

## Education and Scholarly Communication

Microsoft External Research collaborates with the world's foremost researchers in academia and across numerous industries and governments to move research forward and fuel innovation. Working hand in hand with researchers is an essential part of the Microsoft External Research engagement model. The team serves as a critical link between academia and Microsoft product groups that work on the development and use of new technologies from across the corporation.

Collecting and analyzing data, authoring, publishing and archiving information are all integral to the everyday work of researchers—with collaboration and search and discovery augmenting the entire process. At each phase, Microsoft® technologies are playing an increasingly important role. The Microsoft External Research vision is to support the scholarly communication life cycle with software and services that enable data and information to flow in a coordinated and seamless fashion.

These technologies will help researchers, government institutions and academic publishers find more relevant and targeted research, speed production cycles, distribute research results more effectively and work more efficiently. Researchers will no longer have to switch between tools and methodologies at each step in the process. Research data can move directly into authored documents, which can be published with the methodologies, licenses and associated metadata incorporated into them. Other researchers can access the original supporting information directly from an archived document and build on those findings.

Working with members of the research community, Microsoft External Research is developing these technologies with the following goals in mind:

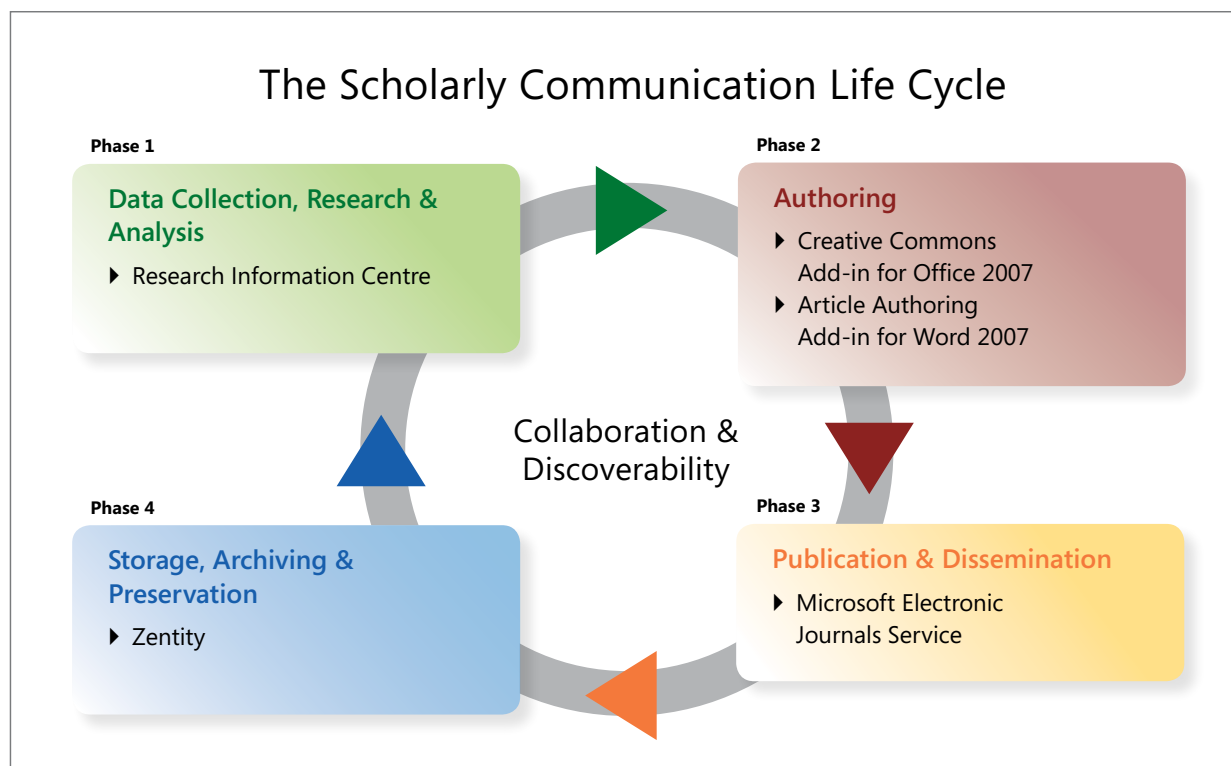
- Optimize for data-driven research and science.
- Enable broad community engagement through greater interoperability.
- Help ensure that data storage is reliable and secure for the long term.
- Build on existing community protocols, practices and guidelines.
- Harness collective intelligence through social networking and semantic knowledge discovery.

Researchers from around the world have provided Microsoft with guidance on the application of technology

to their work, and Microsoft product groups have offered feedback on the use of the company's technology to meet the needs of the scholarly community. The combined efforts—driven by Microsoft External Research—have resulted in multiple tools that span the entire scholarly communication life cycle. The first wave of these technologies is being introduced this year and includes the following.

- **Zentity.** Research output repositories are used increasingly at universities and in research communities worldwide. The Zentity research output repository platform, built on Microsoft SQL Server® 2008, the ADO.NET Entity Framework and the Microsoft .NET Framework 3.5, uses open community protocols such as OAI-ORE and SWORD to ensure that it is open to other platforms and technologies for deep integration of services across repositories. The included toolkit and code samples allow developers to present data in novel ways—for example, to demonstrate the relationships between a published paper and its authors, the underlying research data and associated lectures, presentation slides or PDFs. See <http://research.microsoft.com/zentity/> for the latest information and downloads.
- **Microsoft Electronic Journals Service.** This hosted, full-service solution supports scholarly societies and small and medium-sized publishers in the production of online-only journals. It simplifies the self-publishing of workshop and conference proceedings and smaller journals, and it facilitates online collaboration between authors. An alpha version, available now at <http://research.microsoft.com/ejournal/>, is hosted via Microsoft Office SharePoint® Server 2007 and allows organizations to use the functionality without building or maintaining any infrastructure.
- **Research Information Centre.** Developed in collaboration with the British Library, the Research Information Centre is a virtual research environment (VRE) that allows research partners to store, share, discuss, manage, find and track all components of a research project—including data, references, papers, bookmarks, proposals, internal messages, information and findings—using a simple interface. By providing a framework for managing workflow, the tool helps facilitate search and discovery, simplifies research project management and enables versioning and archiving. Built on SharePoint Server 2007,

## The Scholarly Communication Life Cycle



the tool is accessible from a Web browser. See <http://research.microsoft.com/ric/> for the latest information and downloads.

- **Creative Commons Add-in for Office 2007.** This download for Microsoft Office Word 2007, Office PowerPoint® 2007 and Office Excel® 2007 lets users embed a Creative Commons license directly into their Office documents. By linking from the document to the Creative Commons Web site (via a Web service), this add-in allows an author to select the appropriate license and ensure that it is stored within that specific version of the file. Source code and binary versions are available at <http://ccaddin2007.codeplex.com/>.
- **Article Authoring Add-in for Word 2007.** This add-in for Office Word 2007 enables semantic information and metadata to be better captured during the authoring of scientific and technical articles. It provides a framework that enhances Word templates to help authors in structuring their documents and enables a level of validation before submission to journals. To help preserve the semantic information as part of the publishing workflow, the add-in allows the user to open and save documents in the National Library of Medicine's NLM XML format, including the Book format, from Word 2007. The add-in also enhances the authoring experience through support for the SWORD protocol, which simplifies submission to

archives and journals. Supporting the trend toward associating and archiving data along with articles, the add-in enables automated creation of ORE resource maps. Available now. See <http://research.microsoft.com/authoring/> for the latest information and downloads.

- **Ontology Add-in for Word 2007.** This add-in allows users to enhance the level of semantic information associated with documents they create in Word by making ontologies more accessible to authors, simplifying the tagging and disambiguation of terms in documents and better capturing the author's intent and knowledge at the source. The semantic knowledge in the document is preserved as part of the XML content, facilitating downstream discovery and analysis. See <http://research.microsoft.com/ontology/> for the latest information and downloads.

More information is available at:  
<http://www.microsoft.com/scholarlycomm>

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