

Date of Hearing: June 13, 2023

ASSEMBLY COMMITTEE ON HIGHER EDUCATION
Mike Fong, Chair
SB 711 (Caballero) – As Amended April 26, 2023

SENATE VOTE: 40-0

SUBJECT: Community colleges: blockchain industry report

SUMMARY: Authorizes the California Community Colleges (CCC) Chancellor’s office, in collaboration with the Academic Senate of the CCC and stakeholders, to produce a report on the workforce needs of the blockchain industry. Specifically, **this bill:**

- 1) Commissions the Chancellor’s Office of the CCC, to consult with the Academic Senate of the CCC in order to produce a report by December 31, 2024, on the blockchain industry. The report shall address all the following:
 - a) A review of existing CCC programs and courses that are aligned with the blockchain industry;
 - b) An analysis of the blockchain industry and demand, including employer workforce needs, student demand, and institutional capacity;
 - c) Ways to align the blockchain workforce needs of employers with the education and training provided by CCCs; and,
 - d) Recommendations on potential strategies to promote blockchain-related careers where a workforce shortage exists.
- 2) Requires the Chancellor’s office to do the following in order to produce the report as required in (1) of this analysis:
 - a) Leverage existing CCC workforce programs to convene the necessary stakeholders in the blockchain industry or similar industries to identify workforce needs within regional economies; and,
 - b) Include the contributions of faculty, workforce development, the K-12 sector, and other relevant stakeholders.
- 3) Requires a copy of the report published pursuant to (1) to be made available to the Legislature by December 31, 2024.
- 4) Sunsets the entire measure on January 1, 2029.

EXISTING LAW:

- 1) Establishes the CCC under the administration of the Board of Governors (BOG) of the CCC, as one of the segments of public postsecondary education in California. The CCC shall be comprised of community college districts (Education Code (EDC) Section 70900).

- 2) Authorizes the BOG of the CCC to provide leadership and direction for the continual development of the CCC. Delegates the general supervision authority of the community college districts to the BOG and permits the BOG to conduct various functions including, but not limited to administering state and federal supported programs, and establishing minimum standards for the academic, employment, and governance (EDC Section 70901 subdivision (a) and (b)).
- 3) Establishes the chief executive officer of the community colleges, known as the Chancellor of the CCC and enables the BOG to delegate duties and responsibilities to the Chancellor (EDC Section 71090).

FISCAL EFFECT: According to the Senate Committee on Appropriations:

The Chancellor's Office estimates one-time General Fund costs ranging from \$26,000 to \$137,000 to conduct a series of meetings and produce the report. The workload activities would include the review of existing community college programs and courses; analyzing the blockchain industry; assessing how to align blockchain workforce needs with the education and training provided by the colleges; recommending activities related to pipeline development between local educational agencies and community colleges; and recommending strategies to promote blockchain careers.

COMMENTS: *Purpose of the measure.* As determined by the author, "blockchain technology can significantly help historically disadvantaged communities by connecting them with high-paying jobs. Average entry-level jobs in the blockchain sector pay on average \$117,000. However, these jobs are out of reach for most low-income communities of color due to the lack of educational resources in this space. Due to the lack of skilled teaching talent or official blockchain coursework, it is hard for interested individuals to learn the skills and pursue a career in this nascent sector. As a result, students are self-organizing in unofficial clubs to learn blockchain skills with their peers. Not only can these be chaotic and unorganized, but they lack a standardized, high-quality curriculum."

Furthermore, the author contends, "SB 711 would promote cutting-edge, high quality, and highly sought after courses and curriculum. Specifically, this bill would require the Chancellor of the California Community Colleges, in consultation with the Academic Senate, to produce a report that analysis the blockchain industry and demand, including employer needs, student demand, and institutional capacity. By providing economic opportunities in historically disadvantaged communities, we can diversify the local economies, expand the tax base, improve constituent services, and help communities of color advance within the tech sector."

Background. In May 2022, the Governor of California signed an Executive Order (N-9-22) to create a transparent and responsible business environment for the regulation of blockchain while growing jobs and protecting consumers. The executive order provided the state with seven priorities:

- 1) Create a transparent and consistent business environment for companies operating in the blockchain.
- 2) Collect feedback from a broad range of stakeholders to create a regulatory approach for crypto assets including blockchain.

- 3) Collect feedback from a broad range of stakeholders for potential blockchain applications and ventures.
- 4) Engage in a public process and exercise statutory authority to develop a comprehensive regulatory approach and consumer protections.
- 5) Engage in and encourage regulatory clarity with the Federal Government.
- 6) Explore opportunities to deploy blockchain technologies to address public-serving and emerging needs.
- 7) Identify opportunities to create a research and workforce environment to power innovations in blockchain technology.

One of the recommendations in the Executive Order was for the members of the Governor’s Council for Postsecondary Education to identify opportunities to build a workforce pipeline for the blockchain industry and to create research opportunities for blockchain technology improvement. *Committee staff notes, as of June 7, 2023, the Council for Postsecondary Education has not provided a report or identified opportunities as suggested by the Executive Order.*

In December 2022, the California Government Operations Agency published a report on a summary of the interagency progress on fulfilling the work of the Executive Order specifically on feedback from stakeholders as to the risk and the opportunity for the state to provide oversight and regulation in the burgeoning technology field. The report contained six recommendations from the agencies and stakeholders including, “leveraging California’s unparalleled higher education systems to build a best-in-class workforce and drive additional research and innovation.”

This measure would build upon the Governor’s executive order and upon the recommendations of the interagency report by requiring the CCC to evaluate and make recommendations on how the system can establish an educational pathway to provide a diversified and highly-educated blockchain workforce.

What is blockchain? The immediate concept one conjures when discussing blockchain is of cryptocurrency and the collapse of FTX. However, blockchain is not exclusive to cryptocurrency or bitcoin, but rather is the technology interface that enabled cryptocurrency to exist.

AB 2658 (Calderon), Chapter 875, Statute of 2018, defines “blockchain” as a mathematically secured, chronological, and decentralized ledger or database. AB 2658 (Calderon) required the Government Operations Agency to establish a blockchain working group for the purpose of providing a report to the legislature on the potential uses, risks, and benefits of the use of blockchain technology (*the report was referenced previously in the analysis*).

In the first report on blockchain, the California Government Operations Agency defined “blockchain” as:

“A domain of technology used to build decentralized systems that increase the verifiability of data shared among a group of participants that may not necessarily have a pre-existing trust

relationship. Any such system must include one or more ‘distribution ledgers’, specialized datastores that provide a mathematically verifiable ordering of transactions recorded in the datastore. It may also include ‘smart contracts’ that allow participants to automate pre-agreed business processes. These smart contracts are implemented by embedding software in transactions recorded in the datastore.”

International Business Machines (IBM) defines blockchain as a “shared, immutable ledger that facilitates the process of recording transactions and tracking assets in a business network”.

Blockchain is a digital database of sorts that is an ideal delivery system for information as it is immediate and secure. Some of the key elements of blockchain is that everyone can have access to the ledger regardless of location, transactions conducted in the ledger are recorded and can’t be changed or tampered with, and each record is “blocked together” in an irreversible chain. An example of a blockchain is the IBM food trust that traces food from the source to the consumer:



Essentially, anyone who has access to the blockchain would have access to data in the form of a timeline with data from multiple sources. So if there was an outbreak of E. coli, the Center for Disease Control and the U.S. Food and Drug Administration would be able to use blockchain to trace the food back to the source and determine when the food was contaminated. Another example of the use of blockchain is the consolidation of digital patient information in the medical field. The lack of congruency in record-keeping systems can result in patient consent forms and medical histories being incomplete; however, with blockchain-stored records, each piece of a patient’s medical history and paperwork is readily available in a chronological digital format. With blockchain, the information can be readily available to the patient and whomever they give permission to access the chain of data.

Blockchain programs in California. Despite the emergence of blockchain, very few programs currently exist in California and are mostly run by extension programs. Extension programs are self-funded through fees paid by the consumer or student. The extension programs offer short-term certificates, from a week to six months in length, to students for the purpose of expanding their knowledge on a given topic. In the case of blockchain, due to the lack of an agreed-upon curriculum, each program provides different lessons leading to the attainment of a certificate from the institution. Committee staff examined multiple certificate programs offered through an array of vendors, including the University of California, Coursera, and the CCC and found that each program offered a distinctly different set of classes for the student to undertake in order to earn a certificate in blockchain. For example, Los Angeles City College Extension program offers a six-week in-person certificate in blockchain fundamentals for \$116. The program includes 12 lessons on blockchain topics; including, but not limited to, “cryptocurrencies,” “the shared ledger,” and “blockchain business cases.” Whereas, a program provided by UCLA has

four required courses on blockchain including; “fundamentals of blockchain technology” and “digital transformation: Blockchain, IOT, AI, and trusted data.” The program at UCLA costs \$3,996 and culminates in a certificate in blockchain technology management.

SB 711 (Caballero) would build upon existing programs by offering an avenue for collaboration between industry experts and the CCC system to create a standardized educational pathway for the offering of academic certificates or degrees to train a high-skilled workforce capable of meeting the needs of the blockchain industry.

Arguments in support. As delineated by Block, Inc, SB 711 (Cabarallo) is imperative as “innovation is continuing to evolve in the blockchain industry, reaching far beyond the cryptocurrency market and into everyday functions from improving information security, to streamlining business operations, and improving government functions. Creating a development plan for California residents, focused on the education of blockchain and its various use cases, will contribute to the development of new innovations and economic opportunities, and further enhance California’s reputation as a leader in the technology sector. We are also supportive of the report focusing on the additional needs to the program structure and network. All too often, studies are proposed to identify the problems and solutions to specific industries, without also identifying the necessary resources to implement these solutions. Enabling input from stakeholders from the blockchain, workforce, and education communities, will provide California with a clear picture of what is needed to advance blockchain knowledge and education amongst its citizens.”

REGISTERED SUPPORT / OPPOSITION:

Support

Block, INC.
Blockchain Advocacy Coalition
Digital Currency Traders Alliance
Gavilan Joint Community College District
Roseville Area Chamber of Commerce
Wid - Woman in Data

Opposition

None on file.

Analysis Prepared by: Ellen Cesaretti-Monroy / HIGHER ED. / (916) 319-3960