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Partners of Equals – Libraries "Mix Molecules" with Private Organizations

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Library Partnerships

Libraries and information services have a vast and fascinating history of forming joint ventures and/or partnerships with private organizations in order to advance and propel patron services and resources. Such alliances at once boost and boast competitive advantages as described by Professor Michael Porter of Harvard Business School. In his seminal 1990 book, *The Competitive Advantage of Nations,* Porter studied economic strengths and successes of ten countries relative to one another. The economic competitiveness of a country, Porter found, is proportional to where industries are structured into agglomerations or clusters of similar, market-driven, internetworked companies within a particular geographic region (Porter 1990). Based on Porter's analyses, other researchers have followed up with empirical studies on various aspects of industrial clusters. Findings continue to reinforce what Porter suggests – that cluster companies are more competitive; they innovate more; information, knowledge, and technology transfer *more efficiently* amongst companies within a *clustered* environment (Baptista and Swann 1998).

Clustered partnership is not limited solely to industries in manufacturing and production sectors or merely for profit-driven purposes. Clustering can inter-combine a rich mixture of research institutions, academia, universities, government regulatory and developmental agencies. Within such close-knit and

symbiotic interplays, partners qua participants share information and expertise freely and fluidly. Information, innovation, knowledge and technologies are transferred seamlessly through and across participating constituencies vis-à-vis a kind of "partnership arrangement." Moreover, technology and knowledge "spillovers" or "externalities" from one participant to others will sometimes occur, often unexpectedly, and when this happens – a "blossoming" or "flowering" along unanticipated, germane avenues typically ensues – resulting in "win-win" outcomes for patrons and information providers alike in this kind of egalitarian vector or construct.

Furthermore, due to the diverse nature of cluster membership, the group also takes advantage of maximization of individual resources, joint access to collective technology and sharing of skilled human assets otherwise prohibitively expensive and precarious to obtain solo or autonomously; along with minimization of operating expenses, as well as minimization of collective and individual risk.

Economies of scale and leveraged power encourage participants to invest in related and specialized technologies, information, infrastructure and human resources in ways fostering and diffusing efficiency and innovation. Moreover, size and prestige of clustering enable the alliance to attract talent and/or other participants, as well as financial resources much more easily.

In this paper, we analyze the synergistic, symbiotic relationships or partnerships between a few well-known, large-scale, and techno-centric libraries collaborating and inter-cooperating with industry-sponsorship in order to maximize mutual project initiatives, instantiating "cross-matrix stimulation" for everyone involved. Some of these "partnerships of equals" have already garnered early fruition and recognition. For others, the jury remains out as to the prognosis for success in the interrelationship. However, all of the relationships studied share several common traits, including risk taking and sharing, entrepreneurship, economies of scale and scope, knowledge sharing, technology transfer, innovation, and collaborative sourcing. In addition, they all aim at making library resources more easily discoverable and accessible in the networked environment.

BioOne (http://www.bioone.org/)

As a non-profit venture, BioOne illustrates a model of collaboration between scientific societies, libraries, academe and the private sector in bringing together a uniquely valuable aggregation of the full texts of

high-impact *bioscience* research journals. With strong support from the library community, BioOne further demonstrates a virtual enterprise leveraging information technology in exchanging data and coordinating business activities.

BioOne was founded in 1999 by five collaborating organizations (The American Institute of Biological Sciences, Scholarly Publishing & Academic Resources Coalition or SPARC, The University of Kansas, Greater Western Library Alliance or GWLA, and Allen Press, Inc.) to counter increasing concerns regarding commercialization of scholarly publishing. From the start, academic libraries were directly involved in the planning process. Two of the original participants, SPARC and GWLA, were library-based organizations. The Dean of Libraries at University of Kansas also played a pivotal role in the initial process, including making the campus's Internet-2 accessible for this venture. A high speed network connection with abundant bandwidth is key to a reliable online service (Alexander and Goodyear 2000).

Another key characteristic of the BioOne venture is its innovative virtual operations. Due to its tight connection with Association of Research Libraries, the small group of BioOne staff shares the office space in ARL's Washington, D.C. headquarters. The rest of its operations are outsourced. The IT component, from developing the search interface to hosting BioOne's electronic vault and website, is contracted to the founding member, Allen Press, which is already involved in electronic publishing for several scholarly society journals. Sales and subscription services is outsourced to Amigos Library Services for U.S. and Canada sales, and Proquest for international sales. Instead of retrospectively digitizing older issues of its journals, BioOne has partnered with JSTOR and Biodiversity Heritage Library (BHL, http://biodiversitylibrary.org/), providing digital images of older journals of some BioOne titles. BioOne has gradually added direct links from its site to back content available on JSTOR and BHL.

Since the inception of its first product, BioOne.1 in 2001, BioOne has grown to a premium bioscience online resource for researchers and learners. Within eight years, its product line has expanded to three full text collections with more than 120 full text journals from U.S. and foreign publishers and societies. In 2007, BioOne's annual revenue increased to $4 million; its subscription base reached more than 1,000 institutions; and usage surged to 11.5 million hits. BioOne concomitantly hosts an annual Publishers and Partners Meeting in Washington D.C., which serves as an open forum for librarians, editors, publishers, and leading industry providers to exchange ideas and concerns related directly to scholarly publishing and preservation. To celebrate its ten-year anniversary, BioOne is planning to launch a new search

interface built with social networking capabilities, a new logo, a new website, as well as a more robust web platform and compliance with the Open Archive Harvesting Protocol (OAHP).

Collaboration and sustainability are clearly identified in BioOne's mission: Work *collectively* to preserve *cost-effective* access to quality scientific literature published by *not-for-profit* organizations. BioOne offers this platform for all stakeholders to team up together. The alliance comprises a mix of nonprofit organizations (libraries, universities, and scientific societies), as well as a commercial companies (publishers and resellers). Such cooperation offers participants the economy of scale of efficient production; economy of scope of proficient marketing, distribution, product bundling, and family branding; and economy of knowledge of scholarly publishing in the digital environment. For small societies and not-for-profit organizational publishers, BioOne is able to migrate their operations to the electronic publishing world (a feat that would have been impossible without BioOne's support), and expose their contents to a larger audience.

For libraries, the subscription cost of key journals is much lower than if the journals are sold from commercial publishers. And ultimately, end users (patrons) enjoy the aggregation of key resources from one provider and "The Long Tail" effect in a networked environment, as BioOne actively adds links from its site to other relevant resources.

Evergreen Open ILS (Integrated Library Systems) (http://open-ils.org/)

Traditional Integrated Library Systems have played a central role in effective management of library resources, as well as patrons' discovery and usage of these resources, for many years. Over these years, libraries have relied upon and locked into their proprietary ILS from commercial ILS vendors, such as Ex Libris, Innovative Interfaces, and Sirsi, with a hefty annual service contract, limited flexibility in local customization, frequently insufficient support and customer service, plus the uncertainty of the ILS market after a series of continued as well as recent ILS company mergers and acquisitions. In addition, the traditional ILS has not been able to keep up with the shifting expectations of net generation users in an era predominated by Internet Search Engines. For instance, commercial system's traditional opaque nature makes it difficult, if not possible, to interoperate with services from other vendors.

Enter “Open Source.”

Open source ILS offers an alternative to, and many advantages over, commercial products. Instead of developing a system from scratch, it leverages existing well-tested open source components, such as the Linux operating system, Apache web server, and MySQL database system, to lay its foundation. Because it is open, the software source code is accessible by library staff to make any changes freely. Library IT professionals are able to fix bugs directly and faster; add new features; customize the Open Source ILS to local needs; share software with others; and rely on a grass-roots user community for support. On the other hand, with a shift in ILS maintenance and development from commercial vendors to in-house IT staff, open source ILS demands a higher level of in-house IT proficiency, deeper IT investment, and a larger in-house IT team than outsourcing those tasks to commercial vendors entails.

Evergreen Open ILS was originally developed by the Georgia Public Library System to provide automation services for the state’s public libraries. Launched in 2006, Georgia’s PINES (Public Information Network for Electronic Services) system is based on Evergreen ILS and now supports more than 275 libraries and affiliated service outlets in almost 140 counties across Georgia. Patrons with a PINES library card have access to materials beyond what is available on their local shelves and enjoy the benefits of a shared collection of 9.6 million books and other materials that can be delivered to their home library free of charge (Weber 2006). The original Evergreen software developers have since formed a private entity, Equinox Software (http://esilibrary.com/), that installs, maintains, and supports Evergreen for library customers.

The success of Evergreen has spread outside Georgia. A number of library systems, including Michigan Library Consortium, British Columbia SITKA Consortium, Kent County Public Library in Maryland, and Indiana Open Source ILS Initiative, have recently chosen Evergreen as their next-generation library system. In addition, several institutions, including Laurentian University, McMaster University, and the University of Windsor, have formed a partnership with Evergreen in the development of an acquisition / serials module for the system.

The Evergreen case illustrates a typical start-up that began as a government project and eventually spun off to form a commercial company with continuing involvement from libraries and universities beyond its aboriginal geographical boundaries. The participants also expanded from public libraries to academic

libraries. Collaboration has been further enhanced due to grass-roots community involvement and the inherent community-building nature of the open source movement generally.

Google Books Library Project (http://books.google.com/googlebooks/library.html)

Since its debut in December 2004, the Google Books Library Project has received a fair share of publicity, including substantial criticism and concerns. Controversy mainly centers on identifying the right balance of copyright and fair usage under current copyright laws. Several legal actions have been spawned as the project itself continues to grow (Baksik 2006; Toobin 2007).

Google has been very successful in recruiting large libraries with significant collections, both in size and in scope. Many of them are top-tier ARL libraries. The number of participants has swelled from the original "Google Five" launch libraries to more than 25 institutional participants, including two state-owned libraries. Resembling the global expansion of this Internet giant, the scope of participation includes 8 foreign participants, ranging from India to Japan to Switzerland (See appendix for a list of participating libraries). The size of the collection to be scanned has also mushroomed from the original 15 million to more than 50 million volumes.

Google library partners have pointed out the following virtues – economies of scale and scope, technology innovation, increased accessibility and discoverability, as well as collection preservation – all as key attractions to join the project (Grogg and Ashmore 2007). Most of the Google libraries were already engaged in mass digitization of their collection before joining the project. However, none of them has the combination of financial resources and technological wherewithal to embark upon the project at this scale by themselves. In agreement with each participant, Google assumes the cost of digitization. Although Google is mum on many aspects of its project, the estimated total costs ranges anywhere from $200 million (Baksik 2006) to $800 million (Last 2007).

Technology transfer is another attraction. Google libraries meet twice a year to share their lessons, expertise, and best practices (Grogg and Ashmore 2007). Libraries are trying to figure out how to integrate their Google digital copies into their online library catalog or institutional repositories. One participant, the Committee on Institutional Cooperation (CIC) - a 12-university consortial members further plans to contribute their public-main Google digital copies to build a shared digital repository

housed at the University of Michigan (Committee on Institutional Cooperation 2007). Non-participating libraries also see this as a way to expand their local collections, by providing links from their catalog to Google Books Gold Mine.

Exposing library collections extramurally ("beyond the wall") and beyond geographical limitations, thus bringing them to the network level, this is most probably: *the most significant outcome of this endeavor*. With Google's search technologies, book content is now searchable at the granular and precise discovery level that was not possible before. Increased exposure to this content at the network level can contribute its usage as defined by the "Long Tail Effect."

Symbiosis in Information Ecologies

In any ecosystem, organisms continually interact with each other and their environments. In studying the bass society in the ecosystem, Haskell (1947) classified the coactions of between species into three categories. His 9 Co-Actions model was further perfected by Odum (1953) that says in an ecosystem the outcome or consequence of interactions between species can be positive (+), neutral (0), or negative (-). The possible interactions are as follow:

		Species B		
	Type of Interaction	**+**	**0**	**-**
Species A	**+**	+ +	+ 0	+ -
	0	0 +	0 0	0 -
	-	- +	- 0	- -

Odum (1993) further defines some of the relationships, based on numerical results, per following:

Type of Interaction	Effect on A	Effect on B	Definition
Competition	**-**	**-**	both populations inhibit or have some kind of negative effect on each other
Predation	**+**	**-**	positive for the predator, negative for the prey
Parasitism	**-**	**+**	negative for the host, positive for the prey
Commensalism	**+**	**0**	one species, the commensal, benefits, the other is not affected
Cooperation / Mutualism	**+**	**+**	both populations benefit from the interaction, which may be optional (cooperation) or essential for the survival of both partners (mutualism)
Amensalism / inhibition	**-**	**0**	population A is inhibited, but B is unaffected
Neutralism	**0**	**0**	Neither population affects the other

Symbiosis allows species to live together in their own niche. Symbiotic relationship encompasses a spectrum of such balanced relationship, in which at least one organism benefits (Wikipedia 2008). Based on the degree of such relationship, we can plot them into a spectrum as below:

Cooperation/ Mutualism	*Commensalism*	*Predation*	*Parasitism*	*Amensalism/ Inhibition*	*Competition*
Win-Win	Win-Neutral	Win-Lose	Lose-Win	Lose-Neutral	Lose-Lose

Symbiosis Spectrum

In these six possible outcome scenarios, only two are favorable to both parties involved. In reality, the ability to successfully minimize the potential loss or maximize the chance of gain when dealing with a conflictive situation is critical to the survival of any organization. In all three partnerships we described in this paper, all land in the "Win-Win" range of the symbiosis spectrum. Although it might be too early to predict the eventual outcome of any of these positive alliances, we do notice some immediate positive benefits for all the participants.

In today's information ecosystem, the rapid development and evolution of Internet technology and web-based services has created many opportunities and challenges for libraries. The Library is just one of many information providers our users consult. Google and other Web 2.0 sites are often the preferred providers for studential information needs. "Library," as a major player in this constantly evolving information ecosystem, needs to continue to maintain a dynamic and symbiotic relationship with publishers, distributors, end users, and Internet companies (Forsman 2005; Michalko 2000; Neal 2001). Forming joint venture, advancing strategic partnership, exploring new business models and technological innovation, being agile and flexible – these are all keys to remaining viable and relevant in the networked environment and the digital world.

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Appendix: Google Books Library Project Timeline

2004			
December	Google Five Libraries announced: University of Michigan, Harvard University, Stanford University, Oxford University, New York Public Library	U.S. U.K.	15 million volumes within a decade
2006			
August	University of California System (approximately 100 libraries)	U.S.	34 million volumes
September	University Complutense of Madrid	Spain	
October	University of Wisconsin-Madison and Wisconsin Historical Society Library	U.S.	7.2 million volumes
November	University of Virginia	U.S.	6 years
2007			
January	University of Texas at Austin (13 libraries)	U.S.	1 million+ volumes
January	National Library of Catalonia	Spain	
February	Princeton University	U.S.	1 million books in 6 year contract
March	Bavarian State Library	Germany	1 million+ public domain and out-of-print works
May	Cantonal and University Library of Lausanne	Switzerland	The fifth European institution to sign on with Google's digitization project
May	University of Mysore	India	800,000 items
May	Boekentoren Library of Ghent University	Belgium	19th century books in the French and Dutch languages
June	Committee on Institutional Cooperation (12 member libraries: University of Chicago, University of Illinois at Urbana/Champaign, University of Illinois at Chicago, Indiana University, University of Iowa, Michigan State University, University of Minnesota, Northwestern University, Ohio State University, Pennsylvania State University, Purdue University, University of Wisconsin-Madison)	U.S.	10 million volumes in 6 years
July	Keio University	Japan	120,000 public domain books
August	Cornell University	U.S.	500,000 both copyrighted and public domain items
December	Columbia University (25 libraries)	U.S.	Public domain books