Culture, Value, and Communication*

American Council of Learned Societies Commission on Cyberinfrastructure for the Huma

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1 Culture, Value, and Communication

The European Commission's Web site Knowledge Society [1]posits that:

> *Our society is now defined as the "Information Society", a society in which low-cost information and ICT [Information and Communication Technology] are in general use, or as the "Knowledge (-based) Society", to stress the fact that the most valuable asset is investment in intangible, human and social capital and that the key factors are knowledge and creativity. This new society presents great opportunities: it can mean new employment possibilities, more fulfilling jobs, new tools for education and training, easier access to public services, increased inclusion of disadvantaged people or regions.*

One of the strategic goals set for Europe by the European Council is "to become the most competitive and dynamic knowledge-based economy in the world" by 2010. Clearly, other developed nations understand that economic growth is a function of knowledge and creativity, and that information is increasingly the core asset held by companies, the key social good produced by governments, and the determining factor in individual quality of life.

A key component of the knowledge society is education, and education requires preservation of the record of the past as well as ongoing scholarship and research. Education, scholarship, and research all require the sharing of data and the communication of results. The system of scholarly communication includes scholars, publishers, libraries, and readers. Readers receive work that is produced by scholars using resources made available by publishers and held in or found through libraries. Scholars create value by doing research, thinking, and writing. Publishers add value through peer review, editing, and design. Libraries add value by collecting, organizing, and preserving scholarship, and, of course, by making it accessible. At least three economies are at work in this system:

1. A prestige economy, primary for scholars and important but secondary for the other players
2. A market economy, primary for publishers, usually not very important to scholars, and important but not primary for libraries
3. A subsidy economy, primary for libraries, which are subsidized by universities, less available to publishers than it used to be, and more important to scholars than they generally know

It should be no surprise that a system that comprises three different economies is difficult to operate successfully. When it does work, it has a certain elegance: each party contributes from its own sense of mission,

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[1]http://ec.europa.eu/employment_social/knowledge_society/index_en.htm (<http://ec.europa.eu/employment_social/knowledge_society/in

and each gets paid in its own currency. The system has not always worked this way, though, and it may not continue to work this way much longer: at present, there seems to be general agreement that the system is broken, or breaking. [2]

Scholarship cannot exist without a system of scholarly communication: the cost of that system is a necessary cost of doing academic business. One could say that every part of this system is subsidized—from faculty to presses to libraries—and one could equally well say that every part operates under significant financial constraints. In the case of university-based publishers, institutional subsidy has declined in recent years, forcing university presses to behave more like commercial entities. [3]If, however, we take a longer view of the information life cycle in universities, revenue from sales may not be the best measure of the value of scholarship. It may make more sense to conceive of scholarly communication as a public good than as a marketable commodity.

The phrase "public good" often refers to the idea that there are good things—things of special social value—that ought to be produced for free public use rather than as a marketable commodity. [4]Common examples of public goods are national defense, vaccination programs, the GPS navigation system, dams, and public art. Education is often spoken of in these terms, and although education is to some extent exclusive (or there would not be systems of limited admissions), knowledge itself—as represented in scholarship and research—is not. Thomas Jefferson put it most eloquently: "He who receives an idea from me, receives instruction himself without lessening mine; as he who lights his taper at mine, receives light without darkening me." [5]Private goods are a clear contrast to this: if one person eats an apple, a second person cannot eat the same apple; but one person can teach another how to spell apple without thereby losing that knowledge. In the case of public goods, charging a price invariably reduces social welfare relative to what is possible.

On the other hand, although public goods can be extended to more users at or near zero cost, they can be quite costly to produce in the first place. The case of digitally produced scholarship is an excellent example. Economic theory tells us is that we ought to charge nothing for it at the margin: we ought to give it away. On the other hand, it tells us nothing about how to pay for its production or how much of it to produce. It does tell us that markets will underproduce this kind of good, though, and it also tells us that, as a general matter, the solution of public-goods problems requires collective action.

Collectively, then, we should act to support the system of scholarly communication as a public good—and this collective action must be as broad as possible, including not only those universities with presses, but also all universities with faculty, libraries, students, and public outreach. After all, the social value produced

[2]For an in-depth look at the pressures faced in one part of the system, by scholarly publishers, see John B. Thompson, Books in the Digital Age (Cambridge: Polity Press, 2005). Concerning the pressures faced by scholars, the Modern Language Association (MLA) has appointed a Task Force on Evaluation of Scholarship for Tenure and Promotion, which will complete its work this year and is expected to address how the tensions within the scholarly communication system are affecting junior faculty: see http://www.insidehighered.com/news/2005/12/30/tenure (<http://www.insidehighered.com/news/2005/12/30/tenure>)for summary. information. For a library perspective, see the series of reports collected under the heading "Managing Economic Challenges" at the Council on Library and Information Resources http://www.clir.org/pubs/reports/managing.html (<http://www.clir.org/pubs/reports/managing.html>), or OCLC Online Computer Library Center, Environmental Scan: Pattern Recognition (2003) http://www.oclc.org/reports/escan/ (<http://www.oclc.org/reports/escan/>).

[3]According to Peter Givler's "University Press Publishing in the United States" http://aaupnet.org/resources/upusa.html (<http://aaupnet.org/resources/upusa.html>)(fn. 14) (originally published in Scholarly Publishing, ed. Richard E. Abel, Lyman W. Newlin, and Katina Stauch [New York: Wiley 2002]), From 1988 to 1998, the average parent institution support among reporting presses declined from 10.4 percent of net sales to 6.3 percent, for a loss of 4.1 percent; during the same period, outside gifts and grants increased, as a percentage of net sales, by only 1.6 percent, for a net loss in non-publishing income of 2.5 percent.

[4]There is also an economic construct—not unrelated, but not the same—called a "pure public good." This more abstract concept derives from the production and use of a good, and it is worth noting that pure public goods (for example, air pollution) may not always be good things. The defining characteristic of a pure public good is that one can add more consumers without diminishing the quantity of the good available to others. National defense, the system of contract law (as distinct from litigation itself), standards, and information are all examples of pure public goods.If, for the pure public good, the cost of adding another consumer approaches zero, then it follows as a matter of economic efficiency that the market price ought to be zero, because to charge something for an item that costs nothing to produce at the margin is to pass up possible value—the value of making someone better off while doing no harm.

[5]Thomas Jefferson, "To Isaac McPherson," 13 Aug. 1813, in Writings of Thomas Jefferson, ed. H. A. Washington, vol. 6 (Washington, DC: Taylor & Maury, 1853–1854) 180-81.

by the system as a whole is enjoyed by all of these constituents.

In considering how best to organize the publishing side of scholarly communication, it will also be important to be open to new business models. Received opinion and settled assumptions may be very costly, both in terms of missed opportunities and in terms of unforeseen expenses. For example, defying conventional wisdom, the National Academy Press has for some time now been distributing the content of its monographs free on the Web, and (thanks in part to a carefully thought-out strategy for doing that) it has seen its sales of print increase dramatically.

By comparison with print, born-digital scholarship will be expensive for publishers to create and, over time, even more expensive for libraries to maintain. Even considering these costs, however, owning and maintaining digital collections locally or consortially, rather than renting access to them from commercial publishers, is likely to be a cost-cutting strategy in the long run. If universities do not own the content they produce—if they do not collect it, hold it, and preserve it—then commercial interests will certainly step in to do the job, and they will do it on the basis of market demand rather than as a public good. If universities do collect, preserve, and provide open access to the content they produce, and if everyone in the system of scholarly communication understands that the goods being produced and shared are in fact public goods and not private property, the remaining challenge will be to determine how much, and what, to produce.

Such questions would normally be answered with reference to demand, and, indeed, one analysis of the "crisis in scholarly publishing" is that it is a crisis of audience. Average university-press print runs are now in the low hundreds, and although digital printing lowers the unit cost for printing short runs of books, selling fewer books raises the cost per copy to the library or scholar and makes it harder for the publisher to cover pre-press costs, which are still the most significant portion of the total cost of producing a book or article. On the other hand, university presses could (and should) expand the audience for humanities scholarship by making it more readily available online. Unless this public good can easily be found by the public—by readers outside the university—demand is certain to be underestimated and undersupplied.

We note that some university presses have already made great strides in electronic publishing—Johns Hopkins's Project MUSE, [6]Illinois's History Cooperative, [7]and the University of Virginia Press's Rotunda [8]series, to name a few. The Rice University Press, closed in 1996, is being brought "back to life as the first fully digital university press in the United States." [9]Some scholarly societies, such as the American Historical Association, also have experimented with publishing born-digital scholarship. These and other experiments in electronic publishing in the humanities and social sciences, and experiments in building and maintaining digital collections in libraries and institutional repositories, need to be supported as they move toward sustainability, and they need to be funded (by universities, by private foundations, and by the public) with the expectation that they will move toward open access—an area in which many of the natural sciences and some social sciences are conspicuously ahead of the humanities. [10]Open-source software is an instructive analogue here, and the experience in that community suggests, strongly, that one can build scalable and successful economic enterprises on the basis of free intellectual property. [11]It is worth noting, too, that the "Economy of Regard" (that is, prestige) is one of the factors used to explain why this open economy works. [12]

[6]http://muse.jhu.edu/ (<http://muse.jhu.edu/>).

[7]http://www.historycooperative.org/ (<http://www.historycooperative.org/>).

[8]http://rotunda.upress.virginia.edu/ (<http://rotunda.upress.virginia.edu/>).

[9]Rice University Press http://ricepress.rice.edu/ (<http://ricepress.rice.edu/>).

[10]See John Willinsky, The Access Principle (Cambridge: Massachusetts Institute of Technology Press, 2005).

[11]See Bruce Perens, "The Emerging Economic Paradigm of Open Source" http://perens.com/Articles/Economic.html (<http://perens.com/Articles/Economic.html>)(2005).

[12]See Paul A. David and Rishab Aiyer Ghosh, "Free and Open Source Software Developers and 'the Economy of Regard': A Quantitative Analysis of Code-Signing Patterns within the Linux Kernel," Stanford Institute for Economic Policy Research, SIEPR-Project NOSTRA Working Paper, 2004 http://siepr.stanford.edu/programs/OpenSoftware_David/Free%20and%20Open%20Source%20Software.html (<http://siepr.stanford.edu/programs/OpenSoftware_David/Free%20and%20Open%20Source%20Software.html>).

As in the open-source community, [13]however, there are real resources in play, and those who contribute to them must have some motivation to do so. According to Kate Wittenberg, director of Electronic Publishing in Columbia (EPIC), such enterprises must "find a way in which the technical infrastructure and some aspects of workflow systems might be created centrally and then shared by a variety of projects in the humanities and social sciences." She adds, "For EPIC and similar organizations, finding an answer to this challenge would be extremely valuable: [it would make] use of existing infrastructure to create efficiencies in organizations with minimal staffing." [14]One model of shared infrastructure outside the United States is Érudit, an initiative of Les Presses de l'Université de Montréal. Érudit offers a range of services tailored to different kinds of academic publications and "is intended to serve as an innovative means of promoting and disseminating the results of university research." [15]Another model might be a scaled-up version of EPIC itself, which is a collaboration among Columbia University's press, libraries, and academic information systems. [16]The cooperation between the University of California Press and the California Digital Library is another promising example.

[13]See Jill Coffin, "An Analysis of Open Source Principles in Diverse Collaborative Communities," First Monday 11.6 (June 2006) http://www.firstmonday.org/issues/issue11_6/coffin/index.html (<http://www.firstmonday.org/issues/issue11_6/coffin/index.html>).

[14]http://www.acls.org/cyberinfrastructure/cyber_meeting_notes_june.htm#wittenberg_summary (<http://www.acls.org/cyberinfrastructure/cyber_meeting_notes_june.htm#wittenberg_summary>).

[15]Érudit http://www.erudit.org/en/index.html (<http://www.erudit.org/en/index.html>).

[16]EPIC http://www.epic.columbia.edu/ (<http://www.epic.columbia.edu/>).