Universities respond to acute crypto skills shortage

Alex Lielacher, 05 Sep 2018 -  
Cryptocurrency Adoption, Education

With a recent Deloitte survey identifying a shortage of crypto skilled staff as contributing to industry’s slow uptake of blockchain solutions, a new report from Coinbase comes as welcome news.

A report published by Coinbase has revealed the growing levels of interest in blockchain technology and cryptocurrencies at the academic level. To prepare the report, Coinbase inspected the courses offered at the top 50 universities in the world as ranked by the US News Best Global Universities list.

In order to provide a true representation of the courses

attention on courses that were available to both undergraduate and graduate level students.

Additionally, the study focused on the course schedules for the Fall 2018 semester. Where this information was not readily available, the study used the most recent semester for which course schedules were published online.

Reasons for the growing demand

Blockchain projects are having trouble finding engineers who possess the right skill sets and many are now resorting to funding the studies of young coders who will then proceed to work within their project.

While cryptocurrency and distributed ledger technology projects are obviously in need of professionals conversant with the blockchain, non-blockchain companies are also in search of experienced blockchain talent. A recent Deloitte report stated the lack of experienced blockchain labor was a major barrier to entry for many companies. Thus, for students, having completed a course or courses related to blockchain technology and cryptocurrencies is likely to provide them with an edge in the job market.

Campbell Harvey, a professor of International Business at Duke University explains: “If you’re graduating from law school it’s a tough market these days. However, the law students that are trained in blockchain, they don’t need to apply anywhere. People are just asking them to join their firms.”

While blockchain technology is new, there are few who doubt it has the potential to disrupt a wide array of industries. The fast pace at which technological breakthroughs are occurring in blockchain is propelling the sector to exponential growth and influence.
Dawn Song, a computer science professor at the University of California, Berkeley believes this explains why universities are starting to offer blockchain courses. She states: “Blockchain combines theory and practice and can lead to fundamental breakthroughs in many research areas. It can have really profound and broad-scale impacts on society in many different industries.”

Universities are in the business of preparing their students to meet the demand of the job market. In its Q1 of 2018 report, online freelancing portal, Upwork, lists the fastest growing skills of that quarter. Remarkably, blockchain tops the list. Thus, it is essential that institutions of higher learning should provide their students with the necessary skills so they can effectively compete in the job market.

This is especially true now that the sector is cementing its position as a serious disrupter. David Yermack, the finance department chair at New York University’s Stern School of Business agrees. He explains: “Students will benefit greatly by studying this area.”

How universities are meeting the demand

A total of 172 courses related to blockchain and cryptocurrencies are offered by the top 50 universities. 15 percent of these were offered by the business, economics, finance, and law departments, while four percent were offered through social science departments such as anthropology, history, and political science.

With 28 courses, Cornell University has the highest number of classes related to cryptography, cryptocurrency, and blockchain technology. These include “Anthropology of Money” and “Introduction to Blockchains, Cryptocurrencies, and Smart Contracts,” among others.
Stanford University launched a Center for Blockchain Research this summer. The center is designed to bring together interested students and faculty from various departments in the school. The center will focus on research on varied aspects of blockchain technology as well as cryptocurrencies.

This interdepartmental approach is a common theme across universities. A number of institutions are offering these courses through a collaborative approach between departments. This is likely due to the wide array of industries the sector can impact.

This is also the case at Berkeley. Professor Song co-taught a course in the spring semester of 2018 called “Blockchain, Crypto Economics, and the Future of Technology, Business and Law.” The course was created as a result of a collaborative effort between the computer science, business, and law faculties. An equal number of students from each faculty were admitted into the course.

Princeton offers its students one class related to blockchain technology. The information-security course focuses on secure computing systems, cryptocurrencies, blockchain, and related economics, ethics, as well as related legal issues.

Johns Hopkins University also has one course on the subject. Students are able to sign up for a business course on the blockchain. According to the school’s course catalog, the course covers “the potential benefits and weaknesses of its fundamental structure as applied to businesses and organizations.”

Interestingly, universities that are renowned for their engineering programs are adding courses and programs related to blockchain technology and cryptocurrencies. These include the University of Waterloo, Georgetown University, and the University of Illinois at Urbana-Champaign.
What do students think of blockchain?

Coinbase also commissioned a London-based ad-tech company named Qriously to survey students in order to gauge their sentiments towards blockchain technology and cryptocurrencies. The survey questioned 675 U.S. students. The students queried were of varying academic levels and their ages were upwards of 16 years old.

“If you're an expert in cryptocurrencies and cryptography you’ll have a difficult time not finding a job.”
— Benedikt Bünz, Stanford University doctoral student

Additionally, Qriously also held a survey of the general population. The purpose of this additional study was to compare the findings between the two demographics. The general population survey was responded to by 6,011 people who were older than 16 years of age.

Not surprisingly students showcase higher levels of interest in blockchain technology than the general population. 17 percent of the students said they considered their knowledge of cryptocurrency and blockchain technology to be above average. This is almost double that of the general population which came in at nine percent. Further, 18 percent of students said they own (or have owned) cryptocurrency. This is twice the rate of the general population.

The report states 9% of students have taken a blockchain-related course, while 26% would like to enroll in such a class. The majority of the students who have taken these courses are studying computer science, however, interest is spread across all majors. 17 percent came from the computer science and engineering
while 11 percent identified as business majors. Only five percent of social science majors have taken such a course.

For most, the interest in blockchain technology is fuelled by the desire to be gainfully employed after graduation. As Benedikt Bünz, a doctoral student at Stanford, explains: “If you’re an expert in cryptocurrencies and cryptography you’ll have a difficult time not finding a job.”

The Top 10 cryptocurrencies, now and then

Alex Lielacher, 05 Sep 2018 -
Bitcoin Price, Cryptocurrency, Top 10

In the past five years, the group of coins that make up the top 10 cryptocurrencies has changed substantially. While that is to be expected in any early-stage technology field, a comparison of today’s top crypto assets versus those from five years ago also serves as a reminder to what extent things could change.
Looking back at 2013 it will come as no surprise that bitcoin (BTC) was number one in the top 10 measured by market capitalization (and about every other metric). It is a position that BTC has maintained, from the time the first competing altcoin - Namecoin - was launched in 2011 until today.

The list of other top 10 coins from five years ago includes some familiar names — but also several coins that many that have only entered the cryptocurrency space in recent years will have likely never heard of. The top 10 coins on September 1, 2013, were Bitcoin, Litecoin, Ripple, Namecoin, Peercoin, Feathercoin, Novacoin, Primecoin, Terracoin, and Infinitecoin.

### Historical Snapshot - 01 September 2013

<table>
<thead>
<tr>
<th>Rank</th>
<th>Name</th>
<th>Price</th>
<th>Market Cap</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>BTC</td>
<td>$136.69</td>
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<td>LTC</td>
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<td>PPC</td>
<td>$0.179534</td>
<td>$3,614,356</td>
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<td>6</td>
<td>XMR</td>
<td>$0.155361</td>
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<td>XMC</td>
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<tr>
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<td>TBC</td>
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</tr>
<tr>
<td>10</td>
<td>LTC</td>
<td>$0.000004</td>
<td>$341,210</td>
</tr>
</tbody>
</table>

In addition to bitcoin, Litecoin (LTC) and Ripple (XRP) have also remained part of the leading crypto assets throughout their existence. Litecoin managed to retain its “silver to bitcoin’s gold” status thanks to its active community and continuous innovation led by its vocal creator and former Coinbase engineer Charlie Lee. Litecoin is one of the few digital currencies, next to bitcoin, that has experienced a degree of merchant adoption thanks to its fast transaction times and low fees.

Ripple has held on to its top 10 position thanks to strong financial backing and sustained investor believe that it will be successful in its goal of becoming the ‘go to’
The fourth largest cryptocurrency in 2013 was Namecoin, the first ever altcoin, which was launched in 2011. Namecoin was launched to enable the storage of data on the blockchain and to develop secure decentralized DNS. At the time, Namecoin (NMC) had a market capitalization of around three million dollars and was trading at $0.57.

Namecoin has survived the past five years (unlike many of its peers) but it has fallen off the radar for cryptocurrency investors and enthusiasts — currently ranking number 181 on Brave New Coin’s market capitalization with a capitalization of $20 million and a price of $2.17. Compared to returns in the thousands of percent of its more successful peers, Namecoin’s comparatively meager 280 percent return over five years suggests that this project - despite its innovation - has not managed to retain investor interest.

Number five on the list of top coins in 2013 was Peercoin, the world’s first cryptocurrency to adopt a Proof-of-Stake (PoS) mechanism in combination with Proof-of-Work (PoW). Peercoin was launched in mid-2012 as a more scalable and energy efficient alternative to existing digital currencies. However, it did not manage to attract an active community to push the project forward.

At the time, Peercoin (PPC) was worth $0.17 and had a market capitalization of $3.6 million. Today, Peercoin is ranked number 125 with a market capitalization of $37 million and a price of $1.33. Similarly to Namecoin, Peercoin has survived but has failed to attract investor attention.

Next on the list is Feathercoin (FTC), which was launched in April 2013 as a fork of Litecoin. Its main selling point is that it is “10 times faster than bitcoin” due to its 60 second block times and NeoScrypt hashing algorithm. At
the time. TRC had a market cap of $24 million and was trading at $0.15. Since then this altcoin has fallen to number 240 with a market cap of $11 million and is trading below its 2013 level at $0.058.

Number seven of the top 10 coins of 2013 was Novacoin. Like Peercoin, Novacoin combines PoS and PoW to be more energy efficient than its pure PoW peers but uses a different hashing algorithm to Peercoin. However, the differences between Peercoin and Novacoin did not seem to convince investors of Novacoin’s value. In 2013, one NVC was worth $3.92 and its market cap was $1.4 million. Today, Novacoin is ranked at 335, with a market capitalization of $5 million and a price of $2.17.

2013’s eighth biggest coin was Primecoin. As the name suggests, Primecoin had something to do with prime numbers. More specifically, Primecoin (XPM) uses a proof-of-work system that searches for chains of prime numbers. However, the search for new prime numbers used in mathematical research was not enough to convince investors of the value of this coin.

In 2013, Primecoin had a market cap of $1 million and was trading at $0.54. Today, one Primecoin is worth $0.99 and its market cap is $24 million. It is ranked number 163 on the BNC market cap table.

Number nine out of the 2013 top 10 largest cryptocurrencies was Terracoin. Terracoin (TRC) was launched in 2012 to focus on speed, anonymity and user governance. However, despite its innovative features, Terracoin did not manage to hold investors’ attention for long. In September 2013, one TRC was worth $0.17 with a market cap of $600,000. Today, Terracoin has a market cap of $2.5 million, its price is trading at $0.11 and it is ranked at number 392.

Finally, Infinitecoin (IFC) was the last of the top 10 cryptocurrencies as of September 1, 2013. Launched in June 2013 as what can only be described as another
Bitcoin came with little innovation, by September 2018, it was trading at $0.0000004 and had a market cap of $340,000. Today, Infinitecoin is ranked at number 296 and its market cap is $7,000,000. The price of one IFC is $0.000078 and it appears that this project falls into the failed altcoins category.

While these “fallen angels” do not see much investor interest, a few of them are still being actively mined, which is why they still see some - albeit small - daily trading volumes, even if their developer teams are no longer actively working to improve their coins.

The Top 10 crypto assets today

### Snapshot - 04 September 2018

<table>
<thead>
<tr>
<th>Rank</th>
<th>Name</th>
<th>Price</th>
<th>Market Cap</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>BTC</td>
<td>$7,000.3 USD</td>
<td>106,060,000,000 USD</td>
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<td>2</td>
<td>ETH</td>
<td>$21,522.02 USD</td>
<td>29,587,080,639 USD</td>
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<tr>
<td>3</td>
<td>XRP</td>
<td>$0.33799 USD</td>
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<tr>
<td>4</td>
<td>BCH</td>
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<tr>
<td>5</td>
<td>EOS</td>
<td>$6.5821 USD</td>
<td>5,217,400,000 USD</td>
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<tr>
<td>6</td>
<td>ADA</td>
<td>$0.22391 USD</td>
<td>4,303,500,000 USD</td>
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<tr>
<td>7</td>
<td>LTC</td>
<td>$65.878 USD</td>
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<tr>
<td>8</td>
<td>IOTA</td>
<td>$0.99298 USD</td>
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<tr>
<td>9</td>
<td>XMR</td>
<td>$1.947 USD</td>
<td>2,714,700,000 USD</td>
</tr>
<tr>
<td>10</td>
<td>Monero</td>
<td>$1.5422 USD</td>
<td>2,199,531,019 USD</td>
</tr>
</tbody>
</table>

Looking at today’s top 10, which is composed of Bitcoin, Ethereum, Ripple, Bitcoin Cash, EOS, Stellar, Litecoin, Tether, Cardano, and Monero, it becomes clear that the cryptographic asset space has come a long way.

Five years ago, altcoins were largely clones of bitcoin with little more to offer than slightly faster transaction speeds and lower fees. Today, the top 10 largest digital assets have much more to offer, ranging from smart contract functionality, to acting as a transactional layers for the Internet of Things (IoT), to enabling anonymous payments.

The fast-changing list of top assets suggests that those who have stood the test of time may have the potential...
to continue to do so and thus offer a more defensive addition to crypto portfolios. At the same time, though, the leading altcoins change constantly and many projects that have been dubbed the next Bitcoin or Ethereum have fallen off the radar shortly after reaching the top 10 — Dogecoin, NEM, Omni, Steem and Nxt to name a few.