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THE INTRANET: AN IMPORTANT ELEMENT OF AN E-BUSINESS STRATEGY

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ABSTRACT

This paper provides an overview of one the fastest growing segments of the Web environment – the Intranet. Discussions include what an Intranet is (definition), its uses and benefits (both general and specific), its challenges and critical issues (both organizational and technical), as well as future trends (both short-term and mid- to long-term). In addition, throughout this paper the position and vital role the Intranet plays as part of a company's e-Business strategy is highlighted.

Introduction

An Intranet can be understood as “a private version of the Internet”, or as an internal Internet confined to an organization, as the definition offered by Webopedia (2007) – one the major online encyclopedias dedicated to computer technology – indicates:

“A network based on TCP/IP protocols (an Internet) belonging to an organization, usually a corporation, accessible only by the organization's members, employees, or others with authorization. An Intranet's Web sites look and act just like any other Web sites, but the firewall surrounding an intranet fends off unauthorized access.”

The same concepts and technologies of the Internet, such as clients and servers, are used to build an Intranet. HTTP (HyperText Transfer Protocol) and other Internet protocols, especially FTP (File Transfer Protocol) and SMTP (Simple Mail Transfer Protocol), which is often used for email, are commonly utilized as well.

The Intranet is an e-Business element and, therefore, part of a company's e-Business strategy, as shown in Figure 1.

The Intranet contributes greatly to the enhancement of the business process. This is evident when one considers the existence of so many company-specific knowledge bases within the Intranet environment. As shown in Figure 1, the Intranet cannot be categorized as a customer support or information service per se, since it is not directly geared towards the customer. However, it not only affects the components of the other services element indirectly as an information generator for the information services but also likewise supports customer

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support services, including technical aspects.

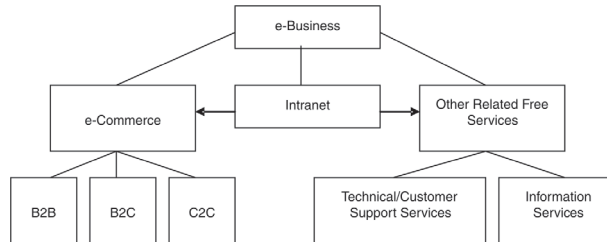


Figure 1: E-business Elements

In addition, for the same reasons as the Intranet affects the other free service element, it also affects the e-Commerce element of e-Business. The same knowledge bases and information exchanges among employees can be and are used to improve product quality, promotional effectiveness, price considerations, and other business areas dealing with the purchase and sale of products (these and other benefits are discussed in detail in the following section). Therefore, Intranets should be considered an independent element of e-Business, affecting the other two elements.

The Uses and Benefits of Intranets in E-business Strategies

Intranets are more and more being used to deliver various tools and applications, which are discussed in this section. In addition, the many benefits derived from as well as the various challenges and issues concerning Intranets are also presented.

Uses

A multitude of applications and tools are being delivered via Intranets to organization's employees, managers, and owners. To develop a fairly complete list, three groups of people must be considered: 1) the users (those who want to get information), 2) the information providers (those inside the organization that have information of interest to others), and 3) the developers (those in charge of the technical aspect of delivering the tools and application with an Intranet platform). Considering these three groups, the following is a list of applications and tools categories (cio.com, 2007A).

- **User Tools.** User tools are a collection of tools a user will utilize on the Intranet.
- **Discovery Tools.** These tools help users find the information they are looking for, e.g., Web page navigation aids, index of internal servers, directories, and search engines.
- **Support Systems.** This collection of tools assists users in finding solutions to problems that arise while using the Intranet. Such user toolkits include online FAQs (Frequently Asked Questions), access to problem reporting systems, help pages, and online training manuals.
- **Web Toolbox for Developers and Publishers.** This collection of tools (such as the Adobe Flash Player and Shockwave, sound and video players, scripts, tracking tools, converters, etc.) helps developers and publishers of Web sites to design and implement the most appropriate Intranet components for a company.
- **Web Applications (or Gateways to Existing Applications).** The applications in this group are shared over the Intranet by users and cover business areas including sales & marketing, product development, human resources, customer sales/service, and general applications

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(e.g., external news feeds, libraries, corporate newsletters, conferencing, catalogues, performance trackers, financial/management queries, etc.)

- **Environment Managers.** Environment Managers are tools that assist in managing a distributed, changing Intranet environment, including tools that link validation, user administration, document control, statistics tracking and reporting, version control, HTML validation, site viewers, and other security tools.
- **Information Repositories.** The Web Information Repository is a collection of shared information provided and maintained by an organization (e.g. on the external Web server) as well as on the corporate Intranet. It generally includes security, levels of access, and distribution mechanisms.
- **Publishing Systems.** These tools are configured, tested, packaged collections of tools that are used by an organization to create and maintain information. Tools include HTML editors, feedback forms, Java applets, search mechanisms, navigation aids, etc.)

Apparently, Intranets are being used for a variety of purposes utilizing a multitude of tools and applications. Organizations using such Intranets have experienced many substantial benefits.

Benefits

If designed, implemented, and utilized properly, Intranets have offered and will continue to offer substantial benefits to organizations, such as Ford, ESPN, Frito-Lay's, and others (Horgan, 2007; Sheth, 2002; Wikipedia, 2007). These benefits contribute greatly to the overall success of an organization's e-Business strategy. These benefits cover five general areas, including workforce productivity, time, communication, Web publishing, and business operations and management.

1. **Workforce Productivity:** Intranets assist employees in finding and viewing information and applications that are important to their roles and supportive to their responsibilities. The data that organizations want to make available to their employees are stored in databases (knowledge bases) that can be accessed by any user (employee) via a simple-to-use web browser interface. This can be done anytime, anywhere, if proper security measures are in effect. Employees are, therefore, empowered to do their job more efficiently and more effectively, knowing they are working off the right information.
2. **Time:** With Intranets, employees are enabled to access relevant information when they need it. That means, that organizations can make more information available (in knowledge bases), which can then be "pulled" by the employees rather than organization "bombarding" the employees with information that might not even be relevant for the employee's task at hand.
3. **Communication:** Intranets serve as data generators and distributors, and therefore are powerful tools for horizontal and vertical communication within an organization.
4. **Web Publishing:** Web publishing, using mostly hypermedia and Web technologies, allows corporate knowledge, such as company policies, employee manuals, business standards, benefit documents, newsfeeds, and training, to be easily maintained and accessed. Such knowledge is made available with the use of common Internet standards, including Flash and Acrobat files, as well as CGI applications. Due to the fact that each Business unit can revise and update any document in these knowledge bases, the most recent versions are always available.

5. *Business Operations and Management:* Intranets are also being used as a platform for developing and deploying applications to support business operations and improve decisions across a networked organization.

The following lists more specific benefits realized by companies, such as Google, Lands' End, JP Morgan Chase, among many others that have successfully implemented Intranets as part of their overall e-Business strategy (Horgan, 2007; Sheth, 2002; Wikipedia, 2007).

- *Increased competitiveness:*
 - Better access to competitive and internal information
 - Just-in-time access
 - Single access interface
 - Ease of publishing
 - Knowledge sharing
 - New business opportunities
- *Expanded Sales:*
 - Faster access to information needed to win bids
 - Shortened time to market
 - Linking customers with internal systems
 - Links to purchasers
 - New market opportunities
- *Reduced Costs:*
 - Automated functions save labor
 - Reduced cost of software and paper distribution
 - Faster access to information
- *Higher Productivity - Better Information Access:*
 - Single interface, platform independence
 - Ease of learning
 - External information
 - Ease of publish
 - Connection to existing data
 - Just-in-time information and training
 - Over time information access
- *Higher Productivity - Better Application Access:*
 - Delivery to desktops
 - Gateways to existing applications
 - Cross-platform concerns reduced
 - Browser testing reduced
 - New possibilities

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- **Shortened Time to Market:**
 - Reuse of existing information
 - Share information instantly (even globally)
 - Share information with business partners
 - Faster development time
- **Better Customer Support:**
 - Cost savings
 - Around the world
 - 24 hours a day
 - With reference material
 - Sharing between users
 - Access to internal experts
- **Support for Collaboration:**
 - Sharing documents, work
 - Use of conferencing, other tools
 - Support for virtual, distributed teams
 - Not bound by restrictions of platforms and networks

These benefits of using Intranets strongly outweigh those critical areas discussed in the following section.

Challenges and Critical Issues of Intranets

Challenges are prevalent in such issues as scale, bandwidth, security, manageability, ROI questions, skills, and making it all work together efficiently. Data needs to be integrated from different sources; access to that data needs to be provided to everybody in an organization; information needs to be presented in a format that is understandable and usable by everybody; and the Intranet's performance, availability, serviceability, and security needs to be ensured (cio.com, 2007B).

Challenging issues can best be categorized into organizational challenges and technical challenges, as discussed in the following section.

Organizational Challenges

Organizational challenges deal with managerial and qualitative issues.

For example, it should be determined if there is a need for a central group – a team of managers whose specific tasks are related to the implementation and running of the Internet. If yes, what should its size be, its purpose, as well as scope of responsibility? Should they be located on-site or off-site in a remote location?

Another issue revolves publishing standards – who is allowed to publish, who is responsible for published content, what are the publisher's responsibilities, and are there any standards or guidelines to be considered when publishing?

In addition, a consistent appearance (look) and feel of the various Intranet websites might be a concern to some organizations, whereas others purposely keep different part of the

Intranet different, thereby pleasing the diverse needs of its users. Should the internal web (intranet) be similar (or even the same) in appearance as the external website? Is there a need to control such an issue?

A fourth challenge relates to data quality and management. The issues deal with if the data provided is the “right” (i.e. useful) information, and if it is accurate and up-to-date. Also, who is in charge of data quality?

Technical Challenges

These critical issues, as the term states, deal with the electronic and technical aspects of making an Intranet and its role in an organization’s overall e-Business strategy successful.

A successful Intranet implementation and deployment, for example, depends strongly on IP (Internet Protocol) issues and other related factors. There are many dependencies in a website environment; webmasters rely heavily on system reliabilities and network experience. It should be noted that an organization has to understand that not all problems can be solved satisfactorily by a control (or Web) team. In that case outsourced troubleshooting is an option.

In addition, differences in Web development dynamics are a challenge. Development cycles become faster, tools and applications need to be continually updated and new ones made available, and traditional supports are not appropriate anymore.

Staffing is another critical issue. In such a dynamic and ever changing environment experienced, competent labor is not as easy to find as one might expect, since most skilled people do not “update themselves”, i.e. learn about and be trained in the latest technical, graphics, and web & information design skills.

The continuous stream of new data leads to a huge volume of information that can easily overwhelm the developer and ultimately the user as well. The decision about which information to provide & keep and which data to neglect becomes an important issue.

And finally, the fact that the technology underlying the workings of Intranets are constantly evolving with new inventions being introduced into the marketplace on a constant and fairly quick basis. The question arises which new technology to use and implement into the existing systems – compatibility is crucial in this regard.

As the previous sections clearly show, Intranets have contributed greatly to organizations’ success. However, the implementation and development of successful Intranets needs to be done in such a way that the discussed challenges and issues are considered, addressed, and in many cases solved.

Future Trends

Security has always been and will continue to be a focus in Intranet development. Secure Intranets have actually become the fastest-growing segment of the Internet since they can be built and managed much more cost effectively than private networks based on proprietary protocols. Industry experts have singled out a few trends that are expected to influence and shape the world of Intranet development and usage.

For example, Intranets are expected to become more pervasive, in the sense that they will be more dynamic and innovative. Users will benefit, and developers are challenged to provide more creative, innovative and dynamic Intranet applications and tools.

In the past, employees have demanded more aesthetic experiences on their Intranet. But another trend is surfacing. Employees are demanding simpler, more intuitive and more Web-

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like intranet experiences (Singh, 2005).

Blogs were arguably the most significant Web phenomenon since 2004; they have also been utilized in Intranet environments. In that regard, a technology to watch is Really Simple Syndication (RSS), a content format to publish information, which will enable to assist employees in publishing more effectively and efficiently than with blogging alone (Employee Benefits, 2006).

In the past, corporate email, telephony, mobile warrior applications, virtual team rooms, executive dashboards, and enterprise intranets are currently distinct tools with independent owners and budgets. As intranets integrate, however, into the organizations they serve, they are losing their independent identities, because IT departments are pushing to consolidate the interfaces, applications, and data sources. The pace of this consolidation is expected to pick up substantially, with the goal to have a single, integrated voice and data interface sometime in the future (Hook, 2006).

Intranet users can also expect to see nifty, task oriented, highly interactive Ajax based applications on your intranet fueling the next wave of user adoption. Ajax is a loose knit of programming technologies that speeds up the Web experience and brings greater interactivity to websites. Mr. Singh paints a picture of an Ajax-based Intranet application (Singh, 2005):

“Now imagine a physical map of your office on your intranet. But also imagine that you could scroll around it, click on a graphic of a desk and get a person’s name, designation and contact information right away. And imagine if by clicking on his or her name, you got a listing of all the recent e-mails sent to you by that person. Or imagine an application on your intranet that has built-in calculators that let you quickly calculate your ideal monthly 401k contributions and depict the results in a graph without requiring several pages to load. And imagine if the graph could be manipulated in real time.”

It is obvious that the possibilities seem endless with Ajax and other similar technologies and tools such as Macromedia flex. Luis Suarez, Knowledge Management Specialist at IBM, states that there “... is no doubt that web content aggregation will become one of the hot players ...” (Suarez, 2006). Many developers are continuing to experiment with Ajax which is expected to result in the fact that more of this new generation of tools would actually become available for everyone to make use of it.

Conclusion

Looking at the recent past and the future trends discussed in the previous sections, it becomes apparent that Intranets are focusing more sharply on meeting employee needs, responding to employee demands, and finding innovative solutions to meet the evolving information sharing, knowledge management, and collaboration needs of organizations. It should be remembered, that an Intranet is only as good as how it serves its employees and its company. Each organization is unique in its need. Therefore Intranet developers would be wise in trying to understand the users better and strategize about how an Intranet can more innovatively meet the needs of the organization. By accomplishing this task organizations will realize the importance and effect of a well-designed and efficiently functioning Intranet in their overall e-Business strategy.

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