Against the Grain

December 2007

ATG Special Report -- Libraries & the Digital Commons: Eight Principles for an Emerging Ecosystem

Ellen Finnie Duranceau
MIT Libraries, efinnie@mit.edu

Follow this and additional works at: https://docs.lib.purdue.edu/atg

Part of the Library and Information Science Commons

Recommended Citation

In my opinion, with advances in the Internet and some of the excessive greed of major publishing houses, the **Open Access** movement is a natural phenomenon for fair cost that also includes backlash to some of these for-profit practices. Having said that, some of my colleagues in academia believe in the extreme side of the spectrum, in which there should be no charge for accessing research knowledge. This is the same contention made by many people about the music industry, where arguments for no costs are applied to any and all music they wish to access, regardless of the costs associated with production of that music. Yes, some musicians share their music free of charge to anyone, but by the same token, there exist volumes of commercially produced music where both the artist and the production company have invested in the work and therefore expect some returns on their undertaking. Given this, it is not truly fair that a consumer questions why these constituents are not providing their music free of charge. At **IGI Global**, we have been very mindful of the issue of **Open Access** by offering our journals and comprehensive reference titles in electronic format free of additional charge. Through this model, we firmly believe that we have already recovered our investment on the title by selling the print version and therefore, there is no need to charge our customers an additional fee for the electronic format. I wish more publishers would begin following our business model to facilitate additional access to research. Furthermore, currently **IGI Global** is experimenting with a few new models which would allow us to become a more active player in the **Open Access** movement.

ATG: You are located on "Chocolate Avenue" in Hershey, Pennsylvania. Do you like chocolate? What are your hobbies? What do you read in your spare time?

MK: As you may know, **IGI Global**'s main operations are in Hershey, Pennsylvania "The Sweetest Place on Earth," with an additional editorial office in New York City. Yes, we are on Chocolate Avenue where we are just a few blocks from the **Hershey Chocolate Factory** and often, the scent of fresh chocolate meets us at our office doorstep. In regard to liking chocolate, surprisingly, I personally do not like chocolate, but my wife, **Beth**, enjoys it enough for the both of us. My hobbies primarily include listening to music, which I truly believe overcomes all social and cultural boundaries. I like all types of music, including classical, rock (classic and alternative), jazz, country, particularly **Johnny Cash**, and even rap. I love swimming and traveling. Also, I like to read social and political satires. I recently finished reading **Thomas Friedman**'s latest book *"The World is Flat."* Yes, I read it in print format and not on **Amazon**'s new **Kindle**!

Finally as a part of my job of managing **IGI Global**, I also try to keep up with research in my field of study, and actually devote two days a week on my schedule to keep up with my writing and editorial work. I recently finished a *Handbook of Research on Public Information Technology* (two-volume) with my colleague **Prof. David Garson** of the **North Carolina State University**, which is due to be released in February 2008. In my spare time, my wife and I manage a non-profit private charity foundation entitled the "**World Forgotten Children Foundation**," providing nutritional, educational, and medical assistance to handicapped orphaned children in third world countries.

Thanks for giving me this opportunity to share with you and your readers about **IGI Global** and my views about our industry. As much as I strongly believe that technology is allowing many societies to achieve much greater power in the dissemination of knowledge, at the same time, the technology is also contributing to widening the economic gaps between developed and underdeveloped nations. Perhaps this is the most important global issue challenging all of us as the citizens of this World. 🐸

ATG Special Report — Libraries & the Digital Commons: Eight Principles for an Emerging Ecosystem[1]

by **Ellen Finnie Duranceau** (Scholarly Publishing and Licensing Consultant, MIT Libraries; Phone: 617-253-8483) <efinnie@mit.edu>

With the prospect of increasingly open access to research on the horizon, academic Libraries should be poised to embrace the challenging question of what they can do to support their campuses in this new, evolving environment. Yet we are only beginning to understand what we need to do to adapt to support and foster open access. We will need new models and new ways of thinking — new frames of reference. This article provides such a new frame of reference by exploring the idea of "**The Commons**" as applied to digital scholarship, through the lens of the principles needed to manage a biological commons.

The idea of the commons as a shared public resource that is free to individual users is deeply historical. A commons is a public good, a resource that is not significantly depleted by each additional individual use — like public streets, lighthouses, law enforcement, or the **Boston Common**, which was opened up to all citizens of Boston in 1634 for grazing cattle. Internet access to research has been talked about as the new "**Digital Commons**."[2]

Stewardship of the Commons

In a 1968 *Science* article, biologist **Garrett Hardin** developed a metaphor that drove thinking about the commons for several decades. He argued that "freedom in a commons brings ruin to us all," referring to this as "the tragedy of the commons," his thesis was that a commons would inevitably be overexploited until it was depleted and finally destroyed.

More recently, however, another biologist has made the case that the "tragedy" metaphor for the commons was erroneous. **Princeton** biologist **Simon Levin**, in his 1999 book *Fragile Dominion: Complexity and the Commons*,[3] argues persuasively that management of a shared resource does not inevitably lead to its destruction; a commons can work if you have agreed-upon rules for its management.

Levin's book offers eight "commandments of environmental management," or essential management lessons for the biosphere as commons. His focus is on managing the planet as a commons, but by extending his principles from a biological ecosystem to a socioeconomic ecosystem — scholarly communications — we can, as **Levin** says, create a "framework for sound practice" in managing our digital commons. This article will explore the implications of each of **Levin**'s principles for managing a biological commons has for the digital commons.

Principle #1: Reduce Uncertainty

Levin argues that to sustain the biological commons we need to reduce uncertainty, which he says can be achieved through:

• Minimizing reliance on one mode or one source

• Monitoring and investigating to obtain new information all the time

• Spreading risks by broadening the scale or scope of our activities

He concludes that diversification is "imperative for survival."

Diversification: Institutional Repositories

In our digital commons, applying **Levin**'s first principle suggests that we, too, need to diversify if we are to be successful in supporting our communities. A key area for diversification is the institutional repository. Libraries need to move quickly and decisively to develop and support IRs, since having an infrastructure to capture and manage intellectual assets produced by the organization will be essential in a new world of open access to research. Libraries have a natural role in this process, by creating and managing open access repositories.

Since emerging as a phenomenon circa 2000-2002, with **California Digital Library**'s **eScholarship Repository**, **MIT**'s **Dspace**, and **Academic Research in the Netherlands Online (ARNO)**, the IR movement has spread to universities around the globe. But at this juncture, to support an emerging digital commons, libraries need to work to ensure that their campus offers an open access repository for its authors, and that it is sufficiently robust and well designed that ingesting new content is smooth and quick. If we anticipate a surge in research covered by open access mandates, we need to have the technical infrastructure ready to support this surge. Automating input, offering friendly interfaces, and providing sufficient staff support for authors are goals we need to work toward quickly, redirecting resources if necessary to do so. We need to ensure that sufficient resources are available to support author self-archiving, among other broader digital library initiatives and preservation demands.

Diversification: Supporting Faculty in Publishing Decisions

Libraries also need to diversify into offering direct and indirect support for faculty and other academic authors in the open access arena. We need to be well-positioned to explain to faculty why and how they should and can retain rights to their work, and what rights they should retain. We need to be aware of publisher policies on self-archiving, and particularly self-archiving in institutional and discipline repositories. We also need to be prepared to explain to faculty how they can use various open access channels, including self-archiving options, open access journals, and hybrid journals.

One way libraries can provide this kind of support to faculty and other authors is by creating a position that focuses on faculty outreach related to author rights and publishing decisions in the digital era. At **MIT**, in September 2006, we filled a new position to act as a resource for faculty, supporting them in regard to:

- Rights in relation to their work
- Use of publisher copyright transfer agreements
- Options and rights related to self-archiving

- Options for OA publication
- Understanding funder policies in relation to OA options.

The focus of this new position is on supporting decisions about how and where to publish, and educating faculty about the implications of copyright assignment for the university. **Peter Suber**, chronicler of the OA movement, commented that this position reflects "Until OA is as familiar as email, every university should have something like this."[4]

Diversification: University Presses

University presses — a place for libraries to start conversations on our campuses. Some libraries have developed innovative partnerships with their university presses, including **Cornell** and **Pennsylvania State University**, and the **California Digital Library. Partnerships** would seem a fertile ground for devising the new business, publishing, and access models we need to support broader open access, including devising institutional publishing programs. We should seek each other out to learn how libraries and university presses can jointly support open access content.

Principle #2: Expect Surprise

Levin's second principle for sustaining and stewarding the biological commons is to "expect surprise." In particular, he says we should:

- Maintain flexibility in management structures
- Adjust rules and regimes on the basis of monitoring and other sources of new data

And he warns that:

- "When a good habitat is found, there obviously is merit in sticking with it …however … staying for too long in one place, or with one strategy, reduces knowledge about what is going on elsewhere."

Levin talks about "adaptive probing" as a means of avoiding this trap; he says that continual exploration of alternative management strategies is needed "even when current strategies seem to be working adequately." For libraries and their digital commons, this principle suggests that we need our roles and services to be data driven, and we need to iteratively test our environment, gathering new data all the time.

At **MIT**, this has meant offering user surveys, and then redesigning systems and services, as well as priorities and even positions, based on the data obtained through them. We carried out a survey of all our users in 2005, and a photo diary study of the information gathering and use behaviors of a selected sample of our graduate students in 2006.[5] One of the many directions that emerged from the survey data was the need for more support for understanding copyright and publishing options (an area where awareness was low but importance

high) and more effort to raise awareness of the services we do offer in these domains.

Levin's warning that it can become dangerous to get too comfortable in "good habitat" is particularly apt for libraries in this volatile era. A particularly pertinent example is that of licensing & electronic resource management systems (ERMs). Librarians should be proud that in a few short years we identified a new need to negotiate licenses, and then devised efficient ways to manage them and store metadata about license terms. We developed in-house, custom tools that paved the way the **Digital Library Federation** "ERMI" guidelines,[6] and the adoption of those guidelines by commercial vendors of ERM systems.

Yet it would not be wise to become complacent about our successes. "Adaptive probing" suggests need for article-level metadata about rights, which is not yet accommodated in our ERMs. We cannot fully take advantage of articles that are open, particularly those buried in otherwise traditional journals, unless we have rights metadata at the article level flagging these articles as open access. It is not too soon to have discussions with ERM system vendors and to investigate how open access rights can be reflected in or made interoperable with our IRs.

Adaptive probing of our environment also suggests a new role for libraries in tracking institution's output; we have the skill set ideally suited to maintain data about where our authors publish, and to track changes in publishing patterns, to help support the evolution of scholarly publishing. This kind of effort could be carried out in partnership with those who are responsible for institutional research on our campuses.

Principle #3: Maintain Heterogeneity

Levin's third principle for stewarding the biological commons is to maintain heterogeneity. He makes the case that:

- "The resiliency of any complex adaptive system is embodied in its diversity and in the capacity for adaptive change among system components" and that
- "…massive failures…are far more likely to occur in homogeneous environments."

In the digital commons, our environment will remain anything but homogeneous in the near future. No single access or pricing model will exist; we will continue to have to work within a variety of models. Green, gold, and hybrid OA will persist alongside with traditional subscriptions and print for some time. So we will need to continue to do many of the important things we have focused on in the last decade: maintain advocacy for Fair Use principles; push back on overly restrictive digital rights management, and restrictive licenses and

purchase models; and promote open access channels through library tools.

We can also begin to develop and support new tools and methods such as the **NISO** document, the **Shared Eresource Understanding** or **SERU**,[7] which we hope will save the time and energy of libraries and publishers so that they can free resources for the important tasks of providing discovery, archiving, preservation, and access to the corpus of research and scholarship.

Principle #4: Sustain Modularity

Levin's fourth principle for sustaining the biological commons is that "in modular structures, there is buffering against cascades of disaster." For libraries, modularity needs to be our watchword, both in the organization of staff and in the organization of systems. To be flexible enough to respond to our rapidly evolving environment, we need to move away from monolithic, hierarchical organizational structures. Modular organizational structures allow for more nimble responses, and allow ideas to bubble up more quickly than a traditional, hierarchical organization divided along the lines of public services and technical services. These divisions are no longer meaningful in the digital era, and act as barriers to change and innovation.

We also need to support interoperable, modular design in system architecture. The **Web 2.0** world is built upon services that can be accessed and used where the user is, through a variety of applications. Modular services embed our resources where our users are, including course management systems, **Google**, institutional repositories, and the like. These Web-based services can be hacked by our users, modified, and redeployed (see for example the **MIT** libraries' betas page at: *http://libraries.mit.edu/help/betas/*). In a world of open access to research, our own gateways will not provide sufficient user value; we will need to reach out to meet users where they are.

Some of these modular services will need to offer social software, incorporating user-generated content (tags, reviews, threaded discussions, rankings) that build on our customers' needs to participate in trusted networks, but online. Other services need to be designed to fully leverage the collections and information we do have, through data mining and integrated, federated searching across all library systems.

Principle #5: Preserve Redundancy

Levin's fifth principle for sustaining the biological commons is to preserve redundancy. He says that "Redundancy is the immediate source of replacement of lost functions" and that it "…reduces the functional susceptibility to specific threats."

For libraries and the digital commons, redundancy of function, particularly the archival function, is something we've been very good at, but we need to apply our thinking in a new way. Our print collections, housed across the world in numerous research libraries, provided sufficient, even excess, redundancy to preserve our cultural heritage and the record of science. We know that unlike the print world, the digital arena does not require this level of redundancy in order to offer good service. Yet we also know that the existing level of redundancy in storing the world's research digitally is not adequate. Archival solutions that are politically, practically, technologically, financially, and administratively workable are just beginning to emerge. A key role for libraries in the coming years is to solidify these emerging solutions, participate assertively in shaping them, and continue to advocate for sufficient and efficient, and sustainable, redundancy in preserving the cultural record.

One of our initial goals is to identify a trusted archive for all our digital content. We will need to determine which of the following models will work best for our campuses, and the answer may vary by material type, publisher, or other factors:

* IR / Discipline archive
* Portico
* LOCKSS
* Print sharing cooperatives
* National agreements

Our eresource management systems need to be designed to store information about what trusted archive solution is employed. This data will be needed more and more at the article level as well as the title level.

Principle #6: Tighten Feedback Loops

Levin's sixth principle is to tighten feedback loops. Specifically, he argues that "…the benefits to individuals in restraining their own consumption or exploitation patterns are faint in the case of common resources. To encourage behavior in the common good, we must tighten cost and benefit feedback loops." This involves ensuring that the market get the price right, or privatization of a resource will go wrong.

Levin's point is that "Tightening feedback loops leads to empowerment, giving people incentives for environmentally beneficial behavior." And that: "…the market can work properly only when pricing reflects the true value of a good, including the social costs." According to **Levin**, privatization can create value that promotes preservation, but only if that price is set and managed properly.

Libraries have a great deal to consider in applying this principle to managing the digital commons. One of the fundamental failures in the existing systems has been the price insensitivity characteristic of our very unusual market, in which universities offer research essentially for free through their faculty and researchers, publishers add some value to it, and sell it back to universities at prices that have recently increased 300% over inflation (for commercial publishers, for the period 1975-95).[8]

The pressing question for libraries is how to develop new pricing models that can make the market work again. We need to build an economic model that offers a reasonable value proposition, setting us on a proactive path where we are not reacting to publishers' opaque pricing and their requirement that we increase our spend every year, based on deeply historic — and largely irrelevant — print spend.

There are already some provocative moves in this direction. In particular, the **University of California**'s proposal for value-based pricing begins to set a direction libraries can take in the coming years. The **UC** model is a sophisticated formula, derived from collaborative study including economists and librarians, which builds cost-effectiveness measures, production costs, measures of scholarly value and impact, and other information into journal pricing.[9]

The work at **UC** begins to answer the important question facing not just libraries, but the entire scholarly communication ecosystem in the digital era: can libraries and their associations develop a cost model based on economic analysis that will improve upon the market constraints we operate under? Such pricing might help ease a transition during which we need new ideas for traditional subscription pricing for some portion of the market, while at the same time devising new open access distribution and pricing models. A consideration of the social cost of toll-access research in limiting potential access could potentially be built into an economic model.

We also need to be looking forward to what will hit us next: it seems likely that the large commercial publishers will meet researchers' need for new approaches to the vast corpus of online research by offering more sophisticated discovery, synthesis, and analysis tools for indexing and data mining toll-accessed journal articles. Libraries should not be caught responding to the pricing demands of these publishers, but should begin now to develop pricing principles and models in anticipation of such new services and products.

We also need to work hard to communicate about open access pricing models with our constituencies, to counter the misconception that 'author pays' is the only model being tried, and that no model has yet proven viable.

We are the logical organization on our campuses to begin to look at institutional pricing models so that we are poised to move to an economic model that makes the most sense for the campus as a whole, not just for the traditional library budget. This means building the bridges that allow for fluid payments both for traditional subscriptions and author-side payments through memberships, deposits or other means. Libraries should be leaders in evaluating and as appropriate assisting with this shift in budget and payment models, as we have been the experts in this arena, and the liaisons with publishers, for decades. This is a business we know, but we need to expand our horizons quickly so that it is not prematurely concluded that an author-pays system can't work, or that it is at odds with the notion of a library remaining at the heart of our campuses and scholarly research purchasing process.

Principle #7: Build Trust

Levin's seventh principle for sustaining the

biological commons is to build trust. **Levin** argues that:

- "Evolution works most effectively when individuals interact most with their near neighbors."
- Small communities can maintain trust, but globally, we need control mechanisms to maintain trust: such as treaties, international agreements, or contracts.
- "We must find ways for all people and nations to realize their own self-interest in the common good."

Building Trusted Relationships with Faculty

In libraries, we can take to heart the command to interact with our near neighbors; building new relationships and renewing existing ones is vital to our ability to support an emerging digital commons. Ongoing monitoring is essential in this volatile environment, where the methods faculty use to communicate research are changing rapidly. **The Berkeley Study**,[10] for example, emphasizes the evolution of in-progress research communications; if we are out of touch with faculty we will miss such significant trends, and will not know where or how to position our services to meet faculty needs. We also need to be sensitive to divided loyalties: faculty may identify more with their discipline (their passion, and a constant across the sweep of their careers) than they are to their institutions.

Unless we can build and nourish faculty relationships, we will not be able to carry out an essential role: addressing the many misconceptions that exist about open access publication and the existing system of scholarly communication. Many faculty believe that access is already seamless, because it seems so on their large research university campus; they may believe that they already have all rights they need to do what they want with their research, not realizing that sharing preprints or posting their work to their institutional repository may in fact violate signed agreements, or that future uses of research are being constrained by the individual decisions of faculty to accept limited or no rights to their work.

Libraries can and should have significant educational role in this phase of reshaping our ecosystem. We need to explain importance of open access to research and education; we are in a particularly good position to frame the discussion in the context of our institutions. We need to develop the communication skills and relationships that make it possible for us to talk about innovations in scholarly publishing that (as **Levin** emphasizes) draw upon the faculty's self-interest, focusing on increased readership, citation frequency, and impact.

We can't do this unless we devote staff and time to tracking changes in faculty attitude, and unless we create organization structures that promote ongoing communications that are both formal and informal. It may be important to create or revitalize a library/faculty advisory board to nourish communication, to create a new outreach position, or to structure a service in a way that triggers faculty interest — for example, by emphasizing copyright and reuse of work.

At **MIT**, the Faculty Committee on the Library System supported the drafting of a faculty-initiated resolution on open access. In January 2007, the Libraries hosted a panel of five speakers on copyright issues. At this session, one of the speakers, a faculty member, publicly launched the draft resolution. We expect that the Libraries will provide logistical support and shepherd the draft through Academic departments during the spring of 2007, when it will be vetted by faculty.

Building Trusted Relationships with Administration

In thinking about building trust, however, it is not enough to build and sustain relationships with faculty. We need to build trust and foster relationships with the administration, since resources flow from the administration and change cannot occur without administrative involvement. At **MIT**, we have been fortunate to have support for open access from the president, the provost, the VP for Research, the office of sponsored programs, the **Committee on Intellectual Property**, and the **Faculty Committee on the Library System**. We have also tried to take advantage of our visiting committee process, in which an outside review board evaluates the libraries' progress and presents conclusions to the **MIT** administration. This kind of process, which is common on many campuses, can be an important vehicle for getting the message through about the importance of open access. Those on such review committees are primed to see the significance of open access for a university's reputation through offering visibility for its successes.

Another natural partnership is with those who manage processes related to grants and research funds. They have been dealing for years with contracts that require openness to data and materials and are well-positioned to work with libraries on these requirements for scholarly publications as well.

The fundamental message about building trust in our digital commons is that libraries cannot do this alone. We can help tell the story. We offer a logical place to provide support, for we have relationships with faculty across breadth of teaching and research at our institutions. We can help create the climate where it is easier for faculty to do the thing they want to do anyway. But we need solid relationships with our near neighbors to be successful at all these things.

MIT's amendment to publisher copyright agreements[11] offers an example demonstrating the change that can happen when libraries build relationships and work in partnership on campus. We devised a broad rollout including library and faculty newsletter articles; department meetings; and the President's Council.

The Libraries' stewardship of this amendment involved framing the issue for the institution, asking: Who will control research results and the research record: educators and researchers or third-party interests? We kept the focus on faculty productivity: we had found in our work with faculty that they can't control the current and future use of their own work and that the agreements they sign are undecipherable to them. The Libraries were also the source of an initial letter to the 30 most heavily used publishers by **MIT** authors, and act as the focal point for ongoing communication between the publishers and **MIT** related to the amendment. The Libraries also act as the liaison for IP counsel support to authors; questions come to the Libraries first and are then referred to IP counsel as needed. The Director of Libraries remains at the center of intellectual property issues, concerns, and policies on campus; she is the senior academic officer with responsibility for advice on copyrighted material and a member of the President's Committee on Intellectual Property. These roles and relationships have made discussion and change possible.

Beyond "Near Neighbors"

As **Levin** warns, though, building relationships with our near neighbors — however successful — is not enough. To engage in significant and productive change encouraging more open access to research, libraries will also need to work internationally with learned societies, standards organizations, and governments to create structures that support open access. As **Levin** points out, "At the global level, such trust is missing; Yet treaties exist, and nations by and large meet their obligations. Trust develops, reinforced by the weight of the community of nations." We are fortunate that the open access movement has already developed worldwide momentum starting from the original declarations of open access, through the recent sweep of OA mandates through the United Kingdom and Europe. If libraries can continue to build local relationships and connect to the national policies and international momentum for OA, we will be prepared to support the scholarly publishing ecosystem in its next phase of evolution.

Principle #8: Do Unto Others As You Would Have Them Do Unto You

Levin offers one final principle, his eighth: the universal "golden rule:" Do Unto Others As You Would Have Them Do Unto You. He says that in sustaining the biosphere or biological commons, "Societies can only survive when there is action for the collective good, whether maintained by reciprocal altruism, binding agreements, systems of law, or international compacts."

For the sustainable stewardship of common resources — ecological or socioeconomic — as **Levin** so wisely summarizes: "Sound and responsible environmental management demands equitable and sustainable stewardship of common resources. Through this program of action, we can harness the forces of evolution and self-organization for the common good. To do otherwise would be both to miss our opportunity and to run counter to natural forces of irresistible power."

From the Reference Desk

by **Tom Gilson** (Head, Reference Services, Addlestone Library, College of Charleston, 66 George Street, Charleston, SC 29401; Phone: 843-953-8014; Fax: 843-953-8019) <gilsont@cofc.edu>

The idea of creating a scholarly publishing system that offers more open access to research has indeed become a natural force of irresistible power. **Levin** has offered us eight commandments to support a biological ecosystem; by following the guidelines **Levin** offers, libraries can support the inevitable evolution of our scholarly publishing ecosystem, shaping it into a true digital commons that will maximize the benefit research and scholarship can offer humanity. 🌳

ABC-CLIO adds another impressive set to their collection of history encyclopedias with the publication of the ***Encyclopedia of the Cold War: A Political, Social and Military History*** (2008, 978-1851097012, $495). Edited by respected scholar **Spencer C. Tucker**, this five-volume set consists of 1,290 entries by over 200 contributors from academic institutions worldwide. Coverage includes entries from those offering "background on World War II, such as the Allied Conferences" to those covering the "breakup of the Soviet Union and the disbandment of the Warsaw Pact" in 1991.

While the majority of articles discuss military threats and diplomatic initiatives or offer biographical sketches of major and minor players, there are also entries that touch on broad cultural topics like music and literature. In addition, there are those that address specific political events like the Profumo Affair, as well as concepts and concerns like Anti-Americanism and Arms Control. Other entries focus on individual countries and their part in the Cold War. In fact, countries like the United States, the Soviet Union, China, and Great Britain have a number of articles devoted to their involvement.

Aside from the diverse content coverage, one of the great strengths of the set is volume five which is separately edited by **Priscilla Roberts** and contains 171 primary source documents. But there are more than simply reprinted documents here. In each case, **Roberts** provides an introduction that places the document in context describing its relevance and giving the reader a real sense of the source's historical importance.

These five volumes are attractively produced with 350 images and over 45 individual maps complimenting the text. Overall, the articles are written in an unassuming style that provides essential information in a clear and factual way. There is only one area where there could be improvement. Although there is a complete list of alphabetical entries pro-

vided, with the number and diversity of the entries, this set could benefit from a thematic index. Compensating for this somewhat are the generous use of "see also" references but a thematic index is a useful finding aid for any encyclopedia of this scope. That being said, the Encyclopedia has other helpful features including a Cold War chronology, tables providing the rank structure for selected Cold War militaries, a glossary and an additional selective bibliography.

The ***Encyclopedia of the Cold War: A Political, Social and Military History*** will take a place among top quality sets covering 20th century history and become a standard reference for Cold War research. If this set is added to their reference collections, libraries owning good single volume works like **Thomas Parrish's** *Cold War Encyclopedia* (1996, 0-8050-2778-5, $60) published by **Henry Holt** and **Scarecrow Press'** *Historical Dictionary of the Cold War* (2000, 0-8108-3709-9, $65) may want to consider transferring them to circulation.

Sage Publications has also released an important reference recently. Edited by geographer **Paul Robbins** from the **University of Arizona**, the ***Encyclopedia of Environment and Society*** (2007, 978-1-4129-2761-1, $695) is a visually impressive resource that treats an area of study that grows in importance daily. The five volumes in this set contain 1,200 concise articles by scholars from both the social and natural sciences providing a necessary interdisciplinary perspective to the set.

The actual content gives readers "a vast range of … entries including those that cover "key individuals, policies, problems, processes and theoretical concepts." Examining a list of articles supports this diversity of topics. There are articles that deal with the specific biology and chemistry of the environment in addition to those that discuss climate and geographic formations and features. There are also entries that cover conservation and ecological issues, environmental movements and organizations, societal issues, including politics and the economy, and of course, pollution and other threats and hazards. In addition, there are articles that talk about the intersection between society and the environment in specific countries, as well as those that discuss the contributions of individual people. Each article is fact-laden but written within the context of the interplay between human activity and the environment. Such interre-

Endnotes

1. This paper was initially presented in a slightly different form as a talk at the **American Library Association/SPARC-ACRL Forum on Public Access**, on January 20, 2007.

2. See for example: **Lawrence Lessig**. *The Future of Ideas: The Fate of the Commons in a Connected World* (New York: Vintage Books, 2002); **Tami Oliphant**, "Enclosure of the Knowledge Commons: The Role of Publishers, Librarians, and Faculty," **University of Western Ontario**, October 2006; "The Future of the Digital Commons," **MIT Communications Forum**, Sept. 22, 2005: video available through **MIT World**: *http://mitworld.mit.edu/video/303/* (accessed February 22, 2007).

3. **Simon A. Levin**: *Fragile Dominion: Complexity and the Commons* (Reading,MA: Helix Books, 1999). also see *http://www.eeb.princeton.edu/~slevin/* (accessed February 22, 2007). I would like to extend my appreciation to **Professor Levin** for his work and for developing and publishing the set of principles discussed throughout this article.

4. **Peter Suber**, *Open Access News*, 12/10/2006, http://www.earlham.edu/~peters/fos/2006_12_10_fosblogarchive.html (accessed February 22, 2007).

5. See: *http://macfadden.mit.edu/webgroup/userneeds/index.html* (accessed February 22, 2007)

6. See: *http://www.library.cornell.edu/elicens-estudy/dlfdeliverables/home.htm* (accessed February 22, 2007)

7. See: *http://www.niso.org/committees/SERU/* (accessed February 22, 2007)

8. Study on the Economic and Technical Evolution of the Scientific Publication markets in Europe, *The European Commission, Final Report*, January 2006, p.7.

9. "The Promise of Value-based Journal Prices and Negotiation: A UC Report and View Forward," **University of California Libraries' Collection Development Committee**, January 2007.

10. "Scholarly Communication: Academic Values and Sustainable Models," **C. Judson King** et al. July 27, 2006. Berkeley, CA; **Center for Studies in Higher Education**, **University of California, Berkeley**.

11. The key Provisions of the **MIT Amendment** are: Nonexclusive right to use their own work in noncommercial and professional activities; Published version in OA repository (**MIT's DSpace** or the **National Library of Medicine's PubMed Central** database.); Grant **MIT** rights to use work in educational activities. **Amendment** is available at: *http://libraries.mit.edu/about/scholarly/copyright-form.html*.