Background. Traditional libraries are burdened with ever-growing storage costs. Old books and academic journals, though rarely used, take up enormous amounts of stack space and can require continuous maintenance to preserve. This has been an unavoidable reality faced over hundreds of years by thousands of libraries. In the 1970s and especially the 1980s, academic journal collection became even more burdensome, as publishers, faced with higher up-front costs, increased drastically the price of many journals. Meanwhile, academic specialization continued giving rise to more and more scholarly literature. Libraries often could not keep up with the proliferation of expensive journals, leading many in the higher education community to feel that they were “being priced out of adequate library resources.”

In 1992, William G. Bowen, president of the Mellon Foundation (also president emeritus of Princeton University) had the idea for a digital library of scholarly journals. Bowen conceived the idea just after a meeting of the board of trustees of Denison University (of which he was then a member), when it was announced that the Denison library needed a $5 million addition to house its ever-expanding stacks filled with back editions of journals. Dubbed JSTOR (for “Journal STORage”), Bowen's digital database was to serve two purposes: (1) increase access to older journal articles, and (2) reduce the storage and maintenance costs imposed on libraries by their many costly journal subscriptions.

Strategy. From the start, it was clear that the “the technological and organizational complexities [of the project] were too great” to develop the JSTOR database in-house. To that end, the foundation recruited Ira Fuchs from Princeton University to help manage “tech hurdles,” and selected the University of Michigan to develop the new database along the lines of TULIP, an early small-scale journal database created in a pioneering collaboration among Michigan and eight other universities with Elsevier Science, a scientific journal publisher. The Foundation gave Michigan an initial grant of $700,000 for software development, followed, four months later, by $1.5 million for production costs.

The Foundation did not leave the implementation of its plan entirely to the grantee. From the start, Bowen had been directly involved in the JSTOR project, and he took it upon himself to convince publishers to participate in the database. Eschewing a solely market-based approach, the Foundation made decisions about which fields of study should be included based upon the needs of scholars, not the likelihood of selling the final product.

The goal for the JSTOR prototype was to scan the complete backfiles of ten journals of economics and history: approximately 750,000 pages of material. The decision only to include backfiles was important. Old academic journals tend to gather dust in library stacks. They are not a source of revenue for their publishers. Critical to Bowen’s success in negotiating licensing rights with publishers was the promise that their business would not be harmed by cooperating with JSTOR. They continue to make money selling their current volumes, but JSTOR gives scholars easy access to an immense base of knowledge compiled in years past. The database was tested at five library sites while the system was still being refined at Michigan. Although there was only limited content available, and technical problems were common, the new resource was well-received; especially popular was its ability to search for a word or phrase throughout the full text of the documents stored.

In keeping with the Mellon Foundation’s determination not to fund JSTOR indefinitely, the
Foundation set up JSTOR as an independent not-for-profit organization in August 1995. The new organization had its own staff, offices, and board of trustees (chaired initially by Bowen). According to Hal Varian of MIT, once “the core journals,” including such titles as the Journal of Political Economy and the Journal of Modern History, had “come on board . . . [Bowen] was able to persuade Kevin Guthrie to become CEO. Kevin, in turn, assembled the team that has led to JSTOR’s great success.” JSTOR became available to the public in 1997. By the end of that year the Mellon Foundation had spent $5.2 million developing it.1144

Outcomes. Today, the JSTOR digital archive includes 449 scholarly journals, covering a wide range of topics in the humanities, social and natural sciences, mathematics, business, and more. Over 2.6 million articles are available through JSTOR, representing a total of some 16.4 million pages. And JSTOR is widely used. 2,160 schools and libraries in eighty-six countries are fee-paying members. In the first ten months of 2004 alone, users viewed more than 56 million pages of content and printed over 15 million articles from the JSTOR archive.1147 JSTOR has been fully self-supporting since 1999.1148

While JSTOR had considerable up-front costs (software development) and does have recurring costs (maintenance, updating technology, adding content, etc.), these costs are far outweighed by the savings it creates. Libraries are able to economize stack space, and require fewer librarians to manage their collections. Delivering the Romanes Lecture at Oxford University in October 2000, William Bowen (an economist before he was a foundation or university president) estimated the system-wide savings in library capital costs to be at least $140 million.1149

Impact. The Mellon Foundation-its staff and trustees—came up with the idea for JSTOR, searched for an adequate model on which to build it, and enlisted publishers to donate licensing rights. They recognized what the foundation was well-equipped to do—create and support, in every way possible, this new archive. And what it was ill-equipped to do—directly manage it. So the Foundation recruited people to run the institution and gave them the resources to make it work.

The libraries’ projected savings thanks to JSTOR are enormous. And JSTOR’s impact in giving millions of people access to such a huge mine of scholarly resources is impossible to quantify. JSTOR is also significant as an early and (still) leading practical application of the technological advances of digitization and the World Wide Web. And, as Hal Varian points out, the database is of special value to the developing world:

JSTOR has not only had a huge impact on scholarship at major research universities in the United States, but it also offers even greater benefits for relatively impoverished institutions in developing nations. Literature that was totally inaccessible to these institutions in the past is now just a click of the mouse away.

JSTOR is also “likely to cause a great deal of intellectual history to be revised.” Fred R. Shapiro, associate librarian at the Yale Law School has, for example, found the origins of many terms in surprising places. He feels that “[t]he history of language is being rewritten because of these electronic tools.” Similarly, Professor Cathleen Synge Morawetz, a winner of the National Medal of Science, contends that “there are important [mathematical] ideas to be picked up from papers of 100 years ago.” Without JSTOR, many of those ideas would probably still be gathering dust.

Notes

1134. For a far more in-depth look at the development of JSTOR, written from an insider’s perspective, see Roger C. Schonfeld, JSTOR: A History (Princeton: Princeton University Press, 2003). According to Schonfeld, a variety of changes—including in exchange rates, paper costs, publishers’ profit margins, and postage costs—combined to force the price increases.
1135. Ibid. In fact, a Mellon Foundation study showed that academic libraries were able to collect each year a smaller and smaller portion of the total scholarly output.


1138. The University of Michigan was selected after the Foundation concluded that it was best equipped, among the TULIP participants, to launch JSTOR. According to Karen Hunter, senior vice president of Elsevier, Michigan was “the outstanding player” among the group that had established TULIP. Schonfeld, JSTOR: A History.

1139. Ibid.

1140. Bowen, “At a Slight Angle to the Universe.”


1142. In fact, users of JSTOR have come to realize that much of the scholarship in those old journals is still very relevant, but had been lost to most researchers as a result of its inaccessibility. See Bronner, “You Can Look It Up, Hopefully.”

1143. Guthrie, “JSTOR and the University of Michigan.”

1144. Introduction to Schonfeld, JSTOR: A History.

1145. The Foundation had also contributed $1 million in March 1997 to provide access to JSTOR to several private, historically black colleges and universities. Mellon would continue providing funds to JSTOR, even after it had become financially self-sustaining. These grants have ranged in purpose from adding of new journals to the database to spreading access to JSTOR to universities in Eastern Europe.


1147. Ibid.

1148. JSTOR charges membership fees from participating institutions. These fees are on a sliding scale based on an institution’s projected usage and its ability to pay. Fees are set so as not to discourage small, relatively underfunded libraries from joining.

1149. It is important to keep in mind that when this estimate was made, JSTOR was less than 30 percent of its current size. The savings may be much higher now. Bowen, “At a Slight Angle to the Universe.”