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How the corporate intranet can be utilized to support the knowledge management activities of an enterprise

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Introduction

1. **Background**

The traditional business firm was a hierarchical, centralized, structured organization. Information technology is bringing about changes in organizations that make the enterprise more dependent on the knowledge, learning and decision-making of individual employees.

The Internet has opened many exciting possibilities for organizing and running a business that are transforming organizations and the use of information systems in everyday life. It is creating a universal platform for buying and selling goods and services and for driving important business processes inside organizations.

Organizations can use Internet networking standards and Web technology to create private networks within the organization called the intranet. An intranet is an internal organizational network that can provide access to data across the enterprise. It uses the existing company network infrastructure with Internet connectivity standards and software developed for the World Wide Web.

The principal difference between the Web and an intranet is that although the Web is open to anyone, the intranet is for use by an organization's employees and is protected from public visits by firewalls (security systems with specialised software to prevent outsiders from invading private networks; the firewall is programmed to intercept each message packet passing between the two networks, examine its characteristics and reject unauthorized

messages or access attempts).

According to Laudon (2000:299), some firms are allowing people and organizations outside the firm to have limited access to their internal intranets. Private intranets that are extended to authorize users outside the company are called extranets.

In today's information economy, rapid access to information is critical to the success of organizations. The intranet and World Wide Web supports this and have changed the global access to information completely. In addition to information on the Internet, organizations are creating intranets with internal Web sites as repositories of their own organizational knowledge. Web pages are organized with the relevant information of the organization, giving employees easier access to corporate information and expertise.

2. **Problem statement: How can the corporate intranet being utilized to support the knowledge management activities of an enterprise?**

- What constitutes an intranet?
- What is the current status of intranet development?
- How is the intranet applied to enhance information flow in a corporate environment?
- How can the intranet contribute to managing the knowledge assets of an enterprise?

3. **Research method**

A literature and case studies were done.

How can the corporate intranet be utilized to support the knowledge management activities of an enterprise

1. **What constitutes an intranet?**

According to Laudon (2000:311), companies have used internal networks for many years to manage and coordinate internal business processes. Intranets are fast becoming the technology of choice for business. As intranets are inexpensive, scalable to expand or contract as needs change and accessible from most computing platforms, uniting all computers into a single, virtually seamless network system, it is understandable why intranets are a business solution to many companies. Web software presents a uniform interface, which can be used to integrate many different processes and systems throughout the company. Companies can connect their intranets to company databases just as with the Web, enabling employees to take actions central to a company's operations. Intranets can be made interactive using a variety of media, text, audio and video.

A principal use of intranets has been to create online repositories of information that can be updated as often as required. Product catalogues, employee handbooks, telephone directories, and benefits information can be revised immediately as changes occur. This 'event-driven' publishing allows organizations to respond more rapidly to changing conditions than traditional paper-based publishing. Documents made available via intranets can be up-to-date, eliminating paper, printing and distribution costs.

Internet technology can also be applied to the internal management of the sales and marketing function. One of the most popular applications for corporate iontranets is to oversee and coordinate the activities of the sales force. Sales staff can log in for updates on pricing, promotions, rebates, or customers, or obtain information about competitors. They

can access presentations and sales documents and customize them for customers.

Intranets coordinating the flow of information between production lines, controllers, inventory systems and other components of a production system can make manufacturing information more accessible to different parts of the organization, increasing precision and lowering costs.

Intranets can be used to simplify and integrate business processes, spanning more than one functional area. One area of great interest to companies is the use of intranets and extranets to facilitate supply chain management. Firms can use intranets to improve coordination among their internal supply chain processes and they can use extranets to coordinate supply chain processes shared with their business partners.

At the moment a great benefit of internet technology for many firms may be the use of intranets to reduce internal operating costs.

2. What is the current status of intranet development?

According to Stadler (1999:30-32), companies in the new economy need access to timeous information to respond quickly to an uncertain business environment. According to Queck (1999:32-38), company intranets originally meant to give agility to the knowledge management process, have started to become disorganized and chaotic as the information glut in organizations increase. Creating an intranet without a powerful organizing principle leads to intranets suffering from unmerged content and ad hoc site development. The advice for this dilemma is that companies must help employees to be productive by building an intranet portal, a new application that gives employees the same self-service that Internet users get from sites like Yahoo (My Yahoo).

Portals

According to Eyal (2000:26-30), it was in 1998 that Internet portals became very popular. Suddenly everyone had their own personalized point of entry to the vast resource of information available on the Internet. Websites such as My Yahoo (Yahoo), NetCenter (NetScape), MSN (Microsoft) and AOL (America-on-line) all started to offer personalized pages, specially tailored to meet individual needs. It was also back then that the word 'portal' was first used for enterprises (or intranets) when a Merrill Lynch report (Eyal, 2000:26-30) coined the term 'Enterprise Information Portal' or EIP.

According to Laudon (2000:297), a portal is a Web site or service providing an initial point of entry to the Web and/or the intranet.

The underlying concept of any company that has been around a while is its data. Data that are stored in Web sites, data warehouses, legacy mainframes, and client and server systems. What happens if specific information is needed? It might be that the appropriate application and correct access method is available on the desktops, but it might be different too. The person with the access rights may be on leave and the information cannot be retrieved.

The solution to this problem is to bring desparate tools and formats together using Web technology (such as browsers and the data-neutral extensible mark-up language or XML file format) and to create an enterprise information portal that allows users to access data stores in any one of these applications. The Merrill Lynch report describes them as applications that enable companies to unlock internally and externally stored information and provide users

with a single gateway to personalized information needed to make informal business decisions.

Enterprise information portals are an emerging market opportunity, an amalgamation of software applications that consolidate, manage, analyse and distribute information across an enterprise, including business intelligence, content management, data warehouse, data mart and data management applications.

It is understandable that business executives and managers are feeling overwhelmed by the vast amount of information generated by their organizations. To be able to react quickly to changes in their environment and to make effective business decisions, they have to be able to navigate their way easily through the mass of corporate information.

Like their Internet relatives, corporate portals aggregate content and provide topic hierarchies and search technology so that users can access a goldmine of information from a single launching point. Essentially a corporate portal is a compass that assists employees in navigating the crosscurrents of information that they require to operate proficiently.

Although the corporate portal is still in its infancy, rapid flux and growth in the portal market has made the technology elude easy definition. Market analysts tend to divide portals into categories:

- Portals that just provide access to enterprise applications and their stored data.
- Portals that integrate data from beyond corporate confines (e.g. Internet sites).
- Portals that allow managers to oversee what data are being accessed and contributed to the portal.

Some writers distinguish between three distinct portal categories:

- Data portals, which provide access to structured information like spreadsheets.
- Unstructured information like e-mails and faxes.
- Collaboration portals, which allow for interaction between individuals and organizational communities.

According to Queck (1999:32-38), the type of portal a company chooses depends on the specific business needs of the organization. If an organization's knowledge management strategy is to leverage its existing data into knowledge, then a portal application that only accesses structured data would be adequate. If the portal had to support tacit knowledge in a 'heuristic' database, then this would not be adequate.

There is a fairly distinct dividing line between portals that are intended to solve a specific business problem, for example, sales force automation (where the portal supports a specific base of core competencies) and general portals that act as an enterprise's knowledge management enabler. The business' requirements will obviously drive the nature of the content.

In a discussion on Innovations (Anon., 1999:14) the growth projections for corporate portal solutions (the single point of access and navigation to multiple enterprise systems and information resources) are into the high double digits over the next few years. New research from the Delphi Group indicates that over the next two years corporate portal sites will rapidly become the interface of choice for professionals to interact with previously disparate corporate information and processes, as well as with the Internet. Portal development is a necessary second stage in the maturing of corporate intranets and an indicator of the tremendous promise of this medium inside the organization. Development of collaborative

portals in the corporate market will lead to enterprise knowledge portal (EKP) that connect people, information and processing capabilities in the same environment. This will have a fundamental impact on how IT systems are implemented the way customers spend their money on hardware, software and services, and the very structure of the IT industry itself. The Delphi survey shows that 55% of organizations already have portal projects underway; 17% have production sites up and running and 38% are evaluating, planning or piloting portal implementations.

A definition of a corporate portal can be a central browser accessible resource of corporate data on an intranet. Under its broadest definition a corporate portal should not be confined to the inner walls of the organization it serves. Ideally it should also accommodate business-to-business transactions and allow for information sharing amongst parties both within and outside the organization.

At Microsoft the portal concept has been refined into the 'Digital Dashboard'. It is in essence a personalized portal, which customizes the intranet entrance for specific users, but also allows users to search and find information outside departmental or individualized borders if necessary. Ideally the Internet portal should be combined with an intranet portal to give access to information needed to do a job internally, but also give information needed to be aware of the marketplace external to the organization.

Wireless communication

According to Bührman (2000:14-20), the market for wireless communications has enjoyed tremendous growth in recent years. The widespread adoption of cellular phones is an example of the added value that accompanies wireless solutions. Until recently, the application of wireless technology in the networking enterprise remained insignificant because of a number of inhibiting factors, including confusion about the arena, the cost implications of wireless local area networks, and limited market participation by vendors. Cahnes In-Stat Group (Bührman, 2000:14-20) are predicting that the market for wireless local area networks (WLAN) will experience accelerated growth over the coming years, generating $285 million of revenue by 2004. It is expected that shipments of WLAN chip-sets and WLAN IC components will grow at an average rate of 41% and 10% a year respectively. As lower prices are making WLAN connectivity more accessible to consumers, so the market increases for WLA devices. Price, however, is not the only factor that will lead to an increase in demand. The emergence of new standards and competing technologies, will allow WLAN devices to transfer data at continuously increasing speed. IT personnel will also be attracted to the technology and its ability to connect people without running cables.

Large communication networking vendors, such as 3Com, Cisco, Intel, Lucent and Nokia will increasingly dominate this market by introducing WLAN products. The standard networking maintenance and monitoring tools, which these large corporations use on wired networks, will seamlessly migrate to the wireless networks.

With modern companies expanding and nationalizing, their networks need to be as flexible and rapidly deployable as their need to meet their changing business demands. The WLAN market consists of vendors providing network interface cards (NICs) used in computers for wireless connectivity to the LAN and intranet and the in-building host devices or access points that act as data receivers/routers. The NIC contains a transmitter and receiver and acts as an interface between the PC or other client device and the access point. Vendors typically offer NICs for desktop PCs, using Industry Standard Interface (ISA) or Peripheral Connect Interface (PCI) portable PCs using Personal Computer Memory Card International Association (PCMCIA) and handheld devices.

To ensure that the various systems do work together under the new standard, the Wireless Ethernet Compatibility Alliance (WECA) was found earlier in 2000, and in April 2000 already had the first certification for wireless LAN product published. They suggest that a company insist on a full site survey before attempting any radio networking. This will reveal patterns of radio absorption a reflection and will also give hands-on experience with wireless LAN for the clients networking staff, and give them a chance to raise concerns.

The advantages and possibilities of WLAN are very attractive:

- Medical workers can receive real-time vital signs and other health information through a mobile PC or other device, in addition to accessing routine patient records and references. This can be accomplished while workers roam anywhere through the hospital or clinic. This possibility can be further explored to the different multi purpose community centres spread throughout the country.
- Information workers can quickly establish network connectivity using a portable PC or other device and wireless links to store information in conference centres and meeting rooms.
- A stock or commodities trader can use wireless terminals to conduct market transactions.
- Auditors can use wireless terminals to download a client's information from the client's premises to the firm's servers.

Bührman (2000:14-20) discusses the issue further and says that WLAN are implemented in Mozambique, Zambia and Kenia with full wireless bridging and networking over difficult terrain. Security can be a concern but it is explained as follows: The wireless card must register with the access point or bridge, which is the entry point to the network. There are also tools available, which network administrators could use to find and isolate suspected attempts. It is fairly hard to break the security of the WLAN.

This is a current intranet development that can have far-reaching implications for the new future.

3. **How is the intranet applied to enhance information flow in a corporate environment?**

As we are living in the information era and are exposed to global market competition, it has become crucial for companies to change the way in which they view their business models. One of the major factors in moving to these new business models is technology that enables and supports the new business models. According to Connelly, McNeill & Mosiman (1999:12-18), the rate at which companies can process information is one of the critical success factors of the global economy.

Siegel (1999:online) says every company can build a very sophisticated intranet with a Web-authoring tool. Each Web page can hold images, texts, links, lists and other content, but the success would be if the employees could link from their information to anyone else's information. He elaborates by saying that many employees are known as experts in certain fields and their knowledge has become a popular destination for others inside the company. By creating their own area of expertise and watching how many colleagues come to 'feed' there, their status in the company goes up not down. Employees are more valuable because of what they share, rather than what they know. The mission statement has changed from: Our intranet gives people what they need to be more productive, to: Knowledge management by the people, for the people.

Siegel (1999:online) describes the 'Seven habits of Web Savvy Executives' as follows:

- Kill the old systems
- Help people to help each other
- Encourage openness
- Build a knowledge management system
- Fix the organizational chart
- Institutionalize learning

From this it is very clear that just to install an intranet will not necessarily lead to information sharing. The information and the technology could be there but the people are the most important factor in the sharing of information.

As the intranet is a local area network and have servers and storage capacity, it is linked to the companies computers from where data are put into the system. Companies often have different information systems, such as:

- Human resources
- Finances
- Inventory
- Production
- Management

to name a few. All these and other systems can be linked together on a common platform with Internet (World Wide Web) application tools to form an intranet. The boundaries between an intranet, extranet and the Internet can be very vague, depending on the core business of the company.

In the previous decade a company's information was stored in different paper based formats. Then came the development towards electronic storage:

- Databases
- Data warehousing
- Data running

According to Miller (1999:online), the intranet offers many business and technological advantages over traditional networks and client-server solutions. Research shows that you do not immediately flock to an intranet just because it is there. It is up to the managers and IS professionals working together to lead the company to the intranet. He describes five characteristics to look for in identifying business processes that could vastly be improved by an intranet:

- Any business process that involves the production, requisition, distribution and update of dynamic information that has traditionally been published on paper. Examples include employee directories, medical benefits, product specifications, user manuals, price lists, marketing information, financial reporting systems, and policies and procedures.
- Any business process that involves the consolidation of information and multiple data sources, for example, a retail customer service reporting must access and consolidate customer information, order history and product information (description, pricing, availability) and enter the information – all while speaking to a customer on the telephone.
- Any business process that requires a high level of communication and collaboration between people, especially if they are separated geographically. Today, for example,

many engineering projects coordinate with multiple development groups scattered in multi geographical places. Many companies have field sales offices that need constant up-to-date access to company information as well as daily contact with the customers.

- Any business process that depends on people finding or requiring information or products. Examples include reference manuals, info requisition systems, channel distribution order systems and fax-based systems.
- Any business process currently automated by a client-server or business application. This is particularly significant for companies with older information systems that need to be brought up-to-date.

Often the least visible but most valuable asset in any organization is working knowledge. This information is typically stored and communicated in the form of business processes, standard operating procedures, corporate policies and other structured documents. These documents, linked and cross-referenced to job descriptions, work instructions, supplementary drawings, flowcharts, forms and other supporting information, make up the organization's knowledge base. With intranet technology the vision of putting knowledge at the fingertips of every employee and accessing it on the desktop, has become a reality. Workers can truly be empowered through timely access to the information they need to do their work whenever they need it.

Communicating 'how-to' knowledge from worker to worker is one of the most essential undertakings in any organization. In most companies most of the critical operating knowledge is locked up in the heads of a few subject matter experts. One of the best ways to safeguard crucial knowledge is to effectively capture it and distribute it over the company's intranet.

The challenges of finding the right information, making sure it is accurate, making updates and reissuing documents become a tremendous information management problem, especially in large organizations that may have hundreds, even thousands of documents.

Everybody is familiar with the policy manual that's never read by anyone because it is hard to find the needed information in it. Valuable time is lost when trying to get hold of such information. Intranets are enabling IT and end-user departments to speed up review cycles, streamline the distribution process and improve information accessibility. Examples of how it can be done are as follows:

- Employees can get immediate access to accurate 'how-to' information directly from their computer without having to ask supervisors or find the information in paper manuals.
- The high costs of printing and distributing paper documents can be entirely eliminated or drastically reduced.
- Changes and updates can be disseminated to all employees in a matter of seconds.
- Online procedure libraries dramatically leverage training expenditures and can reduce training time.

The larger the company and the more locations it has, the more important an intranet becomes to distribute information in the company. Enterprise access to a policy and procedure library on an intranet makes it possible for any authorized employee to access information in a way that is fast, efficient and practical.

The financial and productivity benefits online knowledge bases provide can further be extended by incorporating electronic fans, drawings, sound and, as network bandwith expands, video. At the National Department of Land Affairs in Pretoria, they have succeeded in putting the Human Resources System of the government, Persal, on their intranet. Every

employee can retrieve information about his own leave, payment, deductions, etc.

Other application examples are that:

- engines can review, approve and distribute manufacturing revisions to remote plants instantly; and
- quality managers can publish specifications and other regulatory documentation online.

In our own College we introduced an intranet. The Web application tool used is FrontPage. It has 81 computers running on it. It started with the following information:

- Policies
  - Conditions of services
  - Telephones and faxes
  - Administrative
  - Student policies and procedures
- Meetings: Agendas and minutes
- Calendar: 2000 and 2001
- Academic Roster
- Prescribed and recommended booklists for 2000 and 2001
- References to Web sites for the different subjects that are taught in the College.

Since the intranet was introduced in the College, time and paper was saved, especially as meetings, agendas and minutes are available on the intranet. When queries arise, previous meeting minutes can be found within seconds and issues can be clarified. The flow of information and the business process (teaching of student nurses) in the College is enhanced by the intranet.

To protect quality at this stage, the accountability for a specific page lies with a specific person. Only that person can make changes to the page and therefore all the responsibility does not lie with the Web Master. Every employee can read and print the information. As the intranet does not have that much information on it yet, the College is investigating the introduction of a portal, but has not made any decision yet. The following criteria is being used to investigate:

- Capturing and storing process knowledge, information and tacit knowledge.
- Supporting intelligent search and retrieval of any knowledge.
- Pushing critical information to individuals or groups.
- Supporting collaboration in the use of existing information and knowledge to create 'new' knowledge.
- Profiling and personalizing access to knowledge – giving the end-user what he or she needs, and no more or no less.
- Integrating into our existing systems.

If the College can succeed in the above, the intranet will definitely add more value and enhance the flow of information in the College even further.

According to Gordon (1999:57), Old Mutual has introduced an intranet development in order to automate human resource matters to a large degree. Each of Old Mutual's 16 000 employees was issued with a personal policy manual every year. At least 16 000 leave forms per year and 16 000 payslips every month had to be processed. The policy manual cost about R5 000 000 to print every year. That is now put on the intranet and every employee at the company has access to it in electronic form. As the manual is now online, it can very easily

be updated and the information is available to everyone in the organization.

Employees at Old Mutual are also able to administer their own leave. They call up a leave form, fill it in on the screen in front of them and then route it via internal e-mail into the human resources system, where it is either approved or declined. The information regarding how many days' leave they have and how much they have taken is available immediately to the employee, as well as the human resources department.

4. **How can the intranet contribute to managing the knowledge assets of an enterprise?**

According to Stadler (1999:60-62), consulting companies are leading the way in constructing knowledge repositories for their organizations. The reasons are that their core business comes from re-using the internal knowledge accumulated by employees over the years. It therefore makes economic sense to put systems in place that make the re-use of tacit knowledge possible and streamlined. Ernest & Young were ranked as the fourth most-admired knowledge enterprise in a research conducted by Telos, a London-based knowledge management research company (http://www.knowledgebusiness.com).

After removing client-sensitive information, they develop knowledge objects by pulling key pieces of knowledge, such as interview guides, work schedules, benchmark data and market segmentation analysis out of documents, and store them in the electronic repository for people to use. This approach gives the 85 000 consultants, spread over 689 cities in 133 countries, access to the knowledge that has been sanctified through removing client-specific information.

In doing this, they are able to access to the exact knowledge they need very quickly. It also extends to knowledge sharing.

Although the starting point in many ways for a knowledge infrastructure is the traditional corporate library, Ernest & Young has moved far beyond these more basic outputs to the higher end of the value chain. They base their knowledge management vision on 'The process of creating an environment to improve capacity for effective action and learning. The focus of our knowledge deliveries is to harness the global knowledge of Ernest & Young tempered with appropriate external sources and to leverage this on behalf of our client-facing users to ensure that the focused value of our knowledge is brought to bear on the firm's service delivery'.

Currently their knowledge system is divided into different levels of sharing. At the top of the pyramid are the 'Power Packs' which contain the best highly filtered information. This knowledge is shared with Ernest & Young employees globally. It means employees of Ernest & Young can access the latest work done by a consultant anywhere in the world.

Further down the line the information is less filtered. This includes the raw documents that are waiting for review by the subject matter specialists. The Power Packs also consist of international best practices, reference and research materials, proposals and benchmarks. There are profiles of key specialists within Ernest & Young, including their CVs and specific case study experience. When a project team needs to be selected, information on skills and experience is available.

Ernest & Young has created a system that allows the company to gather and leverage the tacit knowledge of its skilled employees. Stadler (1999:62) says that the investment Ernest &

Young has made in its knowledge infrastructure is estimated as being equivalent to the price of a Boeing aircraft.

As far as the human and organizational element is concerned, a great deal of emphasis is placed on ensuring that when a project team is put together for a specific project, one member is given the task of collecting and returning knowledge to the knowledge repository. In this way they ensure that knowledge is made accessible for value-added re-use.

On the technology side, the company makes use of Lotus Notes and has established an intranet. They have invested substantially in creating their intranet for knowledge called the Knowledge-Web (K-Web). On the K-Web employees can access up to 4 000 databases through keywords with global access. Employees can search for anything and outsiders have access to some parts of the intranet.

It is very clear from the above that Ernest & Young has succeeded in managing their knowledge assets and distributing them via their intranet (K-Web) to give the company the competitive advantage in the global economy.

An article by Anderson (2000:1-4) describes what Arthur Anderson Consulting has achieved. In 1992 they used a CD-Rom-based knowledge base called Global Best Practices. By 1996 the CD-Rom solution had become cumbersome to maintain and its user interface was not sufficiently intuitive to enable users to make the most of the available information. They then created an intranet solution, using Microsoft development tools, that will contain all of Arthur Andersen's knowledge capital including Global Best Practices.

The new solution known as Knowledge Space, is accessible today to more than 40 000 Arthur Anderson personnel for internal use and to benefit clients. Today, through Knowledge Space, Arthur Andersen's personnel can:

- access an extended best-practices knowledge base;
- access all pertinent Arthur Andersen organizational and professional knowledge through a cross-indexed and user friendly interface;
- store information, write, format, publish and manage documents and perform indexing and full-text searching and querying;
- ease the update of the knowledge base, which is important from the point of view of both the user and the individuals who develop the Global Best Practices.

Many companies have found intranets to be a useful technology for distributing information. However, many implementations have lacked useful managed information, which is the part that really adds to the value of the business. There is also a lack of tools that can use intranet technology to access vital company information spread across a distributed environment. A lack of effective document management across the intranet creates a number of issues such as:

- reduced use and re-use of information stored in corporate repositories;
- poor intrinsic value placed on the intranet by management and staff;
- large document management applications on PC desktops, which require installation and system management;
- intranet technology deployed with little or no business critical applications available; and
- deployment of non-intranet document management systems, which cannot utilize the full ability of the intranet.

The Global Recall Intranet Toolkit (http://www.globalrecall.com/intranet-solution/) has been

designed specifically to use the capabilities of intranet technology and exploit the superb enterprise-wide document management capabilities of the Global Recall Document Management System. The Global Recall Intranet Toolkit can be implemented as part of a new or existing Global Recall configuration with either UNIX or Windows/NT Global Recall Servers.

The Global Intranet Toolkit provides:

- an intranet-based access mechanism, which complements the distributed architecture of the Global Recall Server using distributed file stores and document 'catching';
- the ability to integrate with other intranet applications;
- the ability to tailor the document management features for particular users reducing the complexity of the interface, as well as the training and maintenance requirements;
- a browser-based interface, using HTML to reduce network band with requirements; and
- an intranet environment.

The latest development is Athena from Global Recall. Athena delivers knowledge management to the enterprise in a new way. Its unique power derives from working the way people are already working, needing only their existing Windows skills to effortlessly gather the knowledge they create. Athena delivers the power to create knowledge tools to make access simple, and the control needed to keep it secure. It can be said that Athena is the third generation knowledge management.

They do have a demonstration on their Website of what their knowledge management portal can do for and offer to the customer. They use the example of Worldspark, a company with its headoffice in Chicago and offices in Boston, Los Angeles and London. They do business all over the world. They are interested in expanding to Hong Kong.

All information is indexed and stored in Chicago, but is accessible if the user can produce his username and password. A very easy screen (windows) appears and if you open Global Recall Library and the folder that is needed, the information is available. They demonstrate two examples:

- A specific heavy electric motor has to be shipped – four copies of it. The folder and files are available:

Product
Development
Motors

Model	Operating conditions Model Operating manual Shipment instructions Specifications

In this case, model specifications are chosen. The specific model is selected and then shipment instructions are selected. Then an e-mail form appears. The specifications are pasted and the rest of the e-mail order form is completed and sent.

Regarding the marketing opportunities in Hong Kong:
The screen is very user friendly:

Marketing	Creator	Format	Modified

It is very easy to see what is needed and by whom it was created. In this case, the business plan and map under marketing is also available.

The executive visits Hong Kong and decides on the organizational map with changes. On his flight back he does the changes on his laptop. When he connects with his username and password, he opens the file and selects: reconcile. The document in the Global Recall Library is then updated. A technological audit was done by Clark (1999:1-10), where the strengths are discussed as:

- uses advanced concept-based technology to search for information on the corporate intranet and the Internet;
- provides a choice of two desktops either a browser or Global Recall Integrated Desktop;
- provides the centralized management of all documents within the organization; and
- built-in security features ensure that users only access the documents they are authorised to.

The weaknesses are discussed as difficulties associated with bringing a new product to the notice of a wider market.

According to Clark (1999:2), Athena provides the means to extract all relevant information within the organization and ensure that the right people have access to it. This is achieved by allowing all high value knowledge to be managed centrally, yet stored in a distributed multi-repository environment, eliminating the problems caused by the proliferation of operational repositories, which are typical in an organization. Built-in security features ensure that only authorized users with the appropriate privileges are able to access the information.

They succeed in reducing the two major bottlenecks that are impeding the contribution to knowledge:

- Discovery
- Re-use

Athena manages knowledge objects across the whole enterprise, making them available from a single point of access. A cohesion program integrates a number of third party products, such as Lotus Notes and Microsoft Exchange.
Globall Recall uses the third party, Autonomy Agentware's software, to provide knowledge management facilities.

Searches can be initiated for people, rather than documents, by creating a list of all users who have deployed agents looking for the same topic. In this case, a list of names will be returned with relevant information, such as extension number and e-mail address (using concept-based search criteria).

Users can deploy agents to perform a continual search for documents meeting specific criteria. Spiders, which also use concept-based technology, can be set to crawl the Internet using similar criteria. Each time a document is located, the user is informed by e-mail. This can be very beneficial as a means of looking for information on a long-term basis, perhaps concerning competitors or news about developments in a certain market sector.

A major headache for any organization is controlling the location of, and access to thousands of documents, e-mail messages and other important material. Athena addresses these issues

by using knowledge caches, where knowledge is stored locally to its point of use, while controlled by the centrally managed server. Multiple Athena servers are supported allowing a copy of each document, or only its index record, to be stored on the central server with copies stored on local machines geographically, close to the users that require access to them. Athena ensures that all locally held documents are synchronized with the centrally held version.

A built-in internal viewer allows over 200 file types to be viewed, providing support for users creating information from different applications.

Athena's advanced search capabilities allow documents to be located quickly and easily by using attributes, categories, full-text and concepts within the documents themselves.

Version control is included in Athena. The document can be 'checked-out', in which case the centrally stored copy is locked, preventing other users from working on the document. Once editing is complete, the lock is removed from the document, and a new version is created. Alternatively, it can be copied out, which simply takes a copy, and does not preclude another user from checking it out. If the copy on the central servers has been updated, then the 'Librarian' (main servers) will receive the most up-to-date version. An authorized version represents an approved or released status. A document could be available in more than one version, for example MS. Word; Word Perfect, Ami Pro and plain text formats.

The browser interface provides users with a personalized knowledge portal, which includes 'mydiscovery' and incorporates search engines and discovery agents. It allows users to search for explicit and tacit knowledge, create, use and retain agents, and navigate the portal's hierarchy and categories.

The agent technology is also used in 'myworld'. As users read documents accessed via the portal, the agents analyse their behaviour in order to construct and maintain profiles of their interest and skills. These profile agents are then used by Athena to drive suggested reading to the portal and allow other users to search for people that are interested in a requested concept. All of this is achieved without the need for users to explicitly define their interests.

The latest corporate news can be distributed easily around the organization with 'newslistener', which appears in the top right hand side of the screen, and can be updated as often as necessary,

They have a variety of customers such as British Gas, Fisons, Honda, Glaxo Welcome and Elsevier.

The company's Head Office is in Swindon, UK with offices in Boston (USA) and they had one in Cape Town. Mr Bernard Smith (Cape Town) informed me by e-mail that, as of March this year, they are still undertaking development work on behalf of Globall Recall in the knowledge management area, but are pursuing a different market. The reason for the decision is that many companies in South Africa do not seem to realise the value of a knowledge-base company. This is a tragic fact.

According to Dauphinais et al. (2000:311-321), technology enables experts to share both explicit and tacit information. Through intranets, companies can collect and distribute explicit knowledge, such as presentations and competition news. At the same time, intranet facilitates tacit exchange through e-mail, bulletin boards, work plans and real time communications.

Data or information, typically the focus and content of information systems, does not carry

the rich context of human interpretations. Data are easily catalogued and are highly visible with modern systems. Technologies offer great promise in making even tacit knowledge more visible through teleconferencing and the intranet.

Teleconferencing is playing a major role in telemedicine and is starting to come into place in South Africa. The National Health Information Department has 28 Telemedicine sites running at the moment. The idea is that a video camera be made available in a primary health care clinic. When health workers encounter problems in the clinic, they can obtain help through the video conferencing facilities and the intranet dispalying health information. In this way the intranet is facilitating knowledge management in South African health care facilities.

BP Exploration is another company that uses the intranet extensively. When a compressor in an oil field in South America breaks down, they communicate via their intranet with experts in Alaska and Europe in order to solve the problem. In this way they also save quite a lot of money and time, as they have the information and knowledge immediately available.

Conclusion

According to Malhorta (2000:Online), a few years back technologies such as intranets, Lotus Notes, and MS-Exchange were being considered as enablers of knowledge management. Of more recent interest are technologies related to know portals, artificial agents and push-based technologies. Despite significant advancement in technologies and substantial investment by companies in such technologies, most organizations are still trying to find answers to simple questions such as how to capture, store and transfer knowledge and how to ensure that knowledge workers share their knowledge. It is therefore very clear that the technologies are dependent on humans for implementation to the competitive advantage of the enterprise.

The implications of intranet developments and knowledge management are quite significant. The intranet can be a valuable support vehicle in the knowledge management activities of an enterprise.

The corporate intranet can be utilized very effectively to support the knowledge management activities of a company, if it is a well-planned strategy, and implemented by buying the correct technology software, and managed carefully to reach the business objectives of the company.

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