

## **“Openness” at Brown: Some Thoughts on the Effects of the Internet and Brown’s Need to Respond**

Elliot Maxwell

The rise of the Internet and the increasing digitization of information, which contribute to, and are enhanced by, the ongoing tide of globalization, are changing every important institution in our lives. Higher education has not been immune to these changes. Consistent with the IT Advisory Council’s strategic planning mission, this paper is a brief attempt to describe how these forces might affect Brown in the future, recognizing that such an attempt is only the beginning of a longer strategic dialogue.

### **Openness and the internet: some background and definitions**

In the early days of the commercial Internet, many people praised its capacity for increasing access to information, likening its impact to the creation of a new version of the Great Library of Alexandria with an impossibly large collection. The Internet made new resources available to Brown and offered Brown the opportunity to share its own collections and intellectual capital.

Today, we have to come to think about the Internet differently. It still provides access to extraordinary amounts of information—much of it voluntarily created and posted on the World Wide Web—but it has now become the central vehicle for individual and group creativity and collaboration in the 21<sup>st</sup> century.

When attempting to understand the impact of the Internet, it may be helpful to think about how the Internet is facilitating greater “openness” in information, processes, and institutions. What is meant by “openness”? First, for the purposes of this paper, openness is not binary. Information, processes, and institutions are neither open nor closed. They can be placed on a continuum between being open and closed.

Their degree of openness can be assessed by looking at their “accessibility” and their “responsiveness.” If an individual, for example, can obtain information without restrictions based on price, status, or access to a particular technology, that information is more open than if, for example, a subscription is required to obtain access or the information is only available using a particular software program. This is the accessibility aspect of openness—very similar to what is sometimes referred to as “transparency”. But accessibility or transparency refer to only one aspect of openness. If an individual can make his or her own contribution to the information, and can use his or her unique insights and experience to modify, repurpose, and redistribute it, that information is more “responsive” and thus more open than if the information is “read only.”

This increase in the “accessibility” and “responsiveness” of information, processes, and institutions resulting from the rise of the Internet (and the fact that a billion people are now connected to it) has led to new ways of thinking about, and created new possibilities for, higher education. Some of the possibilities, such as the opportunity to reach a student body numbered in the billions, as well as to allow those billions to respond, are breathtaking. But how has the potential for greater openness actually been affecting higher education?

## **How is higher education responding to greater openness?**

There are signs of change, although higher education is adapting much more slowly than other sectors that deal primarily in information such as finance or entertainment. We can see signs of greater openness in MIT's making freely available course materials on over 1,800 of its courses (with translations appearing in multiple languages), Yale's posting of a number of courses on the Web, including videos of lectures, and UC Berkeley's use of YouTube to make lectures generally available. Other colleges and universities are employing audio and video streaming of lectures and colloquia to members of their on- and off-campus communities. It was greater openness at major research universities that underlay the worldwide collaboration that resulted in decoding the human genome with scientists posting research results immediately, accessible to anyone interested. On a more mundane level, greater openness can be seen in the social networking communities such as on Facebook that link undergraduates and alumni of an academic institution.

There are signs of increased openness at Brown as well. For example, Brown's own DecameronWeb [http://www.brown.edu/Departments/Italian\\_Studies/dweb/dweb.shtml](http://www.brown.edu/Departments/Italian_Studies/dweb/dweb.shtml) permits faculty, students, and even self-learners around the world to develop and share resources. Brown is creating new centers for collaboration across departmental lines. The Library is working on posting e-dissertations and engineering syllabi and is digitizing collections; in a related area consideration is being given to a digital repository for research conducted at Brown. The most recent report on the curriculum envisioned e-portfolios for students. The CIO is incorporating greater openness in the IT strategic plan while the VP for International Activities is looking at opportunities to use greater openness to increase Brown's international presence.

This list is not exhaustive. But there is no thorough, systematic, and comprehensive effort under the auspices of Brown's leadership to look at the opportunities and threats resulting from Internet related greater openness.

## **What might greater openness mean to Brown?**

No one is likely to dispute the extraordinary power of the Internet and the increasing digitization of information to affect institutions. Therefore, simply as a matter of due diligence it would be important to understand how these technologies are likely to affect Brown. And there are other trends that increase the need for Brown to better understand the costs and benefits of greater openness.

The pool of potential applicants for which Brown competes is declining and its composition is changing. Most of today's potential applicants were "born digital," having grown up with the Internet, and in an environment rich in computing devices and connectivity, alive with multiple social networks and virtual communities where the sharing of information and experiences is a commonplace. The number of baby boomer alumni who claim an interest in life-long learning is swelling. Knowledge continues to explode, fraying the boundaries between disciplines, while our capacities to aggregate, analyze, and reformulate data continue to grow. The distinctions between formal and informal education are eroding, as are the barriers between the university and its surrounding communities. Globalization increasingly requires that Brown view itself as part of a worldwide community—a community in which new and well capitalized universities are emerging in the Middle East and Asia, hundreds of millions of young people still have little chance for a quality higher education, and self-directed learners turn hungrily to new sources for their own education.

Among the results of these trends is that Brown has great new opportunities, but it also faces increasing challenges. Competing for the best faculty and students with institutions with five or ten times the per-student resources requires that Brown work smarter and be more innovative to stay in the very top tier. If possible, Brown should try to change the very nature of the competition to one in which it is advantaged. It should continue to differentiate itself.

Brown has done that before. Because Brown embraced change in 1969 (and at many other decision points since then) it is now in an entirely different position than it was in 1968. The Brown “brand” is now a major asset standing for a distinctive student centered education and allowing Brown to stand out among America’s elite institutions.

Embracing greater openness and collaboration offers Brown the best opportunity to renew and extend itself, while at the same time allowing it to better serve its goals of promoting excellence in teaching and learning, creating and disseminating new knowledge, and serving the community. The new technologies facilitating openness are disruptive, and as Clayton Christensen has pointed out, even when they are recognized as valuable, they are not often embraced by institutions that consider themselves to be successful. Brown has been successful. Yet, with its recent history of successful innovation, particularly its adoption of a student-centered educational model, it is better positioned than other elite institutions to examine the possibilities for openness and collaboration thoughtfully and to adopt them where beneficial. One could even say that increasing openness and collaboration are natural outgrowths of the path Brown has followed for the past 40 years.

Choosing greater openness and collaboration when the university makes decisions will generally (although not always) be the right thing to do. A more open university increases the dissemination of new learning and promotes innovation. Greater openness allows an institution to demonstrate its strengths, creating more opportunities for both faculty and students. Greater openness facilitates an institution’s efforts to discover and remedy weaknesses in itself. It equips students and faculties with the collaborative skills necessary to succeed in an increasingly interdependent world. The list of positive aspects of openness goes on and on, even though greater openness is not always good. We can get overwhelmed by the flood of information, we may be unable to evaluate information and its sources, privacy and security issues need to be addressed etc. The optimum amount of openness will always depend on the purpose to be accomplished and the context, but generally Brown should be moving in the direction of greater openness.

Brown should look carefully and thoroughly at the costs and benefits of providing greater openness in various aspects of university life. Where can Brown best use greater openness in accomplishing its multiple missions? Where might greater openness be valuable, and how, in teaching and learning, in research, and in service to the community? What are the pitfalls and how can they be avoided? Does Brown have the infrastructural capability—from IT capability to rules governing tenure and the availability of research, to the culture of Brown’s faculty/students/staff--to increase openness? What would have to change?

### **How should Brown start to explore openness?**

For the purposes of adding to the dialogue, some issues that might be explored in thinking about openness at Brown are listed below. Some examples of greater openness at other institutions of higher education suggest areas where Brown can learn from the experience of others. The list is suggestive, not exhaustive; in particular it does not reflect any rigorous effort with regard to costs and benefits. (The list clearly extends beyond the charge of the IT Advisory

Council but, for the most part, opportunities for greater openness depend on the IT infrastructure of the university.)

**With respect to providing excellence in teaching and learning and in support of Brown's becoming a more global university:**

- Should Brown make available online all or parts of its course materials such as provided by MIT <http://ocw.mit.edu/OcwWeb/web/home/home/index.htm> and members of the OpenCourseWare Consortium <http://www.ocwconsortium.org/> ? Brown need not commit to making all of its course materials available but might seek to post materials from courses that are considered to be "world class."
- Are there are new curricular opportunities for Brown and Brown students due to the online availability of courses from comparable institutions? Just as Chris Anderson's "Long Tail" analysis showed that there are viable electronic markets for music and books that only a few people value, there may be curricular offerings that Brown does not presently offer that might be of great value to some of its students <http://www.johnseelybrown.com/mindsonfire.pdf>. For example Brown does not offer a polymer chemistry course; might Brown encourage a chemistry student and faculty member to use MIT's online polymer chemistry course materials for an independent study filling this gap?
- Should Brown's policy be that course syllabi be available online to all (or at least to Brown students, staff, and faculty) throughout the year? Should this continue to be left to individual faculty decisions which have resulted in far less openness?
- The recent report on the curriculum raised the issue of student e-portfolios. For purposes of exploring the possibilities of greater openness, the discussion of e-portfolios might consider the possibility that students' e-portfolios would remain open to them to deposit their creative works even after they leave the university. Doing this would raise issues of security etc. but might strengthen links between alumni and the university.)
- Is Brown adequately prepared for the digital expectations of its incoming students who blog and podcast, and continuously share? Is Brown supporting enough R&D in collaborative pedagogy and in using new technologies and devices for teaching and learning? Is it budgeting enough to provide support for faculty (digital immigrants as opposed to their born-digital students) who might want to integrate new technologies in their courses?
- Should Brown do more to integrate formal and informal education (an issue raised in Harvard's recent report on general education [http://www.fas.harvard.edu/~secfas/General\\_Education\\_Final\\_Report.pdf](http://www.fas.harvard.edu/~secfas/General_Education_Final_Report.pdf))? Has Brown's planning incorporated a scenario for a future where the boundaries of the formal educational experience are far more permeable than they are today? Where 28 courses are not the norm? Where students spend far less time on campus in Providence?
- Should Brown's policies regarding course materials be re-examined to encourage the use of more open access materials, given the dramatic rise in the costs of textbooks and the lack of choices for students? Should Brown

collaborate with other universities to encourage content providers to make their materials more readily available for use online; getting clearance for the use of copyrighted materials is now one of the principal obstacles to posting course materials online.

- Is Brown doing enough to educate members of the Brown community about their rights and responsibilities under intellectual property law, including sharing of materials over peer-to-peer services? There are notices about copyright that appear on the Brown network and Brown should make clear that it opposes unauthorized appropriation of the creative works of others. But Brown should also vigorously defend “fair use” rights and support balanced intellectual policies that recognize the importance of creativity but also the values of openness and sharing. (The recent Higher Education Act amendments will place additional burdens on universities in this area.)
- Should Brown’s Medical School be collaborating with the Hewlett and Clinton Foundations in providing open medical education materials to assist caregiver education in Africa and elsewhere?

**With respect to becoming a world class institution for the creation and sharing of knowledge and in support of Brown’s becoming a global university:**

- Should Brown make its faculty’s research more available (and thus more open) by requiring that an electronic copy of faculty research be deposited in an electronically searchable institutional repository such as the one being developed by the Brown library? The faculty of Arts and Sciences at Harvard has recently established such a policy rather than leaving to individual faculty members all decisions about the availability of their research; individual faculty can still choose not to make their research results electronically available but the “meta-data” of the research will be available so that other researchers can learn of its existence and avoid duplicative work. Policies regarding research are of fundamental importance to the faculty but this is a topic which should be debated given the fundamental mission of the university to create and disseminate new knowledge.
- Should Brown encourage and support faculty publication in open access journals in order to provide more choices to researchers and to make their research more accessible globally? This could be accomplished with little expense by subsidizing publishing costs, encouraging researchers to add publishing costs to their research proposals, or exploring new subscription models being established by open access journals.
- Is Brown doing enough to educate its faculty about the rights that they retain when publishing their research in proprietary journals? In many cases faculty members are unaware of rights that they can retain to share their research freely even if they choose to publish in proprietary journals that limit access to their subscribers.
- Should Brown’s tenure processes be reevaluated to foster collaborative authorship, open access publication, and rapid disclosure of research results such as in database science [www.SciAm.com/science2point0](http://www.SciAm.com/science2point0)? Young faculty, in particular, may be reluctant to freely and immediately

share their research if they believe they must withhold it in order to have it published in prestigious proprietary journals in order to get tenure or achieve professional recognition. Recognition of online publication for tenure or hiring or funding decisions by Brown, other elite institutions, and research funders would help level the field.

- Should Brown seek to increase collaboration in faculty research at Brown and between Brown and other institutions, reducing the “winner take all” competition for faculty and research support? Brown traditionally has been relatively open to interdisciplinary collaboration; are there still barriers to collaboration at Brown? Are there or should there be increased incentives to collaborate within the institution and beyond it? Has Brown adequately explored opportunities for collaboration with foreign institutions?
- Should Brown engage more directly in the study of collaboration (among students and faculty at Brown and elsewhere) to learn what works and what doesn’t? To embrace collaboration implies the need to also study collaboration. Should Brown encourage the creation and/or use of new tools to allow faculty, staff and students to share ideas, problems, and solutions?
- Does Brown’s medical school require the disclosure of outside support for research or consulting in order to allow detection of conflicts or perceived conflicts of interest?

**With respect to Brown’s relationship to the expanding number of communities in which it participates:**

- Should events on the Brown calendar generally be available online to all or at least to members of the Brown community, including alumni? Some faculty talks are being podcast but that is just a start. It seems to have been a missed opportunity not to have a commencement cam streaming video for friends, family etc. Similarly the emeriti executive committee has recommended that the President’s report and other parts of the Corporation open meeting be available to emeriti trustees via secure streaming video just as it would be if they came to Providence for the Corporation meetings.
- Should Brown reevaluate its role in the lifelong learning of its alumni and others? Brown has, in the past, conducted alumni education programs but it might be time to re-evaluate this market and the electronic ways that it can be served as the number of boomer alumni and their interest in life long education increase.
- Will Brown take advantage of new technologies to play a different role in the Rhode Island community?
- What role should greater openness play in supporting the goals of Brown’s internationalization initiative, and for addressing the lack of availability of higher education and the needs of self-directed learners around the world? Making courseware available and encouraging open access publications are easy examples of how to bring about greater openness, but a systematic examination of the connection between openness and internationalization is likely to produce many other examples.

**With respect to Brown's internal operations:**

- Will Brown expand its role in collaboratively developing, utilizing, and sharing open source software, including enterprise software, for academic institutions?
- The new CIO has indicated a clear preference for open standards and interoperability in its IT and communications environment but might this preference be extended further, for example to educational materials?
- Do enough Brown classrooms support new forms of teaching and learning?
- How is Brown incorporating the potential for online education in developing its space projections for the future?
- Will Brown encourage the role of students in developing or customizing software for use at Brown, as has recently happened with the Brown Banner project? Would a "prize" or some other form of recognition for best student contributions help encourage a greater participation? Are those offices within the administration that deal with outside groups, such as Admissions, involving students in evaluating Brown's online presence? Might a Brown Facebook-like application (or a joint venture with Facebook) bring incoming students together more quickly?
- Is Brown's IT infrastructure capable of supporting high-performance computing, collaborative scientific research, and greater openness including new forms of teaching, learning, and research enabled by new technologies? What are the long term plans for evolving the infrastructure?
- Has Brown found the right balance in its intellectual property and technology transfer policies between encouraging innovation, patenting, and increased university licensing revenues versus encouraging the widespread dissemination of research, the promotion of competition through non-exclusive licensing, and the establishment of special provisions regarding technology transfer to developing nations? When was the last time these issues were examined? Have significant changes taken place, such as the rise of open access journals that suggest a need to review the policies?
- Are internal documents such as financial reports routinely posted online to be available to Brown community members?
- Is the Brown media office adequately monitoring online sites that are increasingly important to potential applicants, donors etc.? Coverage in the New York Times is important but Brown needs to know, and have a strategy for dealing with, what is happening on YouTube, Facebook and other sites.
- Should Brown collaborate with Google or Microsoft to provide personal health records for Brown students facilitating better healthcare treatment for these students at a point in their lives when they are just beginning to take responsibility for their own health? (This reflects greater openness by giving students more information about their health and by allowing caregivers to have access to more information and to electronically add results of tests to the records etc.)

## Recommendations

We will not know how, or whether, greater openness will affect higher education for many years, but there appear to be major opportunities now available. Brown cannot afford to ignore them. The opportunities—to provide greater access to information and to enable contributions from all the members of the Brown communities- are consistent with Brown's student centered philosophy. Carefully examining these opportunities, and seizing those that are appropriate, would be consistent with Brown's history of embracing change. In many of these cases, greater openness will improve the processes of teaching and learning, facilitate the creation and utilization of new knowledge, and improve ties between Brown and the various communities with which it is involved. Systematically embracing the ideas behind greater openness will allow Brown to strengthen its reputation, draw in the best faculty and students, and increase its global contribution.

Unlike the case with certain parts of the IT infrastructure, Brown as an institution does not face an immediate crisis. There are some openness initiatives at the university—e-portfolios, digital repositories etc. which are admirable. Brown as an institution has no reason for self-satisfaction—and other institutions are making strides in the realm of greater openness. There is no systematic examination about the costs and benefits of greater openness or even about how and whether the Internet will affect Brown's future.

There is a role for first movers, just as there is a role for fast followers and even cautious adopters. However, there is no reason to ignore very serious trends, particularly by an institution that in the past has benefited from being hospitable to change. There is no reason to believe that fundamental and destabilizing changes will not occur, whatever Brown chooses to do or not do. And there is no reason to believe that it will take many decades before higher education feels the disruptive impact now being felt by other sectors.

The openness initiatives at Brown today only hint at what might be done if Brown embraced openness as an institution. One can't flip a switch and become "open". Institutions can, however, become more open. One way to begin would be to undertake a small number of initiatives/experiments that would allow Brown to better understand the costs and benefits of greater openness and collaboration and the willingness and ability of Brown's culture to become more open. A list of experiments/initiatives that could be undertaken relatively easily, yet with considerable impact, and which could draw from the experiences of other similar institutions might include:

- Review existing curricular offerings and identify a small number of world class offerings that would be made open in conjunction with the OpenCourseWare Consortium with a preference for those not duplicative of existing open offerings and which showcase Brown's strengths.
- Require all Brown syllabi to be open online to students and faculty.
- Establish a faculty committee to make a recommendation as to whether Brown should require that all faculty research results be deposited in an open electronic Brown repository and, if so, under what conditions.

- Encourage faculty research funding proposals to include funding for publication/dissemination/data sharing that would support publication in open access journals. Establish a small fund to support open access publication of Brown research deemed to be of greatest interest to developing countries.
- Establish a faculty committee to examine whether hiring, tenure, and funding decision processes inhibit collaboration, the development of database science, and the use of open access journals.
- Survey the alumni to determine the interest in having access to streaming media feeds of campus-based activities. Provide secure streaming video to Emeriti Trustees of the “open” sections of the Corporation meetings such as the President’s and Treasurer’s reports.
- Continue the survey of incoming students’ experiences and expectations in using digital media and devices. Publish the results and invite student suggestions for new teaching and learning applications. Establish a formal mechanism for student (and faculty) participation in open source software development for educational purposes. Given the increasing attention being paid to graduate students, find new ways to involve them in utilizing new digital possibilities for teaching, learning, and research.
- Charge the CIO and the Vice-President for Research to report on the capabilities of Brown’s IT infrastructure to support collaborative research and high performance computing with recommendations for the long term evolution of the infrastructure in light of the plan for academic enrichment and the increased potential for openness and collaboration.
- Review Brown’s technology licensing rules in light of the competing interests in dissemination of knowledge and revenue generation.

Brown should begin a systematic effort involving different elements of the Brown community to look at the costs and benefits of increasing openness and collaboration at Brown. Such an effort, whatever the outcome, would be of significant value to the Brown community, and might well animate the same interest and excitement that marked the curricular discussions at Brown 40 years ago.