Executive Summary July 2018: Blockchain and Public Library Potential
Annie Norman, Ed.D., State Librarian of Delaware

How might blockchain technologies be beneficial to public libraries?

Potentially, blockchain may provide the salvation for libraries' data challenges! Quantifying and showcasing public libraries' value effectively has been a perpetual problem, which impacts library funding levels. Currently, the COSLA Measures That Matter (http://measuresthatmatter.net/) project is marshalling efforts with IMLS and other stakeholders to assess and resolve public libraries' data challenges, which will likely require new technological solutions. Blockchain distributed ledger, authentication, and privacy capabilities could support a universal library card, a union catalog with provenance and ownership verification, data sharing, and more.

Below are strategic data questions that Delaware libraries are answering using existing library technologies. Blockchain may enable faster experimentation and more effective and seamless solutions!

What does library data tell us about patron needs? What are patrons trying to do? How might library services be bundled to meet those needs?

Traditional library statistics, such as totals of circulation, program attendance, and Reference questions, indicate how busy staff are. Libraries also need new ways of looking at data from the view of the patron. In Delaware we use two macro-organizers to encompass all potential services and community needs, a Dewey/Maslow framework (Figure 1). The Dewey Decimal Classification System (x axis) is the installed base for Delaware libraries' Collections, and the same taxonomy is used to align Circulation with Program attendance and Reference questions. A modified version of Maslow's Hierarchy of Needs (y axis) organizes all needs that libraries support, from basic needs to transformational. The Dewey/Maslow framework addresses all disciplines and subjects, includes all library and DE Partner (https://guides.lib.de.us/departners) services, and can be used in a variety of ways for planning and assessment. Data alignment may be even easier to manage using blockchain solutions. By strategically measuring library performance across all services, we can understand how libraries contribute to improving community indicators, and libraries can become even more effective and influential in helping communities to evolve and transform.

What are the cumulative benefits of reading books, attending one hour programs, and so on, over a year, and over a lifetime?

In Delaware, a method was developed for individuals to capture the accruing benefit of books read, programs attended, etc. Tips, tools, and techniques are provided, and the public is encouraged to track their reading and learning over time (http://guides.lib.de.us/unleashinnergenius). Tracking enables the public to enhance their learning and, they can also quantify the benefits they have received from libraries. A blockchain alternative may help ensure secured and sustainable patron access for the long term.

What proportion of the population do libraries actually serve?

Libraries' stretch target, or capacity measure, is to serve the entire population (or close to it), and the library landscape should be seamless across school, public, and academic libraries. In order to truly understand library performance, the population's use of libraries should be analyzed in relation to community development. For example, Delaware libraries are participating in our state's Grade Level Reading initiative. We have live data on public library use by a portion of the juvenile population now, but it is unknown what is happening in the school libraries. In the statewide Delaware Library Catalog, so far more than 70 libraries are participating, including all public libraries, several academic and special libraries, and a few school libraries. The final frontier, ideally, would be to add all of the school libraries in the state to the Delaware Library Catalog to gain a full picture of library use by juveniles, monitor steps to expand library use, analyze library use in relation to Reading Scores, and more. If we are ever able to obtain the funding to add school libraries to the catalog, it will still take years to complete an integration project. Perhaps a blockchain solution would be more affordable and faster to implement!

How might library performance and outcomes be measured at scale?

Libraries are an open book and share willingly among themselves, but the sharing is not as efficient and effective as it could be, as our services and data are segregated in silos owned by various vendors and governances. In contrast, for example, businesses such as Google and Amazon are "eating our lunch" relative to some library services not only because of their innovations. Businesses have a "single entity advantage" that enables them to monitor the entire value chain for customers, all the processes of their businesses, at scale. To leap beyond traditional data management, libraries and library vendors need to collaborate in a much more seamless and transparent way.

In Delaware, long before blockchain became popular, libraries have worked hard to establish a statewide infrastructure across a potpourri of library governance in order to obtain shared live data. (Delaware Library Network and Catalog delawarelibraries. org, Program calendar, Ask a Librarian Delaware, etc.) Delaware libraries act "as if" they are a single entity, accessing and learning to use library Big Data to learn about customers' needs. The Delaware Library Consortium shared infrastructure has been beneficial in a number of ways, including greater library staff collaboration, merging of policies, and access to live data is engendering greater respect for and inclusion of libraries in initiatives to solve community issues. And patrons enjoy the convenience and the greater variety of collection and program content, too!

A holistic view of performance is needed to better understand the cause and effect of library services, which is what funders want to know. Transparency of inputs, outputs, outcomes, and community impact at scale across all libraries would foster a clearer understanding of library performance and how to improve it. Live data supplements libraries' current use of census survey data and research studies, and is more reliable and informative about patron behavior and use of libraries.

How might libraries implement blockchain technologies?

A seamless ecosystem across all types of libraries is essential to fulfilling our shared mission, to enable individuals to achieve their full potential. A holistic, enterprise solution is not typically the kind of innovation that arises from grassroots efforts. Not all library staff are comfortable with significant change, and staff on the front lines may have significant input to share but not the vantage point to see all the variables or to initiate the system changes needed. The work systems, such as a blockchain solution, must make the leap first, to create the new work for library staff. The leaders in the library profession are responsible for creating the transparent library infrastructure, and may benefit from using the capabilities of blockchain to work together more seamlessly and provide evidence of public libraries' contributions and value to society. We're all stronger and more effective together. That will keep libraries relevant, and will enable libraries best future!
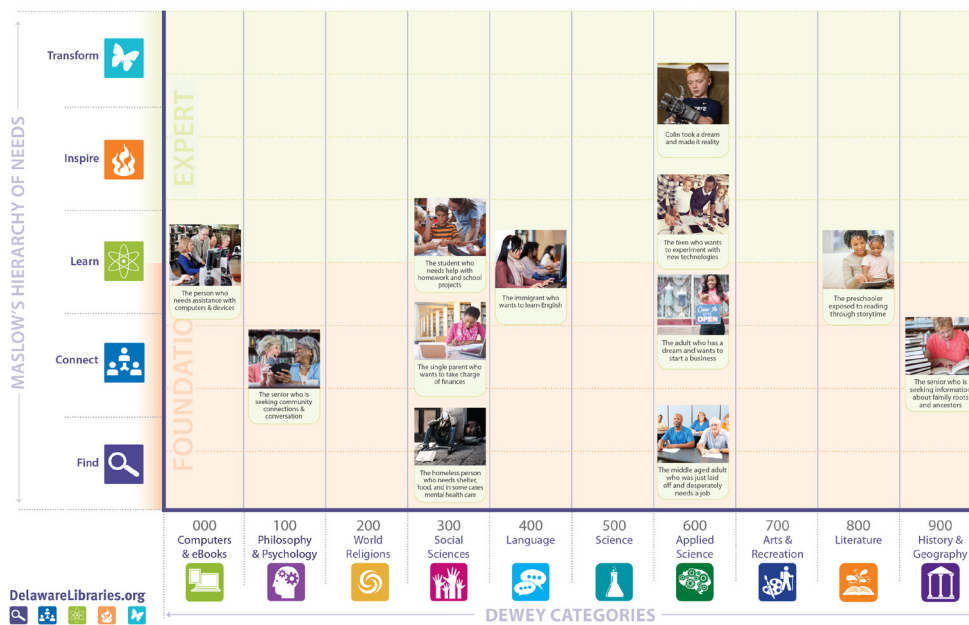

Figure 1: Dewey/Maslow Framework