Knowledge Management Using a Corporate Intranet

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Abstract: Corporate intranets are becoming widespread and are enabling better communications within large corporations, especially those that are geographically dispersed. Taking the next step, from basic communications to using the corporate intranet as a knowledge management tool can occur in many ways. We describe one example of a corporate intranet that may be applied to other corporate intranets to help promote a learning environment. Several mechanisms for achieving this environment are highlighted.

1. Introduction

The MITRE Corporation has developed an award-winning Corporate Intranet [1] and has utilized it heavily for day-to-day operations and information sharing. This intranet has fundamentally changed the way the Corporation operates and helps us leverage our extensive skills for our customers. The initial focus of the intranet, or MITRE Information Infrastructure (MII), was on locating and contacting people throughout a geographically dispersed organization.

Over time, the MII has evolved to a true corporate knowledge-sharing tool. Coupled with this knowledge sharing have come efforts in information stewardship and knowledge management. Since an intranet is only as good as the information contained within it, information stewardship has become a critical component to the MII. Information that is poorly organized, poorly maintained, or outdated is of little value and provides disincentives for its continued use in knowledge sharing across the Corporation.

MITRE is a non profit organization chartered in the public interest that manages three Federally Funded Research and Development Centers FFRDCs. Information sharing is critical to our public interest charter, and helps us to eliminate duplication of effort.

Several efforts are underway in the Corporation to better utilize the information on the MII and to enhance the ability of the staff to locate and leverage the information and resources available [2]. One effort is a Corporate Knowledge Management Program, another is a Corporate Information Stewardship Program, and a third is to provide tools to help support these efforts. This paper will discuss two of the tools that have been developed in the Information Management and Instructional Systems Department within the Information Technology Center.

2. Tools

The Intranet Usage Profiler (IUP) and Intranet URL Recommender System (IURS) are two tools that help information providers and information consumers better assess their use of the MII.

2.1 Background

The IUP and IURS tools were developed as extensions of internally funded research and arose from a need to understand more about our usage of the MII. Some of the drivers included identifying which sites staff accessed, how often, and assessing whether the investment in the web site was indeed beneficial to the MITRE population.

2.2 IUP

IUP enables information providers to determine the profiles of their users. Information providers (or "stewards") are responsible for keeping their web sites current and accurate. Records of access to each site are maintained via server logs. IUP automatically retrieves and loads web server log information into a relational database. Linking this database with the property database that identifies users and their equipment allows us to make the linkages between users and their usage of the MII. We also use an employee database that allows us to understand the demographics of individual users so that aggregations can be made based on a variety of factors (e.g., organization, technical level, and job title).

Coupling the relational databases with a browser-based query tool enables any user to query the system across a variety of factors. Figure 1 is a sample of the introductory user interface to IUP.

Once this data became readily available, information providers began to request additional features for IUP. Some suggested features include time-series data and tools for visualizing users' paths through the site. This tool helps give information providers insight into the usage of their sites, and how they can better serve their intended population. If used successfully, corporate knowledge management is indeed facilitated.

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2.3 IURS

Information consumers and providers benefit from IURS. The consumers determine what their intranet usage is, based on a peer group. From this, they can glean possible learning opportunities, by visiting URLs that others in their peer group have visited, but they have not. Peer-to-peer learning is one of the most effective forms of learning and knowledge sharing [3].

Information providers are able to look at usage of their site by particular demographics to determine if their site is indeed reaching the intended user group. Figure 2 depicts a view of IURS.

IURS draws on the same databases that IUP does, as mentioned above.

3. Management Approach

Many corporations, including MITRE, are investing a significant portion of their Information Technology budgets on intranets, with an expected payback. Investments in the infrastructure as well as content can be considerable. Understanding the usage of the information is critical to making sound investments [4].

In addition, staff must be incentivized to provide the content, keep it current and accurate. Managers using the intranet usage data must also understand how the information is derived in order to make the best use of it. Providing multiple views of the information with user-selectable fields allows the manager, information provider, and information consumer ways to look at data that is of value to each of them [5].

4. Other Considerations

4.1 Privacy

While most corporate information systems contain a notice to users that their actions can be monitored and that the system is to be used solely for business purposes, collection and aggregation of this data needs to be done carefully with privacy in mind. We have chosen to protect individual anonymity by analyzing and displaying only aggregated data without attribution to a single individual.

Privacy policies are lagging technology in these areas; however, progress is being made in defining these policies for MITRE.

4.2 Maintenance

As mentioned earlier, corporate resources are committed to providing the infrastructure and content for a corporate intranet. The cost of maintaining the content is often underestimated, and knowledge of how the information is used is not understood [6].

Merely supporting the initial hosting of information is not sufficient for an effective knowledge management system. Resources must also be allocated for upgrading hardware and software, keeping the content up to date, monitoring usage, etc.

4.3 Technical Issues

Currently, IUP uses information contained in a property database and associated IP address to identify individuals. As users become more mobile, their IP address (e.g., DHCP) may not identify the actual user. New identification and authentication procedures may prove to be more robust and accurate in a system such as the MII.

4.4 Incentives

While MITRE has a sophisticated intranet, not all staff makes use of the myriad features and resources available to them. A constant challenge is educating and training the staff to use the features that are available to them in the performance of their work. In addition, incentives to information providers to host well organized, relevant content is just as important.

At MITRE, a certain amount of peer pressure exists to host good content. There are currently over 200 web servers connected on the intranet with nearly a million pages of content, and this content continues to grow.

Usage of the content is not as high as intended, and the tools to access the content, such as query tools, are underutilized. Investigating current usage patterns is key to helping users take advantage of the features and sites that they may not be aware of. Showing users how they can benefit from the MII is also an incentive into doing more.

5. Conclusions

Corporate intranets have established themselves as knowledge management facilities. Giving information users and providers access to usage information helps both achieve improved performance.

There is much to learn about user dynamics and interactions with a corporate intranet, and we are in the early stages of understanding these dynamics and interactions. The potential is great for exploiting this information to improve the impact of information sharing within the corporation.

The IUP and IURS tools in the MII environment enhance collaboration, teamwork, and a learning environment.

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Authors

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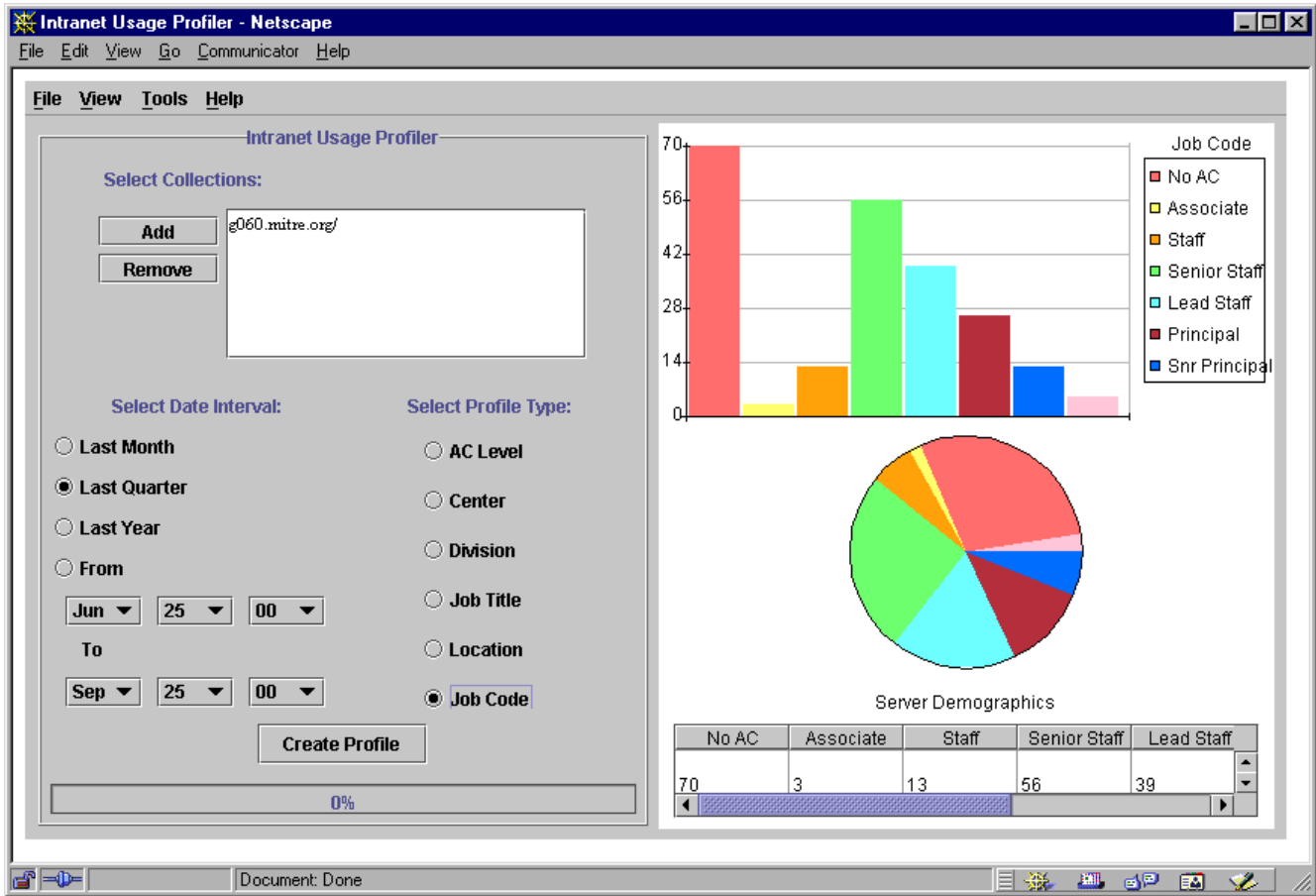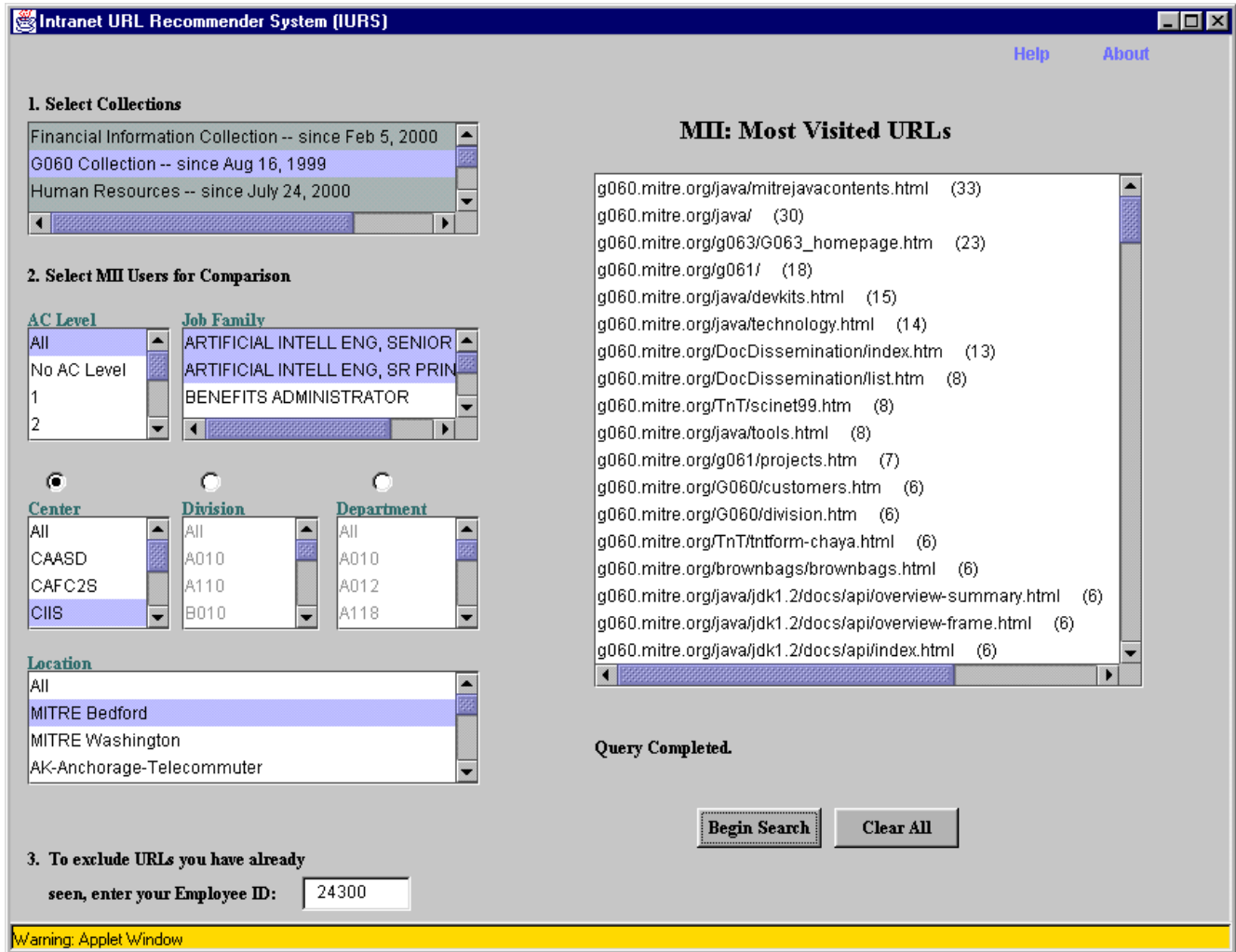
Figure 1. IUP User Interface

Figure 2. IURS Interface