

## **Intranet for Library Services**

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### **Abstract**

*The article gives brief introduction about the Intranet, its history, need in an organization, merits and demerits, characteristics and current trends in internet technology. The use of intranet in providing library services like SDI, CAS and other information management explained with a schematic diagram.*

### **1. INTRODUCTION:-**

Internet is a communication network which bridges all the small computer networks worldwide as a whole. Intranet is based upon Internet Technology, in particular World Wide Web (WWW), to build Information Systems within organization or enterprise to accomplish standardization and automation. Fundamentally, it means network computing environments which let the users share the information through the Internet and Web browsers. Ultimately, it allows a certain organization to build a groupware within web environment at low cost on top of existing network infrastructure. By doing this, closed organization Network would be interconnected with existing worldwide Internet, which results in diverse information that strengthens competitive advantages of the organization. Basically, it runs on top of TCP/IP and HTTP and filters out any illegal access through firewall.

Intranets are widely considered to be simply an internal version of the internet, a sort of miniature version of the web running on a company or institutional network. The appeal of intranets is that they provide a single central information store and encourage communication flows throughout the organizations information can be easily be shared and disseminated to large groups of people dispersed across different sites, even across national borders. There in the potential to link every desktop in the organization irrespective of which computing systems are in use. A vast range of internal company information can be held on the intranet. At a basic level this could include internal telephone lists, procedures, manuals, organizational charts and other personal documentation, the type of information which is almost impossible to keep up-to-date using hardcopy formats. More advanced information handling scenarios are also feasible.

In libraries also Intranet can facilitate so many services. It helps in dissemination of stored information as well as allows to access to remote information. Through intranet, libraries can discharge the required information to its users in less time, with high effectiveness. Information Professionals are becoming Webmaster and Intranet Coordinators, combining technical expertise with information management ability. With the increasing emphasis on resource sharing not only between libraries but between different branches and departments of a library, the Intranet offers the potential to be very important tool in libraries' effort to make the most efficient use of their resources.

### **2. DEFINITION :-**

An Intranet can be defined as a network connecting an affiliated set of clients using standard Internet Protocols, esp. TCP / IP and HTTP or as an IP-based network of nodes behind a firewall, or behind several firewalls connected by secure, possibly virtual, networks.

**Peter Auditore:-** defines – “Intranets represent a new way of solving business problems by facilitating efficient information management, resource sharing, and workplace collaboration... The Physical location

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of applications, information and computing resources will become irrelevant in future organizational internet works and Intranets as the adoption and use of Internet and web technologies proliferates.”

**Cary Griffith:-** defines – “The technology can make use of an organization’s existing network infrastructure (cabling, workstations, etc) , making it in many instances an extremely low – cost information solution.

**Steve Gilliland:-** The intranet is a very powerful paradigm for sharing information across the company . Its server centric computing. There’s a lower cost of application development, a lower cost of software upgrades, and it gives you ubiquitous access to information and applications... There’s a browser deployed on every desktop... it accesses everything and there’s no need for training.”

### **3. HISTORY OF INTRANETS : -**

Intranets have actually been around for quite some time. Several people claim to have originated the term that describes the development of an internal client/server solution based on web technology. Dr.Steve Telleen at Amdahl was using the term IntraNet as early as 1994 in a paper he wrote on Intra Net methodology which resided on Amdahl’s internal intranet and then was placed on Amdahl’s external internet site. The first commercially printed appearance of the term is found in Stephen Lawton’s article on intranets in Digital News and Review in April 1995. In it he discusses Fortune 1000 companies posting web pages and installing telnet and ftp servers. The pioneers were Boeing, Schlumberger Ltd., Weyerhaeuser Corp., Sun Microsystems and Digital Equipment Corp. The advantages were listed as low cost of setup, ease of writing HTML, and access to various kinds of documents online such as employee manuals, research material, and individual homepages.

**Popularization** : - The Popularization of the term is due in large part to Netscape. When Netscape began to develop their business strategy around the full-service intranet, it put the term in our everyday vocabulary.

### **4. WHY INTRANETS ? / Its need in an organizations and libraries**

Most libraries today probably have some form of a computer network. For a library or organization that already have internet access, an intranet is a clever applications that more fully exploits features of the internet. With the relatively low cost and ease of setup, the many advantages of an intranet to a library makes it difficult for it to be ignored. Large organizations which use intranets to electronically transmit documents internally, payback their investment in the technology within six to twelve weeks. (Netscape).

Intranets are necessary in an organizations because of the following reasons : -

- 1. Information Access:** Employees / Users can access information they need, when they need it from the Library.
- 2. Access Control:** One determines as to who can have access to what data, and to what extent.
- 3. Transaction:** Transactions can be followed electronically.
- 4. Updation:** Databases can be updated dynamically – as the transaction occurs.
- 5. Communication:** Communication can take place instantaneously – anywhere in the world.
- 6. Remote Access:** Employees / Users can work remotely and also access data.
- 7. Outline:** One can access data and send data – acquisition, ordering, etc through intranet and also communication is possible.

## **5. CHARACTERISTICS OF INTRANET : -**

Intranet inherits all the merits of internet:

- 1. Openness:** Open architecture based on internet.
- 2. Ease of use:** World wide web facilitates it.
- 3. Low Cost:** Low network cost, license fee, client program install expense.
- 4. Flexibility:** All of the solutions available for customizing.
- 5. Scalability:** Easy to scale up and down.
- 6. Innovation:** Easy to accommodate new technology.

## **6. CURRENT TRENDS IN INTERNET TECHNOLOGY : -**

The latest trends in the internet are :-

1. Intranet
2. Extranet
3. Web applications
4. E- Commerce

There are many other technologies like push or channel technology, streaming multimedia and multicast that are evolving and will enhance the utility of the internet.

**1. Intranet:** An Intranet is an organization's own internal network that uses the same services, protocols and technologies which are available on the intranet. The intranet can provide all the services that Internet provides, but only within the organization. Intranet can be used as an effective medium for communication and collaboration within the organization.

**2. Extranet:** When an organization's Intranet is made available to selected users outside its Local Area Network, it is known as Extranet.

**Undernet:** The area of an intranet or website that is unconnected to the rest of the site, perhaps through lack of correct links or perhaps deliberately as a test area, and that often is not indexed because of the lack of proper metadata and other indexing parts of the organizations may deliberately create an undernet to avoid the central webmaster's control.

**3. Web Applications:** Due to the development of recent technologies used on the Internet, web applications have emerged for traditional application development. Web applications help in building dynamic and more compelling information on the web. They also promote the web browser as a single client application to perform various functions.

**4. E-Commerce:** The increase in usage of the internet by commercial organizations has given rise to electronic commerce over the internet. Many technologies like Digital Certificates, Digital Cash, SET Protocol, Online-shopping malls have come up for enabling commerce solution via the Internet.

On an Intranet, administrations can narrowly prescribe access and policy for a fixed group of users, to have strong control.

On an Extranet systems, systems architects at each of the participating organizations must collaborate to ensure a common interface and consistent semantics (data meanings). In order to collaborate via extranet, the applications have to perform adequately on all represented platforms.

The same is true, even more, for E-commerce, in which the trading partners may be completely unknown to one another. This is the case when we talk into a supermarket: the common interest in communication is based on the need to transact business, and not necessarily on a long term trust

relationship. Thus, e-commerce applications often support a level of security and transactional integrity not present in intranet and extranet applications.

## **7. PROS AND CONS OF AN INTRANET :**

### **7.1 Benefits / Advantages of an Intranet:-**

The key benefits include lowered network costs, ease of learning, goal-oriented, self-development and open standards that allow software to run without relying on an operating system. Communicating company focus and tracking to the mission statement or individual department goals make an intranet a winner. Access to the data warehouses makes the intranet worth its weight in gold. Other key benefits are improved business models, enhanced communication, collaborative work group environment, with continuous process improvement principles underlying the intranet infrastructure. Part of the reason for the large interest and deployment of intranets is attributed to the benefits an intranet can bring to a corporation.

**1.Inexpensive:-** Installing an intranet does not require particularly expensive equipments. Since an Intranet uses the same software and network equipment as the Internet, and speaks the same computer language as the Internet, organizations already with access to the internet may already have much of the hardware and software i.e., they are free. In addition, it is often less expensive to add features and upgrades to an intranet.

**2.Increases Efficiency: -** The intranet can increase efficiency within an organization by reducing the amount of time an employee spends in searching for policies, procedures, manuals, reports, etc. paper forms, documents and microfilm can all be converted to electronic formats and placed online into an Intranet. Using an effective search interface, these documents can be easily and quickly retrieved. In addition, an intranet can facilitate people in sharing information. Time can also be saved by setting up an FAQ (Frequently Asked Questions) page, and referring people to consult it first before asking a person directly.

**3.Flexibility and versatility:-** Since the Intranet is simply the application of Internet technology to a private network, it has the flexibility and versatility of the Internet. It can connect a variety of computer formats and offer access to the information using one common interface. Therefore, an organization are not tied to a particular vendor or a specific software.

**4.Low Technological Implementation:-** Within the technological domain there are several benefits of intranets. Many intranet solutions can be applied to already pre-existing hardware and network configurations within the organization. The ease of implementation and relative security because of the non-proprietary nature and open standards that an intranet uses.

**5.Ease of Use :** - This is the single most factor for the success of a corporate information network. This factor has influenced the popularity of intranets as the ease of use of a web browsers. Navigation through the web of information is simplified using hypertextual links rather than traditional linear methods. This ease of use proposition is extended further to the publishing, distribution and implementation of information across the intranet.

In addition some of the advantages of intranets are: -

- i. It is based on Internet protocols, which expands accessibility worldwide.
- ii. It handles multimedia data effortlessly.
- iii. HTML documents facilitate higher level of document exchanging scheme.
- iv. Ready to access the information worldwide.
- v. Fully support open standards and architecture for flexible expandability.
- vi. Low administration and maintenance costs.
- vii. Platform – independent systems configuration features.

## **7.2 Limitations / Disadvantages of an Intranet:-**

**1.Maintenance:-** The biggest foreseeable problems with an intranet is maintenance. There has to be procedures for updating materials and for reviewing and discarding items on the networks, someone must be assigned to these duties and to the maintenance, design and upgrade of the hardware and software.

**2.Lack of Training / Interest:-** Another possible problem with an intranet is that people will not use it. This obstacle is very real and must be overcome by a decided effort to train and encourage users to fully utilize this tool. Again, this may require a great deal of resources.

**3.Performance Limitations:-** Some applications that have been well optimized for conventional and proprietary systems create a heavy system workload when migrating them to an Intranet platform or merging them with Intranet presentation; this problem will reduce with enhanced Internet technologies and continuing improvements in hardware price-performance.

**4.Presentational Issues:-** Some people whose experience is rooted in paper presentation want web pages (for example) to look like printed equivalents, and burden the systems and their users with unnecessary and sometimes tedious “graphics”, which often get in the way of the information rather than making it more accessible and attractive. This is really a learning curve matter, at some stage the users’ real needs tend to come to the fore.

### **Other limitations of the Intranet:**

The limitations are important in developing an intranet strategy. These limitations may or may not have immediate solutions in the organizations; however, identifying them up front can save lots of development time. So in planning, we must weigh them carefully.

Some limitations to be considered are:

- a. Architecture and infrastructure of an organization
- b. Configuration of everyone’s system
- c. Kind of search engine going to be incorporate
- d. Processes and policies for getting the messages on the intranet site.
- e. Determining the reliability and currency of the content.

### **Controversies of an intranet :-**

The most salient controversy is security. Security is an issue for the intranet and the internet. Security issues have to be addressed fully. Not all information can be put online; payroll, personal employee information, engineering prototypes, company secrets, and so forth. However, in order for the intranet to be fully functional, this information needs to be available on-line. Information like this needs to be secured behind fire bridges (security that allows access only by authorized members).

The web does not handle login, security, access control, authorization, or replication very well yet. So, setting-up fire bridges like this is challenging.

Issues of directory and security interoperability are significant hurdles as well. With the introduction of directory servers and new internet protocols for dealing with directories and operating system differences, this issue will be resolved. However, the maturation of the technology must take place to handle these hurdles.

## **8. INTRANET FOR LIBRARY SERVICES : -**

The role of the Information Officer or Librarian in the facilitation of intranet and internet solutions is a key one. This role takes the librarian into a regular contact and working relationships with the system staff and information suppliers. The librarian often remains the best judge of an information source and knows the information needs of the organization within which he works. Thus, the librarian

can provide an important liaison in order to use the intranet as a platform to disseminate the library's own materials and newsletters or as a conduit to bring external information into the organization.

The intranet is perhaps our best opportunity to talk to the rest of our organization, and provides the information center with a valuable and effective tool for the dissemination of information.

A vast range of internal company information can be held on the intranet. At a basic level this could include internal telephone lists, procedures, manuals, organizational charts and other personnel documentation, the type of information which is almost impossible to keep up-to-date using hard-copy formats. More advanced information handling scenarios are also feasible.

As the Librarian emerges into a more proactive role, she offers a highly effective way of pushing information at the user. Information professionals are becoming Webmaster and Intranet Co-ordinators, combining technical expertise with information management ability. For information services staff the intranet offers a wonderful range of technologies on which they can develop their skills as information managers.

The intranet is another step in the direction of becoming proactive as opposed to custodians of dusty old cuttings and the low status which accompanied such a role. It is not insignificant that the intranet development has been accomplished by a redefining of the staff roles and attempts to change the image of information services away from the passive librarian towards the dynamic research specialist.

As the use of the Internet (and the Intranet) grows, so too will the number and kinds of application software increases. Presently, most Intranet web sites are used for fairly basic information sharing, such as the posting of phone directories, job listings or company documents. However, more sophisticated software allow for greater linkage between databases, remote sites around the world, and the sending of video and audio material around the world, even the holding of virtual conferences, all of which may be applicable to libraries.

### **Library Applications :-**

As in other organizations, the primary benefit of an intranet in a library is the facilitation of information sharing. Various kinds of documents can be converted into HTML and made web-accessible. Policies, procedures, forms, annual reports, manuals, schedules, calendar of events and programs, and anything on paper can be transferred onto an Intranet. The intranet will then serve as a quick and reliable source for organizational information. In fact, anything of interest or use of the staff, either professionally or personally, may be put onto it. In this way, librarians and other employees, and for some information, the public, can be more aware of what is going on at the library.

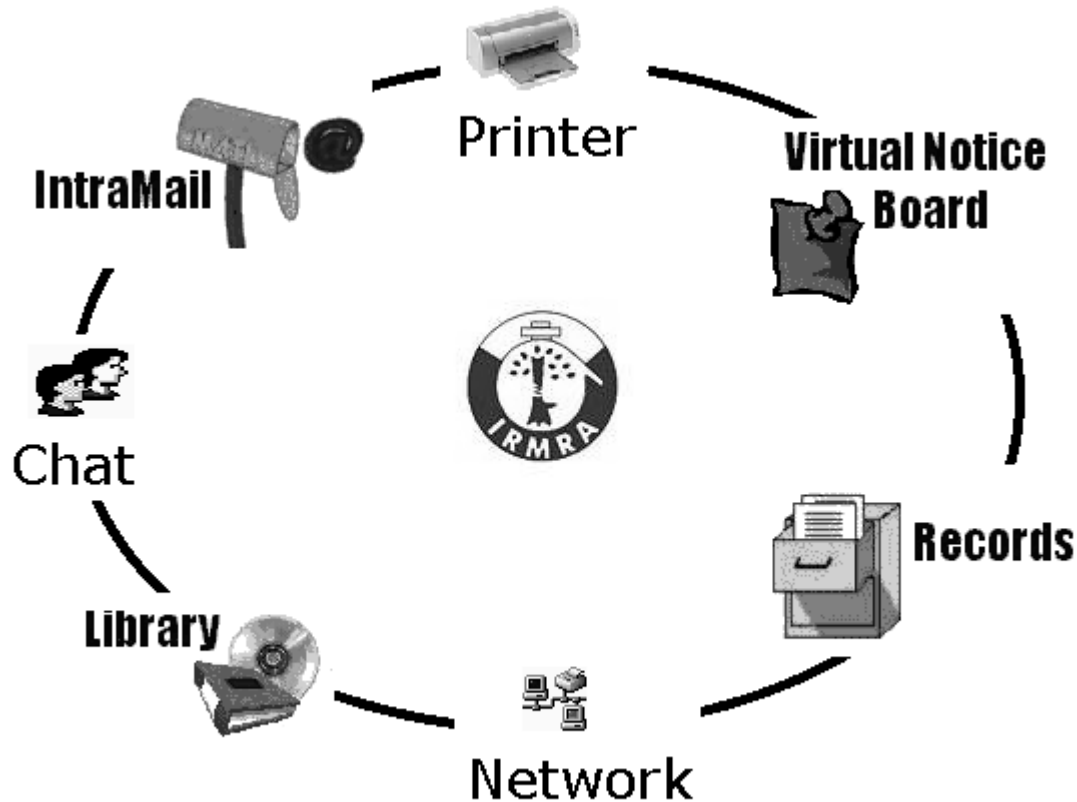
An Intranet can also provide access to online databases such as those of DIALOG'S. Here, the ability of an intranet to restrict access is important. Special interfaces will be needed for Online Public Access Catalogues (OPACs) and Z39.50 gateways to access other databases. The intranet is certainly a step forward a "Virtual Library". In this context Cary Girrifiiths says – "Think of an intranet as an organization's Virtual library".

### **Intranet for library services:-**

There are number of obvious advantages for an information and library service which has access to the parent organization's intranet. It can publicize its services to its user community through a variety of pages, some of them generally static (opening hours, details of key staff etc) and some of them refreshed more frequently (new additions or journal alert listing service).

- An intranet can assist the information professional to develop document delivery services. Documents can be delivered to remote printers alongside users' workstations.
- Network fax and e-mail offers the possibility for externally sourced copies to be delivered to the network.
- SDI services can provide abstract and article summaries by e-mail, or order bulletins to be printed at the users' terminal.
- Intranet allows the direct posting of the results of research on electronic databases.

- The library can give access to its catalogues (OPAC) or other bibliographic database will be connected directly to the network.
- Library and Information Services are often responsible for arranging the supply of external news feeds and other information resources on intranets.



**Figure 1 : Library Services over Intranet at IRMRA**

**i. Accessing Management Information:-**

The library typically provides access to a large number of resources. These resources include books, journals, CD-ROM databases, Online services and even the library OPAC itself. Usage information is an example of Management Information. Other examples of management information are reports and reviews written by members of staff. Management Information is something that can be relatively easily delivered to librarians desktops using off the shelf products and / or a few home grown programs.

Ex.: Access to CD-ROMs. One can provide access to a fair number of CD-ROMs over the campus network. In order to use one of these CD-ROMs, users must supply a user name and password which is validated against the users on the computing services central computing resources.

A webserver can be loaded on to the library OPAC machine in order to prototype the webOPAC.

**ii. Improving Internal Communications:-**

As well as providing a means of allowing access to existing data sources for management purposes, the intranet is also supposed to help foster group working.

**a. E-Mail :-** In most academic institutions at least, e-mail has already become a replacement or alternative to internal memoranda. The ability to easily set up and maintain Internet mailing lists can be applied in the intranet context to support group communication. Mailing list can be archived and the archive made

available from the intranet's web server to allow a group memory to be developed. Mailing list archives are also more accurate than traditional meeting minutes and means that groups no longer need to dedicate someone to make notes of their decisions.

**Intra Mail:-** Intra Mail (Intra E-mail) is a facility that can be used to great advantage by the college / organization faculty and other office staff. Any member can send emails to any other member of the organization. This will reduce unnecessary paper work and improve efficiency. Intramail complements the current intercom facility by enabling the members to communicate with each other within the organization. It also stores messages in the mailbox. This feature will help to correspond, transfer documents and informative articles to everyone.

### **iii. Collaborative working:-**

The ability to share documents and manage the processes of authorship through document workflow is one of the most valuable uses of an intranet in many organizations. Intranets also allow collaborative online working, for example using shared whiteboards, video conferencing, and management round tables based on discussion group technology.

### **iv. Communities of interests :-**

Groups with a common interest can be brought together. The libraries within an organization can provide a single virtual presence even if they are widely spread across a number of campuses or offices around the country. Forms and E-mails allow users to route enquiries to the most appropriate expert section.

### **v. Discussion groups :-**

These are frequently found on intranets, where they offer a kind of collaborative work area. Ideas can be exchanged on a variety of topics. Discussion groups are often managed using a list server, operated using the same software that runs many Internet mailing lists. A number of freely available software packages are widely used, notably Majordomo (for Unix servers), LISTSERV and Listproc.

### **vi. Electronic forms:-**

Forms can be used to query databases or to provide an interface to search engines. Applications familiar from the Internet, such as newsgroups; can be provided for the internal community using the Intranet.

### **vii. Internal newsletters :-**

Internal publications are often hosted on the Intranet. With the digital cameras in the intranet, rapid coverage of events is possible.

### **viii. Search facilities:-**

Search engines and other software familiar from the web can be used on the internal networks and locate the various versions of a given document. There is considerable potential for the library and information service to be involved in the developing the use of the engines, as well as supporting the management of the versions, ensuring that the most accurate, authoritative and recent version of a document is located when search terms are entered.

### **ix. Training materials:-**

These are another of multimedia content often carried by intranets. A number of companies produce training videos in electronic format as CD-ROMs or DVD's. Materials produced specifically for computer-based training can often be networked. The training materials refer to publications that may be in the library collection, there is an opportunity for the library to provide links to the catalogue or to other information about the publications cited.



**x. Library applications / access:-**

The intranet for the library services can be used in the following ways also:

- **Books for approval:-** The librarian can forward the list of books for approval directly to the H.O.D's. through e-mail, who can approve or reject the books without having any visit to the library.
- **Recommendations to the library :-** The staff members can directly make requests to the librarian for purchase of particular titles via the intranet. The same can be intimated to the respective staff when the requested title has been acquired by the library.
- **Department –wise New Books Display :-** A list of new arrivals in the library can be displayed department –wise to keep up-to-date the faculty members.
- **Overdue notices :-** With the intranet facility, librarian can send reminders to the defaulting members by sending intranet e –mail reminders.
- **Renewal of Issued Books :-** One can renew the books issued to the faculty members without having any visit to the library.
- **Electronic SDI :-** By maintaining User Profile and Document Profile, one can provide E-SDI Service to its users. One can give personalized SDI service by sending the list of latest addition to the library, journal articles of their interest can be scanned and send as an attachment. Also articles of interest downloaded from the world wide web can also be saved and later on sent to the user or pasted on the bulletin board of the library page, saving the time required to surf the net.
- **Electronic Bulletin Board :-** List of latest additions of books, journal issue notices of forthcoming seminars, exam schedules, notices about membership renewals, instead of going through the paper distribution system. A news corner for the headlines from daily newspapers is downloaded from the internet can also be posted.
- **Downloads :-** The library can also provide the Articles-Alert Service to its users by downloading e-journals in which some of them are available freely and can be uploaded on to the intranet. As the journals may be current and also difficult to subscribe or sometimes not available as hardcopy. This enables to provide an excellent Current Awareness Service (CAS).

**9. CONCLUSION :-**

The most impressive contribution an intranet will make to your organization is its communication, coordination and collaboration benefits. The Intranet has certainly revolutionized the information management processes in the libraries. Intranet, which has distinct advantage over LAN, has helped in faster data collection and dissemination. It is indeed a challenge to the library professionals not only to accept and assimilate this new technology, but also to spice it up with the classical knowledge to further improve the entire information management processes in the libraries. Lest we ourselves risk being obsolete. An intranet is a learning organization, capable of integrating people, processes, procedures and principles to form an intellectually creative culture dedicated to implementing total organizational effectiveness.

Intranets are relatively cheap and easy to develop because they use the existing technology of the Internet. The value of an Intranet is that it can integrate in one central source a combination of internal, external, formal and informal information. This is an important consideration in the corporate sector where informal information sources are started so highly. Positive communication flows are encouraged and interaction between colleagues and project teams is seen as a valuable way of creating a shared knowledge base for the organization. There is a suggestion however that because intranets are productive layer in knowledge economy engineered organizations' they are less likely to be really successful in strictly hierarchical organizational structures.

For information services staff the intranet offers a wonderful range of technologies on which they can develop their skills as Information Managers. Information Professionals are becoming webmaster and

intranet coordinators, combining technical expertise with information management ability. As the librarian emerges into a more proactive role, the intranet offers a highly effective way of pushing information at the user. An intranet is best described as our own internal version of the internet, using the same protocols and browsers as used by the internet. Intranets are going to become increasingly popular in the future as organizations realize how effective they can be.

Most libraries today probably have some form of computer network. An intranet can be viewed as simply a logical extension of the trend in libraries towards greater connectivity. Part of its charm is that it relies mainly on existing technology and infrastructure. For a library or organization that already have internet access, an intranet is a clever application that more fully exploits features of the Internet. With its relatively low cost and ease of set up, the many advantages of an intranet to a library makes it difficult for it to be ignored.

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