

Web-Style Knowledge Sharing **“Supporting Online Collaboration”**

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As a contributor/user what would you like in a knowledge sharing system?

- Easy to create “content.”
 - The power, storage, familiarity, and flexibility of a desktop computer
 - Fine grained access control.
- Broad availability of others’ work.
 - The connectivity, linking, interactivity, and open-endedness of the Internet.
 - A node can be virtually anything from static content to a sophisticated computational service
- Environment-level services
 - Search/indexing and other access aids.
 - The archiving, configuration management, and other support services of an asset management system.

Does this sound obvious? There is nothing conceptually or technically difficult about it. We know how to do all of this. So why isn't it available now?

Why is the Internet so successful?

- Nodes are addressable black boxes.
- They exchange digital messages (bits) using the Internet as a communication network (transport layer).
- Client software is the face of the Internet to the user.
- Server software is the face of a node to other nodes.
- Clients and servers may interact according to any mutually agreed protocol.



Significant value added at each level

- **Environment-level services: search/indexing**
 - Not built in. Takes lots of extra work!
- **Browser**
 - *Information immediacy*. Changed the internet from a retrieval and remote access system to a presentation system.
 - Became a *generic GUI* for web applications.
- **Gopher**
 - Helps people “browse” the “worldwide Internet.”
 - In 1993 accounted for a substantial fraction of Internet traffic.
- **Nodes are autonomous black boxes.**
 - New capabilities of virtually any sort may be added at nodes.
 - Can implement fine-grained internal access control.
 - Relatively easy to add content to nodes.
 - Can allow remote users to add content
- **Limited communication goals met effectively**
 - Does no more than enable the exchange of bit-based messages.
- **Network as addressable abstract graph**
 - Graph is fully connected.
 - Relatively easy to add new nodes.
 - Each node has a unique (text) identifier.
 - Allows construction of arbitrary *ad hoc* structures.
 - IDs may be extended to refer to internal structures and information

Environment
Browser
Nodes
Communication
Graph

Turns out to be a powerful “stack.” Be cautious about throwing any of it away.

What's missing from the Internet as a knowledge sharing environment?

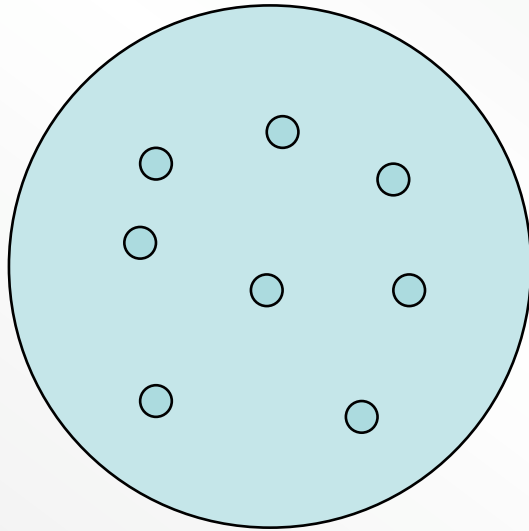
- Needs more environment-level tools and services like weighted indexing (i.e., “search”).
 - Metadata—such as creator, publisher, date, claimed rights, etc. (e.g., Dublin core)—and a way to access nodes/information on the basis of their metadata.
 - The semantic web: ontologies, thesauri, tags(?), ...
 - (Wikipedia-like) watch-list, categories, templates (macro language)
 - (Google/Technorati-like) alerts—on pages and more generally on data streams.
 - (Neilson-like) {unique audience} hits/views/traffic statistics
 - Search term (or blog/news usage term) occurrence statistics
 - “Intelligent agents”
- Configuration management support.
- ...

Make the web more like a wiki

Wiki as mini-web

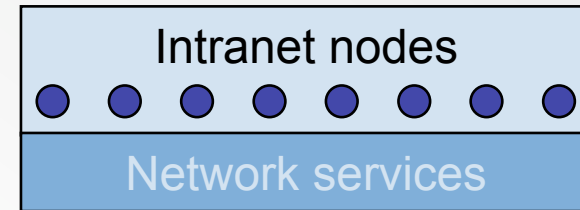
- A collection of autonomous nodes/pages.
- Even easier to add new nodes.
- Even easier to add content to nodes.
 - But wiki nodes are not black boxes.
 - Much more limited in possible content.
 - Could be changed without destroying wiki (bots, plugins, ...).
- Wrapped in a protective environment that enables many high-level services.
 - All the services on the previous slide are or could easily be provided by MediaWiki.
 - User page for each user.
 - Discussion page for each page.
 - Dead-link tracking.
 - Inter-wiki linking.
 - ...

Intranet: the best of both worlds

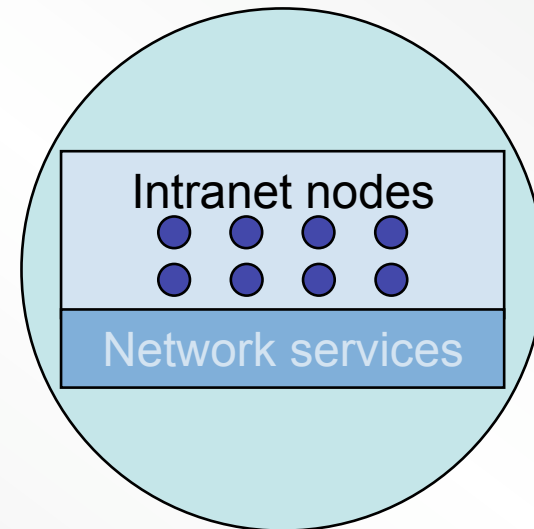


Pages wrapped in wiki environment

Since Intranet nodes exist within controlled environments, make them a web wrapped in wiki support services.



Nodes connected as a network



Nodes wrapped in wiki environment

Implementation options

- Organizational hosting service
 - Wiki is the monopolistic host of all its pages.
 - An organizational (monopoly) hosting service could provide many/most of the meta-level services
- Desktops as Intranet nodes. (Distributed monopoly)
 - By making the software of a hosting service available for use on individual desktops, can get the same effect.
 - Very easy for users to add pages.
 - No uploading; just drag/copy them into the right folder.
- Wikis and wiki farms
 - Include a wiki as an option in the hosting service.
- Virtualization combines all these possibilities and enables one to generate the equivalent of a desktop—and hence a network node—at will.

Caution

Management concern: ECM

Association for Information and Image Management (AIIM) defines Enterprise Content Management (ECM) as

“the technologies used to capture, manage, store, preserve, and deliver content and documents related to organizational processes. ECM tools and strategies allow the management of an organization's unstructured information, wherever that information exists.”

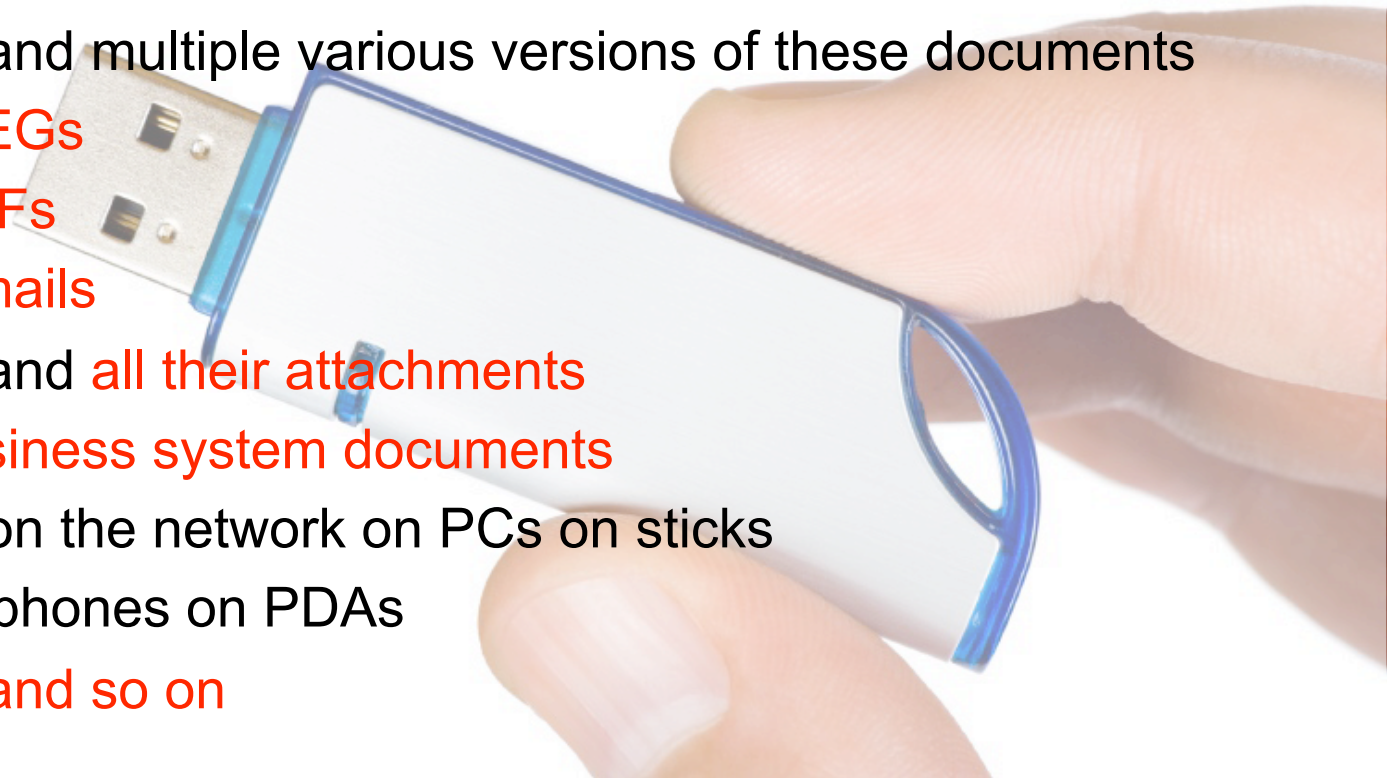
NPR *Morning Edition* story on corporate paper trails. June 18, 2008.
<http://www.npr.org/templates/story/story.php?storyId=91363363>

What's in your digital landfill?



What do you mean by “digital landfill?”

- Word files
- PowerPoint files
- Excel files
- ... and multiple various versions of these documents
- JPEGs
- TIFFs
- E-mails
- ... and all their attachments
- Business system documents
- ... on the network on PCs on sticks
- on phones on PDAs
- ... and so on



Has your ability to document

- **what** your organization did,
- **why** you did it,
- **who** did it, and
- **when** they did it

gotten better or worse in the
past **5** years?

Your CEO is going to have an awfully hard time explaining in court his/her digital landfill.



Impact of ECM on KM

- Focus is on document management, regulatory compliance, Electronic Records Management (ERM), Business Process Management (BPM), Information Organization and Access (IOA), Enterprise 2.0 (E2.0), ...
 - Products such as Alfresco (open source), Documentum (EMC), LiveLink (OpenText), SharePoint (Microsoft),
- Often try to sell themselves as complete information frameworks.
- If used as the overall KM environment/framework, will be too constraining and a return to pre-browser days where the net was an archive and retrieval system.
- But cannot ignore these needs. Must integrate these capabilities into whatever else is built.
 - Part of the environment-level services?