Barriers and Challenges to Blockchain Implementation in Libraries

As mentioned in the introduction, the majority of blockchain-based applications so far have been in the cryptocurrency space. As a result, it remains to be seen how blockchain will be implemented in business and industry. There certainly seems to be widespread interest in the technology as many of the benefits continue to become clearer. However, turning over existing processes to blockchain has not and will not be without challenges. Below is a brief discussion about several questions related to various barriers and challenges libraries face with respect to implementing blockchain-based systems.

Technological Know-How

While blockchain will be touted as the panacea for many library problems, the reality is that blockchain and its implementation are complex. Knowledge about implementation and applied use cases is still very limited. The challenge that arises then is which of the organizations working with libraries will be the first to pursue this opportunity and start creating blockchain-based applications for libraries? Will libraries be able to develop blockchain applications individually, or will we come together via our consortia or through partnerships? Where will the technology leadership come from to introduce libraries to blockchain?

Choosing the Right Blockchain

As has been illustrated in the case studies mentioned in chapter 3, blockchain is not a simple, one-size-fits-all solution. Just as there are many vendors for library systems, there are many blockchain suppliers and platforms. National and international vendors will come offering products and support. Some libraries will have competent technology and development teams that can build the infrastructure from scratch. We may also find that some of our consortia will start participating. Once the right blockchain platform has been chosen, do we want to develop our own apps on the platform, subscribe, or buy existing products? Do we have enough information about whether we want to implement private or public blockchains?

The answers to these questions will present themselves in due time. Before long, the first proofs of concept will be developed, and hopefully the developers will share them with our community. Once they do, we will be able to test the applications, and many of the questions above and below will be answered.

Cost of Implementation

Any new technology carries many inherent costs. Naturally, the direct dollar costs must be considered in the selection of a product, in the development or customization, in the deployment, and so on. However, indirect costs will also be incurred in having to train our library employees on new systems. Will the switchover be immediate and complete or gradual? Perhaps costs will be incurred in having to carry two systems for some duration. And, ultimately, the question is how do these costs compare to the benefits derived from this system? Will the benefits outweigh the costs? And, if so, over what period of time?

Cost of Maintenance and Development

Once libraries have taken the plunge and committed themselves to a blockchain-based application, the costs of maintenance and development must be considered. They may not differ significantly from the costs we incur in maintaining our current systems; however, library salaries are typically not competitive with the salaries offered by industry. As a result, there may be challenges in attracting and retaining the talent to work on our blockchain-based solutions in libraries.