

Aluka

Building A Digital Library Of Scholarly Resources From Africa

By Kevin Guthrie and Tom Nygren*

This year Ithaca will begin making available to the scholarly community an ambitious new online resource called Aluka. Aluka is an international, collaborative initiative with the aim of building an online digital library of scholarly resources from and about Africa. The name, 'Aluka,' is derived from a Zulu word meaning 'to weave', reflecting Aluka's mission to connect resources and scholars from around the world.

Over the past three years, working in close partnership with dozens of contributing archives, libraries, museums, herbaria, and universities, Aluka has made significant progress building an initial set of high quality content areas organized around three important themes.¹ We have also developed a sophisticated, highly scaleable web-

based technology platform that can incorporate a wide variety of digital content, including archival documents, periodicals, books, manuscripts, reference works, three-dimensional models, maps, oral histories, plant specimens, and photographs. Aluka's goal is to use these initial content areas—of significant scholarly importance in their own right—to demonstrate the potential for Aluka to serve as a focal point for contributions of other collections about Africa by institutions and individuals across the globe. The objective is to aggregate in a single place materials that are currently physically scattered and difficult to access, and in this way to open up new possibilities for research and teaching about Africa.

Background and Context

The first idea for what eventually became Aluka was prompted by the experience of JSTOR as it spread out from its roots in North America. JSTOR is now having a profound and growing impact in the developing world.² Yet, a frequent response to the introduction of JSTOR to scholars and librarians in developing nations has been a keen interest in presenting their own local materials in electronic form. A common complaint is that the creation of digital resources from the developing world, especially Africa, is not keeping pace with what is happening in the rest of the world, and it does not appear that other players in the field of scholarly communications will fill this gap anytime soon.

Most academic libraries in Africa, particularly sub-Saharan Africa, have been seriously neglected and do not have the resources to adequately serve the needs of teaching and research in their communities with traditional print materials. Nor can many African scholars afford to travel to Europe or North America. As a consequence, these scholars are increasingly marginalized. Initiatives such as Aluka are a critically important and cost-effective mechanism for leveling the playing field, especially as global access to the Internet steadily improves. Furthermore, those online resources that are currently available to universities in Africa consist primarily of content generated in the West. Although such materials are also critically

important, Aluka plays an important role by acting both as a catalyst and as a facilitator to help make accessible important materials, including many primary source materials, from Africa.

Scholarly materials about Africa, including those pockets of digital content that are starting to come online (primarily, but not exclusively, in Western institutions), are highly fragmented and dispersed. In part, this is a legacy of colonialism, which frequently resulted in the housing of valuable historical materials in repositories outside their country of origin. Digitization offers a way to reunite virtually materials that belong together. In addition, creating a single focal point for these materials by aggregating them online on a scaleable, reliable platform, with powerful tools for full-text searching, adds enormous scholarly value compared to the alternative of relying on a multiplicity of scattered websites, often unreliable and

unsophisticated in technological terms.

Because many of the materials of interest to scholars are primary sources, often located in African institutions, they tend to be inaccessible—not only to scholars in the West, but also to scholars in neighboring African countries, and even to scholars within their own countries. They are inaccessible either because they are geographically dispersed, because they are unique or rare, or a combination of both.³ And, as already noted, few African scholars have the resources to travel, and with the exception of a small number of advanced PhD students, few North American students have the opportunity to visit Africa. Putting valuable materials online, especially on a platform with the global reach of Aluka, dramatically opens up access to these collections and will expose students and scholars to materials of which they would otherwise not be aware.

Aluka's Approach

Aluka's approach consists of four inter-related components related to content development, technology, international partnerships, and sustainability.

1. Content development: aggregating a mix of curated and contributed collections

From the beginning, a central element of Aluka's mission has been the development of high-quality scholarly content. Towards this end we have invested considerable resources to include content that has been carefully curated and organized around three specific themes (African Cultural Heritage Sites and Landscapes, African Plants, and Struggles for Freedom in Southern Africa). In selecting materials, we have relied heavily on an extensive network of scholars and advisors, primarily from Africa. It was recognized from the outset that the three themes that were chosen would be only a beginning, and that a primary objective was to demonstrate the value and feasibility of building such a resource.

With our first content areas, we have accomplished that initial objective—we have demonstrated that we can build a powerful and useful platform and that these first collections from Africa have enormous potential value. It is now time to take a next and more ambitious step. As we make Aluka available for use by scholars and students in Africa and the developed world, we will respond to the needs of that user community for more content, and we will increase the rate at which we add new materials and collections to the resource. We will continue to build high quality, curated collections that firmly establish Aluka's reputation as a premier and trusted resource for scholarly collections related to Africa and that motivate the inclusion of more and similar materials. At the same time, we also intend to take advantage of the opportunities that today's networked environment affords by developing processes and infrastructure that will encourage and enable individuals and institutions to contribute their own collections about Africa as

part of an international, collaborative network. Our process for selecting content for inclusion in the resource must ensure that contributed collections enhance and build on Aluka's reputation for quality, but we will not require that they be specifically related to one of Aluka's existing content themes.

If we are successful in encouraging contributions to the Aluka platform, additional holders of collections will be motivated to contribute as well. This approach, if managed carefully, can lead to a self-perpetuating positive cycle and a far more efficient mechanism to rapidly build the depth and breadth of Aluka, making it an important scholarly destination for many disciplines. Many organizations will find it valuable to capitalize on the economies of scale associated with relying on Aluka's technology platform, others will see it as a more effective way to meet their mission of broad distribution, and still others will value the opportunity to see their content aggregated with other scholarly content. Individuals who own important scholarly collections are likely to value those benefits, in addition to wanting an institutional home where their collections might be made accessible beyond their lifetimes. The potential for this contributed model can already be seen in Aluka's African Plants Initiative (API). Once the amount of content had reached a certain critical mass, it began to attract attention from a wide range of collection owners who wanted to see their materials included on the Aluka platform. It quickly became evident that each collection on its own is not nearly as valuable as the aggregated sum of all the collections combined. It was also clear that the challenges of developing a suitable platform capable of hosting the high-resolution plant specimen images would be daunting for any individual institution in the API network.

2. Technology: building a high quality, web-based platform

Aluka's technology strategy follows directly from our content development strategy. The strategy consists of two core elements. First, in order to effec-

tively aggregate and distribute the content held in Aluka to a global audience, we must build a reliable, scalable platform that is user-friendly and simple to use, but technically sophisticated and able to provide appropriate tools for researchers and students. The platform must be reliable, so that faculty and students will have confidence that it will be available 24 hours a day, 365 days a year. It must be scalable and flexible so that large quantities of content of different formats can be added to the resource without degrading the quality of service or speed of access. It must have a user-friendly interface in multiple languages that will suit the needs of both novice and experienced users, and it must be optimized as much as possible for the low-bandwidth environments that are typical in many developing countries.⁴ The platform must provide tools appropriate for the needs of teachers and students in a university and research environment, including a powerful search engine and mechanisms for viewing the wide range of content types that will be represented in Aluka. Finally, the platform should seek creative ways to facilitate scholarly exchange and foster the creation of online communities around shared interests. One example, which is already being implemented, is the use of "tagging" to allow users to organize and share materials. The first release of Aluka's platform will be completed in February 2007, with additional features and enhancements added over the first six months of the year in response to testing and feedback from the community.

Second, the technology platform must support Aluka's strategy of encouraging individuals and institutions to contribute their own scholarly materials. This requires that the platform allow for the cost-effective ingestion of new content, while ensuring that an acceptable level of quality is maintained for both images and metadata. We must ensure an appropriate balance between automation and manual intervention, without creating unacceptable delays for content contributors, who will expect to see their content loaded within a reason-

able time period. At the same time, not all contributions will be error-free, and therefore, it will also be important for the technology platform to provide tools that allow feedback to content contributors, who in turn must be able to make corrections with minimal intervention by Aluka. In addition, the platform must support interoperability with other online resources, including those affiliated with Ithaka such as JSTOR and ARTstor, as well as, over time, other online resources with relevant content about Africa.

3. International partnerships: investing in capacity building and training

Aluka's third strategic priority is creating strong international partnerships that emphasize building capacity in Africa. Our goal of helping to "level the playing field" for developing country institutions is not just about making scholarly materials accessible online; it is also about the capacity to digitize and make effective use of those materials. Specifically, the capacity building that Aluka supports falls into two categories. The first is building technical capacity for digitization, including training in scanning, creating metadata records, and using imaging and database software. Key partners are provided with digitization labs, including scanners, computers, software, and other equipment. For example, all API partners have received "herbscan" units for digitizing plant specimens, and digital labs have already been established at archives in Kenya, Mozambique, Namibia, and South Africa. The development of this capacity directly supports our strategy of encouraging contributed collections.

The second category of capacity building has a broader objective—to train librarians, faculty, and students in using online resources for research and teaching. Because of their limited technology infrastructure, online resources are still not widely used at many African universities. Now that JSTOR is waiving participation fees for its journal archive in Africa, it too is keenly interested in providing training in Africa, and we are exploring ways to partner with

them. At one level, especially for librarians and staff involved in instructional technology, this form of training is relatively straightforward—users need to be trained in how to use the features of specific online resources such as Aluka and JSTOR. But there is a deeper level of training that is perhaps more important and has to do with teaching faculty and students how to integrate online materials into teaching and research—helping them to become more engaged and involved in the international scholarly community and providing them with the same tools that colleagues outside of Africa use routinely.

Our preferred approach for providing training will be to establish strategic partnerships with organizations already working in Africa. For example, in the Struggles for Freedom project, training in Mozambique and Namibia has been provided by another of Aluka's partners in the region, Digital Imaging South Africa at the University of KwaZulu-Natal. Likewise, much of the training of African partners in the African Plants Initiative has been carried out by the South African National Biodiversity Institute. In some cases we may also send small teams to Africa to hold "train the trainer" sessions at regional centers.

4. Sustainability: developing a long-term business plan

Aluka's fourth strategic priority is to develop a long-term business plan that over time will generate sufficient revenue to ensure that Aluka is available to future generations of students and scholars. Building a central platform is a cost-effective strategy because the costs of operating and sustaining Aluka can be spread across a large number of institutions. And because Aluka is a member of the Ithaka family of entities, including JSTOR and ARTstor, we are also able to leverage investments already made in those organizations. At the same time, the costs of maintaining and supporting a resource of Aluka's scale, eventually serving hundreds or even thousands of institutions with tens of thousands of users, are substantial. Not only must Aluka support the necessary

technical infrastructure, including servers, networking, security, and data storage (already approaching 15 terabytes), we must also offer ongoing support for users in dozens of countries spanning multiple time zones, including the ingestion of growing numbers of new collections. And, over the long run, it is essential that we provide mechanisms to migrate the digital library to new technologies that become available in the future.

The business plan must support Aluka's strategic priorities by providing appropriate incentives for as many institutions as possible to join Aluka, and for those institutions and their constituents to contribute content to the Aluka platform. Consistent with this approach, institutions that participate in Aluka will obtain access to the entire digital library, rather than expecting them to select only individual collections or content areas. In Africa, Aluka will be made available at no charge to appropriate educational and cultural institutions. Outside of Africa, institutions will be asked to contribute an affordable fee, scaled to the size of the organization, in order to join the international "Aluka network"—which will give them both access to an initial (and growing) set of high-quality collections and the opportunity to con-

tribute their own scholarly materials.⁵ In the short- or even medium-term, we do not expect these fees to cover all of Aluka's operating costs. To cover the costs of providing subsidized or free access, Aluka will seek additional support from governments, international agencies, and philanthropic institutions. (The costs of developing the initial collections is being funded by external sources, and will not be recovered through participation fees.)

As a not-for-profit, mission-driven initiative, our priority is to make it as easy as possible for institutions to join the Aluka network, and to maximize participation rather than set fees at the limit of what the market will bear. The willingness of collection owners to post their content to the site will be heavily dependent on the number of institutions with access to the resource and the amount of usage it generates. Choosing to maximize participation, and therefore lower the fees, will necessarily reduce the amount of revenue Aluka will generate in the short-term. However, the larger number of participants will help spur content owners to contribute content, potentially accelerating the rate of growth of the resource while simultaneously reducing content acquisitions costs.

Conclusion

For reasons far too numerous to mention, Africa is important. The study of Africa depends on the availability of a relevant body of scholarly materials. Yet access to analog materials is so impractical as to be virtually impossible for all but a very few African and worldwide scholars. The internet and digital technologies can have a transformative, leapfrogging impact. But without a focal point of investment and effort, progress has been, and will be, diffuse and far less effective than it could be. Aluka aims to play a leadership role in transforming access to and use of the building blocks of scholarship about Africa.

By building a high-quality, reliable, trusted resource that is widely used around the globe, Aluka has the potential to focus the energy and resources of the scholarly community around a common cause—namely, to work hand-in-hand with the African scholarly and cultural communities to support global scholarship and understanding. A combination of curated collections (including Aluka's first three content areas) and scholarly materials contributed by faculties, libraries, and archives will create the scale necessary for Aluka to tap into the powerful network effects offered by the Internet, and establish Aluka as a sustainable resource long

into the future. The investment that Aluka is making in capacity building at partner institutions in Africa is creating strong international partnerships that will help reduce the technological divide between north and south. Of course, the strategies Aluka is pursuing are not without challenges. Among them is the tension between ensuring that the materials in Aluka are of high quality while keeping the costs of ingesting and reviewing content as low

as possible. There are other important questions about managing intellectual property rights and ensuring that institutions can access Aluka despite the technology and resource constraints that many face. Yet the progress achieved to date, and the positive initial reception we are receiving as we introduce Aluka to faculty and librarians, gives us confidence that Aluka can achieve its ambitious mission.

Notes

*Kevin Guthrie is the President of Ithaka, a not-for-profit organization with a mission to promote innovation in higher education by providing research, strategic services, and infrastructure support to promising new initiatives (www.ithaka.org). He was the founding President of JSTOR, which provides an on-line archive containing back issues of leading scholarly journals to more than 3,300 institutions in 115 countries. Tom Nygren is the Executive Director of Aluka, one of the new initiatives supported by Ithaka. Start-up funding for Ithaka and Aluka has been provided by The Andrew W. Mellon Foundation, The William and Flora Hewlett Foundation, and The Stavros Niarchos Foundation.

1. For more information about Aluka's three initial content areas—African Cultural Heritage Sites and Landscapes, African Plants, and Struggles for Freedom in Southern Africa—see www.aluka.org.

2. JSTOR's impact in the developing world was given a dramatic boost in the summer of 2006 when it announced its Open Africa Initiative which waives participation fees for any academic or not-for-profit institution on the continent of Africa. As of December 31, 2006, 110 institutions in 31 African countries have initiated participation in JSTOR.

3. Collections can also be inaccessible because they are unorganized and in need of cataloging. However, such work is generally beyond the scope of Aluka; our primary focus is on making available collections that have already been organized and/or digitized. In some cases, another important benefit of digitizing primary sources is protecting fragile materials from being damaged or destroyed as result of frequent handling or simply the passage of time.

4. A recent article in the *Chronicle of Higher Education* discusses new initiatives to expand bandwidth in Africa, as well as the many daunting challenges that still remain. A supply of relevant content is described as a high priority now that Internet access in African universities is beginning to improve, and Aluka and several other projects are discussed in that context. See "Can Technology Save the Developing World?" by Brock Read in the July 21, 2006 issue (available on the Aluka website at <http://www.aluka.org/page/about/news/20060721.jsp>).

5. Participation fees will be posted on the Aluka website (www.aluka.org) in early 2007.

