
A tale of two knowledge-sharing systems

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Abstract

Two knowledge-sharing systems were deployed on the same platform within the same organization. One was more successful than the other. Interviews with users showed several factors related to work flow, collaboration practices, and the nature of the documents being shared that affected success. This paper describes the systems and then explores why they were used so differently.

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Knowledge management

Knowledge management is a broad-based movement to bring together intellectual resources and make them available across organizational boundaries (Davenport, 1997; Davenport and Prusack, 1997; Hinds and Kiesler, 1995). It is widely recognized that organizations often repeat mistakes, duplicate projects, and otherwise waste resources because the members of the organization are unable to see each other's work. Knowledge management seeks to create common repositories for information and offer search capabilities across organizations so that people within the organizations can "see across the enterprise" and take advantage of each others' work products and experiences.

In addition to broadening horizons, knowledge management systems attempt to break down barriers within organizations by making information available at all levels and across organizational boundaries (Hinds and Kiesler, 1995). This allows knowledge and experience to be shared among people who otherwise would never even meet each other. It also leads to a democratization of the workplace that could foster a greater feeling of common purpose and lead to more collaboration.

While many knowledge management and information sharing systems are available and have been deployed, there is seldom an opportunity to view similar systems within the same organizational context but used by very different types of groups. Such a comparison should throw light on the human activities and organizational issues that influence the success of knowledge management applications. Circumstances at MediaOne, formerly a broadband company in the USA, allowed for such a comparison.

Project history

MediaOne initiated a knowledge management project in 1998. The author lead the project from an organization called the Shared Corporate Resources group. This group oversaw many enterprise-wide systems and operations including information technology, market research, business strategy, and real estate groups. With such a wide scope and experience in enterprise systems, this was a good home for a



knowledge management initiative. The project had the support of the head of shared corporate resources, an individual at the VP level. Eventually, the project (and the author) moved into MediaOne Labs, the corporate R&D organization.

About one year into the project, MediaOne was acquired by AT&T. This slowed the progress of the initial knowledge management project, ultimately bringing it to an end. However, the consulting firm brought in to facilitate the merger had an opportunity to see the system and judged it to be superior to its own. It decided to use the system and within a few weeks it was modified for use by the merger team. Thus two knowledge management systems were built on the same software platform, allowing a close comparison within the same organizational context.

SEEK: the first application

Overview

The initial application was called SEEK, short for “Shared employee expertise and know-how”. Even though it was targeted from the outset to become an enterprise-wide application, a decision was made that the system would first be developed group by group, growing slowly within the organization and changing as necessary. Many prior studies had suggested that a bottom-up strategy was most appropriate, and an earlier attempt within the predecessor company of MediaOne to implement a large-scale knowledge management system with a top-down approach had failed. Thus, the first task was to find groups which needed knowledge management. The optimal groups would have internal needs for information sharing in addition to having value in sharing their information with the rest of the company.

The first groups under consideration were:

- the library and research center (LRC);
- market strategy development (MSD);
- market research and analysis (MR&A);
- human resources (domestic and international as separate groups).

Presentations on knowledge management and idea sessions were held with each group. Ultimately, MSD, MR&A, and LRC were chosen as the initial pilot groups.

Design and development

The core requirements for the knowledge management system were:

- ability to keep electronic assets of all kinds with metadata, including any document type, images, voice files, Web pages;
- automatic indexing of any assets with text;
- ability to bundle assets and attach notes, comments, and/or discussions to them;
- strong search capability across all assets;
- ability to crawl existing intranet and Internet Web sites on a scheduled basis;
- security features for limiting access to some assets;
- personalized search agents;
- Web-based software – no client side applications; and
- economically and technically feasible to scale to the entire organization.

Ultimately a product called Knowledge Management Suite (KMS) from Dataware Technologies (subsequently acquired by the Open Text Corporation) was chosen as the platform on which to build the system. Although this is a vendor product that supports the requirements, it is a highly customizable platform and leaves most design decisions to the customer. MediaOne chose to customize the design considerably.

A participatory design approach was taken to the development of SEEK. A committee was formed with representatives from the research library, IT, the pilot organizations (i.e. MSD, MR&A) and some groups planning to join later (i.e. human resources international and labs). Presentations about the concept of knowledge management and the capabilities of the particular product selected were arranged. The committee went through several design iterations.

The knowledge map

One major design question involved the “knowledge map”. The knowledge map was a set of categories in which any contribution to the system would be located. Each contribution could be located in multiple categories from the knowledge map. The knowledge map was also used to search for documents in categories and to search for people who had contributed in various categories. The goal of the knowledge map

was to cover broadly all possible contributions across the company.

Table I shows the top two levels of the knowledge map that was finally adopted. Most subcategories in Table I had several more subcategories.

Functionality and interaction design

From the users' viewpoint, the application was to have four major functions:

- (1) *Contributing*. The ability to contribute any type of electronic resource. The entire content of text resources would be indexed for retrieval. Also, metadata such as titles, authors, dates, etc. could be attached to any resource.
- (2) *Searching*. The ability to find any electronic resource by using keywords, or document categories, and a search tool.
- (3) *Expert finding*. The ability to find employees with certain expertise on the basis of their contributions.
- (4) *Agents*. The ability to set up automatic, scheduled searches and be proactively informed of new or modified material matching the search criteria.

It was decided that the application would initially have five contribution types:

- (1) file/Web pages;
- (2) best practices;
- (3) bright ideas;
- (4) lessons learned; and
- (5) library and research center (LRC) documents.

LRC documents would make up the bulk of contributions to the system, however since these documents already existed on the intranet or Internet, they would be contributed automatically by the Web crawler.

Files and Web pages covered most individual contributions expected to be made by employees to the system. They would be distinguished by the particular combination of categories chosen from the knowledge map.

Best practices, bright ideas, and lessons learned were special Web templates. These are three common asset types used by many knowledge management systems.

Figure 1 shows the top page of SEEK. The primary functions of searching, contributing, and using agents are present in the left navigation bar. Users could log into the system from this page. Logins allowed the system to determine what groups users belonged to, which in turn determined what documents they could see.

Contributing

In order to contribute to SEEK, users went to one of the contribution pages. These pages were forms that allowed users to enter information such as titles, authors, summaries, etc. The knowledge map was also present on each contribution form and users selected the appropriate combination of categories. The file(s) were attached to the

Table I The top two levels of the knowledge map used by SEEK

Technology	Business process	Joint venture	Document type
Cellular/PCS	Billing	Domestic	Analysis
Entertainment	Business strategy	International	Biography
High speed data	Communication		Communication
Network	Customer	Organization	Final report
Telephony	Employee	MediaOne	Forecast
Video	Finance	MediaOne Group	Form
	Modeling	MediaOne International	Ledger
Research	Legal	MediaOne Labs	Model
Methods	Marketing strategy		Presentation
Data types	Product development		Project initiation
Source	Project management		Project plan
			Proposal
	Products		Raw data
	Cable/video		
	Cable telephony		Region
	High speed data		Domestic
	Web TV		International
	Wireless		

Figure 1 The top page of SEEK

The screenshot shows the top page of the SEEK website. At the top, it says "MediaOne Group" and "back to: theOne". The main heading is "Shared Employee Expertise and Know-how" with the tagline "Support for enterprise-wide information sharing." Below this is the "About SEEK" section, which lists several key features and capabilities of the system. On the left side, there is a navigation menu with sections for Home, Search, Contribute, Agents, and Groups. On the right side, there are three boxes: "Login" with fields for User ID and Password, "Tools & Info" with links for Register, About Users, About Groups, and Account Management, and "Who's Using SEEK?" with a list of participating organizations.

MediaOne Group back to: **theOne**

> Home | Help

Search

- [SEEK](#)
- [Experts](#)
- [Internet](#)

Contribute

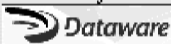
- [File/Web Page](#)
- [Best Practice](#)
- [Bright Idea](#)
- [Lesson Learned](#)

Agents


- [View Results](#)
- [Edit Agents](#)

Groups

- [MR&A](#)
- [MSD](#)

Powered by 

Shared Employee Expertise and Know-how
Support for enterprise-wide information sharing.

SEEK 

About SEEK

- ▶ SEEK is designed to increase communication, information sharing, and knowledge dissemination across company boundaries.
- ▶ Any electronic resource can be stored and found easily.
- ▶ Anyone can use SEEK. Its value increases with the more people who use it.
- ▶ Automatic full-text indexing, categorization, and metadata make it easy to search content.
- ▶ Notification agents that you design perform automatic searches, telling you when something interesting is contributed or changes.
- ▶ Contributors are indexed and biographies are available, making it possible to search for experts.
- ▶ User communities can be established to share information within groups and establish special views.

Learn More!

Login

User ID

Password

Click to Login

Tools & Info

- [Register](#)
- [About Users](#)
- [About Groups](#)
- [Account Management](#)

Who's Using SEEK?

- [Broadband Innovation Group](#)
- [Library & Research Center](#)
- [Market Research & Analysis](#)
- [Market Strategy Development](#)
- [Shared Technologies Org](#)

form by simply pressing an UPLOAD button and selecting the file(s) from a file browser window. Once submitted, the data entered on the form and the text in the document were indexed by the system and immediately available for searches. A copy of the document was uploaded to the server and could be immediately downloaded by users.

The contribution forms also contained group-level security selection boxes for reading and modifying documents. The contributor and authors automatically had read and modify permission for the document. Contributors could also select groups, and members of those groups would be given read or modify permission.

Searching

Searches were conducted from the search interface pictured in Figure 2. Users did not need to log in to perform searches, however if they were not logged in then their group memberships would not be available to the

system and they would see only fully-public documents.

The simplest search consisted of typing keywords into the search box and pressing the SEARCH button. This would search through all indexed text and metadata and return a list of documents. Users could further specify their searches by selecting document types to restrict the search to. Users could also use the knowledge map for searches, selecting categories. If multiple selections were made, then the search tool would combine the selections appropriately.

Figure 3 shows the result of a search for the term "Road runner", the name of one of MediaOne's products. The search tool returns documents with those terms and related terms. Related terms are determined by a thesaurus and by related topics in the knowledge map. For example, a document with exactly the same knowledge map categorization as a "Road runner" document, but without the words "Road runner" in it, would be considered relevant but not given as high a rating.

Figure 2 SEEK's search page

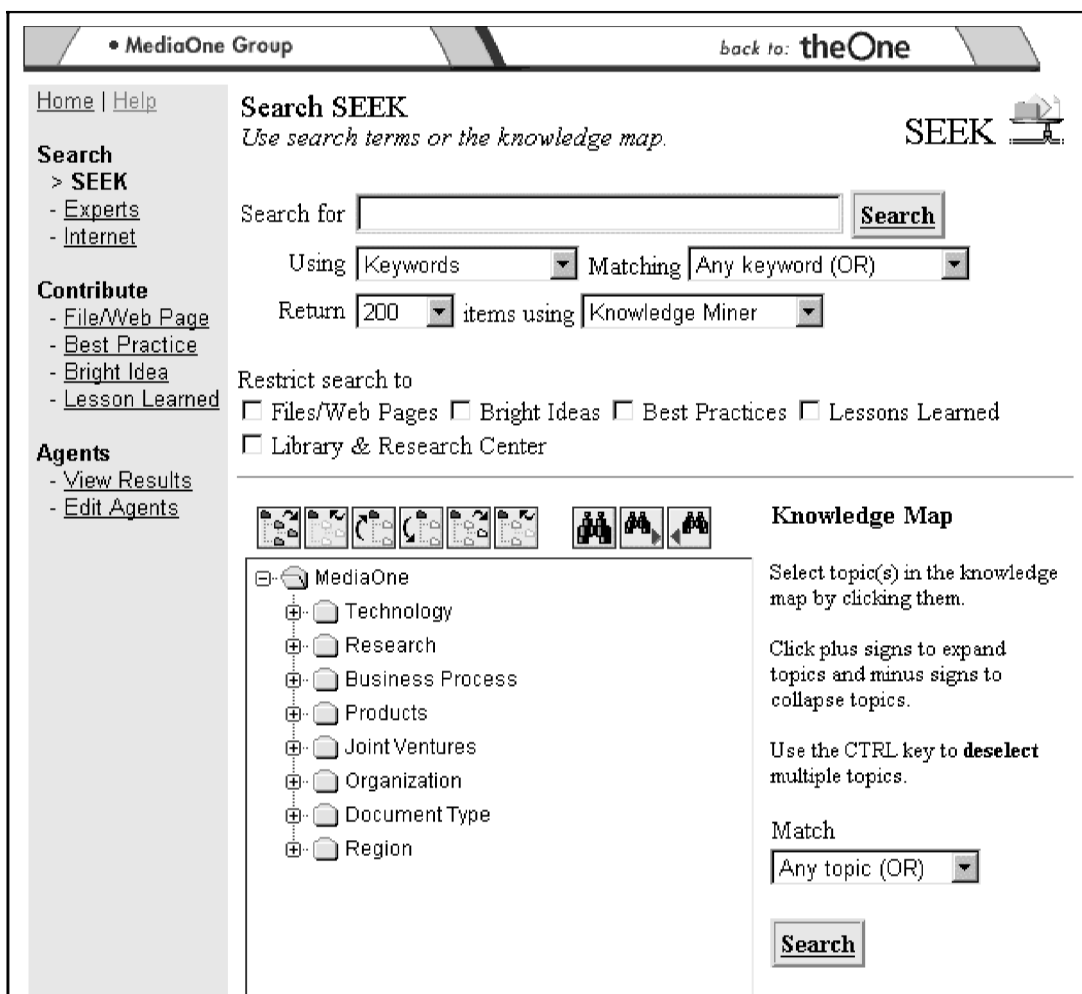


Figure 3 Search results for the term "Road runner"

MediaOne (200)	Rating	Title	Author	Date	Size	Type
Technology (12)	★★★★★	Customer Test of Road Runner V	Jennifer Statham	Mar 6, 2000	25600;106	
Research (10)	★★★★★	Home Networking Business Ana	Rachana Choubey;Jai	Sep 14, 1999	145920	
Business Process (13)	★★★★★	HSD Third Party Access Assessm	Francois Doremieux;J	Sep 23, 1999	15265792	
Products (9)	★★★★★	Joint Venture Road Runner Brand	Ted Kendall	Jan 20, 2000	13824;109	
Joint Ventures (15)	★★★★★	JV Internet Service Share & Multi	John Calhoon;Jennife	Aug 5, 1999	627712	
Organization (200)	★★★★★	LRC Research Archive:Research	Research Library	Nov 12, 1999	4611	
Document Type (17)	★★★★★	LRC Research Archive:Research	Research Library	Nov 12, 1999	5365	
Region (7)	★★★★★	LRC Research Archive:Research	Research Library	May 1, 2000	7182	
	★★★★★	LRC/Decision Resources:Cable	Research Library	Oct 25, 1999	3890	
	★★★★★	LRC/Jupiter (Analysts):Broadban	Research Library	Nov 12, 1999	8595	
	★★★★★	LRC/Jupiter (Analysts):Broadban	Research Library	Nov 12, 1999	7076	
	★★★★★	LRC/Jupiter (Analysts):Broadban	Research Library	Nov 12, 1999	28241	
	★★★★★	LRC/Jupiter (Analysts):Content D	Research Library	Nov 12, 1999	8568	
	★★★★★	LRC/Jupiter (Analysts):Jupiter Co	Research Library	Nov 12, 1999	8645	
	★★★★★	LRC/Jupiter (Analysts):Jupiter Co	Research Library	Nov 12, 1999	9027	
	★★★★★	LRC/Jupiter (Analysts):Jupiter Co	Research Library	Nov 12, 1999	8624	
	★★★★★	LRC/Jupiter (Analysts):Jupiter Co	Research Library	Nov 12, 1999	8355	
	★★★★★	LRC/Jupiter (Analysts):Jupiter Co	Research Library	Nov 12, 1999	9530	
	★★★★★	LRC/Jupiter (Analysts):Jupiter Co	Research Library	Nov 12, 1999	9391	
	★★★★★	LRC/Jupiter (Analysts):Jupiter Co	Research Library	Nov 12, 1999	8813	

In the left column are the categories in the knowledge map that are relevant to the search results. By selecting topics in the map, the user could filter the results further. By double clicking on a title, or selecting the HTML icon at the top of the page, the user could see a summary page of the document and download the document from that page.

By clicking the document icon at the top of the page, the user could see a system-generated summary of the content of the document. By clicking the server icon at the top of the page, the user could immediately download the original document to their desktop.

Figure 4 shows a summary page for a document. This page essentially shows the metadata that was input on the contribution form at the time the document was contributed. From this page, users could see a “QuickView” of the document contents (unformatted, text-only view in the browser), view a system-generated “AutoSummary”, or download the original document directly to their desktop (saving it to the desktop or opening it in the original application).

Search agents

After performing a search, users could automate that search by clicking the Agent icon at the top of the results page. Figure 5 shows an agent creation page from a search on the term “Road runner” (the name of MediaOne’s broadband access service).

The user provides a name for the agent, specifies how often it will run and what results it will return. If the user selects the e-mail option, then the system will e-mail them a notification whenever documents matching the search terms are contributed or modified. When the user clicks the “view results” button under “agent” on the navigation sidebar, a list of new or modified documents matching the terms is displayed.

The user may also “edit agents”. The Edit Agents page allows the user to see the names of all of their agents. Clicking on a name displays the appropriate agent modification page. On the agent modification pages, the user can redefine the schedules and delivery preferences, and turn the agents on and off.

Searching for experts

In addition to allowing searches for documents, SEEK supported searches for

Figure 4 A document summary page

• MediaOne Group back to: theOne

Home

Search

- [SEEK](#)
- [Experts](#)
- [Internet](#)

Contribute

- [File/Web Page](#)
- [Best Practice](#)
- [Bright Idea](#)
- [Lesson Learned](#)

Agents

- [View Results](#)
- [Edit Agents](#)

Market Strategy Development Document

Project 9003

Title RoadRunner Commercial Opportunity:Interim Charging Policy Analysis

Author(s) [James Gorman](#) [Francois Doremieux](#) [Matthew Gale](#)

Summary
Objectives Problem statement Commercial product inventory and product classification Bandwidth consumption Cost allocation principles and analysis Discussion of interim charging policy Next Steps

Attachment(s)
March 25, 1999

[QuickView](#) | [AutoSummary](#) | [Original](#) (706048 bytes)


[QuickView](#) | [AutoSummary](#) | [Original](#) (1814016 bytes)

[QuickView](#) | [AutoSummary](#) | [Original](#) (1373696 bytes)

URLs
None

Knowledge Map

\\MediaOne\Technology\High Speed Data (HSD)\Cable Modem,
 \\MediaOne\Business Process\Business Strategy\Competitive Landscape,
 \\MediaOne\Business Process\Business Strategy\Opportunity Analysis,
 \\MediaOne\Business Process\Customer\Care,
 \\MediaOne\Business Process\Marketing Strategy\Competitive Assessment,
 \\MediaOne\Business Process\Product Development,

SEEK 

[List Project Documents](#)
[Make Comment](#)
[View Comment\(s\)](#)

Figure 5 A search agent creation page

• MediaOne Group back to: theOne

Home

Search

- [SEEK](#)
- [Experts](#)
- [Internet](#)

Contribute

- [File/Web Page](#)
- [Best Practice](#)
- [Bright Idea](#)
- [Lesson Learned](#)

Agents

- [View Results](#)
- [Edit Agents](#)

Create an Agent SEEK

Agent Name:

Maximum Results: **Running Frequency:**

Results include: Author Summary

Deliver Results By Email:

Email Address:

Agent Status: Active Sleeping

Save Agent

employees with particular skills or expertise. When documents were contributed, the authors were associated with the particular categories selected on the knowledge map. Users could then use the search page shown in Figure 6 to select topics in the knowledge map. The results list was a list of names and contact information of individuals matching the knowledge map selections. High matches were considered to have “high” expertise relative to the selections. There were also “moderate” and “low” expertise categories. Conversely, a user could enter a name into the search box and receive a list of knowledge map topics with which that name was associated.

Group-specific applications

Two groups involved in the initial pilot, market strategy development (MSD) and market research and analysis (MR&A), determined that they wished to have customized Web sites that linked into SEEK. In addition, they wished to have some document metadata included in their contributions that were specific to their groups and not included in the generic file/Web page contribution form. For example, both groups had document categories relevant only to research documents (e.g.

survey, controlled experiment, ethnographic study, etc.).

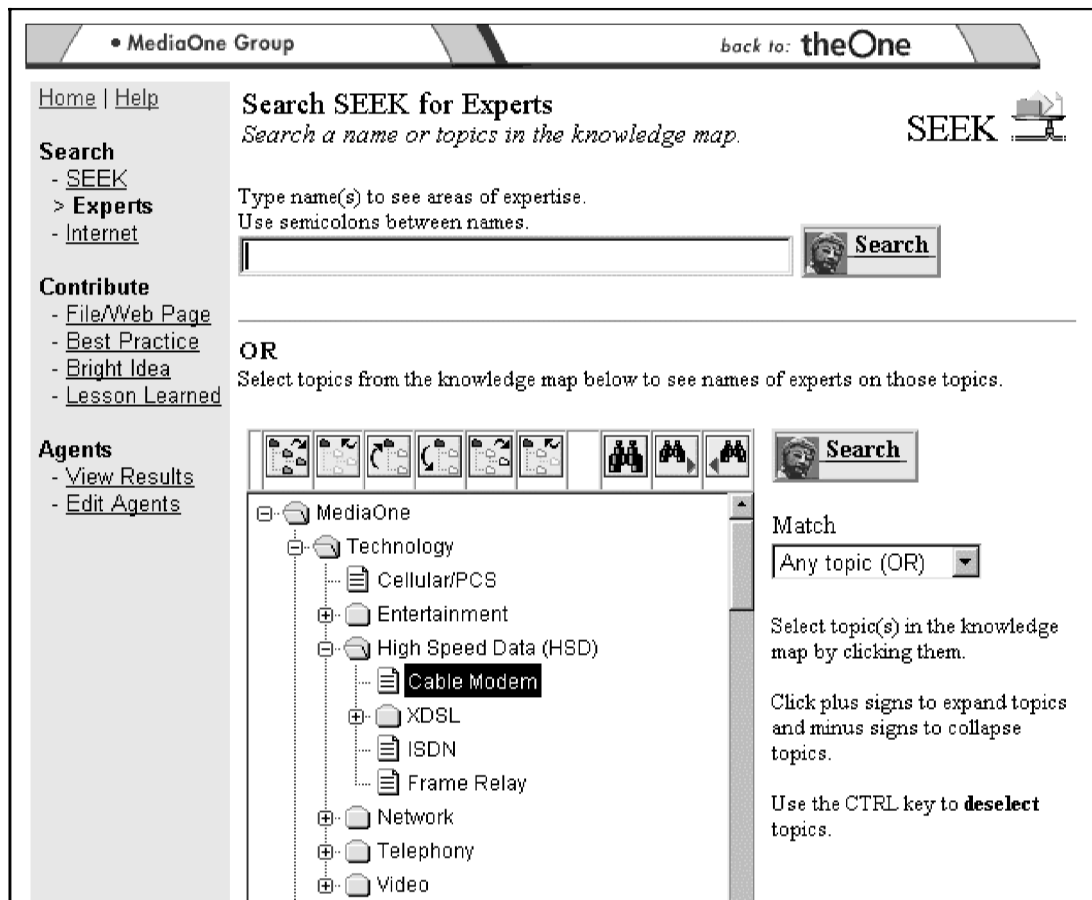
Figure 7 shows the MSD Web site with MSD-specific SEEK links in the left navigation bar. The left navigation bar also contains “shortcuts”, which are predefined searches for MSD material. For example, the main frame in Figure 7 is the result of clicking the “all projects” link.

MSD had three specific document types:

- (1) *Project description*. Contained a project number, project summary, team member list, client information, and dates. There were no attachments, instead all documents were attached to “project document” templates.
- (2) *Project document*. Contained all information in a project description, however the summary and attachment(s) were specific to a particular product of the project.
- (3) *Résumé*. Contained MSD employee names and skills. A resume in Word was attached.

The document summary pages for MSD project descriptions and MSD project documents had a “related documents” button which would immediately show all documents for a particular project.

Figure 6 An expert search page



MR&A also had a customized site, however the interface looked much like SEEK and it was not integrated into a separate MR&A Web site. MR&A had one special document type, called a “project document”. The template for an MR&A project document allowed users to specify the project title, summary, team members, clients, and dates. All documents related to a project were attached to this template.

AT&T/MediaOne transition team: the second application

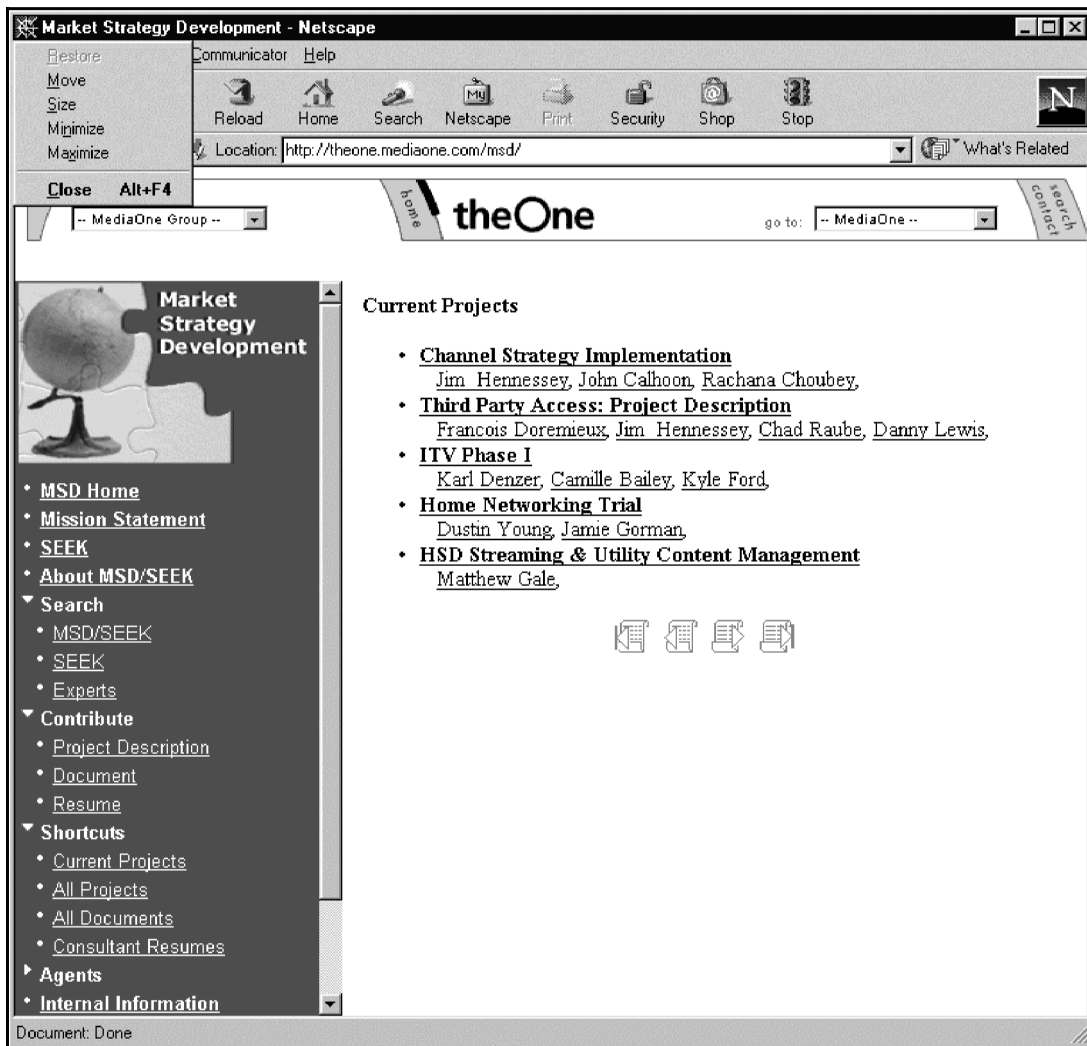
About one year into the project, AT&T began the process of acquiring MediaOne. In the first quarter of 1999 a transition team was formed to plan the merger. A consulting firm was contracted to oversee the formation and operation of this team. The consulting team already used a knowledge management system, however after seeing SEEK it decided to adapt it for the purpose of the AT&T-MediaOne merger.

A completely separate system was designed for the AT&T-MediaOne transition team. Although it was built on top of the same application software, the interaction design was different. A participatory design method was again employed, however the time devoted to design sessions was greatly reduced partly because of experience from the first application and partly because of a much simpler design. The design participants were largely members of the consulting firm who had directed mergers before and had a strong sense of the flow of activities.

It was determined that agents and expert search would not be deployed in this application. Also the knowledge map was radically altered. It consisted only of the sub-teams that were involved in the overall transition team. These sub-teams were categorized into:

- *Customer facing teams*: includes teams such as billing and marketing.
- *Network facing teams*: includes teams such as network field operations and procurement.
- *Corporate facing teams*: includes teams such as payroll and finance.

Figure 7 SEEK integrated into the MSD Web site



In the end there were 32 sub-teams, considerably fewer knowledge map categories than in SEEK. Each contribution was categorized as being relevant to one or more of these sub-teams, and searches could then be conducted by team.

A completely new set of document types was developed for the team. These document types were used by the consulting firm to support the merger process. The AT&T-MediaOne transition team document types were:


- functional operating model;
- functional initiatives inventory;
- synergies work sheet;
- integration work plan;
- presentation;
- communication;
- status report;
- milestone/critical event; and
- issue.

Figure 8 shows the top page of the transition team document site, and Figure 9 shows the search page.

The transition team application was greatly simplified over the SEEK implementation. Even though there were many more contribution types, there were no agents and no expert search capability. The only pages available were the top page, from which users could go anywhere, the search page (Figure 9), and search results pages. As Figure 9 shows, the search form allowed users to use keywords. They could also restrict their searches by contribution types and/or teams.

Filtering of search results could be done on teams and on contribution types. Figure 10 shows a result list filtered to contributions from “customer care technology”. A total of 90 results were returned on the original page, however only

Figure 8 The AT&T/MediaOne transition team document management home page



AT&T Transition Team Knowledge Center

<p>■ Templates</p> <ul style="list-style-type: none"> • Functional Operating Model This template allows each functional team to document current and future views of major company functions. • Functional Initiatives Inventory This template identifies all major current initiatives underway within the functional teams' areas of responsibility. • Synergies Worksheet The First Stage of the Functional Operating Model, combined with Executive Planning Committee "EPC" inputs and the synergy baseline, will be used in the Second Stage to identify synergy specifications including synergy value, timing, accountability, and related costs. • Integration Work Plan An integration work plan is to include activities and tasks required to achieve planned synergies and combined operating model objectives. 	<p>■ Contributions</p> <ul style="list-style-type: none"> • Functional Operating Model • Functional Initiatives Inventory • Synergies Worksheet • Integration Work Plan • Presentation • Communication • Status Report • Milestone/Critical Event • Issue 	<p>■ Search</p> <ul style="list-style-type: none"> • Search Page (Opens in a new window) <p>■ Reports</p> <ul style="list-style-type: none"> • Issues by Team • Red Open Issues • Closed Issues • Milestones by Team • Status Reports by Team
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seven are from the selected team (note that a contribution can be categorized with more than one team, which is why there are more than 90 entries in the subcategories).

Figure 11 shows milestones selected from the filtering list.

Evaluation and lessons learned

Both the SEEK system and the transition team site were in use for about one year. The two applications serve as an interesting contrast since they are built on the same platform, have a similar essential design, and are deployed in the same company.

SEEK had about 140 MSD documents, 120 MR&A documents, and about 2,000 LRC documents loaded into it. Its initial users were MSD and MR&A staff (approximately 50 people). Despite this large corpus of material and ready user base, SEEK received very little use. In contrast, as of 1 July 2000 the transition application had 440 documents, about 200 users, and was getting daily use. What accounted for the difference?

In order to determine reasons for usage differences, interviews were conducted of the users of both systems. Several interesting factors emerged.

Archive vs collaboration perspective

The market research groups who initially piloted SEEK had many existing documents from projects that were finished. This was initially seen as a good thing because the document repository could be populated quickly. In contrast, the transition team had no documents to put into the system initially, but they were going to generate a large number of documents in a hurry.

In interviews with users from the market research groups it became clear that they viewed their documents as “archival”. In general their documents consisted of proposals, presentations, and final reports about completed projects. They were using SEEK to “put their documents away” in anticipation of finding them later. As a result, once the documents were entered into SEEK all of the project work was finished. The documents were never visited again.

Figure 9 The transition team search page

Search

For the simplest search, type text and press the SEARCH button.
All other selections on this page are optional.

Search text:

Search for: Using:

Retrieve: documents Display with:

Restrictions

Select any restrictions on Information Types, Teams, or Integration Topics.

Information Types (Search All Types)

<input type="checkbox"/> Func. Initiatives Inventories	<input type="checkbox"/> Workplans	<input type="checkbox"/> Communications
<input type="checkbox"/> Func. Operating Models	<input type="checkbox"/> Status Reports	<input type="checkbox"/> Milestones
<input type="checkbox"/> Synergies	<input type="checkbox"/> Presentations	<input type="checkbox"/> Issues

Teams (Search All Teams)

Customer Facing Teams (Search All <input type="checkbox"/>)	Network Facing Teams (Search All <input type="checkbox"/>)	Corporate Facing Teams (Search All <input type="checkbox"/>)
<input type="checkbox"/> Billing	<input type="checkbox"/> Digital Strategy	<input type="checkbox"/> Corp. Development
<input type="checkbox"/> Business Services	<input type="checkbox"/> M1 Labs	<input type="checkbox"/> Finance
<input type="checkbox"/> Customer Care	<input type="checkbox"/> Network Field Ops.	<input type="checkbox"/> Finance Systems
<input type="checkbox"/> Customer Care Tech.	<input type="checkbox"/> Network Upgrades	<input type="checkbox"/> FP&A
<input type="checkbox"/> Div/Reg Ops	<input type="checkbox"/> NOC	<input type="checkbox"/> Employee Relations
<input type="checkbox"/> HSD	<input type="checkbox"/> Procurement	<input type="checkbox"/> Equity Investments
<input type="checkbox"/> Marketing	<input type="checkbox"/> VOD	<input type="checkbox"/> Information Tech.
<input type="checkbox"/> Median Sales		<input type="checkbox"/> Legal

In contrast, the documents generated by the transition team were “living documents”. They were integral parts of the ongoing activity of the team. For example, the initial documents were planning documents called “functional operating models”. These documents described the purpose, goals, and requirements of the various organizations on the team. They were to be looked at by different teams so that the transition team could have an overview of the new organization. Thus these documents were not archival, but rather a part of the work process. They needed to be found and read by other people as part of their work.

Other examples of living documents were “milestones”, “status reports”, and “issues”. Milestones and status reports laid out goals for each team with dates and were then used to keep track of status. Hot links on the top page of the site (Figure 8) sent users directly to lists of status reports and milestones for their group or other groups. Issues were any problems that a team

identified. They could be tagged with a priority (red, yellow, or green) and they had a status tag (open/closed). Again, very important (red) issues that had not yet been addressed (opened) could be listed immediately from a link on the top page (Figure 8).

The consultants who directed the transition team would set deadlines for overall vision documents such as functional operating models, and monitor the progress of milestones, progress reports, and issues. Thus these documents were collaborative documents that were revisited and modified often.

Administrative vs. management function

Because the market research groups documents were archival, and the transition team documents were part of the work process, the former were seen as the responsibility of administrators whereas the latter were seen as the responsibility of managers and executives. This viewpoint

Figure 10 Results filtered for the “customer care technology” team

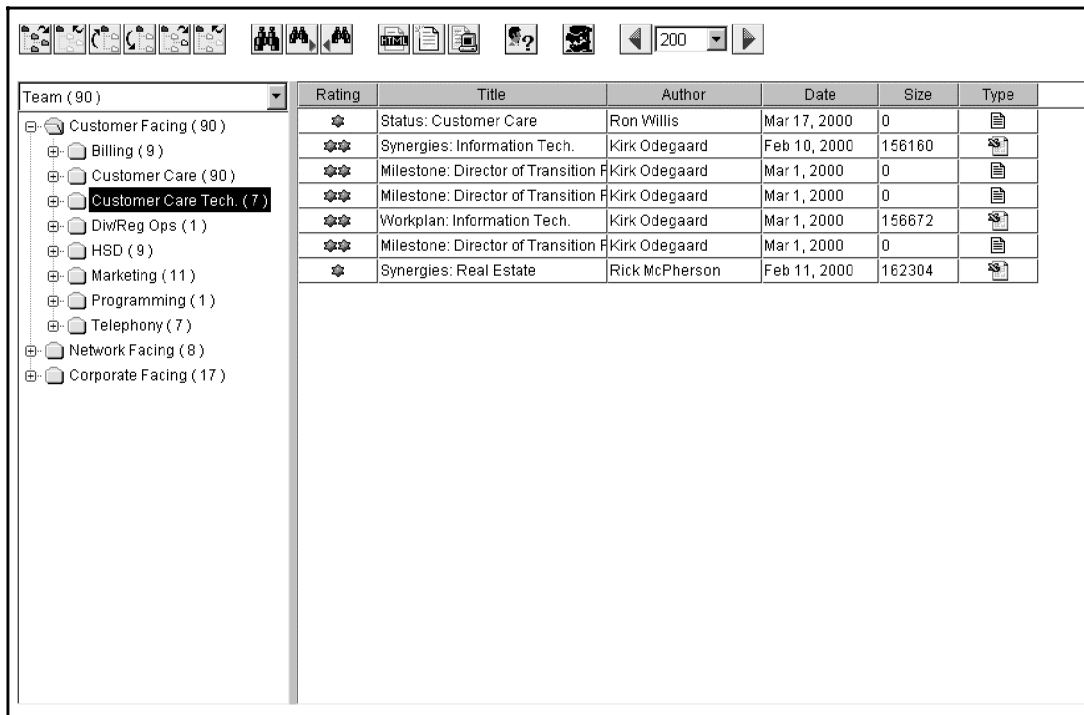
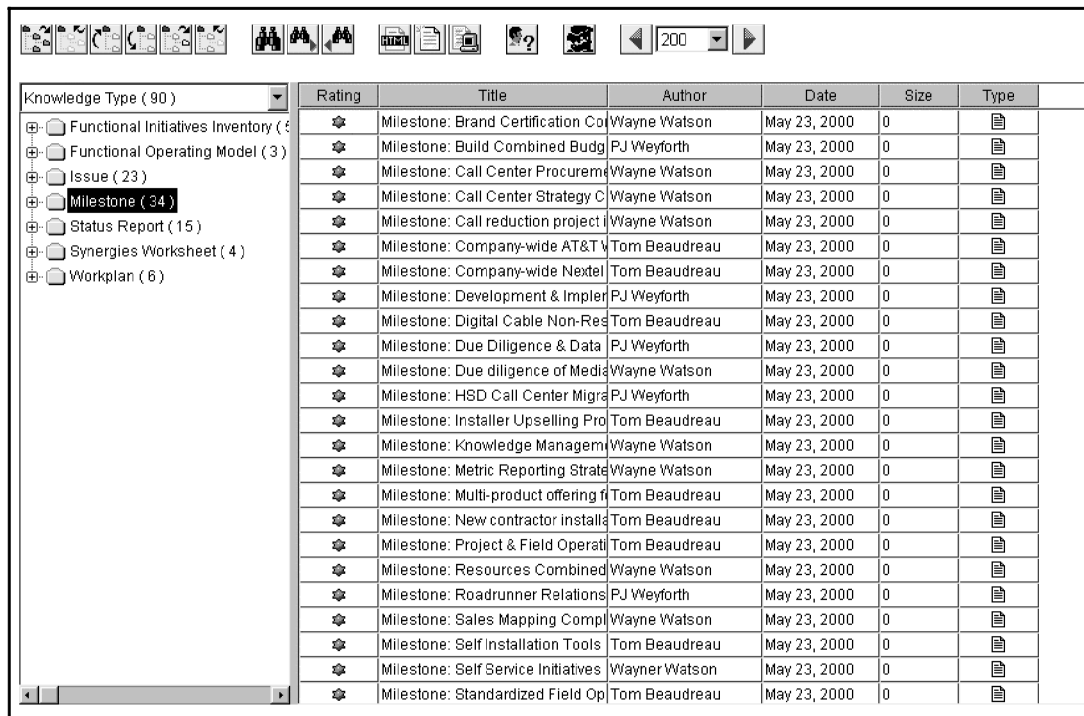


Figure 11 Search results showing milestones



significantly affected people’s idea of who should use the system and what it was for.

The market research groups assigned the task of entering all documents to administrative assistants. Although managers were needed to categorize documents on the knowledge map, the collection of these

categorizations was assigned in a centralized way to the administrative assistants. The managers expected to be told what was in the system when the assistants were finished. In addition, the process that was adopted when managers wanted documents retrieved was to ask the assistants to use the system.

In contrast, the executives and managers on the transition team worked more closely with the system. They all had to prepare their documents and then either enter them themselves or oversee their entry by the consulting team or their own assistants. At the very least, the entry of documents was distributed across the various teams (rather than centralized with a “document entry” person), and at best some of the decision makers themselves actually used the system. Because they were concerned with what other teams were doing, they went to the system themselves to find out.

When the content generators use the system to contribute, they become familiar with it and tend to use it for other purposes as well. If the system is “at arms length” from the contributors, they do not become familiar with it and tend not to understand what it does and use it very little.

Team structure and motivation for sharing

The team structures of the market research groups and the transition team were similar in that they both consisted of small sub-teams doing projects. However, the market research groups did semi-independent projects for different clients whereas the transition team sub-teams each did the same project for their group. It was an explicit goal of all sub-teams on the transition team to locate “synergies” or areas of overlap. Thus the work structure was inherently collaborative and there was a strong motivation for sharing information. Although the market research groups could have benefited from sharing, the motivation was not as strong and the system was not used as much.

Integration of documents and workflow

The documents that the market research groups wished to save were produced at the end of their projects. The transition team, on the other hand, was creating documents as part of the process of its work. Having documents that are integrated with workflow made the knowledge management system a more integral part of users’ activities.

Knowledge asset coordination and oversight

The SEEK system did not have a coordinator of knowledge assets, or someone to oversee contributions and organization. In time this

was to become the role of the LRC, but initially it was not necessary. In contrast, the consulting group working with the transition team served as knowledge coordinators. They determined when certain types of documents were due and defined carefully to the group what the various document types were about. The consulting team checked for compliance with deadlines and also for the appearance of new documents such as status reports or issues that had to be dealt with. The consulting group maintained the accuracy and timeliness of the transition team’s documents, being sure to close open issues or milestones for example.

This oversight and direction setting proved to be important for maintaining the content of the system (see also Marshall, 1997; Williams and Bukowitz, 1997). People trusted that the content was up-to-date and they felt confident that everyone was contributing.

Summary

In this case it was possible to compare very similar systems, built on the same platform and deployed in the same company. One system was much more successful than the other because of several factors. Comparison of these two applications leads to the belief that knowledge management works best when:

- (1) Information content is dynamic.
- (2) User activities include active sharing across multiple parties:
 - across departments; and
 - with outsiders: vendors, consultants, etc.
- (3) Information activities are integrated with workflow.
- (4) All team members at all levels use the system.
- (5) Information content is known to users
- (6) System is familiar.
- (7) A leadership team sets collaboration goals and oversees content.

The system that is deployed is not as important as the context into which it is deployed. Practitioners of knowledge management must pay as much attention, and perhaps more, to the team structure, workflow issues, and collaborations among members of the organization in which the application will be placed. In the end, knowledge sharing is a human activity, and

understanding the humans who will do it is the first step in successfully supporting that activity.

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