

Intellectual Property Conservancies

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Abstract

Conservancies, which hold real property in trust for public purposes or administer easements restricting future uses of private property, are a successful means of securing public benefits within the system of private property ownership. They have been widely encouraged by governments, through tax regulations. Most of us are generally familiar with the idea that property owners may deed rights or donate easements limiting future development or exploitation to a non-profit organization, while continuing to live on their land or in their historic property. With the increased attention that businesses and individuals are paying to the value of knowledge assets, it should be no surprise the conservancy metaphor is now being extended to intellectual property (IP).

Intellectual Property Conservancies (IPCs) are being conceived as a means to provide public benefits by making digital content donated, or licensed to them, freely available and by ensuring its long-term preservation. As such, they would offer free public access to intellectual property as a way of 'leveling the playing field' for rich and poor individuals, and rich and poor countries. The Knowledge Conservancy (<http://www.knowledgeconservancy.org>) is a non-profit IPC incorporated in August 2000; here, the author, who was involved in its planning, explores the issues any such organization will face.

IPCs are digital libraries and therefore have all the problems associated with digital libraries. In addition, IPCs face a large number of challenges that most digital libraries do not confront. These include:

- Obtaining content donations (persuading IP owners of the benefits of giving, possibly without any tax advantage)
- Obtaining financial contributions (persuading philanthropists and the general public of the value of free public access)
- Obtaining usable digital assets
- Creating metadata to support discovery, rights management and preservation
- Providing access to potential readers worldwide

- Providing long-term, or even 'perpetual', access

I. Introduction

I was introduced to the concept of Intellectual Property Conservancies only recently. In the spring of 2000, I met Dr. Robert Thibadeau of Carnegie Mellon University who explained to me his concept for a Knowledge Conservancy, which struck me immediately as an immensely attractive idea.¹ During the summer of 2000, I worked with Thibadeau and David L. Pollack, a local lawyer, to write a business plan for The Knowledge Conservancy, which was then incorporated in August 2000 and which is being organized by them now. In November 2000, I first learned of an Intellectual Property Conservancy dubbed the "Constitution's Commons" by its creators -- faculty at Stanford Law School, MIT, Harvard and Duke.² Since the general idea is clearly 'in the air', I felt it would be useful to identify the requirements for an IPC, abstracting from my experience in writing the business plan for The Knowledge Conservancy, to stimulate discussion of the IPC concept and the best ways of implementing this kind of organization.

A. Why an IPC?

There is no question that the advent of widespread online access to digital information has had major repercussions for societal institutions. It has also made some new kinds of institutions possible, and perhaps even necessary. Intellectual Property Conservancies are an example of a kind of organization that would have made little sense in a pre-digital age. Owners of intellectual property could have given rights to an organization established to receive them, of course, but that organization would have had to be a publisher to make works available to those who might then want to read them. And if the organization was a publisher, it would have had costs that needed to be covered in production and distribution of the titles it was given. Ultimately, it would have been little different from any other non-profit press. Now, however, with online dissemination, digital publication and distribution can be comparatively inexpensive. Some rights owners appreciate the benefit of providing potential readers with a free-to-read (browsable) copy of their intellectual property, and other intellectual property owners would like to have an organization promise to maintain the availability of their intellectual property in perpetuity.

The idea of an Intellectual Property Conservancy also owes something to a major clash which has developed over the past decade between those who want to use the technology of online information systems to develop new markets for information, and those who argue that "information wants to be free" and see the technology as a means to undermine private ownership of intellectual property. The maneuvering of these forces, in courts and legislatures (as witnessed by suits challenging the Digital Millennium Copyright Act,) is increasingly destructive to the financial and social order. Shifts in public policy engineered by one or the other force can cause huge dis-investments and require new business strategies, only to be subsequently reversed by new treaties, laws or rulings. Intellectual Property Conservancies may be a middle ground.

An IPC can promote free-to-read, perpetual public access while shoring up respect for intellectual property rights. This will not bring harmony, but IPCs can satisfy the needs of all but the most radical proponents of free information and unregulated exploitation. At the same time, owners of intellectual property may safely donate specific levels of public access during the term of their copyright control. In this way, IPCs do not compete with copyright owners or try to dismantle the copyright system. On the contrary, they are supportive of the copyright system and the exclusive rights of copyright owners to create or license value-added products. Finally, IPCs need not seek to place all knowledge in the public domain; they could exploit value-added products in cases where intellectual property donated to them has continuing commercial value.

Ideally, an IPC would seek to make the donation of free-to-read access a normal element in online publishing practice. This is possible specifically because an IPC does not threaten the two most important components of the publishers' marketing plans (value-added packaging and timely content), while addressing the two most important public issues (reliable free access that can be assured over the long term). These goals can all be met without negating the others if the right framework is established.

Publishers package information in a way that will appeal to their readers and can be easily accessed by them. Different packages have different functions, but each is tailored to serve a special need. Online publications are even better able to serve information to readers in a value-added way, whether by permitting full-text searches, outline overviews, citation linking, or easy movement of data in the publication to other tools, as for statistical data analysis. In most areas of publishing, the value-added packaging and delivery is the product, while IPCs seek only to ensure the public-right-to-read as a basic level of online presentation. The inconvenient aspects of such presentation could be one selling point for donating public access to an IPC. Although IPCs can provide the content from their servers, they could also allow the publishers to grant free-to-read public access through their own web pages, where the publisher can promote the value-added features of its product (subject to minimum readability guidelines).

IPCs could also take advantage of the fact that publishing is a very time sensitive business -- much information is created for hourly, or daily consumption; still more for weekly or monthly enjoyment. Successful books rarely sell more than a few years - and when they do, are considered "classics". Yet copyright protects works for at least 50 years and often longer. An IPC can provide public-right-to-read (perhaps on a slightly delayed basis), while guaranteeing long-term access that the publisher may be unable, or unwilling, to provide. A slight delay in obtaining access to the free online versions is offset by the public value that long-term access and preservation by an IPC can assure. From a publishers perspective, the willingness of the IPC to keep the property in the public view, which could result in an on-going trickle of sales past the time that they would otherwise be stopped, is a substantial benefit. First copy costs are an even greater part of the overall cost to a publisher in a digital environment, and if someone else is paying the on-going cost of keeping the property available for browsing, a small income stream over a longer period can make a substantial contribution to the economic equation.

Just as the real property Conservancy movement has encouraged the extension of tax benefits for many kinds of donations of real estate and development rights, it is hoped that the existence of IPCs will pressure the body politic to extend new tax benefits to those donating intellectual property. At the same time, IPCs will test the extent to which members of the general public are willing to pay (contribute) to ensure the entire community free access to intellectual property. In time, it is hoped that the debate about access to intellectual property will focus on publicly supported mechanisms for making broader access available rather than attempts to limit the scope of private rights.

B. An Example: The Knowledge Conservancy

During the late 1990's, the Universal Library project at Carnegie Mellon University engaged in a proof-of-concept for making online content publicly accessible. In one sub-project, it approached the New York Times Company to obtain rights to put the full content of the *New York Times*, going back to 1851, online. This project required the participation of the current publisher for materials still under copyright, which in turn required the project participants to define ways in which the provision of free public access to the *New York Times* could be made beneficial to the copyright owner. The New York Times Company turned the offer down, and CMU went ahead on a different track to make available only those issues of the *New York Times* that were in the public domain.³

The *New York Times* experiment, and success with a free-to-read project undertaken with the National Academy of Sciences Press, were the seeds of Bob Thibadeau's IPC model, now called The Knowledge Conservancy.⁴ Metaphorically extending the public interest in conservation of private property and endangered species for long-term enjoyment that has inspired the formation of numerous non-profit 'conservancy' organizations, The Knowledge Conservancy is dedicated to preserving public access to intellectual property. When it is launched in early 2001, it will provide owners of intellectual properties a way to serve the public, yet continue to hold rights to and control value-added uses of their copyright protected content. It will ensure the public, worldwide, free access ("the right to read/view") to content that remains protected by copyright. And it promises to ensure long-term preservation of this electronic knowledge.

Many of the questions about strategy, scope and tactics faced by The Knowledge Conservancy in the planning process will face any IPC, though the decisions which The Knowledge Conservancy made will not necessarily be those made by others.

II. Challenges of Building a Free-to-Read Digital Conservancy

The issues involved in building a digital conservancy include, of course, all those of building a digital library -- and then some. I hope I can be forgiven for not addressing the problems facing architects and operators of any digital library here, not because they are solved of course, but rather in order to examine challenges that are different, or take on new importance, in the context of the IPC.

An Intellectual Property Conservancy faces six fundamental challenges:

- A. Obtaining content donations, by persuading copyright holders of the benefits of giving free-to-view public access
- B. Obtaining financial contributions, by persuading potential supporters of the value of an organization that is obtaining free-to-view public access
- C. Obtaining usable digital assets
- D. Creating metadata to support both retrieval and preservation
- E. Providing access to potential readers worldwide
- F. Providing long-term, or even perpetual, access

A. Obtaining Content

Content owners may, or may not, be ideologically committed to free-to-read. Since those who are persuaded in principle that free-to-read is a good idea probably need only to be given a way to do it, the challenge with these owners will be to make the opportunity known and contribution methods convenient to use. An IPC will also need to attract those who would not be inclined to give away access rights without persuasive arguments of the benefits to them. These benefits might be provided by government, as tax write-offs or savings, or by the Conservancy, as promotion of their value-added property, opportunity to be seen as supporting a public good, provision of 'free' access in perpetuity, and provision of valuable metadata and metadata-based services.

Tax benefits

Tax benefits are central to land conservancies and historic trusts, but it is not clear whether meaningful tax benefits will, in fact, be available for Intellectual Property Conservancies. If the original creator of the intellectual property (an author, artist or inventor) donates it, current tax laws restrict them to writing off the value of the raw materials that were consumed in its creation. Artists and authors have long tried to have this law amended and there is legislation in Congress this session,⁵ but currently this means creators cannot obtain any meaningful tax benefit from donations.

If the donor is an owner (such as a publisher, music label or employer), who has paid to acquire an intellectual property right, outright donation of the intellectual property should be eligible for a tax credit (though most actual examples, like donations of works of art by collections, are in fact somewhat muddy because the physical work is often donated with a full tax write-off though the intellectual property rights may not be transferred to the museum, and may not even have been acquired by the collector). In any case, publishers are, by definition, going to want to publish the content they have acquired, even if they are willing to provide an intellectual property 'easement', or limited license, allowing an IPC to provide free-to-read access. Concepts such as 'easements,' though well established in tax law for real property, are novel ideas in intellectual property law and will, at the very least, need to be tested with tax authorities. They may well need to be legislated.

Promotion

Providing public access to free-to-read content is a way to promote value-added content. In the physical bookstore, we often browse a book, or listen to a few tracks of a CD, before making a purchase. Free-to-read online content may serve this same purpose. Some purists argue that this proves that free-to-read has no real public value, or that it is a Trojan horse which publishers will use to kill off richer online access. A more measured assessment is to acknowledge that the kinds of tools that accompany online access will determine the extent to which online access is an acceptable substitute for other value-added publication formats. Some users may be unwilling to accept the limits imposed by publishers on their free-to-read offerings, such as page-by-page reading or printing; other users will perceive even limited access as a significant benefit. One challenge to an IPC will be to develop a model for free-to-read functionality that is accepted by publishers as not unduly competitive with their value-added products, and accepted by online readers as useful in its own right.

The IPC concept will be viable if at least some publishers are willing to provide a level of free-to-read access as a means to promote their value-added products, and some authors are happy to provide free-to-read access to intellectual property to which they retain rights. It is anticipated that most individuals offering such rights are likely to be acting from non-commercial motives and will encourage highly functional, value-added, access from the very first.⁶ Publishers, on the other hand, are seeking to promote their current commercial product. While they may see promotional opportunities provided by the IPC's free-to-read donation as valuable, they cannot afford to have it compete strongly with their sales. The IPC needs to protect the IP owner's interests in order to obtain an early donation of limited rights and promises to make more valuable access available over time as the threat to a publishers' commercial interests subsides.

Supporting a public good

If a publisher sees free-to-read as potentially beneficial or essentially harmless, they might well donate rights to an IPC so as to be seen as supporting a public good. Needless to say, if the public good becomes persuasive enough, then not being on the list of supporters of the IPC is a public relations negative, and more publishers will join. Making donations to an IPC a normal part of business and making the public aware of which publishers are participating need to be parts of the IPC's strategy.

If an IPC can sign up several exceptionally large or influential publishers in the first few years, the IPC is likely to be a success. To achieve this aim, the IPC may need to find a popular promoter, such as a media celebrity, who can provide very favorable publicity to those publishers who agree to take part. A broadly based public relations campaign spearheaded by popular public figures would also be an effective strategy in getting the idea of an IPC better known.

Free access in perpetuity

Individual IP owners will readily appreciate the benefits of making a gift of rights to an organization that ensures their work a sort of immortality. But an IPC can also attract publishers with the benefits of perpetual access. Publishers who decide to provide free-to-read content on their web sites (and this is increasingly going to be necessary for competitive reasons) are faced with a new liability -- once they have taken this step, either they have to keep their digital content online and free (which costs them money if it doesn't continue to sell) or they need to take it down (which could cause a degree of public anger). If an IPC offers a socially sanctioned way to provide perpetual access without cost to the publisher, donating intellectual property to the IPC when it ceases to 'earn its keep' is a highly desirable fallback. Since publishers would take this step after providing some content for free on their sites anyway, it makes sense to give the limited rights-to-read (and the obligations to maintain it permanently) to an IPC early in the life of the intellectual property.⁷

Metadata and metadata based services

Since the mission of the IPC is to make content to which it has rights easily available online, and its promise to the owners of that IP is to make the free-to-read content easy to find, an IPC needs to invest in rich descriptive metadata to make its content readily discoverable on the web. As a non-profit, and an organization likely to have many ties to academia, an IPC would have an incentive to use public standards and open systems. If these standards can better promote its offerings, that incentive is greater. In contrast, individual IP owners are unlikely to have any metadata systems for their property, and publishers will have created metadata over the years in a variety of in-house proprietary formats, that are often not well suited to providing online catalogs and directories.

If, by donating content to an IPC, IP owners not only make the availability of their intellectual property better known, but also acquire metadata about their own properties in standard formats, they would have substantial incentives to donate content to an IPC. Publishers could use this opportunity to create standard metadata for their IP, donate it to the IPC, and obtain a business expense deduction for the cost of documenting their property. This could enable publishers simultaneously to ensure better access to their properties and to upgrade internal systems and backlist data at reduced corporate expense.

B. Obtaining Financial Contributions

Broad-based membership

Based on preliminary market studies conducted by The Knowledge Conservancy, it seems that the aims of an IPC are quite widely shared by intellectuals; whether they are also shared by the American public we don't yet know. Of course, even if they are, an IPC cannot be assured that it will be able to raise sufficient financial support to operate on a continuing basis. IPCs, like other non-profits seeking donations from the general public, will need to provide concrete benefits to supporters in order to maintain a

sufficient stream of financial contributions. Fundamentally these benefits are those of 'belonging'.

A "membership" organization gives public supporters a sense of belonging and of receiving concrete, perhaps even personal, benefits. Since the 'free-to-read' character of the IPC donated collections are not dependent on the membership status of the user, the IPC has to provide something else. A newsletter and web site that communicate news of the success of the IPC and review recent additions to the properties it holds, would be attractive to many such general members. Retaining members will be important. In planning The Knowledge Conservancy, Bob Thibadeau proposed allowing contributing members to "adopt a title", or have their name in a virtual bookplate. In addition, we imagined that it would be attractive (and sound business practice) to guarantee that a portion of each gift be set aside for "endowment". Both ideas allow members to "track" the effects of their personal giving over time. Family "giving clubs" could give together and be tracked together, attracting matching gifts and gifts in memory of avid readers or IP creators. Doubtless, over time other techniques will be introduced to reinforce the sense of membership and belonging.

Major giving

In addition to general membership (much of the income from which needs to be devoted to maintaining member services), an IPC will need to solicit gifts from major contributors. This may be especially true in the start up phase, before the idea is widely known and when general appeals will not be able to point to a large library of content to demonstrate the value of the idea. Both The Knowledge Conservancy and the Constitution's Commons estimated first year costs at over \$1M.

Support in conjunction with IP donations

An IPC may also need to solicit cash donations from intellectual property owners to help pay the costs of digitizing, transforming, or cataloging gifts of intellectual property that are not suitable for digital delivery or preservation in their current form. Individual IP donors, in particular, may need to help bear these costs, since metadata creation for their donations will be a one-off cost, and the transaction costs of acquiring properties one at a time are likely to be higher than those for donations of sizable lists, including blanket donations of future properties. But even donors of large quantities of IP may need to be asked to contribute financially, because without substantial funds it will be difficult for an IPC to absorb a sizable gift (ten thousand articles from a magazine publisher for instance) in a reasonable time.

C. Obtaining Usable Digital Assets

The most critical issue in the success of an IPC is probably the technical characteristics of the Intellectual Properties it acquires. If care is exercised up front, the IPC could obtain content in a way that enables it to deliver the content today and in the future, without substantial additional investment, and to offer a range of different value-added levels of

viewing without requiring costly intervention. Without attention to the nature of the assets it accepts, an IPC could be saddled with overwhelming costs to initially capture the data in usable formats, transform what it receives, or manage the digital data over time. The IPC's presumed digital assets would instead be liabilities that could far exceed the IPC's likely resources.

Linking terms of donation (legal instruments) and terms of content delivery (technical methods)

One of the most costly factors in acquiring content is negotiating the terms and conditions for its donation and subsequent use. But, depending on what those terms and conditions are, the cost of administering access could also be very high. An IPC aims to maximize the amount of content licensed or donated outright, and it wants to acquire these rights as early in the life of each intellectual property as possible. To achieve these two goals, the IPC must persuade content donors that it will protect their interests by setting specific limits on the functionality provided with access to their Intellectual Property. Designing contractual terms that define levels of rights that can be translated into levels of functionality is a crucial tool in administering donations.

Modular clauses defining incremental layers of rights need to be developed in order to:

1. obtain from each donor the greatest degree of license they are willing to provide to the IPC, and
2. obtain these rights in a manner tied to functionality.

Once specific levels of rights are identified, they can be written into legal instruments using a model of progressively releasing to the IPC rights to provide additional value-added features. For example, a copyright holder is encouraged to give the IPC license to a defined minimum acceptable level of functionality (e.g., rights to provide free public access to the entire publication one page at a time and print the page being viewed) as close as possible to the time of first commercial publication.⁸ At the same time, the donor could agree on a sequence of further rights releases (e.g., granting the right to print a chapter at a time, search any word in context, view an hierarchical table of contents and navigate with it to the proper location in the work, or even exploit the semantic understanding of the DTD in pursuit of scholarly research). Defining these concrete license terms, and the technical facilities that will control the features of the system being enabled, is an important key to sustainable overheads in administration of these properties over time.⁹

It is critical that the donation of different levels of functionality, and the progressive release of further permissions over time, not result in additional operational costs for an IPC. This means that the metadata captured up front must interact with the format captured up front, to dictate levels of display functionality. When declaration of new metadata values is tied to different levels of display, and does not require reformatting or transforming the underlying digital representation, it is simply enabling another view.¹⁰ One way to accommodate publishers' needs to limit functional features is for the IPC to

administer its intellectual property rights with a limited range of variability. This simplifies its management and delivery requirements, and permits publishers to impose different constraints than allowed under this predefined suite, or to showcase value-added features of their products, to serve the free-to-read copy from their own servers.

Unfortunately, we do not yet know enough about how much functionality is required for users to feel positive about the free-to-read offering and remain interested in obtaining a value-added version if their need for it is commensurate with its price. To offer an extremely low functioning free-to-read version that only annoys users will work against the concept of the IPC, as well as leaving a negative impression of the publisher. It is likely that, over time, what is considered minimally acceptable will also change, with standards rising as experience of better online and e-book products become widespread.

Acceptable content formats

Some formats of donated content will require substantial investment to be made usable online, or to be kept online in perpetuity. Hence, an IPC needs to consider the risks involved in selection, based on decisions about what formats to acquire. In planning The Knowledge Conservancy, we decided to accept gifts of texts and still images covered by copyright, and initially, not to accept gifts of sound, motion image, or multimedia. The reason for adopting a staged strategy of beginning with text and still images was to focus our efforts and create a clear public perception of what we were doing. Strategies for digitizing text and images (at a minimum as uncompressed bit maps) allow the escrowed digital format to be converted to future formats as required over an indefinite period of time. Text and image can be delivered with layered public-access-level functionality using existing web-based distribution servers.

In planning The Knowledge Conservancy, we decided that, while issues about how best to digitize sound and motion images could be resolved, it would be more difficult at the present time to define appropriate levels of 'low-fidelity' delivery acceptable to copyright holders because their business models are currently in such substantial flux. In addition, the public is presently quite confused about copyright status of online sound and about the number of new players in the free-to-listen market with different degrees of legality and copyright. Adding another entity offering free sound at this time seems likely to increase the public confusion.

Acquisition of patents, though these are just another form of intellectual property, raises quite different and complex issues for an IPC.¹¹ The information contained in a patent is not in itself of great value until much further development makes it so, and the filing of a patent makes that information publicly available even in the existing system. If patent rights were given to a public trust, necessary further development could be undertaken by that trust (though it is hard to imagine an IPC doing so in very many cases) or could be limited by the trust, for example by auctioning the rights, or (if the trust made the exploitation rights totally free) by others. If the others built a product on the free patent right, they would surround it by many other proprietary patents to protect the value of their investment.

Ownership versus limited rights

An IPC must have defined rights adequate to make content available to users under some terms, but it need not own the IP to do so. If the IPC limits itself to content that it can own, it increases the range of things it can do with its holdings but significantly reduces the quantity of material it is likely to be given. If it accepts limited licenses to do specific things with the content in the public interest, it can expect to obtain more intellectual properties but will, of course, have fewer options of how it can make them available. This is analogous to a land conservancy accepting limited rights to public pathways, or limitations on future development, rather than always requiring outright gifts of property. The strategic reasons for accepting lesser gifts are that these lesser rights are themselves valuable to the public. If a donation with some access or development limits is accepted by the property owner, a donor is brought into a relationship with the Conservancy that might be translated later into donations of further public rights. Since the realm of digital rights to intellectual property is in such a radical state of flux, and the future value of much intellectual property is so uncertain, securing limited rights today rather than insisting on obtaining full ownership may be the only option for most IP

Needless to say, an intellectual property owner may execute a standard deed of gift, donating all rights he owns to the IPC. This could occur at any time during the copyright life of the intellectual property. The IPC will, however, want to seek gifts as long before the expiration of copyright as possible, both to realize the greatest social benefit and because more recent IP is more likely to be available in digital formats and with better metadata.

Although there is not yet any place for it within case law, and perhaps it is not yet fully provided for by legislation, an IPC could develop the model of "intellectual property easements". These could be achieved within existing legal frameworks by executing limited-purpose licenses under which intellectual property owners would grant the IPC rights to permit the public to access their intellectual property. Such easements would need to be accompanied by an escrowed copy of the intellectual property, and rights that the IPC could use to provide public access if the copy under the owner's control ever became unavailable.

There is also no reason why an IPC should not accept gifts of rights that would only become available, or become more fully available, at a later date. Conditional agreements, and agreements to release content for free public viewing at a future date, are common in archives. In such a case, the property owner would provide the IPC with a copy, but the specific rights granted to the IPC would only come into effect at a designated time or under specific conditions.

Persistent links

One of the benefits of an IPC is that it promises to keep IP always available, while the current system of publishing makes much IP difficult to obtain. There are a variety of technical aspects to this claim, one of which is to ensure that some server with the content

must always be available. First, the IPC needs to be able to determine whether the copy at the primary location is available and, if not, shift to a secondary location. The Universal Library at CMU developed a system that keeps track of the on-line books in its catalog and will display locally cached copies of the books if the link to the original work on a remote site disappears.¹² Combined with making copies of the work available from numerous different distributed servers, this might assure that some copy will always be available, without requiring a Persistent URL.

D. Metadata Issues

The most important issue in managing the digital properties accepted by an IPC is metadata management. Any Digital Library needs to invest in discovery (content description) metadata; an IPC must additionally invest substantially in rights management metadata and technical (migration specification) metadata.

An IPC could add significant value to the works in its custody through its management of descriptive metadata. Unlike the author (and to a lesser extent the publisher), the IPC is dependent on the metadata to attract the public use that justifies its existence. As discussed earlier, management of the rights that the IPC owns is crucial to its ability to deliver these rights cost-effectively. Finally, metadata will be central to the IPC's ability to ensure perpetual access that is, in turn, fundamental to its public value.

Where the intellectual property rights holder does not have adequate metadata, an IPC may be able to rely on natural partners in the library community to help provide descriptive metadata for simple resource discovery (such as Dublin Core metadata). On the other hand, it also needs to be able to incorporate metadata conforming to other standards, such as the ONIX and <indec>, being promoted in the publishing communities.¹³

An IPC will need to take some risks in determining the requirements for rights metadata linked to delivery functionality, as discussed above. Proposed standards for rights management metadata, such as those advanced by the American Association of Publishers, do not address the issue of what the E-Book object actually is, and what functionality with respect to it should be enabled. They assume a particular package of content and functionality is bundled, providing an 'on-off' model of access, suited to publication (print or digital) more than asset management (which could generate numerous 'publications' from the same digital resource).

Finally, an IPC needs to manage a digital artifact over time. As such, it needs to determine what metadata will need to be acquired and kept for long-term preservation. The OAIS reference model seems a probable framework for preservation of archival originals while recent proposals by the Open Archives Initiative may be adequate for distribution of metadata between an IPC and its mirror sites, and between IP owners and the IPC.¹⁴

E. Providing Access to Potential Readers Worldwide

Where the content resides and how it is delivered to users around the world, are important operational considerations for an IPC. Although where the data physically resides seems to be a narrow technical issue, it turned out that one of the most controversial aspects of the model we developed for The Knowledge Conservancy was accepting that the digital data that the user views could be located on a server managed by the IP owner. Even though the IP owner is agreeing in their gift of rights to the IPC to make the content available and that should they fail to keep it available, the IPC can shift access to its own servers, many people who think that IPCs are a great idea are put off by permitting the owners to display free-to-read IP on their own sites. Nevertheless, it seems that for operational reasons (someone else pays for the server) and for acceptance by IP owners (some of whom feel retaining this level of control is crucial), distributed access will be necessary.

In addition, an IPC will most likely want to contract with or create mirror sites to provide copies of its catalogs and assets locally for narrow technical reasons, such as ensuring backup and download speeds. However the provision of mirrors will not be straightforward. If content available for access is being defined by metadata about rights, this metadata will need to be provided to mirrors along with the software that governs display features based on metadata values. Sites entering into mirror contracts will need to be provided with the necessary software to deliver content according to the IPC's display rights.

F. Perpetual Access

The fundamental objective of an IPC is to offer free access to its catalog of intellectual property in perpetuity. While this is a rash claim, and one that it might be safer to eschew, it is not the same as promising to be an archive. Indeed, an IPC probably ought not to try to be an 'archive' in the sense of being the repository of the authentic, verifiable, record copy. An IPC is much more like a digital library that holds a copy of a work and makes the accurate and full content available to users without claim to preserving contextual or structural authenticity. (In the dialog about archival requirements, content, context and structure are generally accepted now as essential building blocks of authenticity).¹⁵ The reason that an IPC, and a digital library, focus on preservation of content is that accuracy and truthfulness with regard to the intellectual content of the original is what is required for preservation of public access and the right-to-read.¹⁶ This means that an IPC need not preserve the initial delivery format or any particular subsequent delivery format. Instead, the IPC can return to the escrowed copy to generate a delivery copy in a new format, or move from one delivery format to the next, depending on cost and technology availability, as long as the intellectual content of the original is preserved.

Of course, an IPC still must make strategic decisions about when and how to convert data from one delivery and/or long-term storage format to another, to keep the content accessible over time. Media migration needs to be conducted on an on-going basis as new, more efficient, storage media are developed. This should be relatively straightforward and non-controversial. On the other hand, file format migration, which an IPC undertakes with the requirement to maintain a display view that is as close as

possible to the original, is not necessarily simple. For example, if the IPC keeps an uncompressed bit-map image as a storage format for text and images, its file format migration is likely to be non-problematic. However, uncompressed bit-mapped images are not the best way to store IP contents if the IPC wants to permit its negotiated rights, as documented in its rights metadata declarations, to interact with the content. It would be very expensive to have to interact with bit-mapped content to enable features permitted by changing rights releases to be made available to the public. Even simple rights changes, such as allowing the display or printing of different size chunks of content (whether chapters, sections, a single question and the answer to it in an interview, or a scene in a movie) will require content to have hierarchical and semantically declared parts, or each new view to be hand edited. Searching full-text, especially with such advanced features as proximity searching, requires a different representation than is provided by bit-maps.

Therefore, IPCs need to plan the formats in which they will make and keep their intellectual property (for example, as tif, jpg, pdf, xml, sgml, etc.) for purposes of delivery and for purposes of archiving. An IPC may, ultimately, decide to keep the escrowed copies donated to it in numerous file formats. This will be a significant technical challenge and one that no doubt will require new solutions over time.

III. Resolving Internal Contradictions

There are considerable social, legal and organizational tensions in the organization of an IPC. During the past several months of planning for The Knowledge Conservancy, as we have been getting into those infamous details wherein the devils reside, we have uncovered many contradictions between the likely requirements for successful IPCs and the ideologies of those most committed in the abstract to their formation. These are not likely to be fatal, but resolving contradictions will require open and honest debate about values, strategies and tactics, and a willingness to acknowledge the extent to which 'the best is the enemy of the good'.

Knowledge is universal but tax laws and some IP laws are national. IPCs could add value to works, especially social value, but can't profit by doing so. Rejecting certain gifts of content (which impose high administrative burdens) may be necessary for the IPC to survive and prosper, but it will meet with much resistance from some supporters who believe that the IPC should try to make all content available for free. While it might be ideally true that many IPCs with slightly different goals and methods would contribute to the greater good, the confusion that such competition might cause in the public mind might be the greatest threat to the success of any one of them.

A. Localization/Internationalization

One source of the success of environmental conservancies, land trusts and historic preservation organizations is their tie to local communities. Unfortunately, these ties to local communities have little relevance for IP Conservancies. Indeed, even national communities seem artificial in the world of intellectual property. Yet, a major appeal of

an IPC for copyright owners and contributors might be the business and tax benefits it could provide -- but taxes dictated by national and local laws. This would argue for organizing IPCs on a national scale, as would the cost of trying to provide servers with interfaces in every language.

Yet, no country's IP owners hold all of the world's knowledge. In some sense the objectives of an IPC can only be fully realized when free-to-view public access applies to intellectual property worldwide. The surest path to internationalization is probably through affiliations between many national conservancies that share technical methods. Achieving a reasonable degree of international collaboration will probably require any IPC to adopt open standards, to find a place for shared governance and to engage in concerted efforts to collaborate and cooperate.

B. Added social value

An IPC can exploit properties that it owns or has license to in a way that creates a value-added service. When an IPC becomes a huge digital repository of published content, it could earn income by selling information about term occurrences to dictionary publishers, quotations to reference services, and citation links to search engines, or it could license some levels of value-added access to its assets beyond what it wanted to provide but for which it had rights. Such services could even be geared to create a benefit for the public.¹⁷ Ironically, while an IPC can make such value-added properties, a non-profit may not be able to exploit the economic value of this ability without engaging in unrelated business activity and subjecting itself to taxation.

In addition, if the IPC became a value-added publisher, even when it can guarantee to any given IP owner that it will not compete with their value-added properties (if given limited rights in a licensed donation), the IPC could be perceived as competitive and, therefore, have increased difficulty in soliciting donations from IP owners. It may be necessary to give up visions of obtaining income from exploiting the content the IPC owns.

C. Selecting Content

Though no one would suggest that an historic trust should accept huge donations of industrial wasteland or swamp, or argue that anyone should be able to give an easement to preserve the facade of their home regardless of its historic interest or value, the prospect of turning away donations of IP seems to seriously offend many advocates of 'free-to-read'. Nevertheless, it is likely that a successful IPC will have to turn away some content donations for practical reasons.

An IPC cannot afford to assume the obligation for perpetual access to a universe as broad as everything on the Internet. Its credibility would be severely impugned if the 'catalog' of available free-to-read material ends up skewed by propaganda from whatever quarter or self-published works. Indeed, like any library, digital or physical, the collection of an IPC will be assessed as a whole. Loss of legitimacy could be fatal since legitimacy is crucial to any new social concept.

Even if an IPC established a threshold standard or collections development policy and decided only to acquire IP that had been published (or formally released in the case of music or video, or registered in the case of patents), issues of selection based on review of contents remain. How these selection issues are managed will have direct impact both on the acceptance of the perceived value of the IPC and the cost of providing access to the content it preserves.

D. Digitizing by the IPC

One benefit IPCs offer to society is a way of avoiding costs involved in converting lost electronic information into electronic form after it has spent years under copyright protection but has not been available for use. In this way they could obviate the need for libraries to scan content from hardcopy a hundred years from now, that could have been kept in electronic form.

But an IPC should probably avoid the temptation to accept content today that is not in digital form. Much of the content currently on the Internet for free public access has been placed there by people and organizations which have scanned it from works that are out of copyright. If the purpose of the IPC was simply to get the largest quantity of works possible into digital format, it too could make a case for digitizing. However, converting IP to digital formats is more appropriately the mission of digital libraries than of IPCs. More central to the purpose of an IPC is making public content that might not otherwise be available, or making freely available some limited version of content that would otherwise only be available (though in a more enhanced form) at some cost. A loss of focus on obtaining rights to materials whose rights are currently private property will ensure that an IPC is buried under huge volumes of potential rights for materials that it cannot afford to convert, and ensure that the purpose of the IPC will muddled in the public mind.

E. Transaction Costs

Obtaining rights involves negotiations and contracts. Even under the most ideal conditions with the most ready donor, it takes time and energy to reach an agreement. For this reason, an IPC needs to target owners of large quantities of IP, particularly those who will continue to generate large quantities of IP in the future. Big publishers, especially those who focus on highly time-sensitive and highly functionally driven information, will find the advantages of free-to-read donation most compelling. Because ownership of media in the United States is highly concentrated (the top ten media companies have as great a revenue as the next 100 companies; the top twenty-five earn more than half the total industry income), an IPC can approach owners of very large quantities of content in a fairly short time.

The Internet will create many new publishing opportunities, but there is no reason to expect that concentration will diminish. Indeed the trend of the past decade has been for increased concentration of telecommunications access and content ownership. This has resulted in huge concentrations of "publisher backlists" in the hands of particular firms.

This is not to suggest that an IPC should not also try to obtain content and intellectual property rights from individuals (authors) to whom there is a substantial benefit in having their works remain in the public eye. But in these cases, it will not be economical to approach each owner individually or negotiate any special terms. Instead the IPC needs to provide mechanisms for owners to conveniently offer their content under standard terms and submit it online.

F. Avoiding Confusion

The concept of an IPC is new. Confusion in the public mind could be a major barrier to success. Once it is widely known that the function of providing free-to-view public access to privately owned intellectual property is being performed by a named IPC, there will be a substantial barrier to entry by other not-for-profits into the same arena. If several non-profits appear to be trying to serve the same function, all the competing services will suffer. Clear missions are especially important in communicating new purposes.

IPCs will have a difficult enough time distinguishing themselves from for-profit entities which look to be doing some aspect of the same thing, such as Questia or Octavo. The IPC could argue with reason that both of these electronic publishing ventures, and others, would benefit from giving free-to-view public access rights to make their holdings better known and accentuate the value-added features they are selling.

Greater "competition" arises from the potential for confusion between an IPC and other non-profit organizations with somewhat different aims but with some similar values or operational methods. For example, it will be hard for the general public to distinguish between an IPC and non-profit, academic, digital libraries like the Universal Library at Carnegie Mellon University, the "Online Books Page" at the University of Pennsylvania, and the Electronic Texts Center at the University of Virginia. An IPC will also need to formulate its purposes in a way that distinguishes it clearly from such advocacy organizations as the Electronic Frontier Foundation, the Freedom to Read Foundation, the Long Now Foundation or the National Security Archive, whose mission statements use similar language though their purposes are actually quite distinct.

Finally, the methods of an IPC could become confused with those of IP threatening activities, such as Napster and Gnutella, making members of the public uncomfortable contributing to a legitimate not-for-profit out of uncertainty about copyright law.

G. Perpetual Access

An IPC commits itself to perpetual access in order to qualify as a custodian for tax-benefited property donations. But it needs to be very clear what the limits of this responsibility are so that it is able to fulfill it. No one can at this point state unequivocally that they have a working method for permanent archival preservation of digital intellectual properties. Certainly, the costs of such a program remain unknown.

The perceived value of an IPC is, to a very large extent, its promise to provide long-term social benefits, and perpetual access is an appealing and easily understood concept. It is problematic from the perspective of an IPC start-up that so much depends on the provision of an unknown commodity.

Conclusions

Intellectual Property Conservancies are an attractive idea. They may be a very promising way to bridge some of the conflicts between those who see the future of economic growth in finding new ways to exploit intellectual property in a knowledge society, and those who feel that the knowledge society is creating new inequities that can only be reduced by loosening the grip of private ownership of intellectual property. Examining the requirements for such organizations in advance and publicly debating the best ways for them to achieve their stated goals, are first steps to forming robust Intellectual Property Conservancies.

Notes

1. Both of us are attracted to experiments in intellectual property management. I was promoting the Art Museum Image Consortium, a cooperative formed by museums to creatively address some of the intellectual property problems that confront those wishing, on the one hand, to provide educational access to rich multimedia and, on the other hand, to protect their IP assets from commercial misappropriation. Bob was working with the Digital Library Federation on a collaboration between individuals with digital photography of art and with a variety of 'free-to-read' experiments.
2. Lawrence Lessig of Stanford University Law School shared with me a draft proposal for this IPC. Hal Abelson of M.I.T. has discussed his view of its aims with me. Very preliminary discussions are underway about how The Constitution's Commons and The Knowledge Conservancy might collaborate.
3. Thibadeau's recent work in collaboration with Seagate Technology aims to provide free-to-read access to the public domain Historical New York Times (see <http://nytimes.ulib.org/>), based on a subscription model for enhanced access.
4. The concept of The Knowledge Conservancy was originated by John Ockerbloom while he was a director of the Universal Library Project at Carnegie Mellon University. John is presently at the University of Pennsylvania where he continues to maintain "The On-Line Books" page (<http://digital.library.upenn.edu/books/index.html>). The Knowledge Conservancy was developed further by Robert Thibadeau (another director of the Universal Library), who has focused on exploring frameworks for publishers (such as National Academy Press) to make content available for free online use. Dr. Thibadeau has spent the last six years developing ways in which free-to-read can be shown to enhance revenue, not detract from it.

5. The "Artist-Museum Partnership Act", S. 2781, was introduced June 23, 2000, by Senators Patrick Leahy (D-VT), Robert Bennett (R-UT) and Joseph Lieberman. (D-CT).

6. Cliff Lynch noted, in reviewing these ideas in an earlier draft, that there is not now any real way for an intellectual property owner to 'put it in the public domain'. By donating it to an IPC, an IP owner could contractually do so, and users would not have to rely on an assertion on a web page to give them the right to make use of the content for free.

7. Note that while offering free-access in perpetuity is a means for an IPC to obtain content, it is also a major liability and risk for the IPC.

8. Analogous levels of functionality for sound recordings or motion images can also be developed. Stereophonic sound of a single track may be a minimum functionality while CD quality sound, with liner notes and visuals, searchable lyrics, etc., could represent the high-end functionality. While experience in negotiating with IP owners will be required to determine what is possible and desirable, it will always be necessary to monitor the ability of a digital delivery system to automatically provide a given level of contractually agreed access from a complete file held in escrow.

9. It is worth noting that, if tax benefits are eventually provided for intellectual property donations, such a progressive release could potentially realize on-going business and tax benefits to the donor, since it would increase the use benefits to the readers, and decrease the residual value of the intellectual property held by the donor. Importantly, the actual levels of functionality might be dictated by defined tax benefits at some time.

10. Functionally, this control is the same as is required by rights management and permissions systems, in particular those applying to medical or archival environments where the identity of the users defines what content they are permitted to see.

11. The Constitution's Commons, as proposed by Lawrence Lessig in the fall of 2000, does intend to collect patent rights. Details about how it might make them available or develop them further are not clear to me as of this writing.

12. This experimental system can be found at <<http://xiotech.ulib.org/ulib>>.

13. For example, see the recently released American Association of Publishers OpenEBook standards (<http://www.publishers.org/home/ebookstudy.htm>).

14. The Consultative Committee for Space Data Systems (CCSDS) reference model can be found at <<http://www.ccsds.org/RP9905/RP9905.html>>. The Open Archives Initiative (<http://www.openarchives.org>) open metadata harvesting protocols will be made public at a meeting scheduled for January 23, 2001.

15. The distinction between content, context and structure was introduced in a series of articles by the author which are collected in "Electronic Evidence: Strategies for Managing Records in Contemporary Organizations" (Pittsburgh, Archives & Museum

Informatics, 1994) and in "Metadata Requirements for Evidence" (see <<http://www.lis.pitt.edu/~nhprc/BACartic.html>>) co-authored with Ken Sochats. They are echoed in most current archival reports on recordkeeping requirements, for example National Archives of Australia "Corporate Memory in the Electronic Age - Statement of a Common Position on Electronic Recordkeeping" (http://www.naa.gov.au/recordkeeping/er/manage_er/append_1.html, <http://www.naa.gov.au/govserv/techpub/rkms/intro.htm>) or Anne J. Gilliland-Swetland and Philip B. Eppard, "Preserving the Authenticity of Contingent Digital Objects: The InterPARES Project, D-Lib Magazine, July/August 2000. <<http://www.dlib.org/dlib/july00/eppard/07eppard.html>>.

16. For more on authenticity and its challenges, see David Bearman and Jennifer Trant, "Authenticity of Digital Resources: Towards a Statement of Requirements in the Research Process," D-Lib Magazine, June 1998. <<http://www.dlib.org/dlib/june98/06bearman.html>>

17. For example, in planning The Knowledge Conservancy we explored how TKC could offer "Large-Type" or "Spoken" editions of any intellectual properties donated to it outright, or provided under a free-to-read license or deed which permitted this.

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