Web Services and Digital Libraries

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Overview

- What are Web Services?
- Integration with Microsoft Office 2003
- Open Archives Initiative and DSpace
- Other relevant standards
- The future of Web Services

What are Web Services?

- Standards-based method of exchanging data over the Web
- Key Standards
  - XML (foundation)
    - eXtensible Markup Language
  - SOAP (XML messaging / RPC)
    - Simple Object Access Protocol
  - WSDL (Defines properties of service)
    - Web Services Definition Language
  - UDDI (Service location)
    - Universal Description, Discovery and Integration
- Many, many more layered on top

Why Web Services?

- Interoperability for diverse systems
- Key standards agreed
- Component decoupling
- Dynamic, automatic data exchange between applications
- Opportunities for legacy system integration
- Platform, language independent
- Lots of investment and commitment, eg
  - Google
  - Microsoft
  - Factiva
  - LexisNexis

Integration with Microsoft Office 2003

- Selected organizations invited to work with Microsoft
- For Ovid, a very fast, successful development
- Within MS Office 2003, users can select specific medical terms and launch a ranked search in Journals@Ovid
- Direct access to more than 1000 leading scientific journals
- Very easy to install

Microsoft Word Scenario

Horizontal hostility drains nurses of vitality and undermines institutional attempts to create a satisfied nursing workforce. Even though a facility may raise its staffing levels or give nurses more freedom to govern their work environments, those measures alone will not help to retain them. Nurses will continue to leave their institutions and the profession, some permanently, when conflict and unpleasantness among colleagues become unbearable.

To combat the horizontal hostility that drives too many of our colleagues away, individual nurses—like you and I—must take action. The well-being of our patients and the survival of our profession are at stake.

It has been demonstrated that the cohesion of the group has a strong influence on job satisfaction among nurses. Socialize outside the place of work regularly—hikes, picnics, and potluck dinners are modest ways of so doing. Celebrate colleagues' birthdays, certifications, promotions, advanced achievements in education, and other accomplishments. Make sure that new nurses are welcomed by the staff, and pair them with mentors who want to help them to succeed. Keep the group focused on common goals.

Nurses at a small psychiatric hospital in New England, for example, wanted to increase nurse autonomy in their institution, which had a "fiercely patriarchal and autocratic hospital culture," according to Brenda and colleagues.

They formed a study group in which they discussed clinical practice and prepared for the AACN's psychiatric mental health nurse certification examination. Members of the study group also sought to participate more frequently in the hospital's interdisciplinary committees and treatment teams. Ultimately, instead of leaving for better working conditions, the nurses in the study group stayed at the same work site and transformed it through this group effort.

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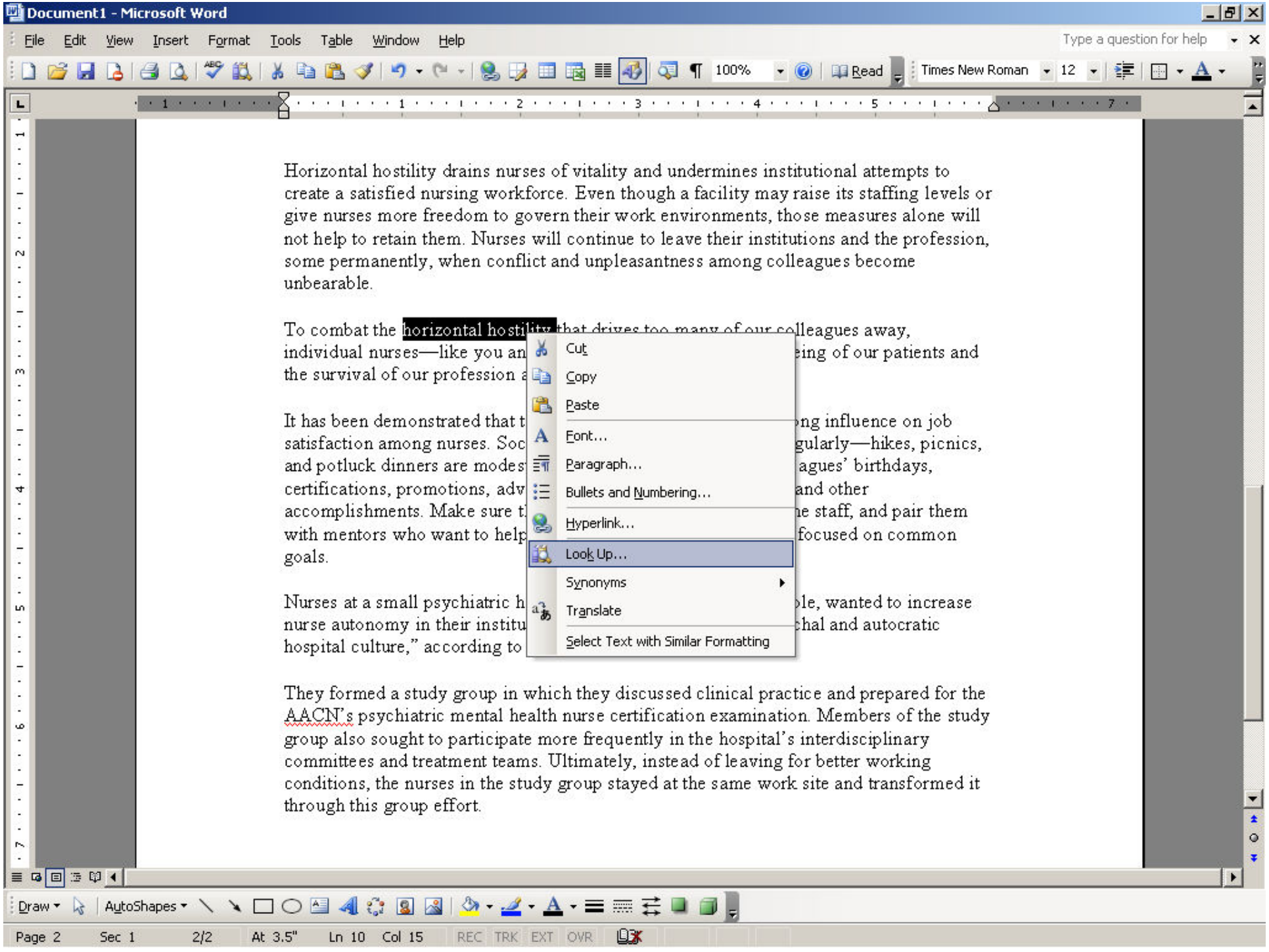
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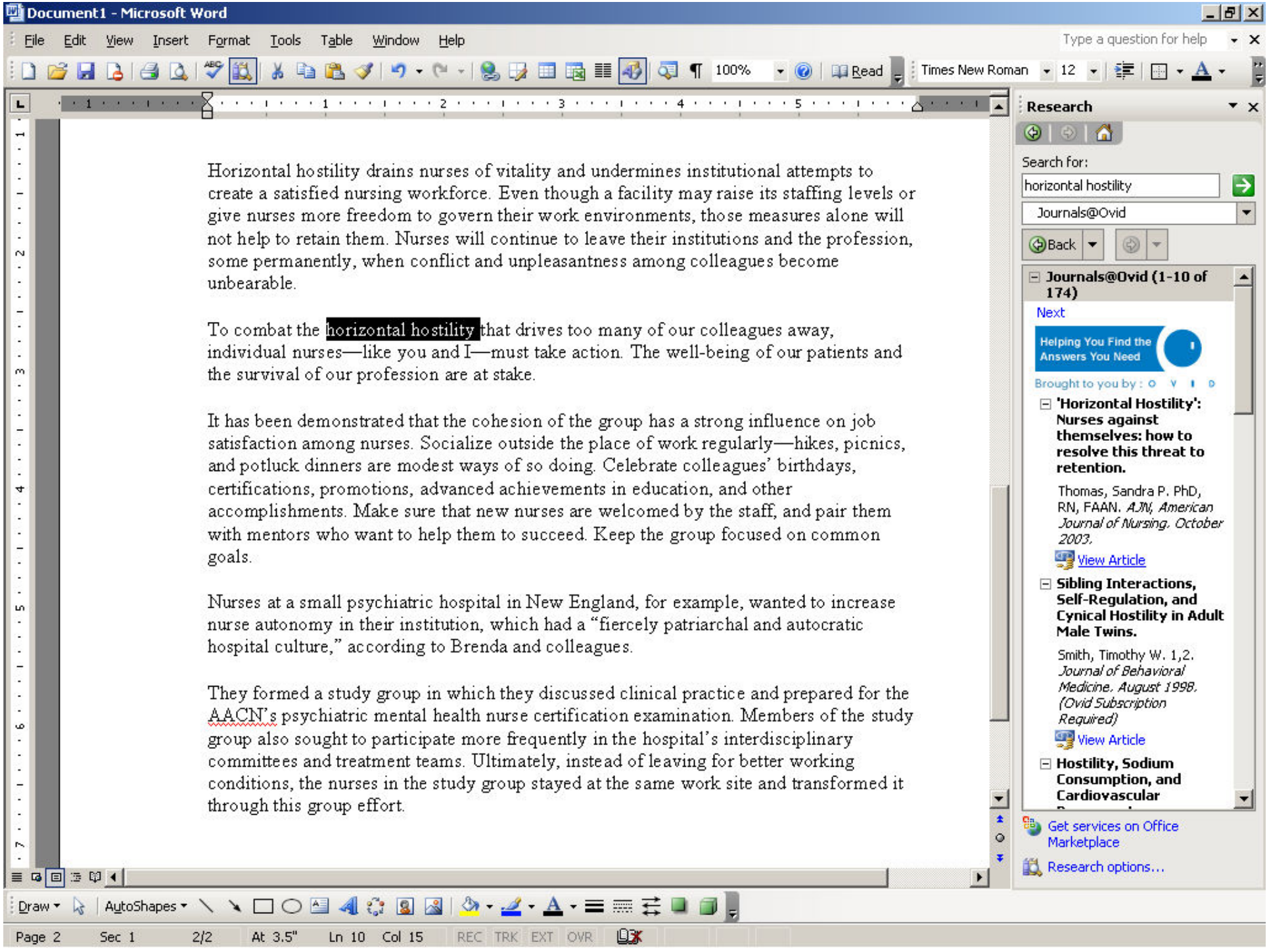
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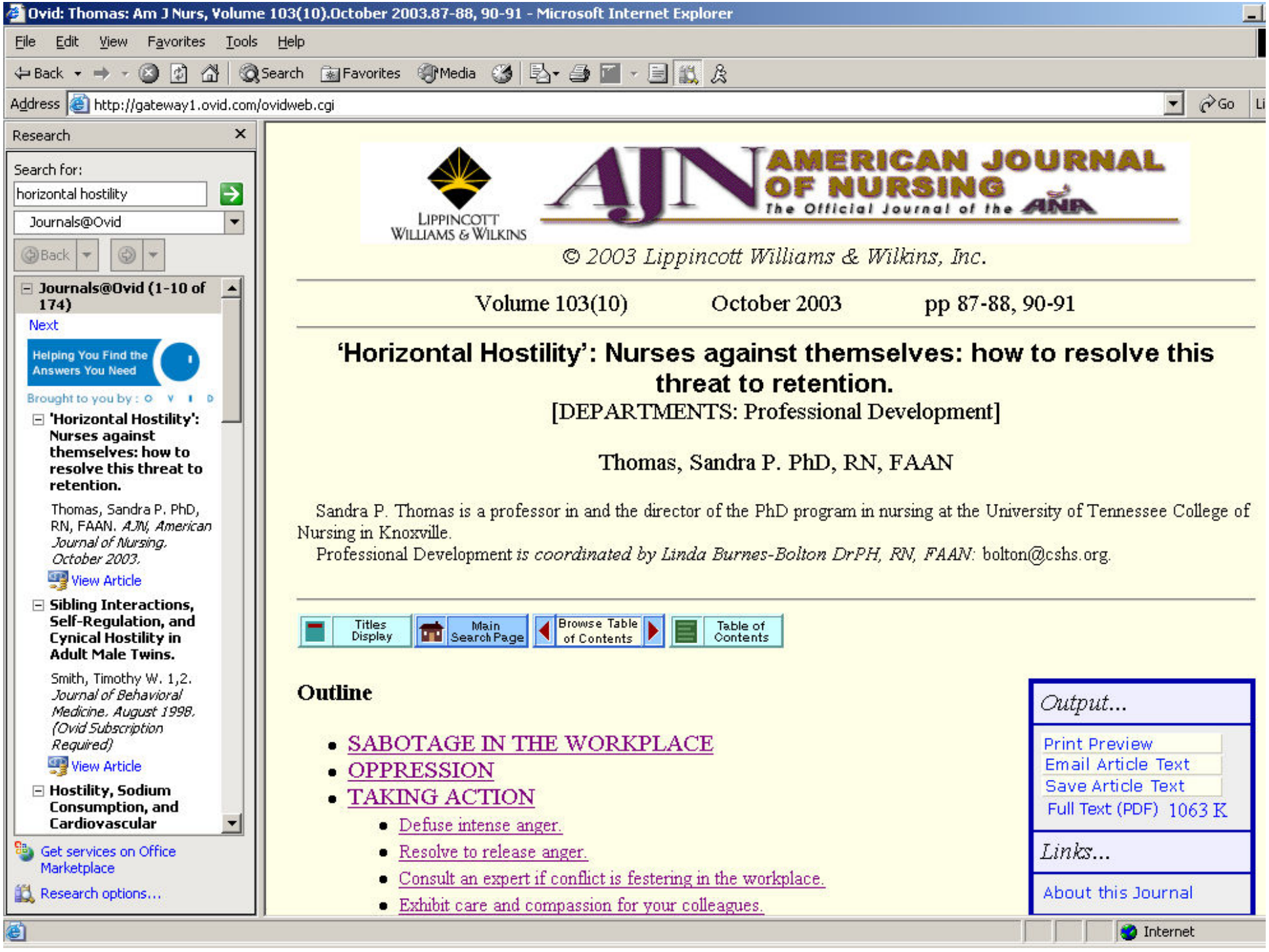
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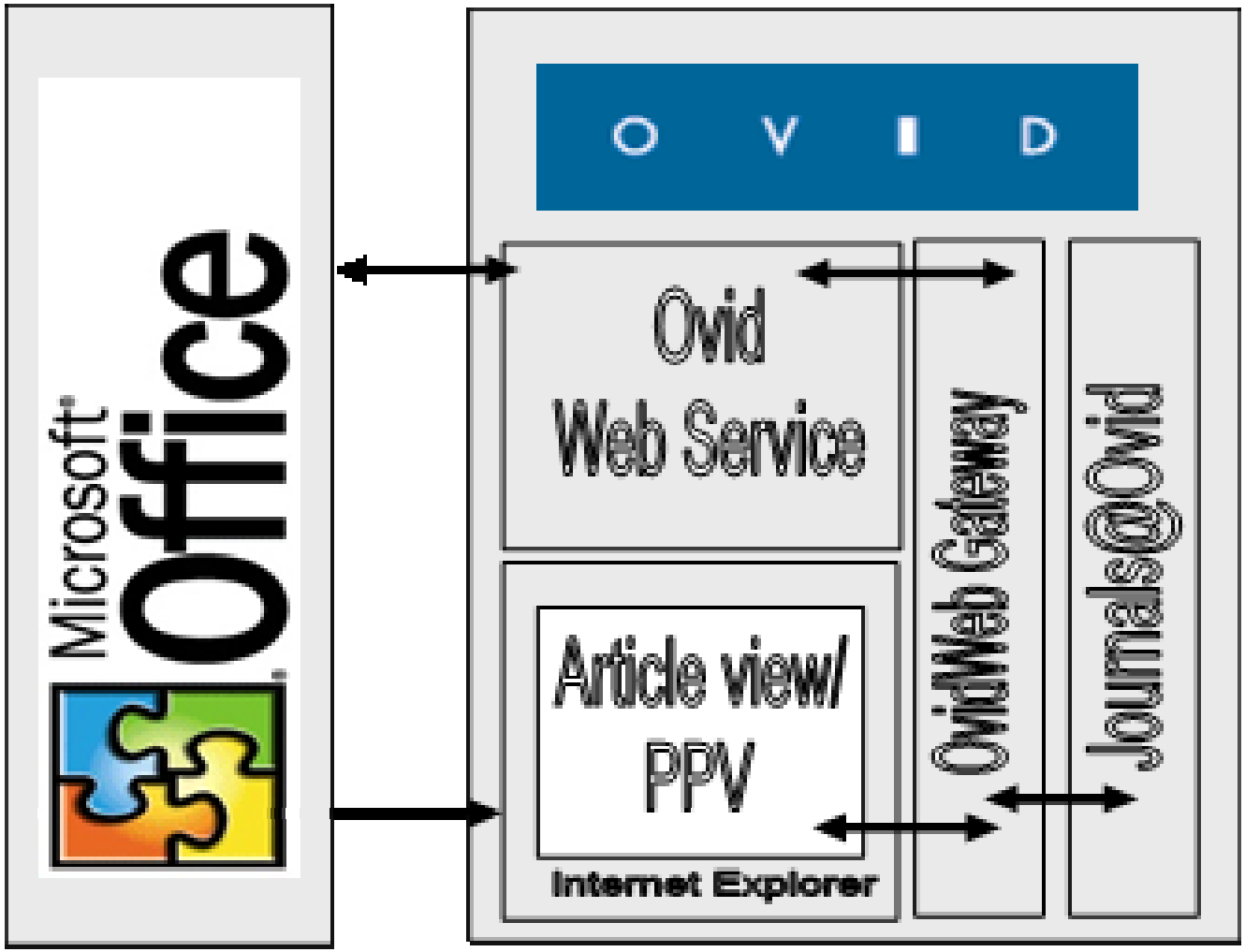


OAI and DSpace

- Two examples of Web Services usage
- Using Web Services to deliver OAI
- Building Web Services access on top of DSpace
- Both moving us further to digital libraries

Open Archives Initiative / PMH

- OAI develop standards to facilitate content syndication
  - Not just about “Open Access”
- Protocol for Metadata Harvesting is a standard way for interested parties to request metadata from content repositories
- URL based query syntax
  - Nothing to do with Web Services as such
  - But Ovid will implement using Web Services
- Example of Web Services as enabling technology

DSpace and Google

- DSpace is institutional archival system, used by over 100 institutions
- For research papers, technical papers, theses
- Jointly developed by MIT and HP
- Google to harvest and facilitate targetted search via metadata tags
- And we already have Web Services access to Google

Other standards – Lots of them

- Dozens of standards are in development
- Security, federation, policies
- Metadata exchange
- Business Processes description
- Transactions, application co-ordination, events, messaging
- Binary data exchange
- Specific application areas

Other standards – Overlap and gaps

- Overlap and competition between standards
  - IBM & Microsoft vs. Sun & Oracle
  - W3C vs. Oasis
    (Organisation for the Advancement of Structured Information Standards)
  - e.g. BPEL (supported by IBM) vs WSCI (supported by BEA)
- No established standards in our area of interest
  - query syntax
  - data return

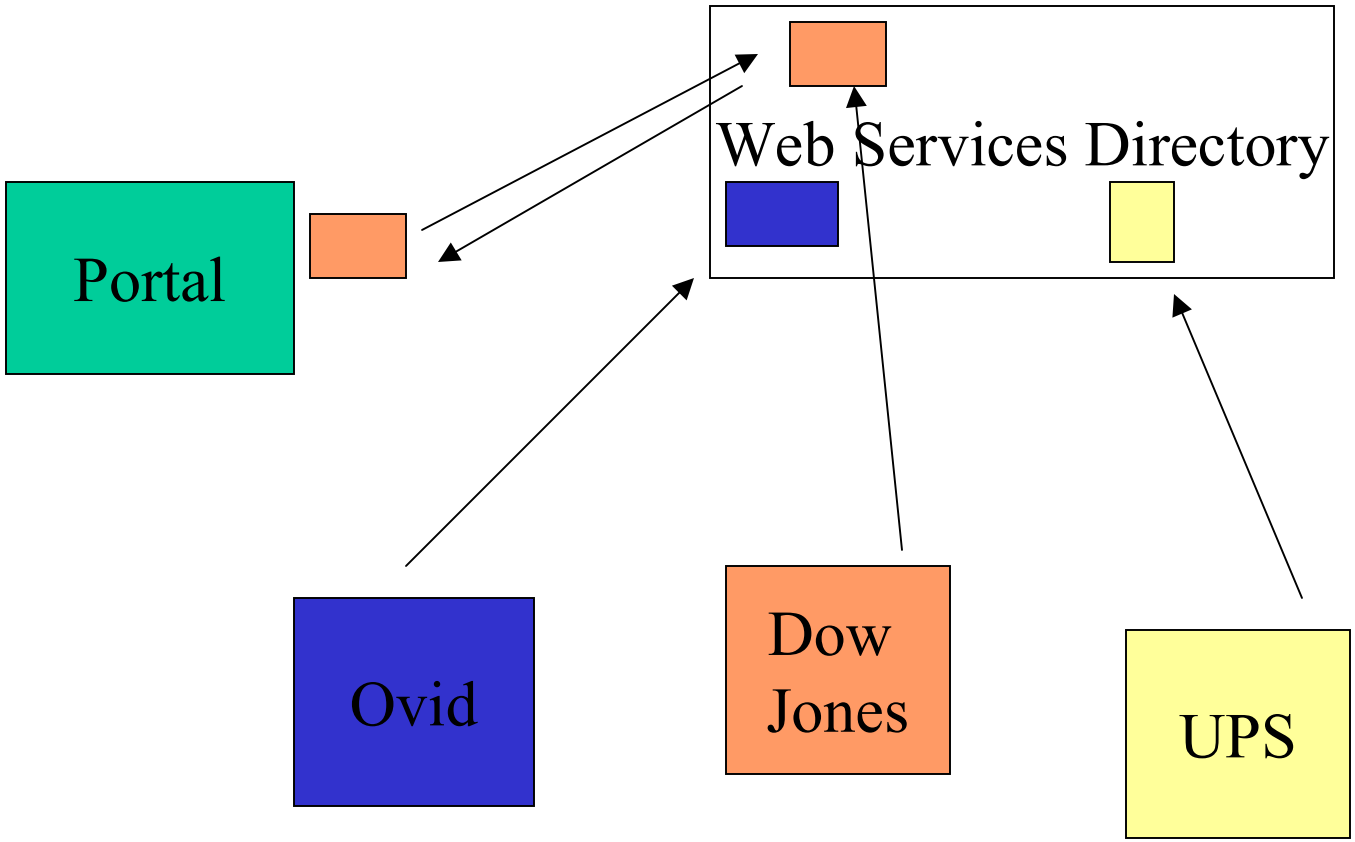
Other standards – SRW/SRU

- Search / Retrieve Web Service / URL Service
- Protocol carried by either SOAP or URL
- Supported by ZING
  - ZING = Z39.50 International: Next generation
  - Based on Z39.50 concepts
  - Limits to interoperability
- Includes Common Query Language (CQL)
- Not currently widely implemented
  - OCLC, LOC and a few others
- May gain acceptance

WSRP

- Web Service for Remote Portlets
- OASIS standard
- A presentation-oriented web service that allows content sources to plug into content aggregating portals (etc)
- Has wide support
  - IBM
  - BEA
  - Plumtree
  - etc
- Plug and play access to our content in customer portals

Web Services for Remote Portals (WSRP)



The Future of Web Services

- Ovid's Generic Web Services
- Web Services in general

Ovid Generic Web Services

- A general purpose way of accessing the Ovid Content repository
- Accepts Incoming requests
  - SOAP messages
  - URLs
- Returns XML documents containing the requested information
- Not tied to a specific request or response format
  - Default XML schemas
  - Plug in architecture for request formats
- Will provide access to fully integrated books, journals and databases

Web Services and the Future

- Good balance:
  - Easy to connect components
  - Good level of interoperability
- Basic standards agreed and in place
- Successful start
- Other standards will follow
- Will be supported by many vendors
- Will be used for both simple and complex integration
  - At the level of vendor cooperation
  - At the level of the individual institution
- Very widely used in future
- Key technical component of future digital libraries

OVID

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Thank You

Frank Lukey
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