different agendas or timing requirements. In this instance, the functional department, having decided that a particular set of information would be valuable to employees, has the full control to empower the distribution of that information.

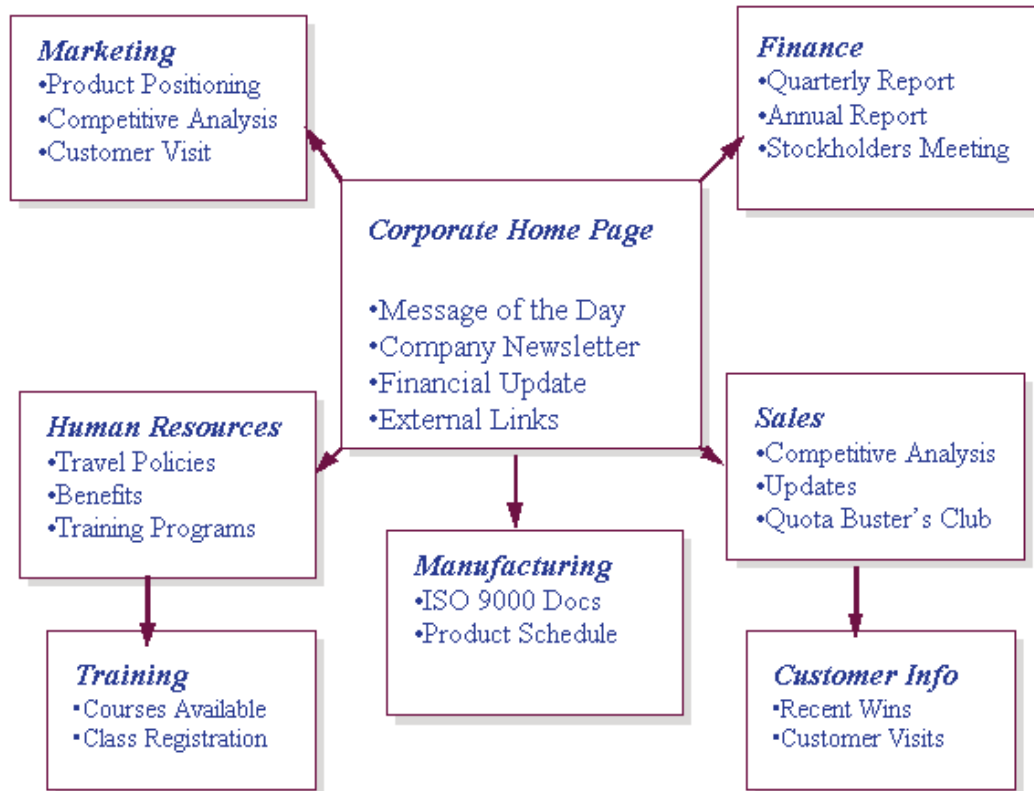


Figure 3: Distributed computing environment

## So just what are companies doing on the intranet?

The first organizations to use Internet technologies on the corporate network generally moved traditional paper-based information distribution online. These organizations have focused on a core group of supporting or mission critical information sets, including:

- competitive sales information;
- human resources/employee benefits statements;
- technical support/help desk applications;
- financial;
- company newsletters;
- project management; and
- ISO 9000 documentation.

These companies typically provide a "corporate home page" as a launch pad for employees to find their way around the corporate intranet site. This page may have links to internal financial information, marketing, manufacturing, human resources, and even non-business announcements (company outings, personal events such as weddings, births, etc.). (See Figure 4.) Setting this page as the default home page in users' browsers will further ensure that this page will act as a key launch pad for employees.

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