

# **Environmental Scan of Pricing Models for Online Content**

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## **Executive Summary**

The objective of this research project was to perform an environmental scan of pricing models for online content that could help the OnDisC alliance formulate an effective e-commerce model. Towards this end a number of literature searches, interviews and web searches were performed.

The research was directed in several areas to ensure that the results provided a broad context: e-business models in general and for electronic content in particular; the developments in the library field towards digitization in general and in the use of e-journals in particular; discussions with specialists in a number of relevant fields; and a broad survey of content providers on the internet.

The e-business literature revealed the breadth of different pricing models available and gave insight into the nature of price and market differentiation, which is an effective strategy for increasing the user base for digital content. An example of price differentiation is to sell the same product to two different kinds of users at different prices thereby maximizing overall revenue.

Libraries have been at the forefront of technological changes for many decades, and much research has already been done on the potential for e-journals to greatly improve library service for academic institutions. Electronic journals allow for the dis-aggregation of journals and novel pricing schemes using bundling of articles and metered use (pay as you go). Libraries tend to like the flexibility and cost savings that these novel pricing schemes allow but there are disadvantages such as increased administrative overhead and the potential for metering to inhibit end users.

The discussions with industry specialists and subsequent web searches revealed a number of content aggregators – organizations which accumulate digital content from a number of different providers for redistribution – which have moved beyond the stage of subsidized pilot project status towards operational independence. Background papers

and pricing schedules were found for JSTOR, AMICO (Art Museum Image Consortium), SCRAN (Scottish Cultural Resources Access Network) and ECO (Early Canadiana Online) which revealed that all of them use price differentiated academic institution subscriptions to generate revenue. Two of the four, JSTOR and ECO charge a one-time up-front fee to help pay for the cost of initial content digitizing.

Web searches revealed a number of sites offering cultural and educational content in various formats including streaming video, audio, text, animation, images. Many of these sites generate revenue from banner advertising, affiliate referrals, product sales, and donations as well as subscriptions. Many pricing models are possible by combining or blending the above revenue streams. The wide variety of cultural and educational content available on the web attests to the effectiveness of these models.

## Table of Contents

Executive Summary	3
Objective Of Research	7
Introduction	8
E-Business Models	9
E-Resources In Today's Academic Libraries	13
Discussion	14
Library E-Business	15
E-Journals	15
Subject Based Gateways	17
Discussion	18
Content Aggregators	21
Non-Profit, Independent (Moving Beyond Subsidization)	21
Museum Consortia	21
JSTOR	22
SCRAN	23
Early Canadiana Online	24
Discussion	25
Non-Profit, Subsidized	27
SunSite (Sun Software, Information And Technology Exchange)	27
American Memory	27
Colorado's Digitization Projects	28
Los Angeles Public Library Photo Collection	28
Canada's Digital Collections	29
Digital Library Of Canada	29
Content Providers	30
For Profit	30
WebCT	30
Brainpop	30
Digitalcurriculum	30
Unitedstreaming	31
Britannica	31
Nonprofit	31
Classical Archive	31
How Stuff Works	31
Freecode	32
The Great Chicago Fire	32
The Chopin Files	32
8notes	32
The Artchive	32
The Web Gallery Of Art	33
Shakespeare Online	33
DNA From The Beginning	33
Conclusion	34
References	35
Appendices	37
Appendix A - Full Payment Schedules For Aggregators	38
SCRAN Pricing Schedule For Higher Education Institutions Who Are JISC Members.	39
Academic Institutions Prices For AMICO	40
Pricing Schedule For JSTOR - Arts And Sciences Collection I	41
Appendix B - List Of Web Sites	42
Content Aggregators	42
Subject Based Gateways	45
Content Providers	47

## **Objective of research**

The objective of this research project is to gather information on relevant initiatives in online distribution of electronic content at learning institutions for a variety of media types, including text, video, audio, and still images.

## **Introduction**

Two main types of organizations that will be investigated are identified as content aggregators and content providers. Content providers are organizations which have a unique collection of digital content organized around a subject, format, or theme which is perceived to be of value to the end user or institution. Information will be sought about the nature of the digital content offered, and where possible, pricing schedules for that content which will help OnDisC partners assess the value of their digital content offerings.

Content aggregators are organizations which gather content from a number of content suppliers and organize (add value) the content for distribution to end users. The OnDisC Alliance is recognized as an open architecture content aggregator that will supply a wide variety of forms and levels of organization of digital content. Information will be sought about the business models used by other content aggregators including their pricing models, target customers and relationships with content providers.

A further objective of the report will be to provide some broader environment context for the investigation into business models and will include a summary of the types of e-business models currently used by organizations doing business on the internet. Context will also be provided by considering the experience of libraries in seeking to provide digital products and services to their clients.

## **E-Business Models**

The goal of this section is to present a summary of the types of business models that have been considered for use in electronic markets to provide the broadest possible context for the subsequent sections of this report.

In a broad sense, a business model is an abstraction that specifies how an organization will sustain itself by supplying a service or product that is valued in the marketplace of services and products. A business model may include a definition of the product or service, an analysis of the various business parties that will interact in the business process, an analysis of the cost of supplying the product or service and a description of how revenue for the service or product will be generated. A marketing model may add additional considerations such as the competitive advantages offered by the product or service and the marketing strategy used to position the product or service in the marketplace.

Once the technological infrastructure for the internet reached a critical level of size and capability many companies and organizations began to consider how it could be used as a new economic landscape for enhancing traditional business and for generating entirely new types of revenue. A vast multitude of websites offering a wide range of products and services have appeared in the past several years. Along with the new businesses, new variations of business models tailored to the unique features of the internet have appeared. These can be grouped into broad categories such as those compiled by Michael Rappa, of the North Carolina State University at the website *Managing the Digital Enterprise*<sup>1</sup>. They include:

**Brokerage** – a model where market makers bring buyers and sellers together. Internet examples include financial brokers such as e\*Trade, or auction sites such as eBay. The brokers generate revenue by charging a transaction fee.

**Advertising** - an online vendor provides services or products that include the display of advertising messages or banners, similar to the traditional model of commercial radio

and television broadcasts. The advertising model depends on a high volume of viewer traffic or high specialized viewing audiences.

**Infomediary** - a model where a product or service is exchanged for information about the consumer and his/her buying habits. Aggregated information is sold to other companies. An example of this is the web version of the NY Times which requires viewers to register before viewing free web content.

**Merchant** – a model in which traditional goods or web-specific goods are sold over the internet via online catalogs.

**Manufacturer** – a model in which manufactures use the internet to reach customers directly (by-passing the distribution chain) to provide a benefit to customers – e.g. cost savings, faster delivery, better customer service.

**Affiliate** – a model in which web content providers “send” customers to other sites to make purchases, and thereby earn a percentage of sale revenues. Many web pages dealing with personal hobbies will feature links to authoritative or recommended books that then send the viewer to a page at Amazon.com where the work can be purchased.

**Community** - a model in which a web site is supported by voluntary contributions from regular users, or receives funding from corporate sponsors or charitable foundations, in a similar manner to Public Television. A subset of this type of community includes so-called Knowledge Networks – “help” sites supported by knowledgeable staff or volunteers.

**Subscription** – users pay to gain access to a web site. Typically high value added content is necessary since many web users will not pay for common content such as daily news or movie reviews etc. Some businesses combine free content to attract users with fee-based premium content. The online version of the Economist and Scientific American both have publicly available free content; users must subscribe to obtain all the articles online.

**Utility** - is a metered usage or pay as you go approach, and its' success will depend on the ability to charge and collect "micro-payments". The New York Times and Time Magazine are customers of Qpass, a company that manages micro-payments for viewing individual online articles.

A very widespread sentiment in internet culture is the notion that ideas and content are abundant and free. This perception is reinforced by the many apparently free services such as email, daily news, movie reviews, and online photo albums which are available on the internet. In reality they are supported by some form of revenue be it advertising or premium service subscriptions etc. Other apparently free services such as patent databases, government publications and academic journal articles are subsidized either directly or indirectly by taxes or grants from foundations. Finally there are some sources of information that are maintained by amateurs, such as the Gutenberg project, that do not expect to receive financial support. Yet even these 'free' services require a base expense reflecting the cost of the computing hardware and internet service provider fees necessary to connect to the internet. In this sense free internet content is similar to the public library model in which people have free access to material that is paid for by the community. In the end the cost of content must be covered by someone.<sup>2</sup>

In the article Intellectual Value<sup>3</sup> (Wired, July 1995), Esther Dyson predicts an emerging two tiered electronic content marketplace in which high value content commands a premium price and is protected from easy copying and distribution, and a second kind of market in which much content is widely available and free and fees are charged for ancillary processing of the content such as rating, organizing, collecting, sifting and locating the wheat among the digital chaff. Fees for the value added to free information could be charged directly to the 'user' in a number of ways by selling advertising space for example, or they could be paid indirectly by public funds.

In Pricing Information Goods, Hal Varian<sup>4</sup> discusses the incentives to engage in differential pricing in a digital information marketplace. In an environment such as electronic journal publication a major factor is the cost associated with the first copy; subsequent copies can be generated and distributed fairly easily. In the case of

electronic journals, the cost of the first copy has been estimated to represent 70% of the total costs in supplying the journal to end users. These costs would include acquisition, peer review, editing, and conversion to digital format.<sup>5</sup>

Pricing schemes must deal with recovering this large up front cost. One way to do this is to sell the product to as many users as possible by offering the product to different groups of purchasers. This is the strategy followed by many companies in high technology – Intel for example sells a standard CPU to people willing to pay a higher price, and then sells a *crippled* version of the same CPU at a lower price to more cost conscious buyers. Differential pricing is often based on characteristics of different segments of the overall market for the product. It is thought for example that businesses will pay more for a product than educational institutions, or that large organizations will be more willing to pay a higher price than a smaller organization. Other group variables that differentiate users are time (on-peak vs. off peak), location (domestic vs. foreign) and age (children vs. adults).

Another way to affect the market for a product is to use product *bundling*. This occurs when distinct products are sold together as a package. Bundling allows sellers to increase the marketability of one good by pairing it with another of higher perceived value. This is commonly done in the information marketplace; journal issues are bundles of articles. Bundling articles together will generate more revenue than selling each article at a flat price.

## **E-resources in Today's Academic Libraries**

I contacted and interviewed two reference librarians, one at the University of Toronto in Mississauga, and the other at McMaster University. They each gave me an overview of their libraries' available electronic resources as well as some insights about their use.

The University of Toronto has one of the largest collections of e-resources in North America and has a reputation of being aggressive in acquiring e-resources to maintain that pre-eminence<sup>6</sup>. The university has a wide range of material available electronically including over 10,000 e-journal subscriptions through a number of publishers; electronic bibliographic indices and abstracting services linked to full text articles; electronic reference materials such as encyclopedias and dictionaries, and electronic text books (netLibrary). They also have subscriptions to AMICO and JSTOR, but not to SCRAN. There was some thought that the AMICO service was not being used much and there it was noted that the AMICO subscription fees are seen as being expensive.

McMaster University also has a large number of e-resources, although they have only been actively pursuing them for the past two years<sup>7</sup>. They have over 4,000 e-journal subscriptions, but most of these are bundled with subscriptions to print journals. The university is looking to acquire more e-journal titles pending developments with The Canadian National Site Licensing Project (CNSLP) <http://www.uottawa.ca/library/cnslp/cfi/index-e.html>, a Canada-wide license negotiation body. McMaster is sensitive to the cumulative cost of e-resources; for example, one absolutely must-have product, the Web of Science is priced at over CAN \$100,000 per year, about 10% of their e-resource budget.

Both librarians contacted expressed concern over the readiness of their technological infrastructure to handle a service such as OnDisC. It was felt that the bandwidth required to stream video over the universities networks would far exceed current capacity. The network is busy even in off hours, especially 10 p.m. to 3 a.m. presumably due to students surfing the internet and spending time in chat rooms. Another infrastructure concern is that many, if not most student workstations in the libraries are

not equipped to handle multimedia; most computers in university libraries do not have sound cards to help maintain a low noise level environment.

### ***Discussion***

Although the discussions with the librarians at the University of Toronto and McMaster University did not result in receiving any specific pricing data, they were instructive about some of the issues that they are concerned with. Both libraries have been actively adding to their e-resources collection over the past few years. The University of Toronto has compiled a very large collection due in part to very attractive trial subscriptions which many vendors seem eager to provide. McMaster University has been more tentative in acquisitions for budgetary reasons, and will be selective in future e-resource collection development; they will expect a price schedule that will give them a discount based on their “mid-sized” student enrollment. They will favour products that clearly provide useful content and which have effective search/location interfaces. The usefulness of any multi-media content will depend on the capabilities of the workstations available to the students.

The University of Toronto is the more likely of the two universities to subscribe to OnDisC because of its proclivity for e-resource acquisition and its endorsement of OnDisC can only be helpful. McMaster’s endorsement would also be helpful in that it would demonstrate to other mid-size and smaller academic institutions that OnDisC is a valuable service that has passed through some evaluative screening.

## **Library E-business**

There has been much literature in the past ten years from librarians contemplating the migration of library materials into the digital realm. There are a number of reasons for doing this including: reducing the costs of journals, taking advantage of the broad and rapid distribution of digital resources made possible by the internet, providing efficient archival storage of older materials.

Librarians have traditionally been “early-adopters” of technology and have been “online” for several decades providing research services for clients using Lexus-Nexus, Dialog and other early online bibliographic tools. True to their form, librarians are continuing to assess and adopt technology to improve the service they offer to their clients. In their report, *Economic Models of the Digital Library*<sup>8</sup>, Halliday and Oppenheim explore several different digital library models including electronic journal production and delivery, a resource discovery network (Subject Based Gateway) and a national electronic reserve service. The authors’ examination of the models include consideration of all stakeholders in the academic information chain, their relationships to the supply and delivery of digital resources and the associated costs and benefits. The most important stakeholders are identified as:

- academics as authors and users of scholarly information,
- academics as teachers,
- academic librarians,
- publishers and information brokers (including subscription agents and document supply agencies).

## ***E-journals***

A major reason for considering electronic journals in libraries is to address the problem of inflationary subscription fees of some journal titles, which in recent years have increased tremendously in cost. It has been proposed that once a journal is digitized the

duplication and delivery component of distribution cost will make a significant reduction in the overall cost of the journal. This cost saving has not been convincingly demonstrated however. Users generally will expect extra value in an electronic version of a journal such as the ability to make electronic highlights or hot links to referenced papers to make it worth their while to learn the new interface. The extra cost of adding these new electronic features often outweighs the savings accrued from electronic delivery of the journal. Users will also be reluctant to invest the time and effort to learn a new electronic journal system if there is not a critical mass of available content to make it worth their while. This problem is also present in the distribution of music online; users who are used to user a single, simple interface such as Napster to download music will be reluctant to learn a different system for each of the major record labels.

One beneficial aspect of digitizing journals is the ability to “dis-aggregate” journal issues and allow libraries different pricing models for purchasing individual papers.

One model of a non-commercial electronic journal generates fees by charging the authors of a paper a publication fee instead of charging users a subscription fee to offset the costs publication costs – editorial work, proof-reading, distribution. This model addresses the fact that current internet users that expect free content will be reluctant to pay for an electronic journal, and also avoids the extra costs associated with subscription (maintaining accounts and restricting access).

Traditional journal pricing, where an annual subscription fee is charged per title creates a low-risk market for publishers. The user base is wide, and money is paid up front. In an electronic environment, journal articles can be un-bundled and sold either on-demand, or repackaged in bundles better suited to individual libraries or departments.

Publishers sometimes bundle all of their titles and sell a site license to the entire collection. This is analogous to bundling a set of journal articles into one issue of a title; money is paid in advance, and weaker articles (or journal titles) are subsidized by stronger articles (titles).

Electronic publication allows flexibility in the bundling of individual articles, and in the prices charged for them. For example, different prices may be charged for the same article depending on who accesses it – staff, undergraduate or graduate student or at different times of the year – articles may be more expensive near exam time (thereby penalizing last minute studying).

The PEAK<sup>9</sup> (Pricing Electronic Access to Knowledge) project at the University of Michigan in conjunction with Elsevier explored three different pricing models for electronic journals. One model was the traditional subscription model where a library pre-pays for a number of journal titles. A second model involved a generalized subscription in which a library purchased a bundle of 120 article “coupons”, from a large set of journal titles, which are used as users request articles. In a third model libraries paid a set price per article without having to commit to either a traditional subscription or a pre-purchase of a bundle of articles.

Initial findings of the PEAK project found that the two non-traditional models found great acceptance among the participating libraries. The authors also found that there is a non-monetary user time and effort cost associated with accessing journal articles in the “metered-use” distributed models that affects their overall usage pattern. In addition, it was found that there was a substantial learning curve for users extending for almost a year before users were using the service heavily.

The authors noted that a potential long term unwanted consequence of adopting the non-traditional models would impact the publication of less popular articles, which in the traditional model are subsidized by the more popular articles in a journal title.

### ***Subject Based Gateways***

Subject Based Gateways (SBG) are web sites which are created and maintained to provide pointers to free, high quality Internet resources for specific subject areas. Thus far they are largely of European origin in general and British origin in particular. The Electronic Libraries Programme (eLib) projected, supported by the Joint Information Systems Committee (JISC) funded the development of a number of SBGs and research

studies concerning their use. One supporting study by Haynes et al. evaluated three different economic models by which the SBGs could move beyond supported project status into a sustainable service. The recommended model was one in which the SBGs should continue to receive funding from JISC for two years during which time they would move towards 50-50 funding from JISC and other sponsors. Haynes also recommended that many functions of the various SBGs such as marketing and training be rationalized and centralized to reduce costs and this led to the creation of the Resource Discovery Network Centre.

Some examples of active SBGs include: the Art, Design, Architecture & Media Information Gateway (ADAM) <http://www.adam.ac.uk/>; The Biz/ed Internet Catalogue <http://bized.ac.uk/>; and the Arts and Humanities Data Service (AHDS) <http://ahds.ac.uk/>. A general subject gateway is the Bulletin Board for Libraries (BUBL) <http://bubl.ac.uk/link/> which contains pointers to a large number of subject areas. The Multimedia Educational Resource for Learning and On-line Teaching (MERLOT) <http://www.merlot.org/Home.po>, is a SBG created in 1997 by the California State University-Center for Distributed Learning. It now serves over 1,400 campuses worldwide.

Typically the SBGs are highly organized and contain annotated and classified links (using Dewey Decimal Classification) that are located and reviewed by subject experts. The above SBGs are free and without advertising; their source for operating revenue is not apparent. In contrast a North American SBG, Netfirst <http://www.oclc.org/oclc/netfirst.htm>, is available through paid subscription to OCLC, an online non-profit bibliographic and cataloguing service.

### ***Discussion***

Electronic journals allow for flexibility in the supply of academic articles that was not possible when print was the only viable medium for distribution. Pricing models are available which can give libraries access to a larger number of titles while at the same time requiring them to pay for only the journal articles that are requested by their patrons. OnDisC could offer this kind of flexibility to libraries (or institutions) which are

considering paying a fee to access the content of OnDisC. One possibility would be to offer different prepaid levels of access, for example a value membership would pay in advance for 1,000 'object' downloads/month while a premium membership would pay a larger membership fee for 5,000 downloads/month. This kind of metering does entail some cost and risk however. There would be the extra administrative costs of setting up and managing accounts and users may be reluctant to freely use a resource that is "limited". There is also the risk that institutions, if facing budget restrictions, would look first to save money by maintaining the service at a lower level (i.e. a price reduction is easier than outright cancellation).

Another way to take advantage of the flexibility of the digital distribution channel would be to offer different sets of OnDisC bundles in a manner analogous to the way cable companies offer different cable TV packages to subscribers. It might even be possible to combine bundling with metering. For example, an institution might wish to purchase 3,000 downloads per month for a highly relevant collection, but may wish to purchase only 500 downloads per month from a less relevant collection. They may consider buying a 4,000 download bundle of the two collections. Again however, this type of pricing model would incur additional administration costs.

Subject Based Gateways are similar in several respects to OnDisC. First they both provide an access function to separate content entities and the content 'collective' acquires much needed critical mass that can give the individual entities a degree of exposure they would not receive on their own. Secondly, both SBGs and OnDisC provide a quality assurance function to their constituent entities; SBGs by reviewing and excluding sites that do not reflect a certain level of quality and OnDisC by providing technical and marketing assistance. Both SBGs and OnDisC thus add value to the information content supplied by the constituent entities or members. Where they differ is in the relationships to their members. SBG websites are more or less completely independent from their content 'providers' and they could appear in any number of other SBGs. OnDisC and its members have an exclusive two way relationship that includes financial and legal components. This difference is a major one and should be taken into

account when examining SBG business models for their relevance to an organization like OnDisC.

## **Content Aggregators**

### ***Non-profit, independent (moving beyond subsidization)***

#### Museum Consortia

The Association of Art Museum Directors (AAMD) launched the Art Museum Image Consortium <http://www.amico.org/> (AMICO) in 1997 to create, maintain and license a pooled collection of digital images and documentation from their respective museums for use by the educational community.<sup>10</sup> AMICO performs a number of centralized services for the collective, including providing technology consulting, data enhancement, catalog management, rights management, customer services and collaborative partnering.

AMICO decided to choose a not-for-profit business model since it's intended customer base, academic institutions, are nonprofit, and there were already established companies, Corbis and Bridgeman, satisfying the needs of the commercial online art marketplace.

The AMICO library is priced on a sliding scale relative to the size of academic institutions. Institutions with less than 2,000 undergraduate students pay a US \$2,000/year fee, while institutions with greater than 25,000 undergraduates pay \$10,000/year. None of this revenue is returned to the member museums; it is used to cover the cost of the centralized AMICO functions of collating and enhancing the documentation provided by the member museums. The user fee level has been chosen based on subscription projections to allow AMICO to recover its costs after five years of deficit spending. AMICO members pay the cost of digitizing and documenting their collections, and also bear the cost of researching rights to their works, and in some cases are paying license fees to artists so that their works may be included in the AMICO library. AMICO members also pay a participation fee to AMICO equal approximately to the fees paid by subscribing academic institutions.

In the UK, a similar arts consortium is being led by the Visual Arts Data Service (VADS) <http://vads.ahds.ac.uk/>, part of the Arts and Humanities Data Service (AHDS) <http://ahds.ac.uk/>. VADS appears to be still in the pilot project stage and their web site acknowledges that some source of funding will be required to create and maintain the digital collections, which will more than likely be supplied by some government agency other than the contributing or using institutions, unlike AMICO's model.

Australian Museums On-line (AMOL) <http://www.amol.org.au/> is a similar organization in that it acts as the official gateway to Australia's museums and is overseen by the Heritage Collections Council (HCC). Sumption, in a Case Study of AMOL (Meta-Centers: do they work and what might the future hold)<sup>11</sup> characterizes AMOL and other similar organizations such as AHDS and CHIN (Canadian Heritage Information Network) <http://www.chin.gc.ca/> as *Professional Meta-Centers*, that is online centres featuring robust interoperable databases of digital art objects aimed primarily at those working in paid or unpaid cultural heritage positions. Although AMOL is a world leader in advancing museums via the internet, there was little information on which, if any business model they are following; they appear to be an entirely publicly funded organization that is concerned primarily with their mission and trying to measure their success through surveys and statistical analysis of web visits.

In contrast to AMOL and VADS, CHIN is actively pursuing revenue by charging institutions an annual subscription fee based on the number of simultaneous users; CAN \$550/year for up to three users, increasing to \$975 for up to 15 simultaneous users. Participating members in CHIN pay no fees; their digital content submission is regarded as equivalent to a fee. In addition to a number of features intended for museum and heritage professionals, CHIN features the Virtual Museum of Canada, which is open to the public for free and features online digital collections that highlight the *real* (i.e. physical) collections of Canada's museums.

## **JSTOR**

<http://www.jstor.org/>

JSTOR is an electronic journal archiving service that was originally funded as a pilot project by the Andrew W. Mellon Foundation<sup>12</sup>. JSTOR acquires the rights to full runs of back issues from journal publishers, digitizes the contents and makes it available to subscribers over the Internet.

An early goal of JSTOR was to develop a business model that would allow it to become a self-sustaining service organization. To that end JSTOR charges participating libraries a one-time capital fee and an annual access fee which is used to offset the costs of maintaining the digital collection. Fees vary depending on the size of the institution which are grouped in five classes ranging from very large (Carnegie Research I) to very small (Bachelor II with FTE of less than 1,000). Costs for the Arts and Sciences II collection of back issues range from US \$20,000 ACF (archive capital fee) and \$8,000 AAF (annual access fee) for a very large institution to US \$2,000 ACF and \$1,000 AAF for a very small institution<sup>13</sup>. JSTOR gave a substantial charter member discount to institutions joining before March 31, 1997, to facilitate important early growth of the user base. As of November, 2001, JSTOR has 838 US participating organizations and 325 international organizations.

JSTOR has successfully defined a niche for itself. At the time of its' creation, the decision to focus on back issues was seen as contrary, since it was perceived that providing electronic access to current journal issues was a much more lucrative business possibility. JSTOR's decision though was based on addressing a research need foremost and not on maximizing profit<sup>14</sup>. An important factor in their success has been that their niche has more than one clearly visible benefit for their subscribers; they create improved access to back issues through instant internet delivery and they provide significant long term cost savings to journal storage and retrieval costs.

## **SCRAN**

<http://www.scran.ac.uk/homepage/>

SCRAN (Scottish Cultural Resources Access Network) is a non-profit organization funded by a grant from the UK National Lottery<sup>15</sup>. The network's large digital resource

base is drawn from museums, libraries, galleries and archives of Scotland and features over one million text records, 120,000 multimedia resources, and 70 multimedia essays. SCRAM issues grants to cultural organizations which purchase the education rights of material which is digitized and added to the SCRAM collection. The material is then made available on the National Grid for Learning. Thumbnail images are publicly available on the internet for all of the collection, but higher resolution (72 dpi, 256 colour) images are available only to subscribers<sup>16</sup>. The subscription pricing model for JISC (Joint Information Systems Committee) members (heavily subsidized) is a tiered scheme, with small Higher Education Institutions charged a £700 fee to cover five years of access, while large HEIs are charge £2,100 for five years. Normal annual subscription rates are about £2,000 per year. It is planned that the revenue from the subscriptions will provide operating revenue for SCRAM after the initial £15 million grant expires. The rights to very high resolution images are held by the original intellectual property rights owners, and these may be released to third parties in special circumstances. It is thought that SCRAM will come to act as a rights clearing agency and will receive some revenue from this role.

### **Early Canadiana Online**

<http://www.canadiana.org/eco/english/index.html>

Early Canadiana Online (ECO) is produced by the Canadian Institute for Historical Microreproductions (CIHM) and is a nonprofit organization for preserving and providing access to early Canadian publications, first on microfiche and now online. ECO began as a pilot project in 1997 and has since then scanned over 500,000 pages of text from CIHM's microfiche collection. This first phase is freely available to the public. A second phase from 2000-2004 will add an additional 1,250,000 and will be available to members through a subscription. CMO has a tiered subscription fee schedule based on the number of FTE academic students ranging from a base of CAN \$645 for the smallest institution to \$21,630 for the largest (over 30,000 FTEs). CMO also charges an additional start up fee for new memberships of about 20% of the annual membership rate.

In *The Costs of Print, Fiche and Digital Access*<sup>17</sup>, Kingma analyses the costs of moving the ECOs collection from fiche to a digital form and concludes that the cost /use of digital information is cheaper than either print or microfiche, as long as there are sufficient numbers of users of the digital material.

### **Discussion**

It is interesting to compare the pricing schedules of AMICO and SCRAN, two similar aggregators and distributors of digital cultural content. AMICO's 2001-2002 collection contains about 77,000 images while SCRAN includes about 120,000 images, video and sound clips which is indicative of approximate quantitative parity. Both collections are copyright cleared for educational use and contain enhanced data to improve access and usefulness. There is a significant difference however in the price schedules of the two collections. A large academic institution will pay US \$7,000 to \$10,000 per year to access AMICO's collection, yet a large institution in the UK will pay roughly £2,000 or about US \$3,000 (1 GBP (£) = 1.41 USD(\$)), which is a significant difference. It may be the case that SCRAN's operating costs are subsidized through grants or donations such that they can afford to charge lower access fees for their collection. It may also be the case that AMICO needs to charge higher fees to build a fund for future digitization projects of its' members or to pay off debt accrued in the initial set up of the consortium. Regardless of the reasons for the wide disparity, the existing price "range" is an important market factor that OnDisC will have to consider when deciding on a subscription schedule, if one is to be used.

It is also interesting to consider that AMICO members pay dues comparable to the fees paid by institutions to access the collection whereas other groups such as CHIN do not require their members to pay. AMICO's higher user fees and membership fees may reflect the true cost of developing and delivering the digital collection without being obscured by subsidization.

JSTOR recognized two distinct cost categories – initial database creation and ongoing maintenance costs and their pricing scheme transparently reflects this. Their maintenance costs include consideration for long term sustainability such as

technological obsolescence in hardware, software, and personnel skills as well as providing for the annual additions of digital content to the database. ECO also charges an extra one time membership fee above the cost of subscription to help offset the initial collection digitization costs. OnDisC may wish to charge a similar kind of digitization fee and then distribute it among OnDisC partners through some agreed upon formula.

JSTOR decided early on to deal only with individual organizations and not consortia in order to maintain a simple and consistent pricing mechanism. AMICO on the other hand offers a different pricing structure to consortia. There is a trade off between enticing large consortia versus having a simple price schedule. It may be better to start off with a simple pricing model and then move towards wooing consortia if the need arises.

Two of the four – JSTOR and EOC charge a digitization fee, and a third, AMICO has fees that are somewhat high, perhaps indicating some kind of digitization cost recovery. Regardless of whether only some OnDisC partners need to recover some of the cost of collection development, there is an opportunity to follow the lead of the above organizations and include some kind of extra “membership” fee on behalf of the entire alliance that can be distributed to the OnDisC partners on a need basis.

All of the above nonprofit aggregators target academic institutions and use tiered, market differentiation pricing schedules. This reflects the clear advantage of using such a scheme.

One major difference between the above organizations and OnDisC is that OnDisC has many independent content providers offering a wide range of kinds of digital content. In contrast, JSTOR and EOCs’ content is uniform – scanned paper and fiche respectively. AMICOs’ content is probably mostly digitized images, with some text. Only SCRANs content seems to be a mixture of different media types. Another difference between OnDisC and the above is that OnDisC is a “re-purposing” project where the digital media has already been created and stored for other primary purposes. All of the above digitized their content in support of their respective “missions”. They must have a good understanding of the costs of digitization and the prices that they must charge to pay for those costs. One approach that OnDisC could use to help determine prices, and

subsequent distribution of money back to alliance partners is to use the cost-of-digitization of the media in their collections using publicly available costing information.

Another difference between OnDisC and the above is that the alliance members have an independent existence and 'market presence'. They could theoretically use advertising on the OnDisC interface as a way of generating 'benefit' or cost-recovery.

***Non-profit, subsidized***

SunSITE (Sun Software, Information and Technology Exchange)

<http://sunsite.berkeley.edu/>

The Berkeley Digital Library SunSITE builds digital collections and services while providing information and support to digital library developers worldwide. They are sponsored by The Library of the University of California, Berkeley and Sun Microsystems. SunSITE is developing the technology for intelligent access to massive, distributed collections of photographs, satellite images, maps and text and has already produced a number of digital collections hosted on their computer(s) which are available to the public through their web site. Currently, SunSITE is serving 33 digital image and text collections. The term serving means that the digital collection is available online, on their computers under their control but they have not yet made a commitment to archive the collection permanently. SunSITE also acts a Subject Based Gateway to other Digital Library initiatives and provides a comprehensive set of links to other digital collections. AMICO and SCRAN are both included in SunSITE's directory of other digital image collections along with 48 other digital image collections. SunSITE also has a link to JSTOR in addition to 79 other digital text collections.

(Notably absent from SunSITE's links to other digital collections are those of Canada, for example the Digital Library of Canada, CHIN, and Images Canada .)

American Memory

<http://lcweb2.loc.gov/amhome.html>

The American Memory digital collection is a major component of the Library of Congress' National Digital Library Program and it includes more than 90 collections of digitized documents, photographs, recorded sound, moving pictures, and text from the Library's Americana collections. The National Digital Library Program is a joint public-private initiative that has received funding in the order of US \$60M over the period 1996-2000. The website for the NDLP includes a discussion of ten challenges facing the program and one deals with sustainability<sup>18</sup>:

*Challenge Ten: Develop economic models for the support of the National Digital Library.*

*The creation and maintenance of digital libraries is very expensive. Costs are incurred for production, for ongoing provision of access, and for preservation of the digital information. The cost to develop and operate a distributed architecture for long-term archiving, migration, and backup of digital materials will be high. Since the resource is distributed among providers, the net cost tends to be disguised. Libraries would benefit from better estimates of costs and trends in cost for production and maintenance of a corpus of digital information.*

*How can the continuing costs of assembling content and providing access to the American public best be met? Is technology available that could offer better measurement of benefits and savings? To whom do the greatest benefits and savings accrue? Are there value-added services the payment for which will subsidize broad public access?*

#### Colorado's Digitization Projects

<http://coloradodigital.coalliance.org/cdp.html>

This organization is similar to the federal National Digital Library program, but on a smaller state scale. Their web site contains useful information for others wishing to implement their own digital library program. Public funds were used in the initial stages of the project; the ongoing funding strategy is to acquire long term funding commitments from both public and private sources.

#### Los Angeles Public Library Photo Collection

[http://catalog.lapl.org/a\\_photo.html](http://catalog.lapl.org/a_photo.html)

This collection is an online subset of the Library's extensive photograph collection and features thumbnails and larger views (about 600x400 pixels). The images are for

personal use only, and commercial use requires the payment of fees to the LAPL, ranging from US \$25 for educational media up to \$150 for advertising and product design.

#### Canada's Digital Collections

<http://collections.ic.gc.ca/>

An Industry Canada initiative gives people aged 15-30 entrepreneurial and technology-based job experience converting collections of Canadian material into digital form for display on the SchoolNet web site.

#### Digital Library of Canada

<http://www.nlc-bnc.ca/index-e.html>

The web site for the National Library of Canada has links to wide number of digital collections, educational sites and exhibitions, which are grouped in the subject areas of Music, History and Literature . Some examples of the digital collections include: The Encyclopedia of Music in Canada, the Glenn Gould Collection, Early Canadiana Online, Images Canada, and the Canadian Poetry Archive. The content is freely available for personal and educational use, and in at least the case of Images Canada (65,000 images), the online images are of lower resolution with higher resolution images available for extra fees.

## **Content Providers**

A partial list of interesting content providers follows. A more complete list can be found in Appendix B.

### ***For Profit***

#### WebCT

<http://www.webct.com/>

A provider of software for hosting educational content on the web. They have a number of education content partners including McGraw Hill Education, Pearson and Thomson. The software is available by subscription. Pricing is per server account using the software, and is available for four time periods: four, six, eight or twelve months. An unlimited single server license is US \$3,000 per year.

#### Brainpop

<http://www.brainpop.com/>

A producer of animated educational videos and shorts. Revenue comes from advertising, corporate sponsorship and subscriptions (US \$50 home schools & families, \$100 for schools).

#### DigitalCurriculum

<http://www.aimsmultimedia.com/dct/index.htm>

DigitalCurriculum.com is produced, developed, and maintained by AIMS Multimedia, a producer of training programs for business, government and education. Teaching modules including streaming video are available to schools on a subscription basis; they start at US \$975/year per school. A unique feature of the service is that it is available to everyone in the school (teaching modules only to teachers) at any internet access point – class, library, even home.

## Unitedstreaming

<http://www.unitedstreaming.com/>

A provider of educational video content, it offers access to over 900 core curriculum online video programs for K-12 on an annual subscription basis. It costs about US \$2,000/year (for high schools), with some discounts for consortia.

## Britannica

<http://www.britannica.com/>

The online version of Encyclopedia Britannica is two tier – a free *very* limited version supported by advertising banners and a referral arrangement with Barnes & Nobles Online, and a premium level of service that provides all 32 volumes ad-free with streaming audio and video. Subscription is US \$7.95/month or \$50/year.

## **Nonprofit**

### Classical Archive

<http://www.classicalarchives.com/index.html>

The Classical Archive features a collection of over 15,000 classical music files, mostly midi but some mp3 format. The site is funded through voluntary subscription at two levels – friend at \$25/year and patron at \$500/year. The site also has a learning centre and features columns and editorials about classical music.

### How Stuff Works

<http://www.howstuffworks.com>

How Stuff Works is a free online encyclopedia that is supported by two revenue streams: Ads and sponsorships, and the sale of products including HowStuffWorks branded products (CD-ROM and book version of the web site and a monthly newsletter aimed at school teachers). Advertising can be “integrated” within an article (integrated sponsorship) or it can be a “link” sponsorship (a companies’ website is located in the link section of an article).

### Freecode

<http://www.freecode.com/index/>

A website that acts as a depository and distribution centre for software code. The site features banner advertising, and is sponsored by the Opens Source Development Network (OSDN), which is owned by VA Linux.

### The Great Chicago Fire

<http://www.chicagohs.org/fire/intro/gcf-index.html>

This website is a small focused online exhibit featuring photographs and essays about the great Chicago Fire. It received support from the Chicago Historical Society, Academic Technologies of Northwestern University, and H-Net: Humanities Online (with funding from the National Endowment for the Humanities).

### The Chopin Files

<http://www.chopinfiles.com/>

Streaming audio, essays and sheet music all for free, with no visible means of support.

### 8notes

<http://www.8notes.com>

This site features over 1,500 free sheets of classical, jazz and traditional sheet music as well as articles, lessons and a forum. The site is funded by selling advertising banners; they currently serve over two million banner ads per month at the following rates :

- 468x60 Banner Ad = \$8/1,000 Views (\$80 Minimum)
- 125x125 Banner Ad = \$4/1,000 Views (\$80 Minimum)

### The Artchive

<http://www.artchive.com/>

The Artchive is a free resource for students, artists and art lovers featuring online images of artwork, as well as essays, criticism and reviews. They receive banner

advertising revenue, affiliate referral fees (5% from Amazon, 15% from Barewalls) and receives funding from other art businesses on the web (e.g. Eyestorm, Bronze Direct). They also receive funding from patronage; they give CD versions of the web site for \$50 donations.

#### The Web Gallery of Art

<http://gallery.euroweb.hu/>

The Web Gallery of Art is a virtual museum and searchable database of European painting and sculpture of the Gothic, Renaissance and Baroque periods (1150-1800), currently containing over 9,200 reproductions. Biographies, commentaries, guided tours are available. The site is free and there is no apparent means of support; it may receive donations or grants but none are solicited.

#### Shakespeare Online

<http://www.shakespeare-online.com/default.asp>

A free site with all things Shakespeare; it is supported by advertising banners (receives two million hits/month.) It also receives affiliate referral revenue from Barnes&Noble.com.

#### DNA From the Beginning

<http://vector.cshl.org/dnaftb/>

A multimedia primer on the basics of DNA, genes and heredity. Material includes animation, images, text, and video interviews. It is a free source funded by the Josiah Macy Jr. Foundation. It also sells CD-ROM versions of the website.

## **Conclusion**

The purpose of this research was to gather information on relevant initiatives in distributing digital content to academic institutions in a variety of different media including text, audio, images and video. Additional research was conducted on electronic journal use in academic libraries and on business models in use on the world wide web by organizations distributing various kinds of media to provide background and context. Specific pricing information was gathered where possible. Some of the major findings in this research include:

- many cultural heritage digital content initiatives have been undertaken in the past 5 years and some of them have taken positive steps towards becoming independent organizations
- independent content aggregators which target academic institutions sell their content as subscriptions and most have differential pricing schedules based on the size of the institution
- some content aggregators charged an up-front or new membership fee to offset their initial costs in digitization their content
- pricing and marketing differentiation is important in maximizing potential revenue to help offset digitization costs
- one potentially useful group differentiation is Canadian vs. US academic institutions; a number of universities in the US have Canadian Studies programs and they may be willing to pay a premium price for OnDisC's Canadian content.
- bundling of products and using metering can help increase revenues but will also add extra administrative costs to manage accounts
- there is a lot of digital heritage content already on the web being supported by various business models and revenue streams including advertising, affiliate referrals, public funding and subscription.
- Academic libraries are rapidly acquiring electronic resources; those with limited budgets will be selective and will focus on useful content that is easily found and accessed

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## **Appendix A – full payment schedules for aggregators**

Table 1 – Early Canadiana Online Fee Schedule for Academic Institutions (new membership fee = renewal fee \* 1.25)

<http://www.canadiana.org/eco/english/fees.html>

<b>FTE Students</b>	<b>New Membership (Can \$)</b>	<b>Renewal</b>
0 - 500	\$645	\$515
501 – 1,000	\$970	\$775
1,001 – 1,500	\$1,930	\$1,545
1,501 – 2,500	\$3,220	\$2,575
2,501 – 5,000	\$4,505	\$3,605
5,001 – 7,500	\$6,440	\$5,150
7,501 – 10,000	\$8,370	\$6,695
10,001 – 12,500	\$12,230	\$9,785
12,501 – 15,000	\$16,095	\$12,875
15,001 – 17,500	\$19,310	\$15,450
17,501 – 20,000	\$21,245	\$16,995
20,001 – 25,000	\$23,175	\$18,540
25,001 – 30,000	\$25,105	\$20,085
30,001 -	\$27,040	\$21,630



**Table 2 – SCRAN Pricing Schedule for Higher Education Institutions who are JISC members.**

Normal Annual Fees are approx. £2000/year

<http://www.scran.ac.uk/licences/tertiary/>

<b>Academic Year</b>	<b>Large HEI</b>	<b>Medium HEI</b>	<b>Small HEI</b>
2000	£150	£100	£50
2001	£300	£200	£100
2002	£450	£300	£150
2003	£600	£400	£200
2004	£600	£400	£200
Total Payable	£2100	£1400	£750

**Table 3 – Academic Institutions Prices for AMICO**

RLG = Research Libraries Group <http://www.rlg.org/amico/amicorates.html>

<b>Undergraduates Enrolled</b>	<b>Standard Price US \$</b>	<b>RLG Price</b>
Under 2,000	\$2,000	\$1,900
2,000 - 8000	\$4,000	\$3,800
8,001 – 15,000	\$6,000	\$5,700
15,001 – 25,000	\$7,000	\$6,650
25,001 or more	\$10,000	\$9,500

**Table 4 – Pricing Schedule for JSTOR – Arts and Sciences Collection I**

(117 journal titles in 15 academic fields) <http://www.jstor.org/about/ASI.pricing.html>

(see <http://www.carnegiefoundation.org/Classification/> for Classification Scheme)

<b>Size of Academic Institution</b>	<b>ACF US \$</b> (archive capital fee)	<b>AAF</b> (annual access fee)
Very Large (Carnegie Research I)	\$45,000	\$8,500
Large (Carnegie Research II or Doctoral I)	\$35,000	\$6,500
Medium (Doctoral II or Masters I above 2,500 FTE)	\$25,000	\$4,000
Small (Doctoral II or Masters I less than 2,500 FTE) or (Masters II or Bachelor I above 1,000 FTE)	\$20,000	\$3,000
Very Small (Masters II or Bachelor I below 1,000 FTE) or Bachelor II	\$10,000	\$2,000