yāna

An open source template
for scholarly journals to develop mobile applications

Proposed by

Thomas Dodson, *Coordinator*
Harvard Library Office for Scholarly Communication

Reinhard Engels, *Digital Software Engineer*
Harvard Library Office for Scholarly Communication

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Aims & Deliverables

The goal of the Yāna project is to provide a light-weight, modular, open source template within which publishers can develop their own mobile applications for open access journals.

The Yāna template would provide the functionality required by any journal operating on a mobile platform. These include:

- Easy navigation
- Clear article layout for PDFs and online viewing
- Favorite and share features
- Information about the journal

The template would also take advantage of standards-based web technologies to allow publishers to deploy their applications to multiple platforms (iPhone, Android, Blackberry, etc.).

A well-documented and publicly available template would greatly reduce the cost to each journal publisher of developing a custom mobile application.

The project would be a success if it made the delivery of content on mobile devices a viable option for more open access journals.

Scope

Yāna will be open source software, so code and documentation will be accessible to anyone who wishes to expand its functionality.

Although Yāna will serve a broad community of journal publishers, many more sophisticated features will be out of the

Yāna is a Sanskrit word meaning "vehicle." It derives from the root word Yā-, which means "going" or "moving."

scope of the initial project. For example, development time will not be devoted at this early stage to the delivery of audio and video content. The focus will remain on features common to all journals.

Because Yāna is intended to support open access publication, its base functionality will not include the ability to restrict access to content to a limited community of users (e.g., paid subscribers).

The Mobile Journal Environment

The major commercial publishers of academic journals have recognized the importance of delivering digital content to their readers using mobile devices. Elsevier, Springer, and others have developed mobile or e-reader applications for the journals they publish and distribute.

Journals not affiliated with these publishers still have other options—from Atyphon's *Literatum for Mobile* to EBSCO's *Metapress®*.

Independent and literary journals can also contract with *Electronic Publisher* for the development of a customized application based on *EP*'s modular platform. Journals can also develop their own platform-specific applications, as *PLoS Medicine* has done for the iPhone.

The Problem

In the current environment, open access journals have access to mobile apps—but at a significant, perhaps even a prohibitive, cost.

Each open access journal publisher must develop its own application or pay a third party to develop the app using a proprietary framework.

Why Yāna?

Because you shouldn't have to re-invent the wheel to go mobile.

Yāna would provide a basic template for multi-platform mobile journal applications, but with a big difference: the code for Yāna would be open source and made available to everyone along with extensive documentation about how to customize it.

Journal publishers would be able to"see under the hood," so to speak, something (quite sensibly) prohibited by companies seeking to profit from their proprietary templates.

Yāna would provide a template from which open access journal publishers could develop their own applications. With the basic functionality already available, OA publishers can focus on customization, greatly reducing their development costs.

Because Yāna will be compatible with multiple platforms, there's no need to build one application from scratch for Apple's iPhone, for example, and another for Google's Android.

Yāna & The Harvard Library

Listed among the four core recommendations of the Task Force on University Libraries was to shift the Harvard Library system toward "ensuring access" to scholarly materials as opposed to the conventional model of "building collections by acquisition" alone.

More specifically, the Task Force's report emphasized the need for continued investment in open access:

> Longer-term efforts to reform the scholarly communications and publishing system, such as the University's leadership in the open access movement, should continue to be emphasized from within the library system.

Open access publishers understand that when it comes to knowledge, what matters is *access*, not ownership.

Because open access journals offer their content for free, they act to enrich the Library's single university collection without requiring costly subscriptions.

It is therefore in the interest of the Library to provide OA journals with the tools to deliver scholarly content in the mobile space and to help them remain competitive with their commercial counterparts.

Implementation

Yāna will be written in HTML5, leveraging developers' existing knowledge of HTML and JavaScript.

We also plan to make use of multi-platform, open source tools in its development.

Timeline

We estimate that developing the core Yāna framework will take three months, progressing through the following stages:

Month 1
1. Identify one or more "comparable" models to determine baseline functionality (and decide what functionality to leave for future phases).
2. Decide on the underlying application generation technology (e.g., *Phonegap*)
3. Create image mock-ups.
4. Write crude (semi-) functional demo code. Ensure that at least two critical behaviors are working.

Month 2
1. Weekly alpha releases until full initial feature set is more or less supported.
2. Recruit test users to provide feedback after each release.

Month 3
1. Package for public release.
2. Provide documentation for users (text and screencast).
3. First public beta release.
4. Fix bugs identified by initial users.

Staff Activity	Man hours	Estimated cost
Project Management	30 days	$4,500
Programming / Development	30 days	$6,500
Graphic Design	3 days	$2,000
Total		$13,000

Staffing

The coordinator for the OSC will serve as the project manager and devote approximately one-third of his time to the project over three months.

We will also require approximately one month of time from a programmer / developer, also spread over three months. Most likely, the developer will be the OSC's digital software engineer.

Finally, we will employ a designer to assist with graphic production related to the application (e.g., default icons and functional elements).

Acknowledgements

We would like to thank two individuals who provided us with information and insight as we developed this proposal.

Michael Fisher, Editorial Director for Harvard University Press, advised us regarding mobile platforms currently provided by commercial publishers.

Open Access Advocate and Berkman Center Fellow, Peter Suber, confirmed our assumptions about open access publishers: they are eager for mobile options for their journals, but most cannot afford commercial solutions.

Addendum

On April 11, the Library Lab review committee requested additional information about the proposed project. The committee asked us to consider how Yāna might be connected to journals operating on the Open Journal System (OJS) and WordPress platforms and to identify some journals that might be willing to act as test cases.

Open Journal System & iOJS

Open Journal System (OJS) is a platform widely-used by OA Journals, and iOJS represents one approach to providing mobile functionality to OJS journals. Currently under development at the Graz University of Technology in Vienna, the application allows the user to view articles from multiple journals that use the OJS platform. Journals must install a plugin on their end in order to provide the necessary feed to the iOJS application.

iOJS is essentially an aggregator, however, and does not fulfill journals' needs for unique, customized, and branded mobile applications. Each journal is presented as a title in a list within a minimal (and unattractive) user interface. There is no provision for a journal to brand the user experience or even provide a logo. Further, iOJS only provides access to articles; other content—information about the journal and guidelines for authors, for example—is excluded. iOJS is also platform-specific, running on only Apple devices.

Finally, iOJS does not appear to be fully production-ready. We have been able to test it using a link to an OJS installation provided by the developers for that purpose, but iOJS failed to connect to our otherwise fully functional, standard, and plug-in enabled installation of OJS.

The goal of the mobile journal template we wish to develop is to provide the basic functionality for a mobile application for an individual journal regardless of what platform the journal currently uses to deliver its web content.

Still, we would like to tap into OJS's large population of potential users. As part of the research phase of our project we plan to investigate the OJS API to determine the feasibility of allowing journals to feed their content directly into a mobile application using the Yāna template.

Other platforms

Both WordPress and Drupal provide installations designed for use by magazine and journal publishers. We believe, however, that investing development time to provide specific support for these platforms would be premature in this early stage. During the three months planned for the initial project, we would prefer to focus on such core functionality as attractively displaying articles in HTML and PDF formats—the formats most commonly used by publishers across content-delivery platforms.

The Very Model of an Open Journal Mobile App

What we are envisioning for Yāna is a customizable template with the same kinds of basic functionality provided by the PLoS Medicine application. This application allows users to browse, read, bookmark, and share articles in HTML and PDF formats. The app is also specific to the journal and contains an "about" icon that leads to additional information about the journal, the editorial board, licensing, and so forth. Whereas the code for Yāna will be cross-platform, the PLoS Medicine app was developed exclusively for Apple devices.

We spoke about the Yāna concept with one of the developers of the PLoS Medicine application, Dr. John Brownstein of Harvard Medical School's Center for Biomedical Informatics.
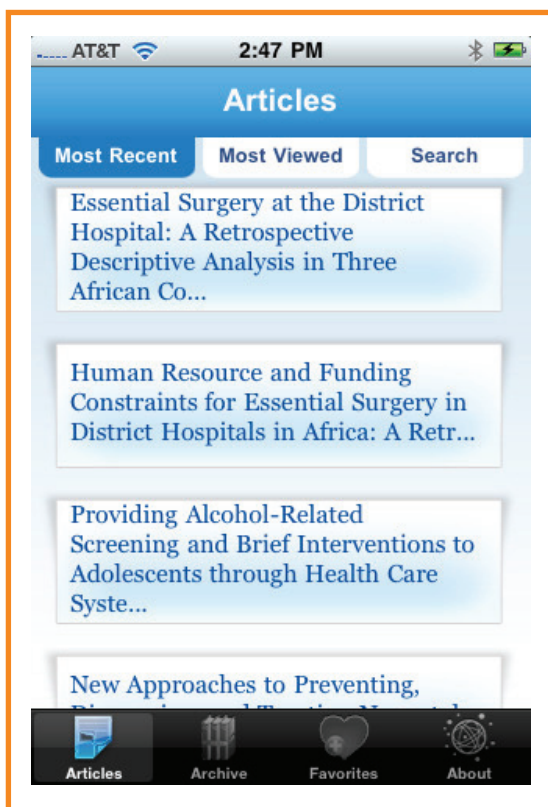
Dr. Brownstein agreed that Yāna would fulfill a need in the open access publishing community and suggested that the current lack of a non-commercial option for mobile application development for open access journals represented a "huge opportunity."

He suggested that we contact another OA journal, *Environmental Health Perspectives*, that had expressed interest in developing a mobile app using the PLoS Medicine code. If our project moved forward, we would be able to offer such journals a cross-platform solution instead of one that is only compatible with Apple devices.

BioMed Central

Matthew Cockerill, managing director of the open access publisher BioMed Central stated that their journals have been considering different approaches to mobilizing their content. He reviewed our proposal, describing it as "a very timely approach," and stating that he saw "a useful role for journal apps, especially for our society journals."

Mr. Cockerill compared our approach to the mobileroadie platform, a template for bands and musicians to create mobile apps at a low cost, concluding: "I think a similar model could work well for journals . . . "

Finally, he expressed interest in beginning a discussion about how BioMed Central (with its over two hundred journals) could collaborate on the project. "It would not be difficult, I am sure," Cockerill stated, "to find external academic editors to collaborate with you on this project."