Managing Information and Content at Sycamore Networks

By *Steve Olson*

As evidenced by the rising tide of media coverage, the optical networking industry has exploded in the past few years. Fiber optic networks are beating out older analog technologies, and most carriers are moving swiftly to implement these newer technologies. Layered on top of their physical networks, carriers need hardware and software products that manage, optimize and speed traffic across global fiber optic networks that integrate voice, data and video traffic. Developing nations are leapfrogging older technologies and laying fiber optic networks on a huge scale, creating tremendous opportunity for carriers and optical networking companies that offer integrated products at attractive price points. With companies like Nortel, Lucent and Cisco stepping into the market through acquisition, the field has already begun to experience dramatic consolidation. This case study looks at how one player in this dynamic industry is using an Enterprise Information Portal (EIP) to keep its employees abreast of important internal and external changes that affect their jobs – and potentially the viability of the entire organization.

Founded in 1998, Sycamore Networks was one of the first companies to reach this new market of integrated carrier-class optical networking products and services. Their innovative offerings combine the functionality of standard fiber optic networks, the efficiency of Internet protocols, the capacity creation of dense wavelength multiplexing (DWDM) and innovative networking software into a new class of optical transport, switching and management platforms. Against the backdrop of rapid industry growth, Sycamore Networks works hard to keep pace, and is rapidly growing its workforce to accommodate expansion. Internally, development happens at such a rapid rate that if standard business processes don't directly apply to getting products finished and into the market, they often just don't happen. One area in particular that hadn't seen much improvement was the company intranet. The job of improving it belonged to Senior Web Manager Jamie Manning.

"When I was first hired," says Manning, "the company intranet was slow and clumsy and did not scale well at all. People just didn't use it. The engineering department had built their own to satisfy their departmental needs." While teams were collaborating extensively, the tools to support that collaboration had not been well thought-out. Expediency ruled the day. Initially, Manning sought to purchase and integrate a content management system such as Interwoven's TeamSite or Vignette's Content Management Server. During the search, however, Manning became aware of Plumtree's Corporate Portal. The idea of a corporate portal (or CP; virtually synonymous with EIP) represented a shift in paradigm and soon changed Manning's approach to the problem.

Content Management: Central Administration Versus Distributed Contribution

Many content management systems control an intranet through central administration and updating of content, adding burdens to a Web team that may already be stretched to capacity. While these systems often have robust workflow management facilities, they do require a fair amount of administration that paradoxically can impede workflow.

Global Internet access has changed the prevailing wisdom about managing intranets. As the general population has become more familiar with browsing and searching the Internet, it has made more sense to EIP vendors to switch to the portal paradigm to better position their content management products. Pioneered by Yahoo!, a portal with a searchable directory can address many needs for information access. Plumtree was arguably the first company to extend these concepts to the corporate market back in 1996. For security reasons, Yahoo! must retain control over the content of their directory, but in a

corporate intranet where each user can be traced and is accountable, an open structure facilitates growth and collaboration.

The corporate portal model distributes responsibility for content to the user community that contributes into a portal-based searchable directory. Like the Internet itself, the quality of a CP-managed intranet is directly dependent on user contributions. To encourage participation, Plumtree's Corporate Portal product supports automated content updating, customizable and personalized interfaces and excellent scalability features. Users place documents in a designated network location. Plumtree crawls the network, finds the document and places it in the appropriate directory with network-based security. Other users then can find the document or other piece of content through a searchable content directory that looks and feels like that of an Internet search engine. From the user's perspective, it is a simple system that facilitates rapid retrieval.

As part of his search, Manning tested content management systems such as Interwoven and Eprise, yet found the Plumtree model a more cost-effective choice with better features. "It's very democratic," Manning said. "Out of the box, Plumtree works well as a behind-the-scenes content integration tool. Our sole criteria was to measure whether the new content manager increased usage of our intranet by making it easier for employees to access information on SycamoreWorld [their term for the customized portal] and get their work done. As soon as I saw Plumtree, I knew it would."

Sycamore Networks Customizes Plumtree to Enhance Content Automation

The Plumtree Corporate Portal ships with tools for adding content, although these tools do require some central administration. For Sycamore Networks, such centralization was impossible; the company was simply growing too fast.

As Manning noted, "While almost everyone in business is exposed to the Web every day, It occurred to me that ninety-nine percent of us don't do work on the Web itself. We work in Microsoft Office or Visio or things like that. Knowing how fast Sycamore Networks was scaling, it was extremely inefficient for someone to bring me pencil drawings for placement on the intranet. They're the content experts; they know what they're doing. I needed to find something that allowed people to put things on the net without going through the Web team."

Manning sought to remove his Web team from the content management process by developing a proprietary Add Content tool. Based upon the network logins, each individual is given read and read-write privileges to the servers where they work. Why not give them the ability to post into the Plumtree system from within their familiar environments? Manning said, "Our Add Content tool uploads to a server with which people are familiar. Plumtree crawls the servers. Anytime that the crawler finds something new, it creates a new indexing card and places the doc in the right place on the network."

Other Corporate Portals/EIPs

Plumtree is the corporate portal of choice of Sycamore Networks. However, the corporate portal market has rapidly developed over the past few years. Below are two-dozen EIP alternatives:

1. *2Bridge*
1. *Appsolut*
1. *Autonomy*
1. *Corechange*
1. *Cornus*
1. *Eloquent*
1. *Engenia*
1. *Excalibur*
1. *Hyperion*
1. *Hyperwave*
1. *IBM*
1. *InfoImage*
1. *KnowledgeTrack*
1. *NextPage*
1. *OpenText*
1. *PeopleSoft*
1. *PortalPrise*
1. *Semio*
1. *Sequoia*
1. *Synergistics*
1. *THOUGHTSTAR*
1. *TopTier*
1. *Viador*
1. *Yahoo!*

As of August 2000, *Microsoft* and *Oracle* were also developing EIPs.

Click 'n' Add Content: What Could Be Easier?

Figure 1

Rather than forcing people to leave SycamoreWorld, the Add Content tool allows users to upload docs directly through their browser. After clicking the *Add Content* button, a user finds the file on his local drive and uploads it to the server. When the file has been copied and flagged for indexing, the user can return to work, and the Plumtree crawler takes care of the rest, including automatically indexing the file based on Microsoft Office properties. Because the tool operates through the browser, no additional user training or administration is required. In addition to simplifying the upload process, the tool clearly defines responsibilities. Individual users are responsible for publishing and updating their documents. The Web team must ensure that the directory structure of Plumtree accurately reflects the directory structure of individual workgroups. While the system does retain the potential for human error, including users forgetting to update the Plumtree system or discrepancies between Plumtree and server structures, such clearly defined accountability ensures that errors can be quickly corrected. "It's very efficient," Manning said. "Most employees have no idea that our Intranet is based around Plumtree."

Paging Inspector Gadget

Most observers agree that a corporate portal isn't of much value if it doesn't integrate well with enterprise data. To that end, Plumtree has developed Plumtree Portal Gadgets. These plug-in components connect Plumtree with common enterprise applications. From within Plumtree, users can access files from common office applications, Web sites and servers, database systems and much more. Gadgets essentially give users access to the five to ten percent of an enterprise application that is needed for general use.

According to Manning, the open architecture of Plumtree's Corporate Portal makes gadgets relatively easy to write, and Plumtree states that there's a big initiative underway to open the user community even more via a platform-independent standard. Through their network of customers and partners, the library grows everyday. Gadgets can be reviewed and downloaded at the Gadget Factory where Plumtree posts all gadgets they have certified.

"Having the ability to pull in data from other enterprise applications is key," Manning said. "Letting people be in one space to do eighty-five to ninety percent of their work was very important. For example, there's an industry site called Lightreading.com. We scrape data from there and put it into Plumtree. People can read daily industry updates directly from the intranet through a gadget. You can be getting your work done while keeping abreast of key changes to the industry and, frankly, in the rest of the world." A collection of Plumtree gadgets, Publications can be used to create daily news feeds for internal and, through separate login, external users.

Manning will "gadgetize" Sycamore Networks' main enterprise applications like PeopleSoft and Vantive so that users can access enterprise data through Plumtree. "Any time we get an enterprise application on board," he said, "We make an assessment whether to gadgetize it or not." Additionally, Sycamore Networks has developed custom gadgets to provide calendars, weather updates, interactive forms and company directories to its intranet community.

"It Grows As Fast As We Do"

By distributing content responsibility to end users, Plumtree was designed with scalability in mind. Any number of users and web servers can support a very large number of documents. Fault-tolerance is high, as failure of any system or network does not interrupt Plumtree service. The Plumtree Corporate Portal has been deployed in a number of very large organizations; several of them have contributed to Plumtree's financing.

Compared to behemoths like Ford Motor Company and Procter & Gamble, Sycamore Networks is relatively small, yet the company is expanding at a rapid rate through hiring and acquisition. When he was searching for a content management system, Manning recalled, "Scaling was a very important issue. Absolutely. Acquisitions could very well play a part in our scaling strategy. To compete with the Cisco's of the world, we must be aggressive in ramping up which potentially includes the acquisition of other companies."

Since user access to Plumtree is based on network login of user groups, adding users is transparent. Adding servers of newly acquired companies is nearly as easy. Merged companies must rapidly integrate knowledge sets, so the shared intranet becomes the right channel for that collaboration. Said Manning, "As we acquire other companies, it is much easier to extract information from that company and pull it into our world. It's so much faster to do it through Plumtree because we literally plug into their server, scrape the data, and throw it into Plumtree." In a matter of days or even hours, merged companies can be effectively collaborating through mutually viewable documents.

When Manning started to implement Plumtree, Sycamore Networks had 350 employees. At the formal launch of the system – just five weeks later – Sycamore Networks had 500 employees. "We're a pretty small client compared to some of [Plumtree's] clients," Manning admitted. "So we've had absolutely no

problems scaling with Plumtree. It grows as fast as we do." Plumtree supports security for embedded applications and individual document links for individual users. For practical purposes, however, there is no reason to splice access to that level; the level of detail is too fine to administer. Basing security on user groups streamlines the administration, and Plumtree manages that task well.

"A Great Value"

The importance of a corporate portal to a company is often reflected in an elevated price. For Manning, however, Plumtree arrived at an attractive price-point. "For what we got," Manning said, "Plumtree was a great value. There are other applications on the market that don't do as much. Plumtree was very reasonable from a cost perspective." Post-purchase, Manning thought that their Professional Services team was talented and affordable, as well. Indeed, Plumtree's Corporate Portal offers several advantages in terms of features, implementation, management and cost:

- Distributed Responsibility for Content: Updating and management of the system's content is left with the creators of the content, freeing web development and IT staff from these tasks.
- Automation: Network crawlers cull the intranet for documents to automatically catalog and update in the searchable directory structure.
- Gadgets: A growing library of software plug-ins connect office applications into Plumtree and allow development of custom end-user features.
- Scalability: Plumtree scales in rapidly moving enterprises and very large user communities. New networks are added by making a physical connection and pointing the crawler to it.
- Customization: Plumtree's open architecture encourages customization of the default portal, and the company can provide consultants to assist.
- Personalization: Based on user logins, users can review information that pertains only to their responsibilities. Site-scraping technologies allow for delivery of daily news briefs to user desktops, among other data collection features.
- Low-Cost Performer: The system features superior out-of-the-box performance and arrives at a lower cost than many alternatives.
- Support and Services: Tech Support and Professional Services were rated "very good" by Sycamore Networks.

Plumtree's strength lies in its flexibility and scalability. Gadgets are easy-to-develop plug-ins for popular applications that allow users to update files from those applications into the Plumtree system. By allowing users to stay in their working environments, Plumtree reduces (yet doesn't eliminate) user error and allows the content library to expand organically. As demonstrated at Sycamore Networks, Plumtree scales well with a growing enterprise, and its list of customers and partners suggests that it works well in mature organizations. New networks can be added by simply pointing the crawlers to the new gate after the physical connection is made. Its openness enhances fundamental collaborative processes, and features in subsequent versions are predicted to build better collaborative functionality onto this framework.

Potential Drawbacks

As a relatively new company with an even newer product, Plumtree still has a number of issues to overcome:

- Technical Problems: While the application in v3.5 is considered very stable, technical problems with Plumtree's card system did emerge during implementation at Sycamore Networks. These were resolved with Plumtree Technical Support, however.
- Default Interface Concerns: The Plumtree Corporate Portal ships with a relatively rudimentary user interface. Administrators and implementers should anticipate doing a fair amount of customization to ensure employees are comfortable with the environment.

- Documentation Concerns: The Plumtree Corporate Portal ships with two 80-page manuals, which is probably too little information for a product of its scale and flexibility. Plumtree has provided assurances that this matter is being addressed.
- Version Control Issues: Content updating is entirely the responsibility of the user. If the user fails to post new versions into Plumtree, only outdated information is available on the intranet. This issue could be partially addressed within the EIP itself.
- Lack of HTML Browsing: Currently, there is no way to browse an HTML document from the Plumtree system. While Plumtree can link to HTML documents, it does not allow users to browse the documents or link to the folders containing them. Sycamore Networks has been able to work around this issue through customization.

Like economies, intranets seem to grow fastest when individual users are allowed to build and contribute as they see fit with a minimum of bureaucracy. Central control may create bottlenecks and a harried IT staff, which can percolate into slowdowns throughout the organization. As the downfall of the Soviet economy illustrates, bureaucracy propagates inefficiencies that can snowball into system breakdowns. Through the corporate portal approach, content control is left in the hands of the experts whose job responsibilities provide the incentive to contribute to the system. People do what they need to do and, with a minimum of overhead, publish their results to the organization. Those results are automatically catalogued for easy search and retrieval.

While centrally managed content management systems do have their place, particularly in workflow-oriented processes, the corporate portal idea may be superior for organizations like Sycamore Networks that are on the fast-growth track or in acquisition mode. CS predicts that more and more organizations will choose the portal solution for its ease of customization, low maintenance costs and familiar search methodologies. While Plumtree has some technological and support issues to resolve, CS believes the Plumtree Corporate Portal can bring significant value to growing organizations that are comfortable with decentralized content administration.

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