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Iter Community: Prototyping an Environment for Social Knowledge Creation and Communication

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# **Iter Community: Prototyping an Environment for Social Knowledge Creation and Communication**

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## **Abstract**

This article focuses on the features and challenges of Iter Community (IC), a new collaborative research environment which aims to aid social knowledge creation for the communities that have formed around Iter's discovery tools and publication platforms. The underlying vision of IC as a flexible environment for communication, exchange, and collaboration is explained via the history and conceptual framework of IC, preliminary details concerning its infrastructure and features, and a brief examination of the *Social Edition of the Devonshire Manuscript* as an IC pilot project.

## **Keywords**

Social knowledge creation; Online research environments; Knowledge co-creation; Web 2.0; Scholarly communication platforms; Online publishing; Infrastructure; Prototyping

## **Introduction**

In Iter's formative years, the partners focused first on the creation of metadata to improve access to scholarship, and then turned to building an online infrastructure for the dissemination and publication of academic resources. While work continues on these early initiatives, Iter has since tested a Drupal Commons social media platform as a pilot project named Iter Community (IC), thereby beginning a concerted effort to broaden Iter's response to the facilitation of the research and teaching undertaken by scholars and students in the Medieval and Renaissance community. With the imminent

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close of the pilot project and the phased implementation of a completely reworked IC, this article will focus on the features and challenges of the new collaborative environment, which aims to aid social knowledge creation for the communities that have formed around Iter's discovery tools and publication platforms. How this environment may support specific research projects is illustrated in a brief study of the *Social Edition of the Devonshire Manuscript*. The main point here is the hope that the edition will enable human social engagement specific to the *Social Edition*, computer social engagement through indexing by search engines, and inter-Iter resource discovery via robust metadata.

This article has three parts: it begins with the historical and conceptual frame for Iter Community (William R. Bowen), followed by preliminary details of the new Iter Community (Matthew Hiebert), which lead to the perspective of one of the early adopters, the *Social Edition* (Constance Crompton and the INKE Modeling and Prototyping team). William R. Bowen is the founding and current Director of Iter. Matthew Hiebert and Constance Crompton are actively engaged in the development of Iter Community and serve on its advisory committee.

### **Iter: Gateway to the Middle Ages and Renaissance (1994/5–2014)**

The genesis of Iter ([www.itergateway.org](http://www.itergateway.org)) goes back almost twenty years to when a small group of colleagues considered the use of new digital technologies as a necessary remedy to the chronically slow appearance of scholarly bibliographies in traditional print formats.<sup>1</sup> The animated conversation that ensued during the formative years informed a pilot project in 1995–1996 and saw the legal incorporation in September 1997 of a formal partnership that includes: two major academic societies (the Renaissance Society of America and the Sixteenth Century Society and Conference); two research centres (the Arizona Center for Medieval and Renaissance Studies [ACMRS], Arizona State University and the Centre for Reformation and Renaissance Studies [CRRS], Victoria University in the University of Toronto); plus two academic units at the University of Toronto (the Faculty of Information and the University of Toronto Library).

From this partnership arose a commitment to a clear mandate:

Iter, meaning a journey or a path in Latin, is a not-for-profit partnership dedicated to the advancement of learning in the study and teaching of the Middle Ages and Renaissance (400–1700) through the development and distribution of online resources. (<http://www.itergateway.org>)

We will not dwell on the scope of the partnership. However, we will note that this concise statement of purpose has provided an enduring and precise sense of direction with enough freedom in its implementation to allow Iter to align its efforts with a constantly changing digital humanities landscape. Further, there is a deeply ingrained sense of service to Iter's communities that is instantiated through rich and varied relationships to our partners and our numerous associated societies and research groups.

A case in point is Iter's bibliographical database, our first major project and a deliberate response to the need for more efficient and effective access to metadata. First released in 1998 with 100,000 records and two New York institutional subscribers, today the bibliography includes 1.3 million records, with more than 430 university libraries and scholarly institutions subscribed worldwide. Tremendous growth is also visible in materials covered (e.g., from articles, essays, and books, to reviews and encyclopedia entries). This project relies on the co-operation and support of faculty and students at three different institutions and on the technical support of the University of Toronto Library (UTL), all of which is co-ordinated by a central office.

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Since the early years, Iter has expanded its offerings to Renaissance scholars through a range of distribution, publication, and co-publication agreements. For example, currently we offer specialized databases (*Bibliography of English Women Writers; Milton: A Bibliography*); a digital edition of Paul Oskar Kristeller's *Iter Italicum*; full-text e-journals (*Confraternitas; Early Modern Women; Early Theatre; Quaderni d'italianistica; Renaissance and Reformation/Renaissance et Réforme*); and, most recently, e-books. Our e-book collections include *The Other Voice in Early Modern Europe: The Toronto Series*, co-published by Iter and the CRRS, and *New Technologies in Medieval and Renaissance Studies*, co-published by Iter and ACMRS. Future plans include offering e-editions of CRRS publications, including their *Essays and Studies* series, as well as digital editions of F. Edward Cramz's *A Microfilm Corpus of the Indexes to Printed Catalogues of Latin Manuscripts before 1600 A.D.* and *A Microfilm Corpus of Unpublished Inventories of Latin Manuscripts through 1600 A.D.* In effect, Iter has developed a rich platform for online publication and dissemination of materials for research and teaching.

While development of all of these programs continues at a lively pace, of late our conversation has turned to Iter's potential role in facilitating more informal scholarly communication and in supporting social knowledge creation. To a certain extent, this direction is suggested in our early efforts to facilitate the online presence and operations of the Renaissance Society of America, our ongoing support of conference sessions on the use of new technologies in our subject areas (including travel funds for graduate students), and our development of a suite of tools for community interaction through a PHP website (now discontinued). However, this direction is more strongly signalled in our recent partnership with other digital humanities groups (e.g., Implementing New Knowledge Environments, or INKE), the forthcoming co-publication of *The Social Edition of the Devonshire Manuscript*, and the proposed complete re-working of Iter Community (IC) as a collaborative and repository integrated with Iter's other resources and services. The following section of this article provides an introduction to both the vision of IC and its new implementation.

### Iter Community

A number of Iter Community Advisory Committee members indicated that the old IC, based on the Drupal Commons distribution, offers an unusually dense interface. Iter programmers have also found that the platform, while rich in functionality, provides a prohibitive level of complexity for customized development. We are thus building a Drupal-based prototype that will help us address the particular needs of our

community, and which will be intuitive for scholars to navigate and easy to manage. Our work plan timeline this year entails regular consultative meetings with our advisory group for feedback in development, while we also are able to trace site navigation experiences through Google analytics.

The core commons functionality we have specified for IC offers public and private groups, user profiles, blogs, file upload, forums, personal activity streams, limited messaging functionality, and Wiki document creation. Open source software offers much of what we need, and between the UTL team and the University of Toronto Scarborough (UTSC), we have the programming expertise to build our own modules as functionality requires it. The software we will integrate in the months ahead may be passed along to the larger digital humanities community for its use and further development. In regard to populating the new IC, we plan to import all users from the existing community site on Iter Gateway to the user table on the new relational database. We are also working toward having the Ficino listserv managed and distributed from the IC platform, with its 850+ members migrating into the database as well. The group will remain an e-list, but with threads now available by browsing an area of IC. We have acquired from the University of Toronto the complete Ficino archive, which goes back nearly 25 years now; we plan to provide this rich social content as a searchable resource from within the community space.

The original vision for Iter Community, articulated six years ago now, presciently proposed combining, in a single web interface, Iter's discovery tools, around which a community coalesced, and social media. In building the new IC, we are pursuing the merger of commons functionality with the Iter Bibliography. As a development space, the new IC also approaches projects under its umbrella in their inherent modularity, actively seeking to deploy key components across the environment for collective benefit. This involves working with projects to make the digital tools they prioritize – annotation, to take one example – available throughout the IC environment as communal scholarly primitives (Unsworth, 2000). We provide independent indexing for each IC project; but a combined cross-project search in a single interface is another way to produce a shared environment. Communal meta-data policies orientated simultaneously toward scholarly project sustainability and public social knowledge creation are being developed as well. Dublin Core and automated schema.org microdata structuring might peacefully coexist in IC.

On the backend, we currently have two Debian Linux virtual private servers, one as a development sandbox and one for production, on a VMWare framework running Apache Web server and Solr configured with multiple cores. These servers reside at Information and Technology Services (at UTSC), with which we have established service licensing agreements. We can readily add additional servers, processing, and storage as required. Apache Tika (on a Tomcat 7 Java service) has been set up for indexing PDFs (files in Portable Document Format) and other non-SGML (Standard Generalized Markup Language) based file formats. DenyHosts, UFW (Uncomplicated Firewall), and Hobbit are currently employed for security, and we are looking to add VPN (Virtual Private Network) tunnelling. We are also now exploring an internal repository solution based on Git – the distributed revision control and source code management system (SCM) – for tracking the development of IC projects and for

pushing code from the production server to the development server. Like real-world sandboxes, IC is a shared space, and while we anticipate that users within it will play well with others, we do wish to preclude scenarios in which a particular project shuts down collective services – taking out all the shovels and toys, as it were. We assign admin rights for SSH (Secure Shell) access to project’s directories, for their content management system (CMS), and for their databases, and will also grant super user access on the development server when called for.

It has been necessary to draw a line between providing a knowledge environment for innovative scholarship and publishing, and the setup and maintenance of basic Internet infrastructure in addition to our own backend. We decided against hosting an IC email server, for instance, in sustaining Iter’s focus on supporting social knowledge creation publishing projects and the provision of an integrated Web 2.0 scholarly communication platform. To these ends, we are working with Information and Technology Services (ITS), part of the UTL team and a partner in Iter, and Information and Instructional Services (IITS) in designing a single sign-on (SSO) solution for IC. In its conception, this initiative is to allow an individual logging in to the commons space with her Twitter credentials, say, to be able to move seamlessly between IC projects and the commons, receiving permissions specific to each space automatically without additional authentications. Data from all of a user’s activities across IC and in the commons can be accessible to her in relevant ways within a personal activity stream. We have taken steps towards an OpenID/OAuth-based solution here, rather than implementing a Shibboleth system as commonly found in academic institutional settings. Our knowledge environment, we believe, should readily aggregate users of various IC project sites with scholars and learners from outside of the academy. We have acquired a number of domains for IC, with [itercommunity.org](http://itercommunity.org) to be designated as the project’s home address.

An initial pilot project to take up residence on our public production server is the Institute for Research in Classical Philosophy and Science ([www ircps.org](http://www ircps.org)), with a private development sandbox version installed on the development site. A recently announced project of Chicago’s Newberry Library to develop an education site for paleography is set to begin January 2016, using an IC forum in the new commons, and we have been outlining ways for IC to meaningfully interact with the T-Pen transcription software logs that the site’s learners will generate. A number of other distinguished projects have indicated interest in pursuing collaboration with Iter Community – the Renaissance Knowledge Network (ReKN) and INKE’s NewRadial among them – and we are profoundly excited about the unique affordances that might arise, both spontaneously and intentionally, from diverse coexistences in a public-facing social knowledge creation environment. The current work we are undertaking with directors of the *Social Edition of the Devonshire Manuscript* to produce a version of their groundbreaking project within IC is leading the way in these efforts to both understand and develop IC as a social knowledge creation ecosystem for digital humanities projects.

## SOCIAL EDITION OF THE DEVONSHIRE MANUSCRIPT

The most recent iteration of the social edition was built in Wikibooks in order to bring together lay editorial communities (within Wikibooks and other social media),

students (via the use of the social edition as an in-class teaching tool), and traditional scholars (represented by our advisory group). We found, via feedback from our advisors, that in order to foster the sense of a community that, as one of our advisors noted, is “virtually there, as if everyone is crowded around a page, putting their two cents in on matters great and small” (Advisor 7, personal communication, March 4, 2012) editors must productively collaborate in the service of textual scholarship using digital platforms. Based on our analysis of our advisors’ combined perspectives on credit, peer review, and collaborative editing with the traffic and interaction in Wikibooks, we concluded that the social edition model could recast the role of the editor to meet the needs of both enthusiasts and scholars. However, some of our advisors were uncomfortable with how very open Wikibooks is: contributors to the *Social Edition of the Devonshire Manuscript* within Wikibooks could too easily, to their minds, change the transcriptions of the manuscript. While the advisory group was in favour of layered annotations and glosses on the text, some members were uncomfortable with potential changes in the sixteenth-century poems at the heart of the edition.

In the next iteration of the social edition—a WordPress-based version of the text, in which the transcriptions are fixed, but in which annotations to the social editions are editable—we plan to model scholarly best practice and open access methodology through the use of collaborative, technologically mediated scholarly editing in the Iter Community environment. We plan to build on our discoveries from the Wikibooks production process. We were pleased to find that producing an edition “live,” in consultation with various groups across multiple media, let us build an edition that meets the needs of its readers in nearly real-time. In the *Social Edition of the Devonshire Manuscript* project, a process-driven social edition, the scholarly conversation always overtakes and extends beyond the scholarly material that gets produced along the way. This focus on the social, the sense of leaning in around an edition page, aligns the goals of the *Devonshire Manuscript* editorial team with the purpose, manifest both in Iter’s history and in the technical specifications outlined above, of the Iter Commons prototype.

In very practical terms, the *Devonshire Manuscript* editorial team sees the edition and production space within Iter as a place to develop the edition further in ways that capitalize on the possibilities offered by conflicting and congruent interpretations, new evidence, and differing theoretical perspectives in the apparatus of the edition itself, and, perhaps more significantly, as a place to bring the social edition text into productive conversation with the other resources within Iter. Working in a collaborative digital space that can bring editors, researchers, and reviewers together lets the text evolve, thereby capturing the scholarly conversation, which currently takes place around a print edition, within the edition itself. As one social edition advisory group member pointed out, “The main advantage [of an evolving edition] is the openness to further corrections and improvements—of the introduction, the texts, and the commentary” (Advisor 7, personal communication, March 4, 2012). One advisor suggested that the evolving edition speeds up the scholarly conversation that is, at its root, the main goal of the peer-review process:

When it comes to the goals of peer review, I see it less in terms of ‘grading’ and evaluation. … It seems ultimately that it is facilitating a conversation amongst a scholarly community about a work in progress. … It’s done in a very abstracted way [at the moment]. (Advisor 2, personal communication, March 5, 2012)

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From the standpoint of research on edition production in a digital environment, capturing the conversation among that scholarly community via annotation, written documentation, and analytics will be key.

Our goal, then, is to build a text that, to borrow a colloquial expression, plays well with others, whether those others are texts, readers, annotators, or editors. Editing, engaging new scholarship, and even peer review are all social. At the moment, print editions tend to address how the edition was created – which interpretations rejected, which scholarship embraced, which revisions made – only in very general terms. The incorporation of social reading tools that produce analytics seems like a natural fit for digitally published texts. As Kathleen Fitzpatrick (2011) argues, “The greatest value added by the scholarly publishing process in the future likely will lie not in the content itself, but in the tools that will enable authors to produce and readers to interact with that content and with one another via that content” (p. 185). Iter Community’s affordances for encouraging readers, annotators, and editors to engage with one another, without tying the initial editor to a single platform, make Iter Community the ideal home for the social edition.

Iter Community’s ability to host multiple content management systems is one of its key features. Earlier digital publishing and peer-review initiatives tend to divide along two lines: they are either aggregators (e.g., NINES, which is almost wholly agnostic about a digital edition’s format, provided each document has a stable URI about which XML metadata can be ingested) or platform providers (e.g., that offer a single platform for publication). Iter Community takes a middle path, offering space for publication in which initial editors and advisory groups can choose the content management system that best suits their vision for an edition, whether that content management system be Drupal, WikiMedia, Scalar, or WordPress. The resulting Iter Community space realizes the vision of shared infrastructure for sustainable digital scholarship (Rockwell, 2010).

Storage is not synonymous with sustainability – it is in their use, their currency, and their circulation that texts are preserved (Fitzpatrick, 2011). The ability to mount the content management system that best suits each Iter Community publication, and to submit that publication to Iter for peer review, are key to the people engaged with the text. What sustains a scholarly text is the community that is built around it, the way that its ideas are taken up by other scholarship, and the way that it circulates among scholars, students, and the general public. We want to integrate that scholarly conversation in and alongside the text itself. Scholarly readers need the authority models of peer review, but may also want to know that the edition text is up to date: that in incorporating new scholarship and responses from other readers, it embodies the perpetual beta that characterizes web applications, while securing the authority models that underpin scholarly work (Manovich, 2013). The social life of the text, however, does not simply incorporate human sociality. In its sociality, the text must engage with other texts, or, more specifically, must be built in such a way that

computation can bring the text into dialogue with other digital texts within the Iter system, regardless of each text's content management system.

To this end, the Iter-based INKE team is working with librarians at the University of Toronto and the University of British Columbia Okanagan to create metadata compatible with traditional print specifications, such as the Library of Congress subject headings, and with more recent developments, such as Dublin Core and MODS, HTML5 microdata, and the metadata projects of commercial search engines, as represented by the sitemap.org and schema.org specifications.

This will allow traditional knowledge repositories, such as libraries, and newer commercial resource discovery tools, such as search engines, to better index Iter's scholarly digital resources. The goal at this stage is to draw up a proposal for metadata standards and user-friendly metadata creation tools for review by Iter's advisory group. Many of the advisors will be contributing content to Iter Community, and so are uniquely positioned to work with librarians and IT staff to outline the best way for their texts and other digital resources to *play well* with related texts within Iter, as the team develops cross-CMS search capabilities, visualizations, and other tools to enhance the social life of each resource.

Our hope for the social edition within Iter is to capture as much of the editorial process as possible for judicious display to various readerships, including computers. We expect to make the *Devonshire Manuscript*'s analytics, reader commentary and annotations, and responses to new scholarship available to a core editorial team, and then to offer audience-specific versions of the text: a teaching edition that offers the poems, glosses, and annotation; a community edition that captures all the commentary by other readers, allowing readers to turn certain threads on and off and to follow a particular commentator through the text; a research edition that includes witnesses, page images, paleographic samples; and an annotated bibliography encompassing the material and scholarly history of the *Devonshire Manuscript*. This model of semi-public editing and ongoing revision of scholarly online resources may indeed make it seem as though digital publications are in perpetual beta, but through the sociality that Iter Community affords – both for humans (via apparatus for reading and contribution) and computers (via metadata) – we expect that the social edition will be both sustained and sustainable.

### Closing observation

The *Social Edition of the Devonshire Manuscript* illustrates an important facet of Iter Community. Put simply, IC is intended to change and grow, to adapt itself to the needs of the members of the communities that it serves. Indeed, it is the underlying vision of IC to provide a flexible environment for communication, exchange, and collaboration that will evolve organically as its participants work out their particular priorities and challenges. In this way, IC will play an important role in realizing Iter's mandate in a manner that resonates with the possibilities of Web 2.0.

### Note

1. The early history of Iter is presented in Castell (1997); Bowen (2000); and Bowen (2008).

## Websites

Arizona Center for Medieval and Renaissance Studies [ACMRS], <https://acmrs.org>  
Arizona State University, <http://www.asu.edu>  
Centre for Reformation and Renaissance Studies [CRRS], Victoria University in the University of  
Toronto, <http://crrs.ca>  
Faculty of Information, University of Toronto, <http://www.ischool.utoronto.ca>  
INKE, [www.inke.ca](http://www.inke.ca)  
Institute for Research in Classical Philosophy and Science, <http://www.ircps.org>  
Iter Gateway, [www.itergateway.org](http://www.itergateway.org)  
NINES (Networked Infrastructure for Nineteenth Century Electronic Scholarship),  
<http://www.nines.org>  
NewRadial (INKE), <http://sourceforge.net/projects/newradial-inke/>  
Renaissance Knowledge Network (ReKN), <http://rekn.itercommunity.org>  
Renaissance Society of America, <http://www.rsa.org>  
Schema, [schema.org](http://schema.org)  
Sitemap, [sitemap.org](http://sitemap.org)  
Sixteenth Century Society and Conference, <http://www.sixteenthcentury.org>  
University of Toronto, <http://www.utoronto.ca>  
University of Toronto Library, University of Toronto, <http://onesearch.library.utoronto.ca>

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