Community-based Collections

Extending libraries through blockchain

M Ryan Hess

Digital Initiatives Manager

Palo Alto City Library

The blockchain opens up the possibility of extending library-like services beyond the library walls. Leveraging the blockchain’s facility for establishing trust between total strangers, M Ryan Hess envisions using a blockchain solution to build a free, reciprocal sharing platform where community members can share objects, tools, services and know-how. At its heart, such a Community-based Collection solution takes the services already provided by libraries and encodes them into a technical platform open to anyone.

Hess proposes using existing blockchain technologies to build this platform. Ethereum is a versatile blockchain technology that could track the various transactions and provenance of items. More importantly, Ethereum includes smart-contract functionality, allowing for programmable rules that can handle aspects like borrowing policies. The front-end code of such a platform could be made available as a distributed app via the Inter-planetary file system (IPFS) or as a standard phone app. uPort, a blockchain-based identity management platform, might be a good candidate for authenticating users.

There are several problems that need to be overcome before such a platform could be realized. What is the optimal incentive system for such a platform? How do we ensure robust security, particularly around the front-end code? And what is the library’s role in such a platform? Will the platform be completely autonomous, or will libraries serve as validating agents? And if so, what would the energy costs be for libraries were they to provide the processing of the community transactions? Finally, who builds such a solution and with what resources?