

Digital Library Service Integration

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The Digital Library Service Integration project (DLSI) automatically generates links to related collections and services. Users see a totally integrated environment, using their system just as before. However, they will see additional link anchors, and when clicking on one, DLSI will present a list of supplemental links. DLSI will filter and rank order this set of generated links to user preferences and tasks.

The DLSI infrastructure provides a systematic approach for integrating systems with Web interfaces. Systems generally require no changes to integrate.

DLSI generates link anchors and links *automatically*. If a collection or service can operate on an element, DLSI will generate a link leading directly to that system's feature. For example, if there were a discussion thread about a course, any time that course's

identifier appears in a screen or document, DLSI would automatically detect this and add an anchor over the course identifier.

DLSI typically generates link anchors in two ways. First, "wrappers" parse screens and documents based on an understanding of the structure of the system's displays (i.e., using form templates, XML markup or parsing rules). Most anchors are identified this way.

Second, DLSI parses the screen and document content using lexical analysis to identify additional anchors. DLSI generates links automatically based on relationship rules.

This research's primary contribution is providing a relatively straightforward, sustainable infrastructure for integrating information systems. Other contributions include:

- Developing filtering mechanisms for customizing large sets of links to particular users.
- Combining automatically generated structural links and links found through lexical analysis as a way of achieving integration

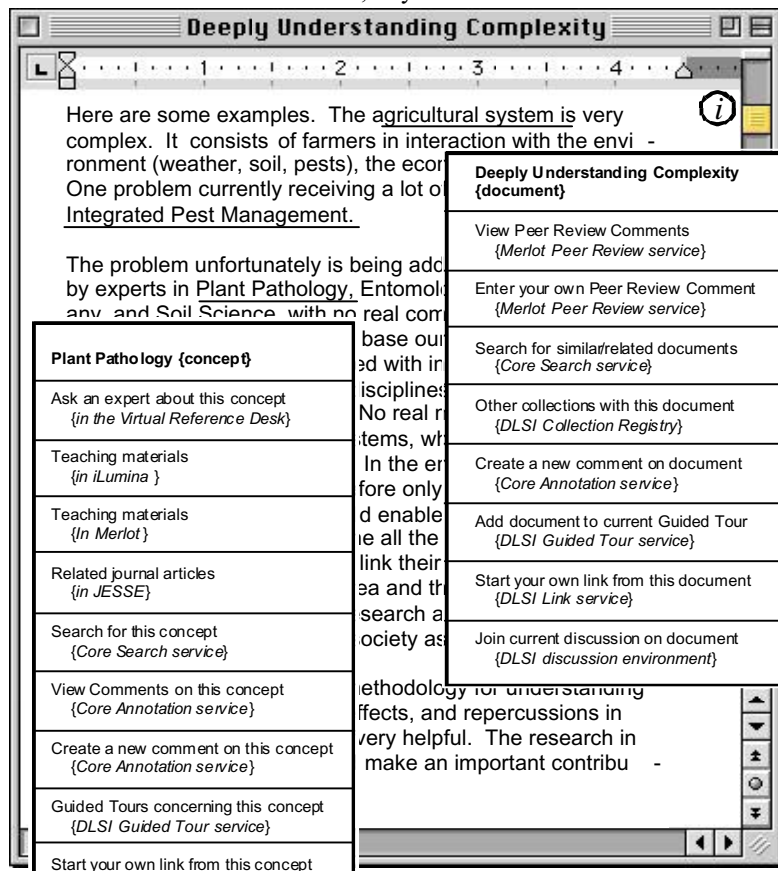


Figure 1: A mockup of a document with DLSI support. DLSI automatically adds link anchors, including an icon in the top right-hand corner for the document as a whole. Choosing one prompts DLSI to generate a list of links. The figure superimposes two possible sets of links for different elements: the concept "Plant Pathology" and the document as a whole. Each link shows a display label describing the link, and the name of the service or collection it leads to.

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