Information Commons

Human societies have always used common property, from grazing fields and town halls to streets, sidewalks, and libraries. Even in today's profit-dominated markets, economists have found that communal ownership and control of resources can be efficient and effective. Scholars meanwhile have described the salient characteristics of successful "common property regimes," including clearly defined boundaries, rules, the equal exchange of goods and knowledge, and the building of trust and social capital. Libraries, civic organizations, and scholars have begun to turn the idea of the commons into practice, with a wide variety of open democratic information resources now operating or in the planning stages. These include software commons, licensing commons, open access scholarly journals, digital repositories, institutional commons, and subject matter commons in areas ranging from knitting to music, agriculture to Supreme Court arguments. These many examples of information sharing have certain basic characteristics in common. They are collaborative and interactive. They take advantage of the networked environment to build information communities. They benefit from network externalities, meaning that the greater the participation, the more valuable the resource. Many are free or low cost. Their governance is shared, with rules and norms that are defined and accepted by their constituents. They encourage and advance free expression.

Library science professors Karen Fisher and Joan Durrance have examined how information communities unite people around a common interest through increased access to a diffused set of information resources. The Internet is often the hub of these communities, facilitating connections and collaborations among participants, the exchange of ideas, distribution of papers, and links with others who have similar interests and needs. They describe five characteristics that distinguish these Internet-based information communities:

- information-sharing with multiplier effects;

- collaboration;
- interaction based on needs of participants;
- low barriers to entry; and
- connectedness with the larger community.

According to Fisher and Durrance, online communities that share the production and distribution of information are likely to experience increased access to and use of information, increased access to people and organizations, and increased dialogue, communication, and collaboration among information providers and constituents.

Information commons have similar characteristics. They are collaborative. They offer shared spaces, real and virtual, where communities with common interests and concerns gather. They take advantage of the networked environment to build information communities, and they benefit from network externalities, meaning the greater the participation, the more valuable the resource. They are interactive, encouraging discourse and exchange among their members. Many are free or low cost. Their participants often contribute new creations after they gain and benefit from access. These commons enhance both human and social capital. Their governance is shared, with rules and norms that are defined and accepted by their constituents. They incorporate democratic values. Free expression and intellectual freedom prevail.

Examples of Open Democratic Information Resources

New initiatives with characteristics of common property regimes are emerging. They share features such as open and free access for designated communities, self-governance, collaboration, free or low cost, and sustainability. Some of these projects use the Internet itself as a commons, employing open source software, peer-to-peer file sharing, and collaborative Web sites, while others are more focused on content creation and dissemination. While some consider the whole Internet or the public domain to be types of

commons, these are essentially open access resources and lack the clearly defined group governance that is characteristic of common property regimes. Thus, while not every example below fully embodies all aspects of commons, they all represent exciting new alternatives to a purely private property driven approach to information and ideas.

Software Commons

Computer software designers were among the first to recognize the importance of developing a commons-like structure to share computer code and collaborate on modifying and upgrading electronic products. Innovative programmers created hundreds of open source software applications that are available without the restrictive licensing provisions of commercial software. The best known example is Linux,92 an open source version of the UNIX operating system.

Licensing Commons

Licensing is the process that copyright owners use to control reproduction, distribution, or other use of creative works. Many licenses are highly specific, restrictive, and costly. To build the information commons, creators have begun to use the licensing model to relax the stringency of commercial licenses and grant permissions for many uses in advance, while still maintaining some control over their work. By using licensing arrangements quite different from those of media companies, they are able to contribute their work to open-access publications and digital repositories.

Scholarly Communication

Open Access in the 1980s, many professional societies turned over their journal publishing to private firms as a way to contain membership fees and generate income. The short-term financial gains, however, were offset by serious losses in terms of access to research results once journal prices outpaced library budgets. Prices of scholarly journals soared, and

publishing conglomerates restricted access through expensive licenses that often require bundled or aggregated purchase of titles.

Scholarly Communication: Digital Repositories

A breakthrough for alternative distribution of scholarship came in October 1999 with the development of the Open Archives Initiative (the "OAI"). Funded by the Digital Library Federation, the Coalition for Networked Information, and the National Science Foundation, this initiative works with various information examples of open access scholarly journals BioMed Central, www.biomedcentral.com, was the first scientific publisher to institute an alternative model that offers open access, fully peer-reviewed online journals. Begun in 1999, it recovers costs through author charges, some advertising, and institutional support from universities and foundations. The Public Library of Science (PLoS), http://www.plos.org, conceived by Nobel Laureate Harold Varmus with his colleagues Michael Eisen and Pat Brown, began three years after the introduction of BioMed Central.

Institutional Commons

Over many centuries, information communities resided in institutions like universities, schools, and libraries. Today the importance of moving institutions toward an information commons model is recognised. Universities are now threatened by the tragedy of the commons, and must respond by building a "common enterprise community" as a sanctuary for knowledge creation. One way that universities can serve the broader public interest, is by requiring that publicly funded research discoveries be in the public domain. Libraries are quintessential examples of institutional information commons. They embrace, embody, and practice the democratic values that characterize commons. Their mission is to provide communities with open, equitable, sustained access to ideas, and they offer individuals the tools, skills, and spaces necessary to participate in democratic discourse. Starting with free Internet services, libraries have taken a leading role in promoting alternative modes of

access to information. Collaborative, online libraries are also among the proliferating examples of information commons.

Subject Matter Information Commons

Beyond the cross-disciplinary archiving and publishing efforts evolving among scholars and cultural institutions, information communities worldwide have developed a broad array of projects that focus on particular subjects. These efforts incorporate many of the characteristics of commons. Examples range from civic engagement to cultural exchange and from collaborative publishing to dissemination of specialized resources.

Principles and Characteristics of Information Commons

Information commons have similar characteristics. They are collaborative. They offer shared spaces, real and virtual, where communities with common interests and concerns gather. They take advantage of the networked environment to build information communities, and they benefit from network externalities, meaning the greater the participation, the more valuable the resource. They are interactive, encouraging discourse and exchange among their members. Many are free or low cost. Their participants often contribute new creations after they gain and benefit from access. These commons enhance both human and social capital. Their governance is shared, with rules and norms that are defined and accepted by their constituents. They incorporate democratic values. Free expression and intellectual freedom prevail.

Future

Developing, sustaining, and governing information commons will require significant investment in infrastructure and content to pay for start-up and ongoing costs. While the public may gain more free or low-cost access, someone must pay to sustain new information commons. Many of the commons are supported by foundations and other grantmaking agencies. At some point, these projects will need to generate revenues to

replace the grants that now cover costs. For circumstances like open access publishing, the burden of production expenses is shifting from purchasers to creators. Such transitions require capital for starters, and then new streams of revenue for sustainability. For libraries, low-cost journals and digital archives are welcome. But libraries already face serious budget constraints in paying for their long-term commitments, let alone investment in new ventures. At the same time, authors need incentives and rewards if they are to favour new publishing ventures that may demand high publication fees. Institutions like universities will need to redirect resources if they are to become publishers as well as consumers of their faculty's scholarship.