Multiple Roles of the Digital Library of the Middle East
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My perspective on the Digital Library of the Middle East is informed (and biased perhaps) by my experience creating and delivering digital surrogates of museum objects via searchable databases on the Web. Since the Harvard University Art Museums has identified the research community to be the primary audience for the results of this work, we have attempted to provide materials without much interpretation and assume that the users will augment their search of our database to access additional interpretive work which is generally found in galleries and classrooms. From the point of view of an academic art museum and a library-like purveyor of visual information, it has been our observation that the means we have chosen to achieve our goals are relatively adequate to the task. But it has also been observed both here and elsewhere that, like so many newly-scaled plateaus on the New Media landscape, initial success on one initiative seems immediately to open the question of what else could or even *should* be done with the new set of capabilities

The most noteworthy success achieved thus far by most digital library initiatives, in my opinion, has been the well conceived and highly reliable implementation of trusted repositories for digital material. The prescription and experience of others is well documented and need not be re-stated here, except to say that this documented methodology should be carefully and closely followed. However fundamental the safe and future-oriented storage of digital objects most certainly is to their usage, we would all agree that this alone cannot be considered an adequate agenda for a major digital library. Thus, it seems that one of the tasks of the upcoming workshop is to itemize the many roles a lead institution, such as the Bibliotheca Alexandrina, will need to consider as it moves forward in this arena. In addition to providing a trusted digital repository service, the short list of roles would include at least the following: 1) Union Catalogue *and* Facilitator of Federated Searching, 2) Advocate, Funding Agency and Collections Developer, 3) Interpretive Curator, and 4) Publisher.

1) Union Catalogue *and* Distributed Search Methodologies
Many institutions with robust infrastructure and pre-existing holdings of digital material would most likely prefer to be participants in distributed search schemes. Operating in this manner reduces the staff time devoted to preparing and sending out datasets and, by managing their information as harvestable data, their data remains more up to date. There are, however, many other stewards of valuable material who might not be capable of mounting their content locally and would rather contribute to a union catalogue operated by some larger institution. These two models are by no means in contradiction with one another; the operator of the central catalogue can (and must, I would say) accommodate both types of collaborators. To do this, the lead institution needs to assume the additional costly yet highly valuable measures of organizing the received material according to standard OAI protocols and then treat its aggregated content as just one of the many other participants in the federated search collaborative. The result for the end user will be greatly improved because of the vast quantity of material being searched, and the technical means by which this is achieved will be transparent.

2) Advocate, Funding Agency, and Collections Developer
Implied by the union catalogue model mentioned above is the need for the lead institution to pro-actively develop and maintain collections of material which fall within the field of interest. Hardly a new role for those in the library community, this task takes on added dimensions in the arena of digital assets. To successfully accomplish digital collections development and management, one must expect to assume the role of educator within and advocate for the collaborative body throughout the community it intends to serve. Additionally, the lead institution would be called upon for mentoring contributing institutions and the establishment of metadata and other technical standards to enable the entire operation. Further, it is likely that the lead institution would also be called upon – or at least be expected – to assist various digitization projects with funds and other resources so that the

materials can be made available to the online community in the first place. Thus, in addition to providing a safe haven for digital assets and a means by which they can be found and used, the lead institution of any such digital library initiative will need to be able to influence other funding agencies to assist participants or to provide substantive aid directly.

Parenthetically, I must add from my experience that all too often researchers and even would be collaborative institutions assume the pre-existence of large quantities of digital materials when in fact just the opposite is true. Custodian institutions such as museums are still far from realizing the dream of comprehensively digitizing even their most well-known cultural heritage collections. Fortunately, there is already a large body of knowledge derived from practical experience with digitization projects within the cultural heritage community and elsewhere. Standards, methodologies, and conventions need not be re-invented for the most part, and because of this, funding agencies can provide support with greater confidence than was possible in the past. To insure the quality of the digital material to be produced, however, it will be important for the lead institution and the various funding sources to require compliance with best practices and, very probably, also supply mentoring and oversight of the resulting projects.

Associated with this advocacy and funding role is that of collections developer. Given the wealth of material yet to be digitized, a pro-active effort to seek out and encourage digitization projects of specific collections also would appear to be necessary. Undoubtedly a large number of requests for assistance can be expected, but it would seem necessary for the lead institution to also accept the responsibility of insuring a balance of digital assets by establishing internal guidelines and initiating projects to achieve those objectives. Developing a preliminary listing of potential sources of material to be digitized would not appear to be particularly difficult. Implementing such a program of collections development, however, would require considerable vision and a highly disciplined approach.

3) Interpretive Curator
Unlike maintaining stacks full of research materials and dispensing borrowing privileges, stewards of a digital library also take on an interpretive role, much like a librarian for special collections or a museum curator. Depending on the nature of the material, exploration of collections can be enhanced by a some amount of interpretation embedded in their presentation. Generations of practitioners have discovered that finding an appropriate balance between presumptive packaging and open-ended presentation for serendipitous discovery can be a difficult task. In the realm of digital libraries, where the quantity of material is potentially overwhelming, this lesson must be applied carefully so as to enhance digital resource discovery without pre-empting unforeseen research. In addition to traditional subject cataloguing, full text digitization and indexing capabilities – even for archival and fine arts materials – will allow for potentially much more illuminating searches. Because not enough material has yet been scanned and indexed in this way, it is too early to predict what research methods will evolve. It is my expectation that the combination of interpretive cataloguing and comprehensive open-ended presentation of fully indexed text, now enabled by affordable and readily available hardware, will point to research possibilities heretofore unimagined.

4) Publisher
In order to make known and available some of the material it will hold, the lead institution operating a digital library will by necessity become a digital publisher, as well. It is probable that some contributed material will be lacking an acceptable delivery vehicle, i.e., a database, or even a static presentation medium. Thus, in the publishing role, the lead institution will need to provide at least direction, and probably mentoring, for the creation of such a vehicle, or simply create one itself. But any such editorial work must be approached with great care and awareness of the delicacy required by negotiating and working with a wide variety of authors and differently sized content providers.

When this work inevitably encounters political, cultural, or religious discord, great editorial sensitivity, understanding, and trust will be of paramount importance.

Another publishing capability to be developed as a critically important feature of the digital library is an easy means for delivery of both objects and their metadata for re-use by the end user researchers. At Harvard and many other universities with digital libraries, we have discovered that it is vitally important to provide technologically unsophisticated users with simple tools to enable downloading of materials to their local computers. While this may seem an easy task to those participating in this workshop, empirical evidence indicates that it most certainly is not. This is especially the case when images of various sizes and resolutions need to be reformatted for classroom usage or for self-directed instructional programs. Given the wide variety of potential uses, it will be nearly impossible to predict and provide a tool for them all. At very least, however, the stewards of a digital library must provide disk space for researchers to save data sets for usage in later sessions, and choices of format and size for downloaded materials, especially images.

As numerous as these practical and programmatic challenges may be, hanging very heavily over any publishing enterprise are daunting intellectual property rights questions, as well. Rights management, based on well conceived and implemented metadata will be another critical requirement to be addressed by the stewards of any digital library. In this present case, however, when the very nature of the initiative is multi-national and enjoys governmental and legislative support, perhaps it is possible that IPR issues could be reduced or even eliminated from the list of challenges. The Creative Commons approach might prove to be very useful.

Postscript
It is not my intention to indicate pessimism about the possibilities of this initiative. Even after having enumerated some of the multiple roles inherent in the development of a digital library, it still appears to be as feasible as it is desirable. Given the obviously strong support the Bibliotheca Alexandrina already receives from the Egyptian government and the important position Egypt occupies in the Middle East, it would seem that the successful creation of this digital library is well within reach.