



Talent
Data
Organizations

White Paper

Blockchain Landscape Analysis

‘Where is blockchain talent produced, where does it live, and what does this mean for the Commonwealth of Massachusetts?’

September, 2021

Background

The global blockchain technology market size was valued at \$3.67 billion in 2020 and is expected to expand at a compound annual growth rate (CAGR) of 82.4% from 2021 to 2028¹. As this industry exponentially grows, supply of talent currently does not meet demand.

IdeX and QUBIC Labs (“QUBIC”) established a partnership in 2021 to leverage IdeX’s proprietary data-driven research, analytics, and strategic insight to support QUBIC’s mission around economic development and technology job creation in Massachusetts by creating a globally recognized blockchain hub.

To support this mission, IdeX and QUBIC sought to understand the talent landscape of the burgeoning blockchain industry in the United States – where it is being developed and produced, where the talent goes to work, and where the growth exists. Having identified these attributes, this report also analyses what these findings mean using the Commonwealth of Massachusetts (the “Commonwealth”) as a case study.

The Rise of Crypto & Blockchain

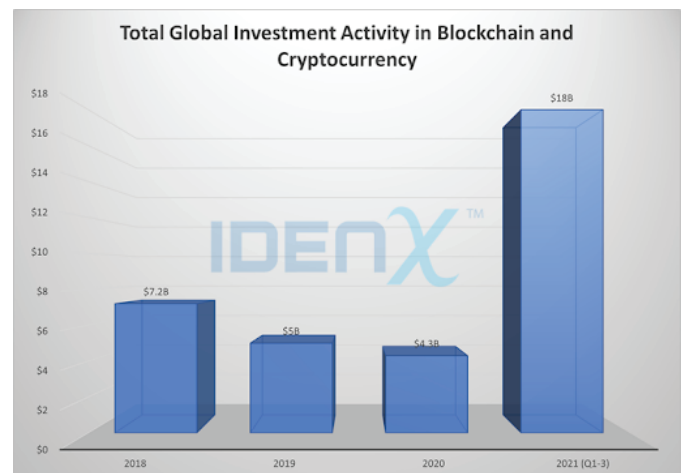
While commonly viewed as a stand-alone innovation, the internet has also proven to be an adaptive fabric to launch world-changing technological breakthroughs. Smartphones are ubiquitous today, even in the developing world. Social media networks have facilitated the interconnectivity of people, creating networks that span countries and continents. Video streaming technologies make remote workforces a reality. Still, as much as those advancements changed society, they may all pale in comparison to innovation which allows the exchange of value across the internet.

Cryptocurrencies did not exist until the Satoshi Nakamoto whitepaper of 2008 and the subsequent protocol initiation in early 2009. Despite the relatively young lifespan of the digital assets space, the pace of adoption has been exponential. This embrace by significant swaths of society is capturing the attention of retail investors, financial institutions, and regulators alike. In just a few short years, digital assets have gone from an afterthought to becoming an economic resource necessitating a robust business strategy.

Underlying cryptos lies blockchain. The main purpose of blockchain is to allow fast, secure, and transparent peer-to-peer transactions. It is a trusted, decentralized network that allows for the transfer of digital values such as currency and data. To explain it more simply, it is a digital ledger wherein transactions are acknowledged by majority consensus, and are theoretically unbreakable. While much publicity has been given to cryptocurrencies, the underlying blockchain technology and its myriad of applications has been gathering interest and investment also. The technology has seen increasing use in supply chain management, payments, identity management, smart contracts, governance, risk and compliance management amongst other sectors².

For many prominent venture capital firms and angel investors, the view toward digital assets as an investable space changed dramatically in 2021. As of late August, investments in crypto-native companies reached \$18 billion, reversing diminishing investment totals over the previous three years. Nine companies raised over \$100 million, based on \$1 billion-plus valuations, between May and August.

This level of growth investment drives increased demand for domain expertise. Immediately, questions arise for companies defining the digital asset barriers to entry. Where are companies sourcing this talent? What are the attributes coveted by industry leaders? Concerning this new workforce, what are their educational backgrounds, their experience, their geographic dispersal?



Methodology

To determine these characteristics, IdenX utilized a dataset of self-declared, publicly available information to isolate professionals working in the digital assets space. IdenX geographically focused on Massachusetts, given QUBIC’s mission to bring economic incentives to Quincy, regions south of Boston, and the Commonwealth, more broadly.

Our queries aggregated 30,828 professionals in the digital assets space. While the average age of this sample was 33 years old, we anticipate the actual number of digital assets professionals to be higher than our results as younger professionals appear less likely to self-identify skillsets to the professional marketers providing our data.

Who Are The Talent?

Education and Credentials

Talent is not “accredited” and are not following a typical path. Typical paths do not yet exist.

An interesting note about this space is its lack of emphasis on credentials. 15.9% of workers listed their highest level of education as an online blockchain training course, an associate degree, a degree from a for-profit university, or attendance in an accelerator or incubator. This percentage is nearly double the proportion of workers with degrees from Ivy League schools (8.2%) and is not significantly less than those from Forbes’ Top 20 Universities (22.4%). This may also reflect the fact that there are not significant numbers of blockchain educational curriculums developed to date and that a more robust education infrastructure is needed to support this emerging technology.

Given the burgeoning nature of the space and the lack of specific academic degrees offered by traditional education, it makes sense that the industry would welcome those that sought learning through less traditional means. Still, it is impressive to see that 15.9% of the talent listed a degree or certification from high school, a technical training curriculum, online studies, participation in an accelerator/incubator or attendance at a for-profit university.

The 15.9% who received non-traditional education outstripped those with degrees from Ivy League schools (8.2%) and almost equaled those with degrees from Forbes’ List of Top 20 Universities in America (22.4%). This demonstrates the lack of credentialism in the space.

Occupations in Demand

Unequivocally technical positions.

Anecdotally, difficulties finding technical talent is a common refrain for businesses. A recent LinkedIn survey had blockchain topping the most in-demand hard skills.

The enclosed graph from Glassdoor clearly shows a gaping lack of technical blockchain talent. Given that most blockchain jobs are technical, this is creating huge demand. The lack of accredited curriculums may also be at play here which hinders supply. Given the early stages of blockchain, it is difficult to find talent but also difficult to find talent with proven track records.

Top 15 Occupations for Open Blockchain Jobs on Glassdoor			
Rank	Occupation	# of Job Openings	% Share
1	Software Engineer	331	19%
2	Analyst Relations Manager	88	5%
3	Product Manager	76	4%
4	Front-End Engineer	54	3%
5	Technology Architect	50	3%
6	Risk Analyst	45	3%
7	Technical Consultant	39	2%
8	Back-End Engineer	33	2%
9	Marketing Manager	30	2%
10	Community Manager	26	1%
11	Engineering Manager	23	1%
12	Product Designer	23	1%
13	DevOps Engineer	19	1%
14	QA Engineer	15	1%
15	Strategy Manager	14	1%

Demographics

Talent is young.

As befits a young industry, our data shows the most common age of professionals as 33, but likely younger when taking workers without self-declared data into account.

Where Is The Talent?

Locations

Blockchain = Decentralization. That includes decentralization of talent. Talent can live and move anywhere. States and companies need to attract them.

Consider the following excerpt from Entrepreneur magazine:

“The central theme underlying everything in the blockchain industry is decentralization. Decentralization is the idea that existing power centers across all sorts of industries can be disintermediated by people from all over the world participating in a shared network. If people working at blockchain companies believe decentralization is incredibly important when it comes to the technology that they’re building, it follows that blockchain companies themselves should operate in a decentralized manner. In the same way that anyone can be a node in a decentralized network, so too should anyone be able to contribute to a decentralized protocol.

It doesn’t make sense to only hire candidates living in expensive cities in a select few countries. Embracing a work-from-anywhere culture not only widens the talent pool a blockchain company can access, but it also accommodates employees with primary care responsibilities and supports a more diverse and inclusive work culture³.

Blockchain companies have set out to reinvent global systems, and with this expansive vision comes the belief that anyone – no matter the city, country or financial background – can participate in the growth and development of open-source networks.”⁴

Decentralization is further encouraged by pandemic effects. Since the start of pandemic-induced lockdowns, technical talent has become extremely migratory with companies and workers seeking jurisdictions with better living conditions and economic friendly regulatory environments. This is especially true of the digital assets space, as exhibited by the high rankings of Texas (3rd / 7.2%) and Florida (5th / 4.5%).

Given the flexibility and migratory nature of blockchain talent, it seems likely that they will go where they are treated best and to states where there is a perception that innovation is happening within the space.

A Focus on Massachusetts

Why Should a State Support Blockchain?

Local economies benefit from an influx of digital asset professionals. Despite the developing nature of the industry, 76.6% of Fortune 500 companies employ professionals with self-declared blockchain knowledge and skills. Researching further, 18.8% of the Fortune 500, 34.5% of the Fortune 200, and 51% of the Fortune 100 employ what we would consider as “concerted blockchain efforts” (20 employees or more). In terms of a “major blockchain effort” (100 employees or more), 6% of Fortune 500, 13% of Fortune 200, and 21% of Fortune 100 companies meet this measure. Moreover, there were heavy concentrations of crypto talent at technical and management consulting companies, suggesting that other companies may have outsourced digital assets solutions while planning an organic adoption strategy. 8.8% of the talent included “founder” or “co-founder” in their title, denoting an explosion of company formation in their jurisdiction and the job creation which accompanies that trend.

The Good News for Massachusetts

The collection of prestigious academic institutions in Massachusetts has long created an ecosystem of local tech talent. Our initial assumption was that digital asset talent would continue this local trend; initial analysis appeared to support this hypothesis. Universities in Massachusetts accounted for 8% of all bachelor and advanced degrees in our sample, and the Massachusetts Institute of Technology (“MIT”) produced more workers in the dataset than any other academic entity.

The Bad News for Massachusetts

Despite this creation of talent, Massachusetts represented only 3.8% of the sample’s digital assets workforce. While this is certainly above average (7th in the US), it is disproportionate to the amount of talent educated in the state. California, the leading state in terms of the current disposition of talent, experiences the opposite phenomenon. California universities accounted for an impressive 16% of bachelor’s and advanced degrees, yet nearly a quarter (24%) of the sample’s self-declared workers. One state is educating workers and then losing them, while the other has historically attracted more than it produced.

This is despite MIT being the largest producer of blockchain talent of any academic institution in the country, and Massachusetts universities accounting for 8% of the bachelors and advanced degrees.

Further contrast shows that California is recognized as a center of innovation. In short, talent in the space relocate to California due to a perception of favorable working conditions, exemplified by the fact that California’s resident blockchain talent workforce is a significantly higher number than what California organically produces through education.

RATING	STATE	BLOCKCHAIN WORKERS	%
1	California	8583	24.0%
2	New York	5154	14.4%
3	Texas	2588	7.2%
4	Washington	2102	5.9%
5	Florida	1601	4.5%
6	Illinois	1556	4.3%
7	Massachusetts	1351	3.8%
8	Georgia	1002	2.8%
9	Pennsylvania	991	2.8%
10	Colorado	983	2.7%
11	Maryland	963	2.7%
12	Virginia	903	2.5%
13	North carolina	892	2.5%
14	New jersey	796	2.2%
15	Ohio	663	1.9%
16	Arizona	588	1.6%
17	Oregon	492	1.4%
18	Michigan	487	1.4%
19	Minnesota	446	1.2%
20	Tennessee	356	1.0%

This trend may not continue. Remote work has inspired white-collar workers to engage in intra-country migration. While digital asset talent might migrate to locations emerging as “preferred,” we theorize that talent clusters will remain (as opposed to a wholly disaggregated geographic footprint). Our sample supports this theory as only a handful of states (14) ranked higher than the mathematical average of 2% of the workforce. For instance, Texas and Florida, which emphasize local and state crypto-friendly regulation, rank third (7.2%) and fifth (4.5%), respectively.

Conclusion and Further Research Proposals

Blockchain talent is young, follows atypical paths (including non-accredited ones) and is a highly migratory workforce. Occupations in demand are predominantly technical and educational institutions have largely not been able to offer the type of technical programs currently needed to meet demand.

Massachusetts is home to global companies focused on blockchain technology, including Algorand and Circle, global financial institutions developing digital banking solutions like Fidelity and State Street Bank, leading blockchain research institutions like MIT, blockchain practitioner institutions such as Bentley University and Babson College and the Federal Reserve of Boston, which has been leading the research and development of a central bank digital currency or CBDC.

This activity has largely been created without state support or a meaningful regulatory framework. This may lead to the perception that Massachusetts is not friendly to the sector. It may explain why some Massachusetts blockchain and crypto companies are setting up offices in Miami, or why states without the natural advantages Massachusetts has score higher in blockchain talent scores.

With the migration of tech talent from Massachusetts to California and New York regardless of specific sector, it is possible that blockchain and crypto talent will follow suit. Given that only 12 other states rank above average in terms of possession of talent, these migrating professionals will likely seek one of these jurisdictions to form future enclaves of innovation. With the strength of the private sector, in collaboration with public sector support, Massachusetts could leverage the abundance of locally produced and high-quality talent to become a world leader in blockchain technology and development.

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QUBIC Labs is a startup incubator and innovation hub dedicated to developing a thriving ecosystem of FinTech, GovTech and CivTech expertise and early-stage businesses. Based in Quincy, MA, QUBIC Labs is setting the tone for entrepreneurship and innovation just south of Boston with the goal of creating 1,000 jobs over the next 10 years. QUBIC Labs is a nonprofit organization supported by its Founding Sponsors FoxRock Properties and South Shore Bank. For more information, please visit www.qubiclabs.com.



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IdenX is a data aggregation and research company which provides strategic insights into multiple sectors. With an extensive background in talent acquisition, IdenX specializes in identifying professionals in emerging tech verticals, including digital assets. IdenX is dedicated to drive adoption in the blockchain space by helping companies identify talent across the spectrum of blockchain disciplines and smartly partnering with education projects.

Appendix/References

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