TYPES OF ORGANIZATIONAL KNOWLEDGE

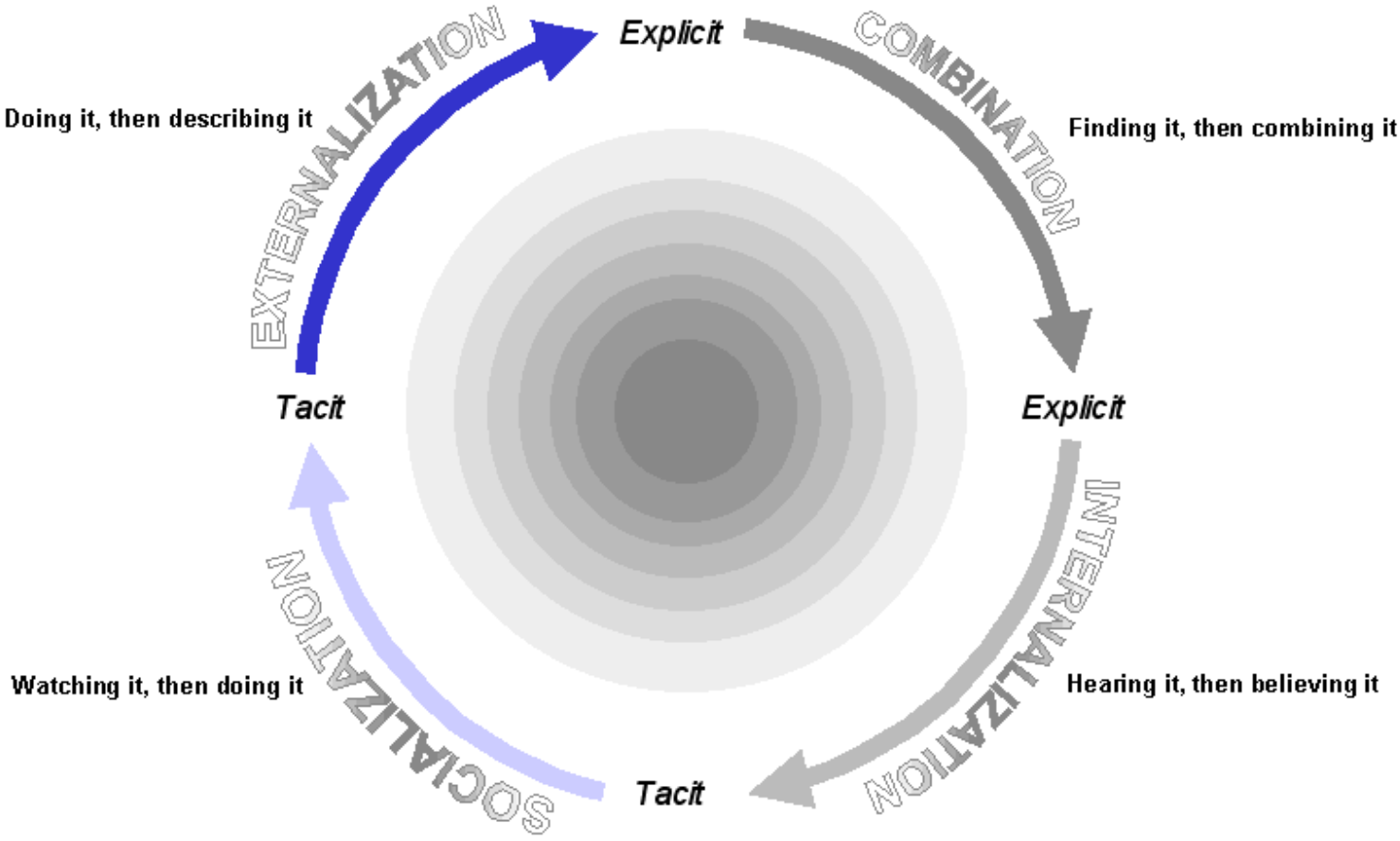
Tacit Knowledge	**The implicit knowledge used by organizational members to perform their work and to make sense of their worlds.** **Tacit knowledge is hard to verbalize because it is expressed through action-based skills and cannot be reduced to rules and recipes.**
Explicit Knowledge	**Knowledge that has been codified formally using a system of symbols, and can therefore be easily communicated or diffused.** **Explicit knowledge may be object-based or rule-based.**
Cultural Knowledge	**The shared assumptions and beliefs about an organization's goals, capabilities, customers, and competitors.** **These beliefs are used to assign value and significance to new information.**

Issues

- **The three types of organizational knowledge are interdependent and work together.**
- **The more integrated the three types of knowledge, the more unique the organizational advantage.**

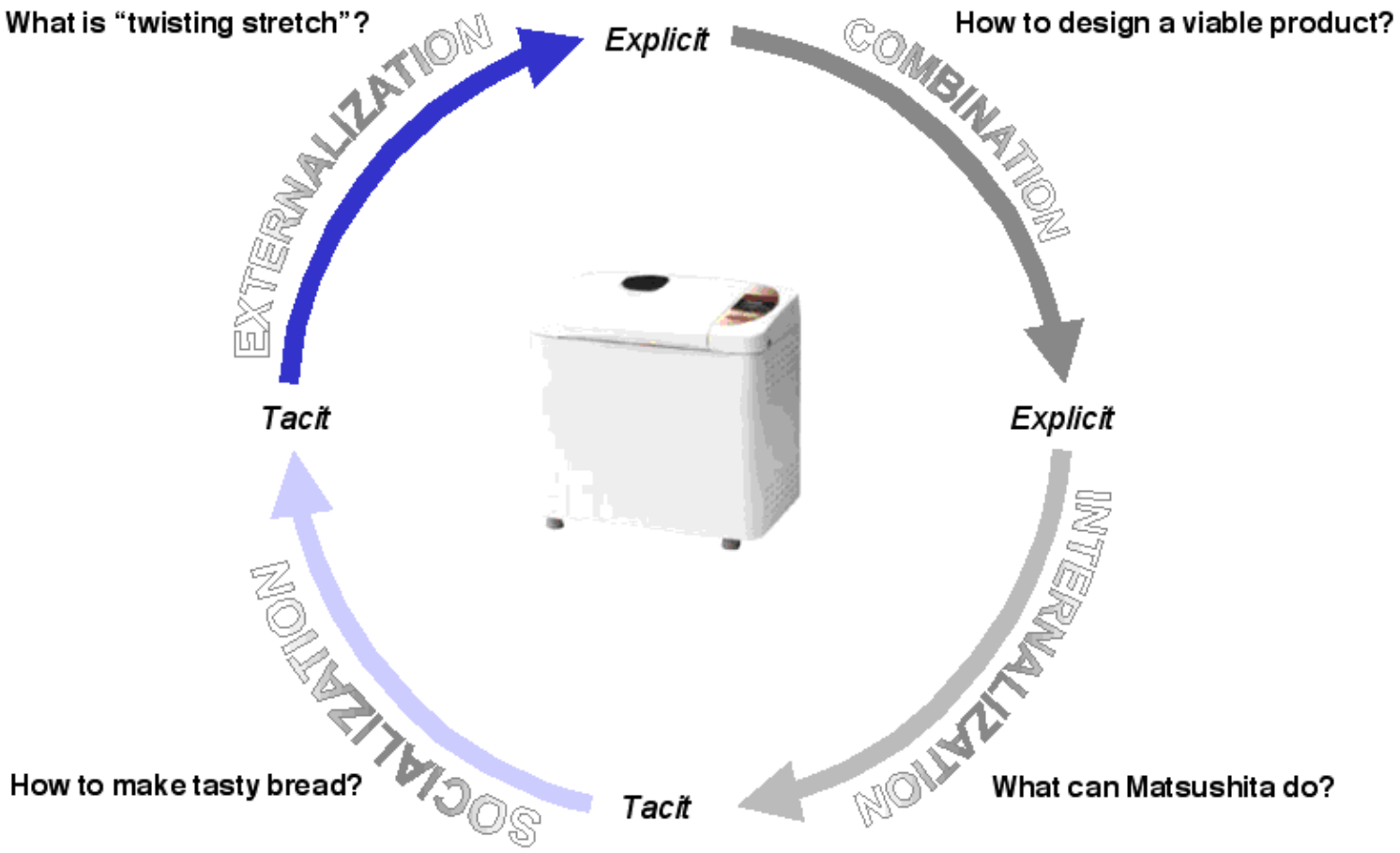
Knowledge Conversion

(Nonaka and Takeuchi 1995)

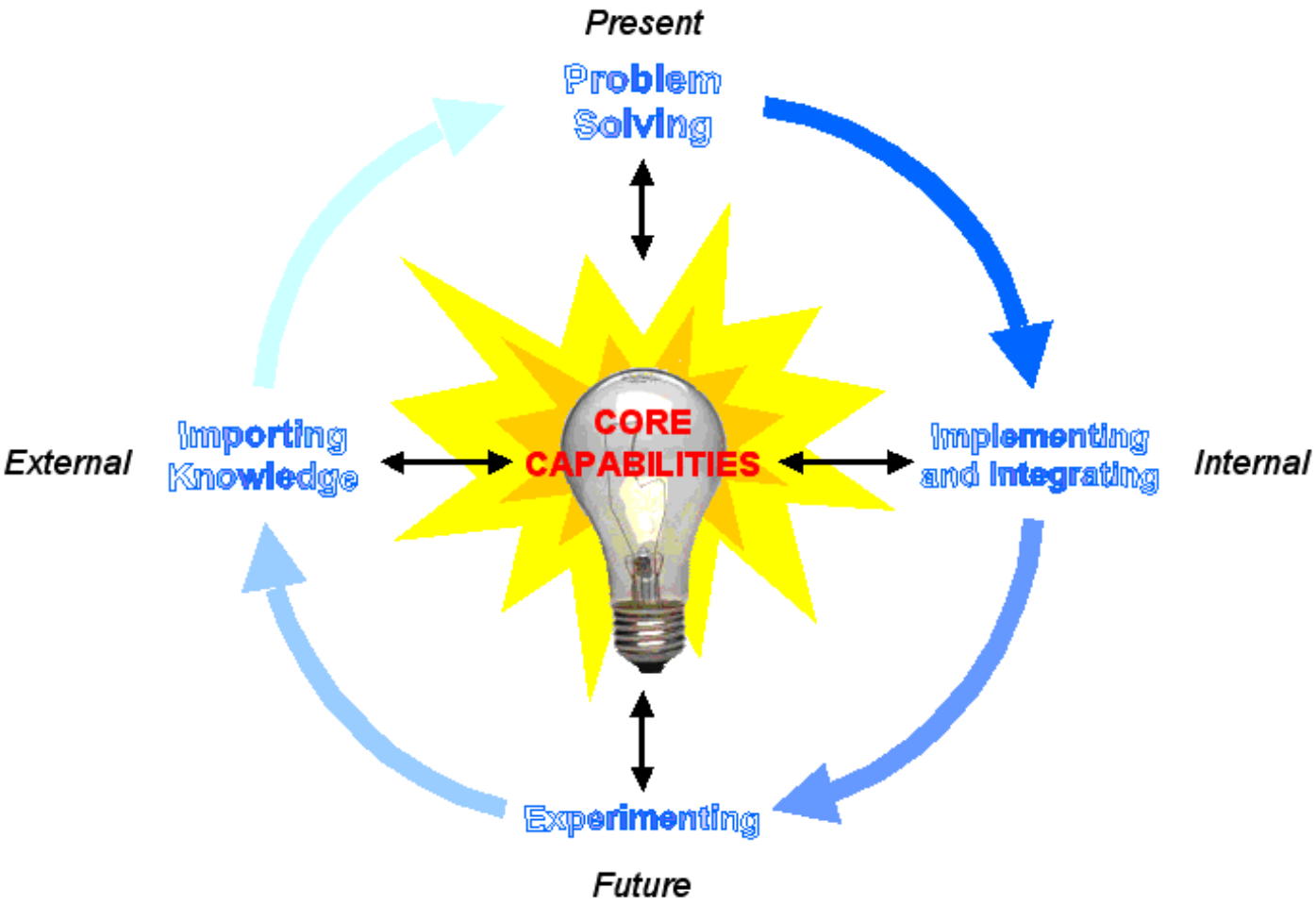


Knowledge Conversion Case

(Nonaka and Takeuchi 1995)



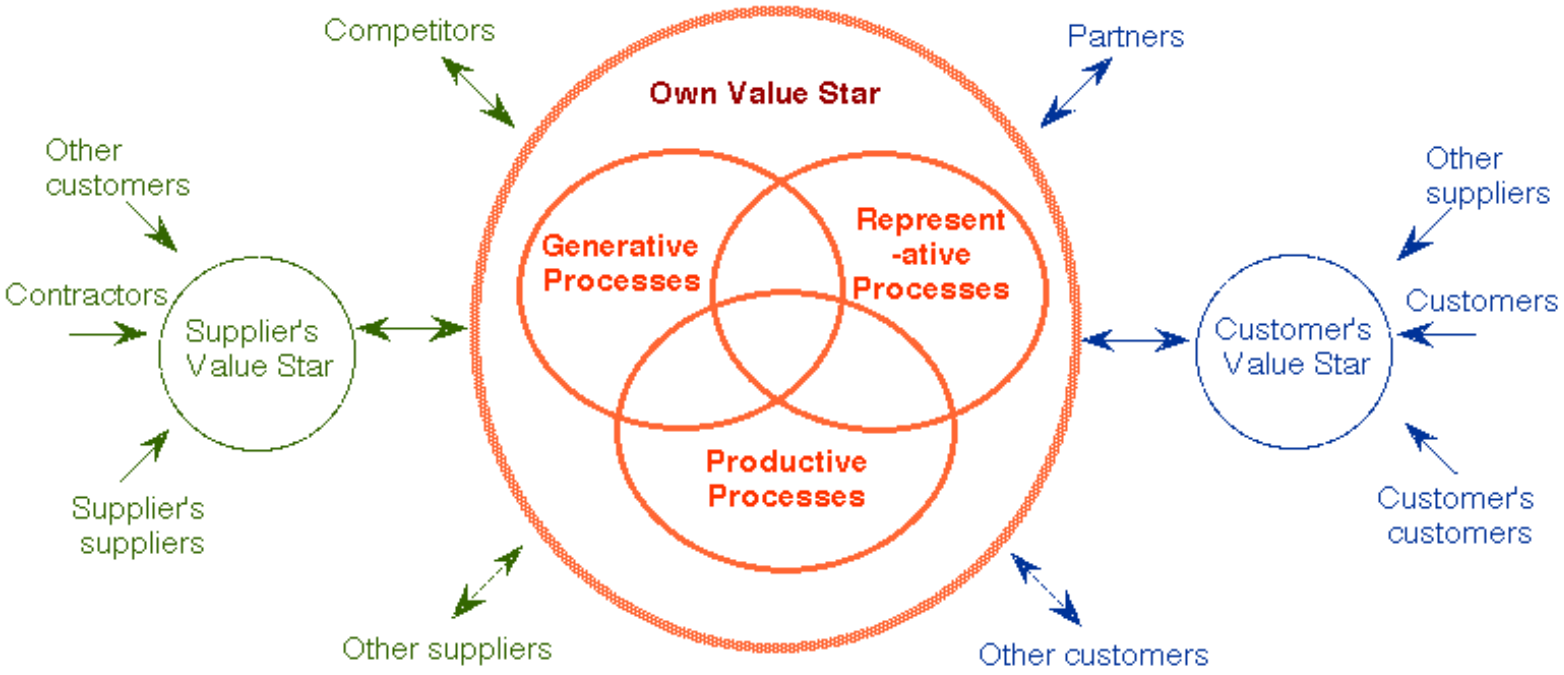
Knowledge Building
(Dorothy Leonard-Barton 1995)



The organization should identify and nurture knowledge-building activities that enhance and expand its core capabilities over time -- core capabilities that define the organization's unique advantage.

Knowledge-Creating Value Star

(Adapted from Wikstrom and Normann 1994)



Each organization lies at the center of many inflows of knowledge from customers, suppliers, contractors, ... the organization should leverage these inflows of knowledge to create value for itself AND its partners.

Knowledge Processes Compared

Knowledge Processes *Wilkström, Normann (1994)*	***Knowledge Conversion*** *Nonaka, Takeuchi (1995)*	***Knowledge Building*** *Leonard-Barton (1995)*
Generative Processes • Generating new knowledge	1. Sharing tacit knowledge "Socialization" **(Tacit ⇨ Tacit)**	a. Shared problem solving
	2. Creating concepts "Externalization" **(Tacit ⇨ Explicit)**	b. Experimenting & prototyping
Productive Processes • Operationalizing new knowledge	3. Justifying concepts	c. Implementing & integrating new processes & tools
	4. Building archetypes "Combination" **(Explicit ⇨ Explicit)**	
Representative Processes • Diffusing, transferring new knowledge	5. Cross-levelling knowledge "Internationalization" **(Explicit⇨ Tacit/Cultural)**	d. Importing knowledge

Knowledge Creating Case

(From The Knowing Organization, Chapter 4)

The firm is among the largest of the Big 6 accounting firms, with one of the biggest management consulting practices in terms of revenues and personnel. Founded in 1913, the firm has offices in major cities around the world, with headquarters in a large US city in the midwest. The research focused on the management consulting practice (MCP) division of the firm, whose primary business is the design and building of computer-based information systems. The MCP's New York City office consisted of three branches in Manhattan, Connecticut, and one in New Jersey, employing a total of some 750 consultants. MCP's main consulting practice is to custom-build application software for its clients by sending in project teams who remain and work on the client site for months or even years to produce a computerised information system. Building software for clients is a highly complex, knowledge-intensive activity that is fraught with uncertainty. Over its history, MCP evolved two innovations to manage its internal knowledge and to cope with the task-related uncertainty -- a standardized system development methodology, and a suite of computer-aided software engineering (CASE) tools. Orlikowski explains how MCP's standardized methodology ('Modus') came to be:

> When the MCP division first started developing information systems for clients some thirty years ago, the only written "knowledge" of systems development in the Firm was extracted post hoc from the documentation generated for each project. These so-called "client binders" served as the Firm's information expertise about the systems development production process during the initial years of the consulting practice. As the practice grew, some attempt was made to systematize this varied and highly idiosyncratic knowledge. During meetings partners would review the project documentation, trying to extract general procedures, and identify the common factors that made some projects successful, others mediocre, and still others failures. Over time these generalized "rules of thumb" became more extensive and more sophisticated as the MCP division gained more experience. Eventually the informal guidelines about how to run a successful systems development project and what factors constitute good systems practice, evolved into the formal, standardized methodology that "Modus" is today.
>
> (Orlikowski 1988, p. 166-167)

Thus, MCP's system development methodology grew out of the daily activities of consultants working on projects. By analyzing and reflecting on this practical know-how, MCP partners were able to generalize and formalize their experiences into a methodology

which specified the sequence of tasks to be performed at each stage of the system development life cycle, and defined the standards for documentation, control, scheduling, and project estimation. The institutionalization of a standard methodology was also in line with the Firm's "one-firm" philosophy which required all partners to follow a common approach in the ways they dealt with clients' problems and communicated about them. From its earliest days, the Firm had espoused the policy of speaking with one professional voice, and abiding and upholding the official viewpoint of the Firm.

The formalization of the Modus methodology made possible the next major innovation in MCP's consulting practice -- the introduction of a standard set of computer-aided software engineering (CASE) tools, which MCP called "productivity tools," to support and implement the methodology. This integrated tool environment included software to capture ongoing documentation of the new system into a data dictionary; project estimating aids; the project control system; screen and report design aids; data and program design aids; installation tools; and prototyping facilities. The tools "implemented the standard software engineering design philosophy and project management method articulated in "Modus." In fact, "the tools were deliberately based on the methodology as it was recognized that production technology logic had to be compatible with that of the production process, else inconsistency and discontinuity would disrupt the systems development process." (Orlikowski 1988, p. 183) The use of the methodology and the CASE toolset was mutually reinforcing. Since the tools were based on Modus, their use ensured compliance to the methodology. At the same time, Modus was also constantly being updated to better reflect the tool environment. This reciprocal interdependence characterized the co-development of the tool and methodology. Furthermore, the use of computerized tools enhanced the aura of professionalism in the consultants' normal work activities:

> Tools render an image of a room of consultants all seated in front of their personal workstations, all bent over their keyboards, flashing through complicated-looking screens, performing sophisticated cut and paste procedures, and all done to the accompaniment of the reassuring whir of the disk drives, the steady tapping of keys, and the regular sigh of the laser printer emitting its professional-looking documents. It certainly looks industrious.
>
> (Orlikowski 1988, p. 403)

As a result of employing the tool-methodology, MCP reported savings of 30% up to 50% in code generation, and an elimination of between 50% and 70% of the systems installation phase. The use of tools "dramatically" increased MCP's profitability, and allowed it to reap the benefits of operating economies of scale. Competitive position has been improved by enabling the firm to bring the price of its services down, to lower its bids on contracts, to go after larger projects, and to increase the income contribution of each partner.

Besides productivity and profitability gains, there were other important and somewhat surprising benefits derived from the use of the CASE tools and methodology. As a professional services firm, MCP is expected to provide customized solutions to each of its clients. Indeed, each client will have its own data processing environment that made customization mandatory. Although this might appear incompatible with MCP's standardized production process, the software utilities in the CASE toolset were in fact relatively easy to modify so that they could work well with a client's hardware and software configurations. Each client company therefore was provided with tools that were customized to the project and technical characteristics of the site. At the same time, since the underlying process logic may not change that much from project to project, MCP is able to reuse significant portions of their development outputs:

> With the deployment of productivity tools it is able to adapt a set of system designs and documentation developed for one project for use in selling a similar system to another client. By being able to customize the visible features of the design to the potential client's needs while leaving the essential logic of the systems design intact, the Firm can exploit the power of the tools in saving time by not having to design another system or generate new documentation. It can use the logic of the existing system customize the labels, change the screen and report headings, and change client references in the documentation, and have a new comprehensive systems proposal to present to a potential client. And if the client accepts the proposal and the project gets underway, many of the tools, shells, macros can be directly transferred to the new project site, hence avoiding reinvention of the wheel.
>
> (Orlikowski 1988, p. 352)

The standardization process thus extends beyond tools and methodology to the "industry standard solutions" that MCP is able to offer to its clients who receive tested solutions that have been optimized for their local computing environments. (The success of its integrated CASE tool environment prompted MCP to sell the toolset as a generalized productivity tools package to the clients themselves and to other data processing companies.)

[Based on Orlikowski, Wanda J. 1988. Information Technology in Post-Industrial Organizations. PhD, New York University.]

Case Questions

1. **How was tacit knowledge converted into explicit knowledge?**

2. **How did the explicit knowledge benefit the firm?**

3. **How did cultural knowledge influence the development of tacit and explicit knowledge?**

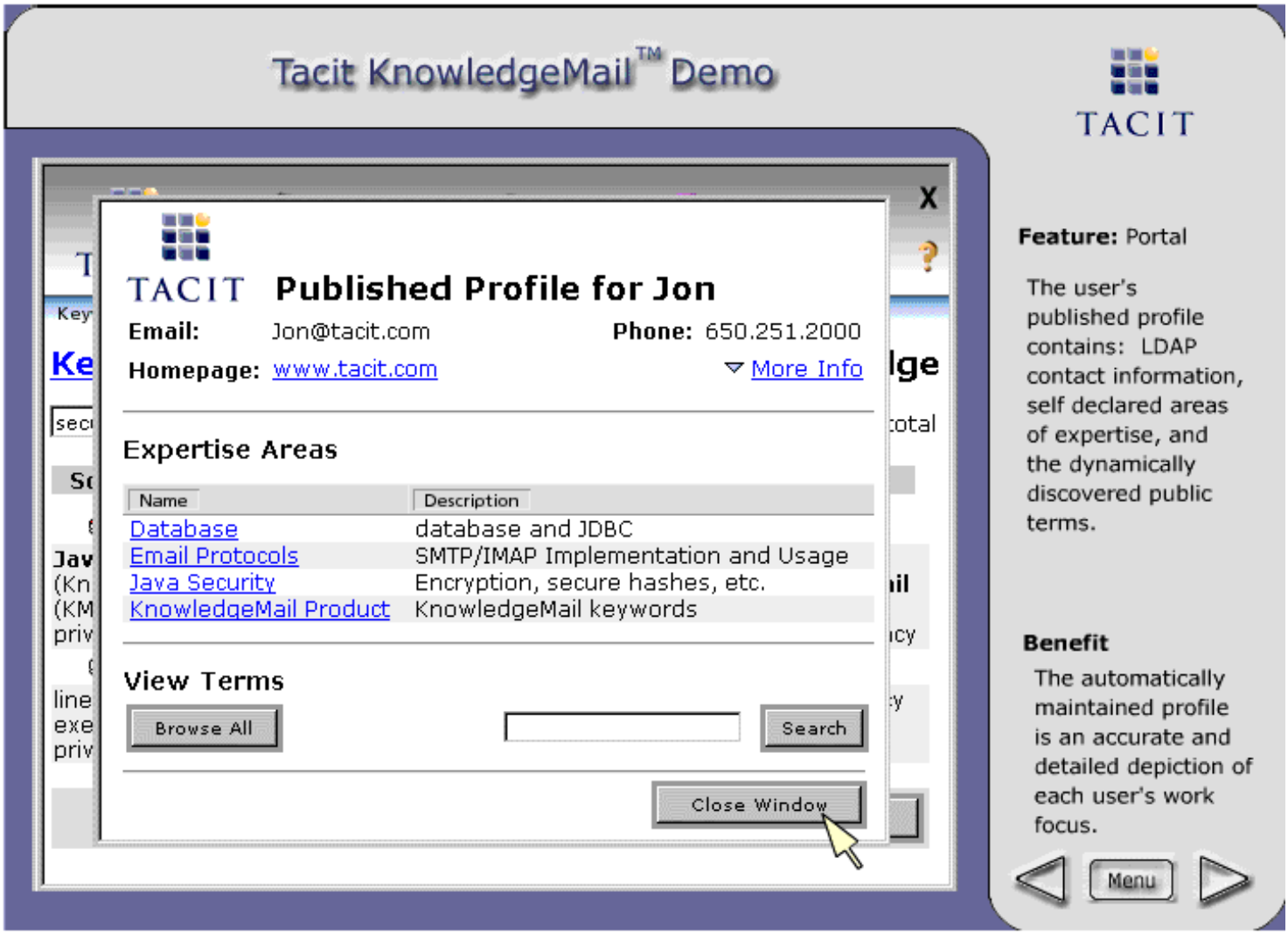
4. **To what extent were the 3 types of organizational knowledge tightly linked?**

Knowledge Mail from Tacit Knowledge Systems

Automated Expertise Profiling from E-Mail

"KnowledgeMail delivers full expertise automation based on integration with enterprise e-mail. The system continuously analyzes users' e-mails to populate and maintain a detailed, yet private, profile. By automating the process, Tacit ensures that the profile creation process is effortless, and profiles are always current. Having a current inventory means that the right human ingenuity can always be found by those in the business who need it."

For current information about Tacit Knowledge Systems and its products, visit the website.


Tacit KnowledgeMail™ Demo
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TACIT Published Profile for Jon
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Phone: 650.251.2000
Homepage: www.tacit.com
More Info
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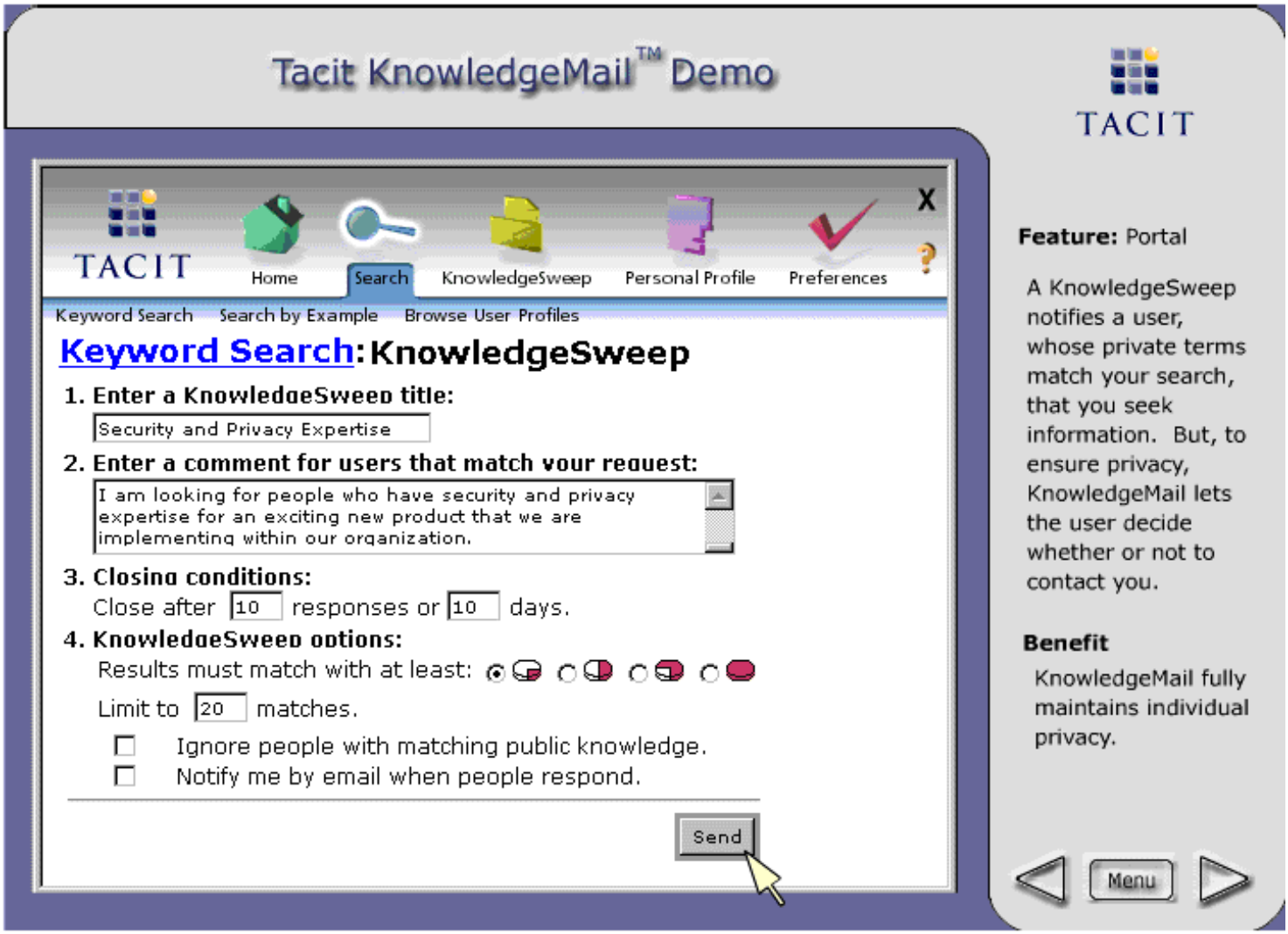
Feature: Portal
The user's published profile contains: LDAP contact information, self declared areas of expertise, and the dynamically discovered public terms.
Benefit
The automatically maintained profile is an accurate and detailed depiction of each user's work focus.
Menu


Tacit KnowledgeMail™ Demo
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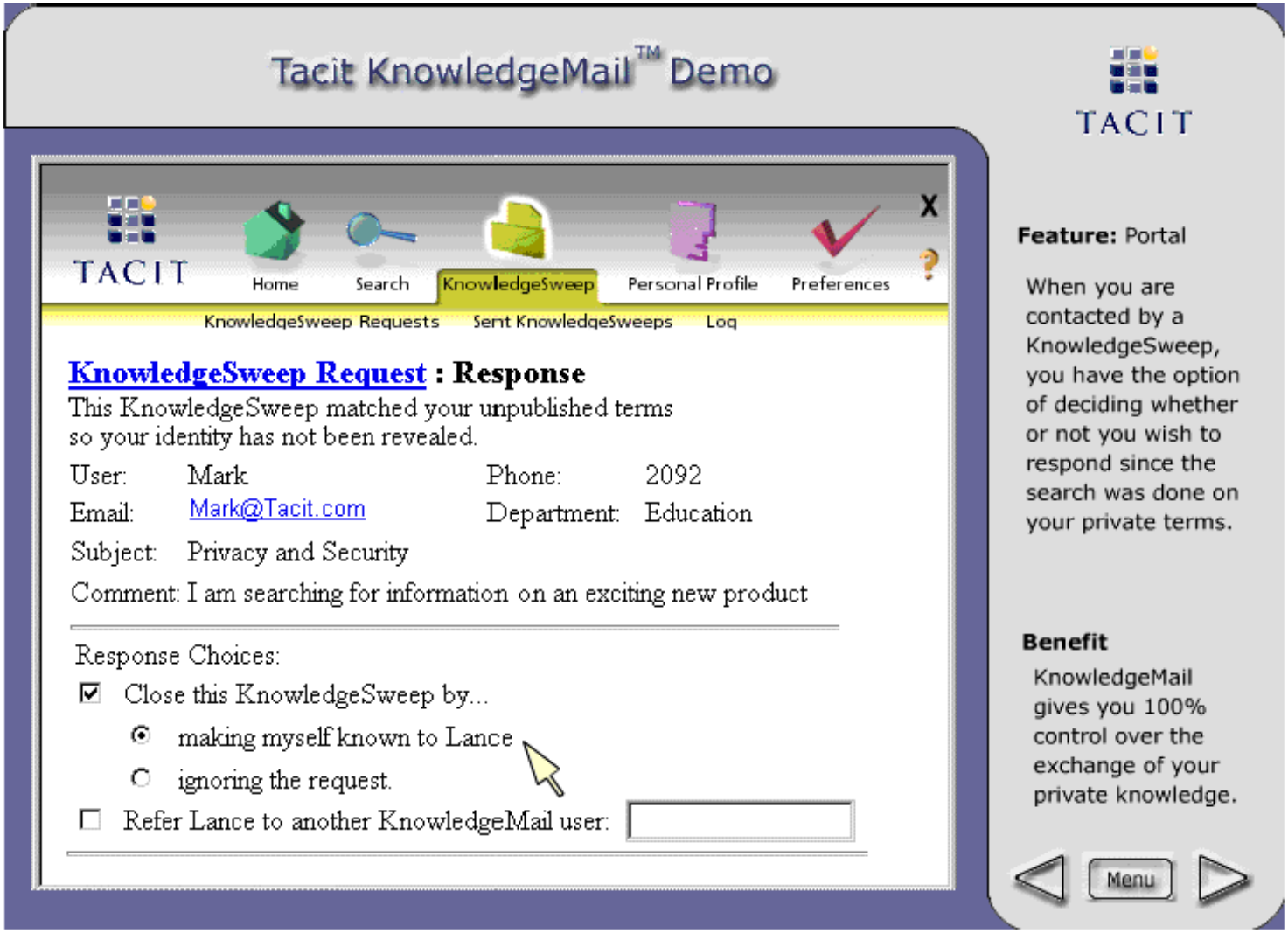
Keyword Search: KnowledgeSweep
1. Enter a KnowledgeSweep title:
Security and Privacy Expertise
2. Enter a comment for users that match your request:
I am looking for people who have security and privacy expertise for an exciting new product that we are implementing within our organization.
3. Closing conditions:
Close after 10 responses or 10 days.
4. KnowledgeSweep options:
Results must match with at least:
Limit to 20 matches.
Ignore people with matching public knowledge.
Notify me by email when people respond.
Send
Feature: Portal
A KnowledgeSweep notifies a user, whose private terms match your search, that you seek information. But, to ensure privacy, KnowledgeMail lets the user decide whether or not to contact you.
Benefit
KnowledgeMail fully maintains individual privacy.
Menu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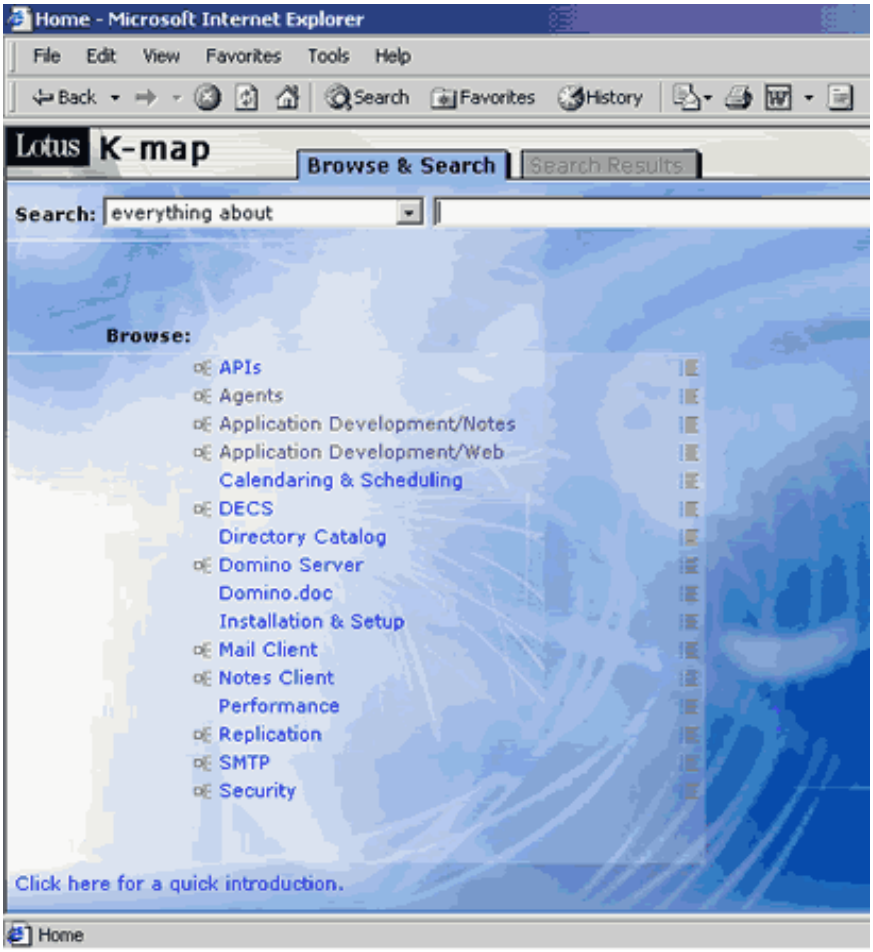
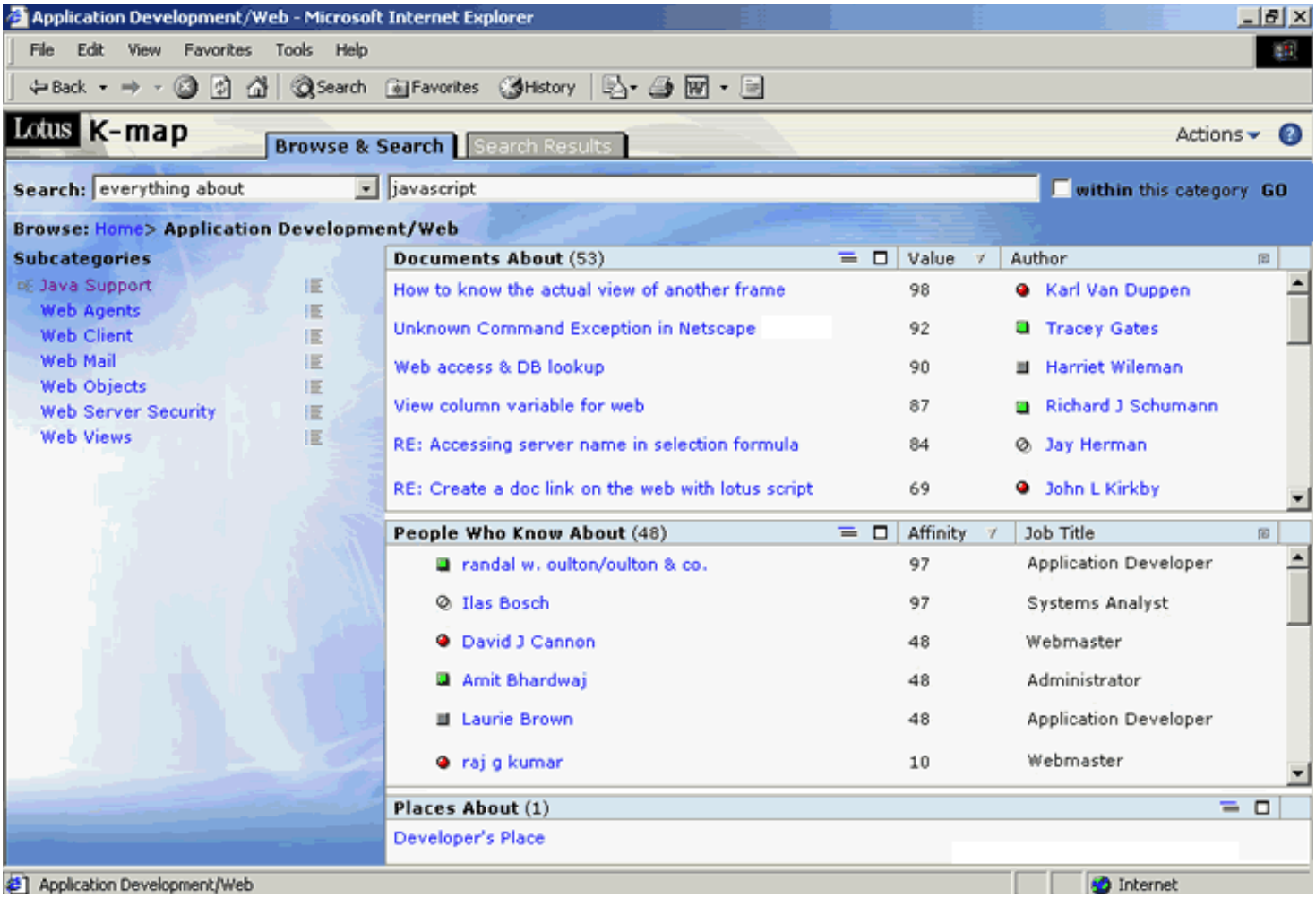
Log
KnowledgeSweep Request : Response
This KnowledgeSweep matched your unpublished terms
so your identity has not been revealed.
User: Mark
Phone: 2092
Email: Mark@Tacit.com
Department: Education
Subject: Privacy and Security
Comment: I am searching for information on an exciting new product
Response Choices:
Close this KnowledgeSweep by...
making myself known to Lance
ignoring the request.
Refer Lance to another KnowledgeMail user:
Feature: Portal
When you are contacted by a KnowledgeSweep, you have the option of deciding whether or not you wish to respond since the search was done on your private terms.
Benefit
KnowledgeMail gives you 100% control over the exchange of your private knowledge.
Menu

Lotus Discovery Server

From the product tour of the Lotus Discovery Server:




Application Development/Web - Microsoft Internet Explorer
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Subcategories
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Web Agents
Web Client
Web Mail
Web Objects
Web Server Security
Web Views
Documents About (53)
Value
Author
How to know the actual view of another frame
98
Karl Van Duppen
Unknown Command Exception in Netscape
92
Tracey Gates
Web access & DB lookup
90
Harriet Wileman
View column variable for web
87
Richard J Schumann
RE: Accessing server name in selection formula
84
Jay Herman
RE: Create a doc link on the web with lotus script
69
John L Kirkby
People Who Know About (48)
Affinity
Job Title
randal w. oulton/oulton & co.
97
Application Developer
Ilas Bosch
97
Systems Analyst
David J Cannon
48
Webmaster
Amit Bhardwaj
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Laurie Brown
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raj g kumar
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Places About (1)
Developer's Place
Application Development/Web
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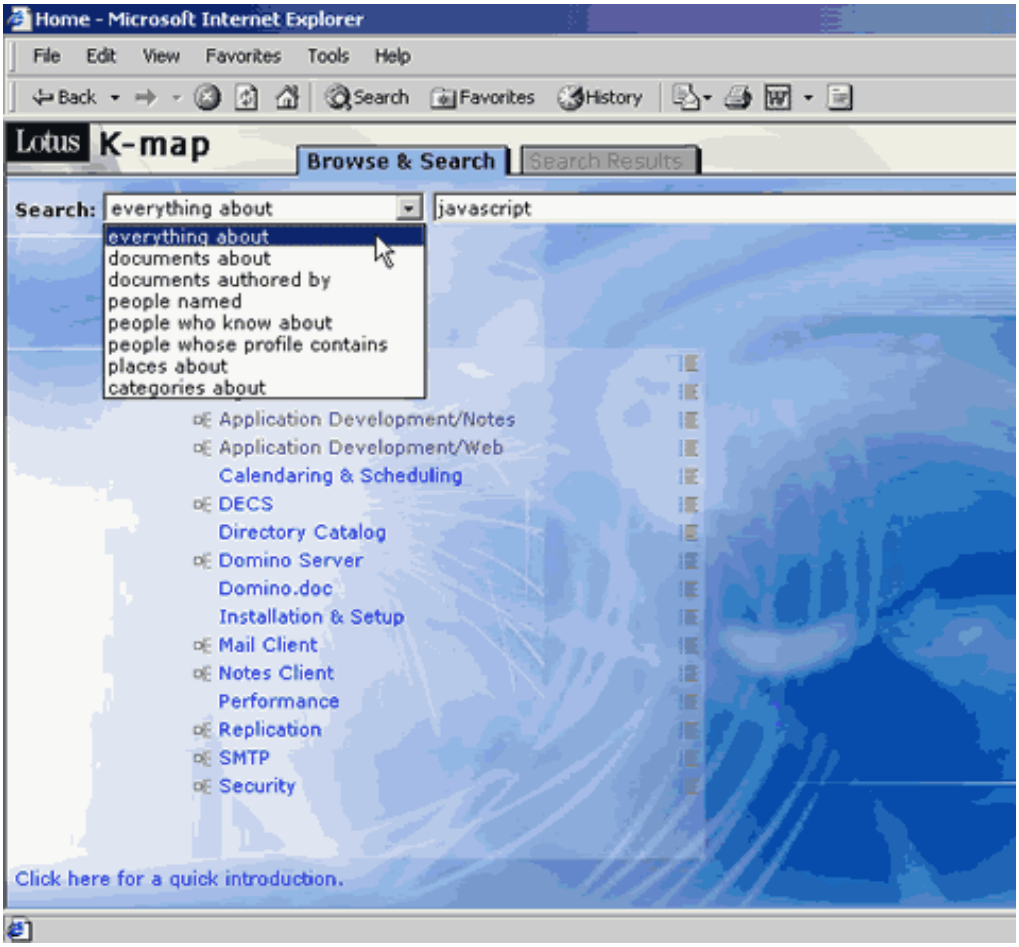
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Application Development/Web
Calendaring & Scheduling
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Performance
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Security
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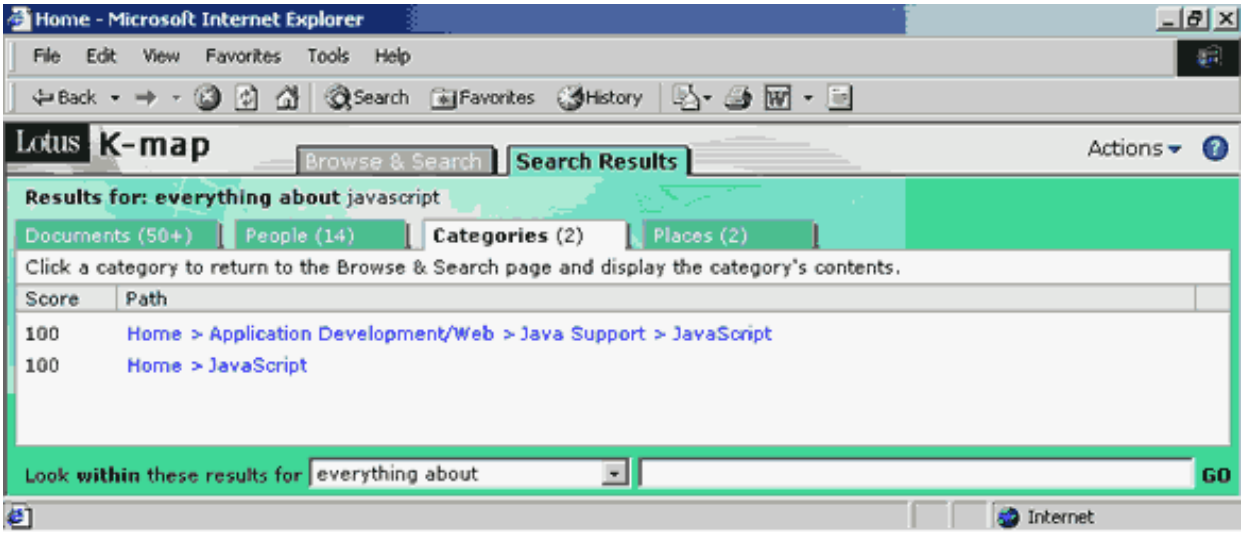
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Categories (2)
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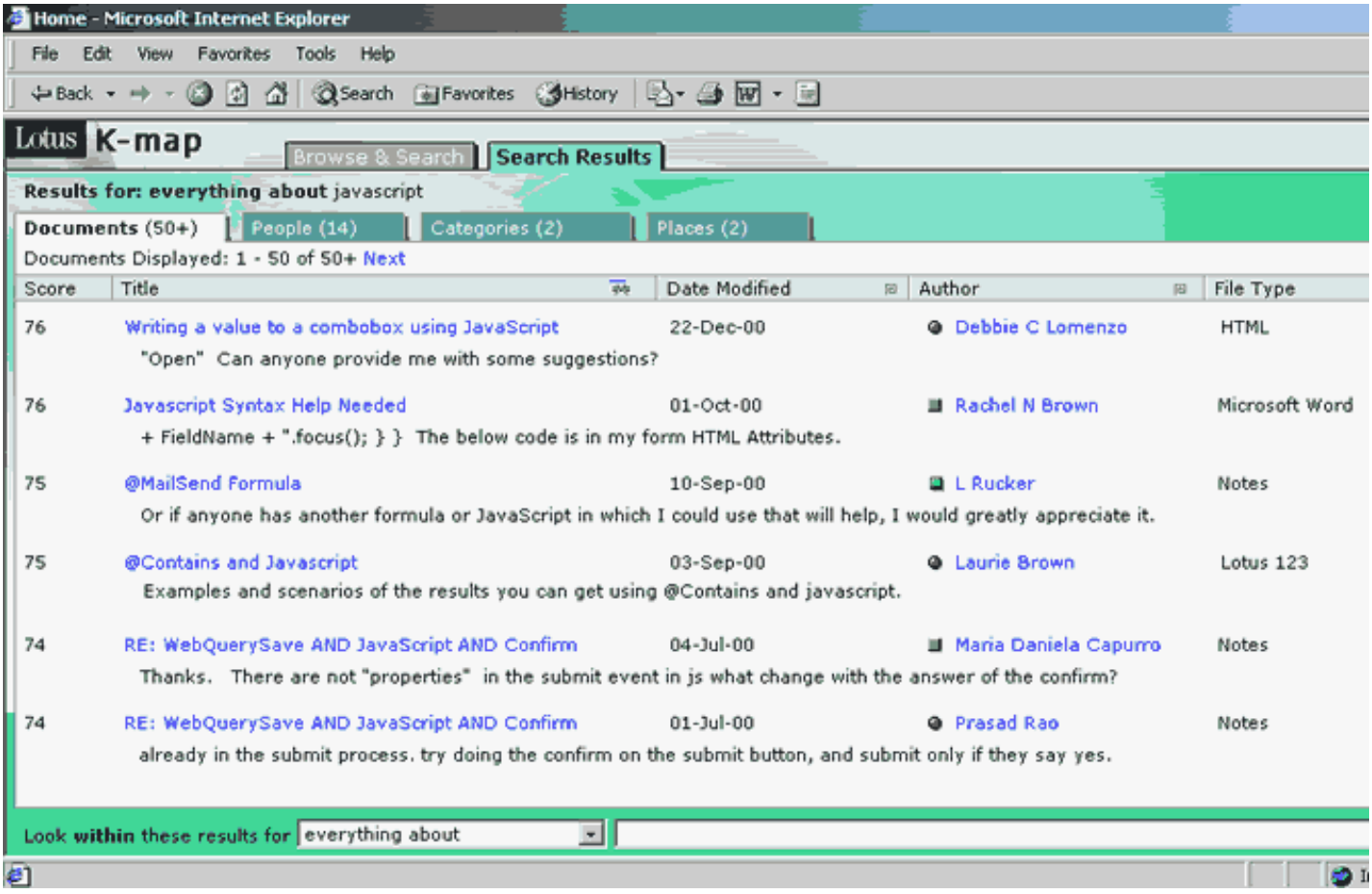
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File Type
76
Writing a value to a combobox using JavaScript
22-Dec-00
Debbie C Lomenzo
HTML
"Open" Can anyone provide me with some suggestions?
76
Javascript Syntax Help Needed
01-Oct-00
Rachel N Brown
Microsoft Word
+ FieldName + ".focus(); } } The below code is in my form HTML Attributes.
75
@MailSend Formula
10-Sep-00
L Rucker
Notes
Or if anyone has another formula or JavaScript in which I could use that will help, I would greatly appreciate it.
75
@Contains and Javascript
03-Sep-00
Laurie Brown
Lotus 123
Examples and scenarios of the results you can get using @Contains and javascript.
74
RE: WebQuerySave AND JavaScript AND Confirm
04-Jul-00
Maria Daniela Capurro
Notes
Thanks. There are not "properties" in the submit event in js what change with the answer of the confirm?
74
RE: WebQuerySave AND JavaScript AND Confirm
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Prasad Rao
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already in the submit process. try doing the confirm on the submit button, and submit only if they say yes.
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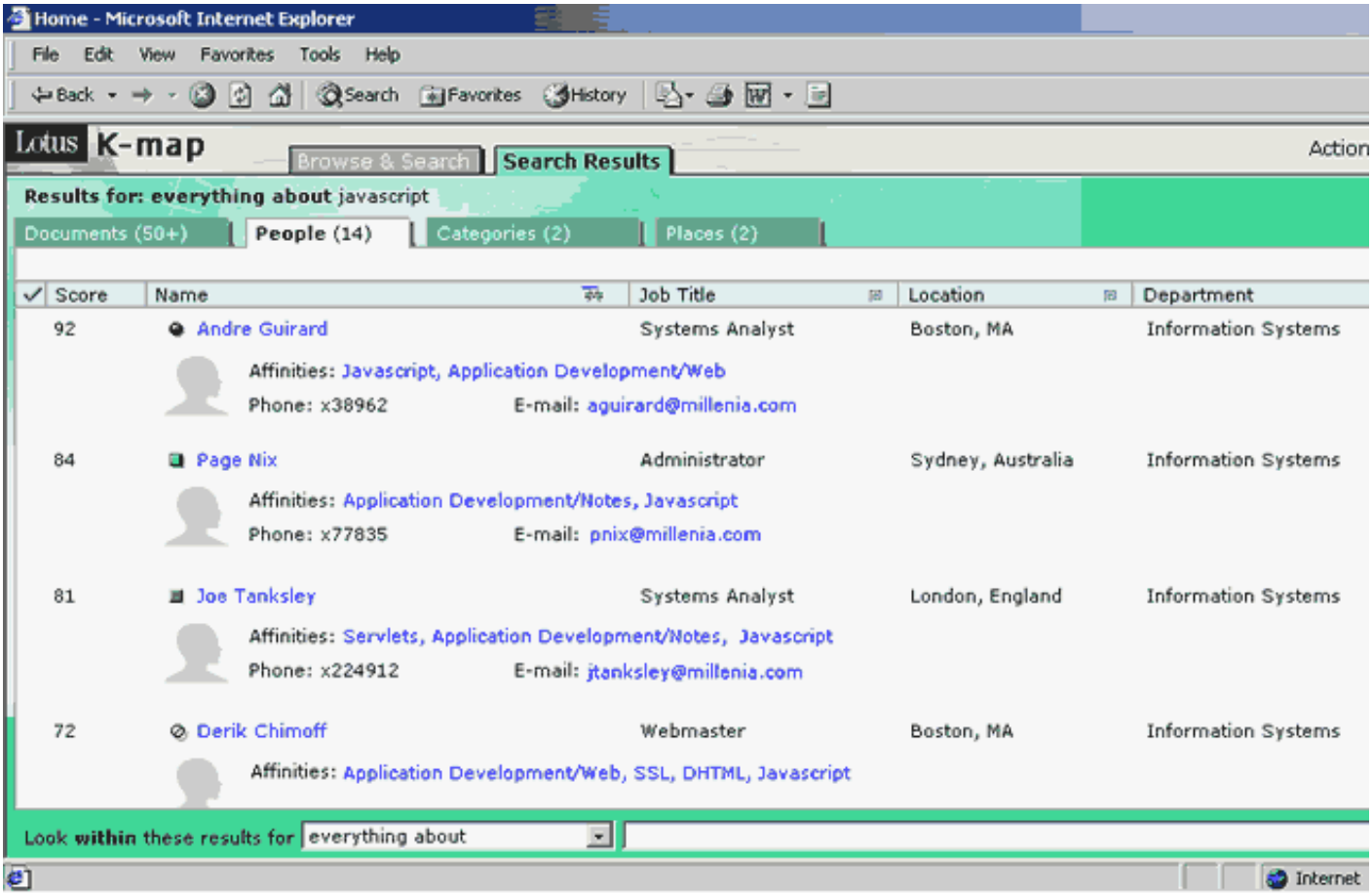
everything about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Andre Guirard
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Information Systems
Affinities: Servlets, Application Development/Notes, Javascript
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E-mail: jtanksley@millenia.com
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Derik Chimoff
Webmaster
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Affinities: Application Development/Web, SSL, DHTML, Javascript
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Simon P Chalfont's Profile - Microsoft Internet Explorer
Lotus Discovery
Simon P Chalfont
617-555-1212, user@lotus.com
Systems Analyst, Lotus Development Corp.
Affinities (click to open a K-map category):
Agents; Mail; JavaScript; Web Client; Admin Process
Contact Information
Affinities
Current Job
Background
Affinities are K-map categories about which people have knowledge. Click an affinity below to open K-map and display the corresponding category.
Current Affinities for Simon P Chalfont:
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JavaScript
Web Client
Admin Process


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Click a place name to open K-station and display the place.
Score
Name
65
Developer's Place
Public enterprise development resources including: discussions, document library, newsfeeds, web teamroom, and access to other enterprise developers.
64
Domino Administration Place
Administrators' resources for administration of corporate e-mail system and applications