

## Blockchain Patent Summary Report

October 2021

In this next in a series of industry-specific [Inventiveness Index](#) reports, we look at Blockchain innovation in the USA. By using patent production as the proxy for measuring quantity (not necessarily quality) of innovation, this report answers three main questions (plus a few other insights):

- 1) What are the top metro areas in the USA for innovation in Blockchain?
- 2) Who are the top innovators?
- 3) Where are the largest concentrations of blockchain talent?

### First: What is a “blockchain”?

Many readers will have heard, by now, of the so-called “cyber-currency” called Bitcoin. One of the most crucial underpinning technologies for Bitcoin and all the other so-called cyber-currencies, is a construct called the blockchain. Without this blockchain, none of these cyber-currencies would function. The blockchain, as the name suggests, is a chain of blocks. Each block contains transactions involving that cyber-currency. Each block is “linked” to the block before it and the block after it in a particular way – so that if anyone ever tried to forge a transaction, alter an existing transaction, or delete a transaction, the chain of blocks would be broken and thus point to the infraction. It is the blockchain that purportedly guarantees the security of the transactions. But the blockchain is also useful for other applications. Academic institutions, companies and even governments around the planet are racing to put the blockchain to work for these other applications. These innovations are recorded by the patent system, and we analyzed this data for this report.

	2017	2018	2019	2020	2021Proj	Total Proj
1 NYC	2	11	55	98	121	287
2 San Jose	1	1	20	27	59	108
3 San Fran		3	11	29	34	77
4 Austin		3	3	17	19	42
5 Seattle		1	2	10	26	39
6 Charlotte		2	2	7	24	35
7 Atlanta			2	7	17	26
8 Boston			3	8	11	22
9 Denver			1	12	7	20
10 DC_NoVa		1	2	5	8	16
11 LA			1	6	8	15
12 Las Vegas		1	1	5	7	14
13 Chicago		4	1	3	6	14
14 Philadelphia			3	3	7	13
15 Raleigh				7	6	13
16 San Antonio			2	5	4	11
17 Dallas				2	8	10
18 Tampa			2	3	4	9
19 Fayetteville			2	5	1	8
20 Springfield				6	1	7
21 Kansas City			1	1	5	7
22 Gainesville			2	3	1	6
23 Providence			1	2	2	5
24 San Diego		1	1	1	2	5
25 Boise City			2	2	1	5
26 Detroit				4	1	5
27 Portland			1		4	5
28 Houston				2	2	4
29 Miami					4	4
30 Albany			1	1	1	3

Table 1 - The Top 30 Blockchain Metros (2021 numbers are projected)

## What are the top metro areas in the USA for innovation in Blockchain?

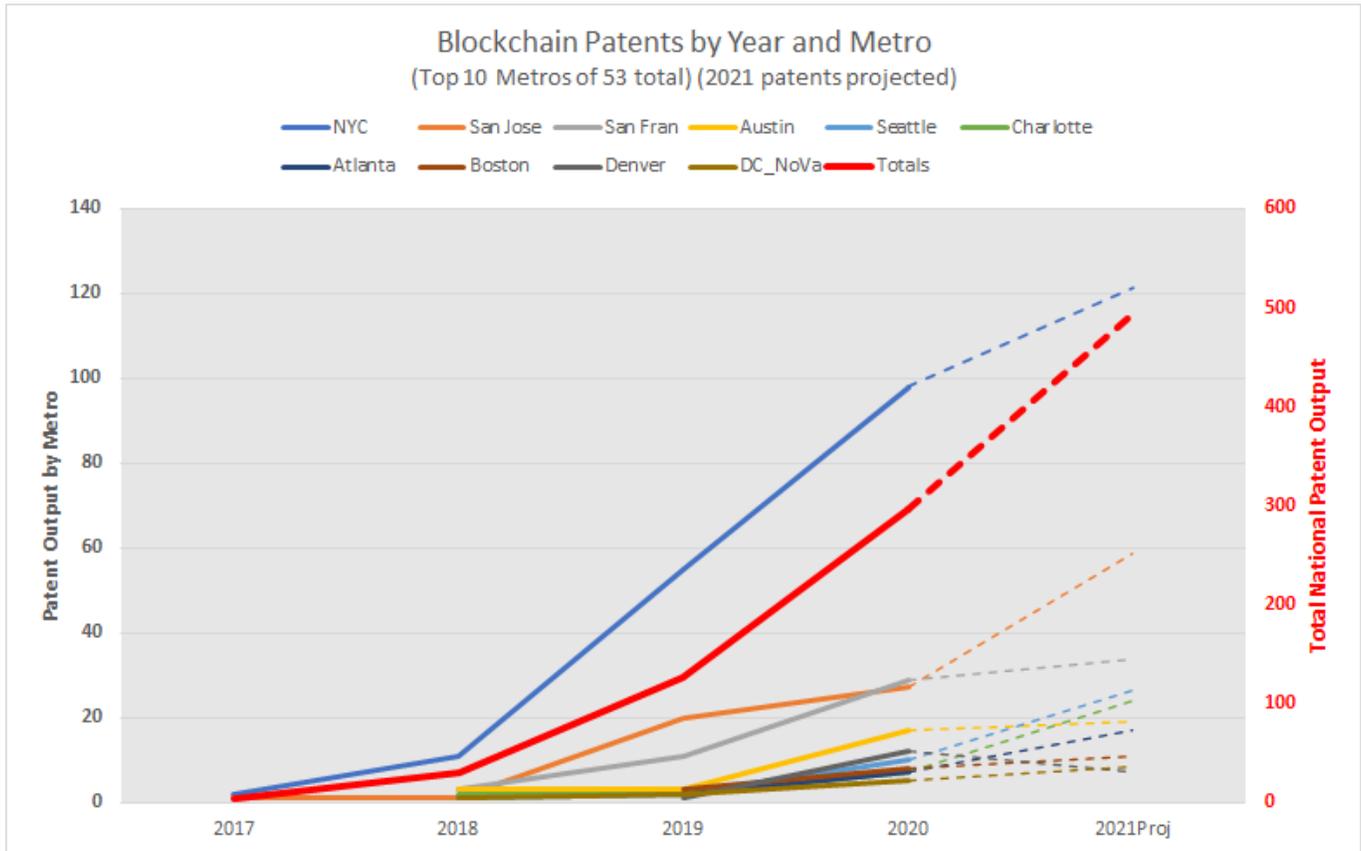


Figure 1 - Blockchain Patents by Year and Metro (2021 numbers are projected)

As both Table 1 and Figure 1 illuminate, the New York City metro area enjoys a commanding lead over even Silicon Valley in the production of blockchain related patents. As we’ll see shortly, there is a singular reason for this leadership.

San Jose and San Francisco, combined, account for 169 blockchain specific patents versus NYC’s 267. These represent, respectively, 21.1% and 33.3% (combined: over 50%) of all the blockchain patents to date. In fact, the top ten metro regions (out of 53) account for 77.2% of all the blockchain innovation in the USA.

The bold red line in Figure 1 above shows the total national blockchain patent output (2021 is YTD so will finish higher). In Figure 2 adjoining, we see that as the volume of patents climbs, so does the time from patent application to issuance. It is common that when a very novel kind of thing appears, at first, because there is nothing to compare it to – time to issuance is very fast. Then as “prior art” accumulates, patent prosecution time slows down. Prosecution time in 2017 was 6 months. In 2021 it is now over 28 months.

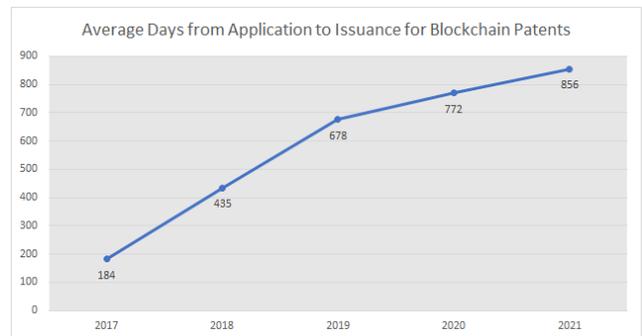


Figure 2 - Avg Days from App to Issue

## Who are the top innovators?

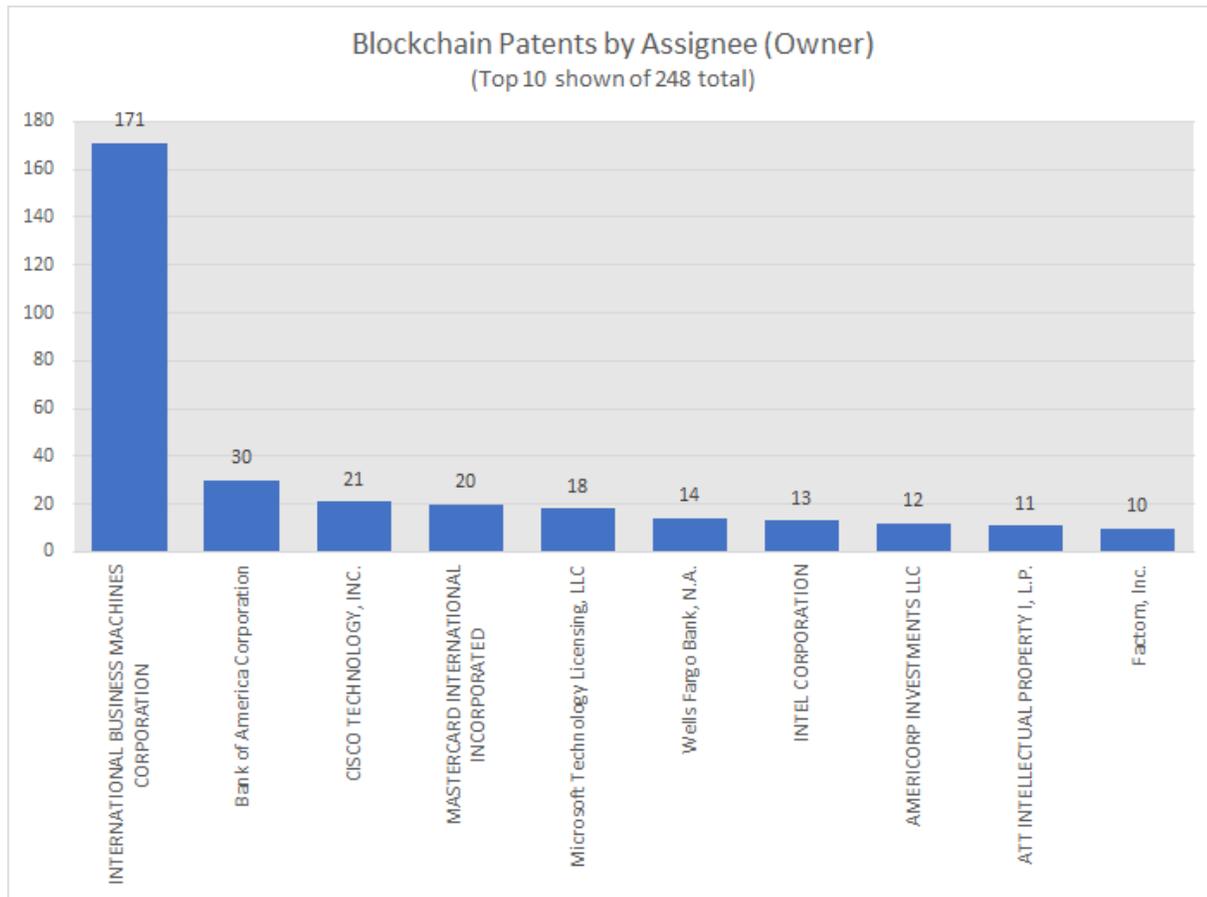


Figure 3 - Patents by Assignee (Owner)

As the Patents by Assignee chart makes abundantly clear, IBM has invested very heavily in blockchain innovation with over 20% (171) of all the blockchain patents to date. Large financial institutions (BofA, Mastercard and WellsFargo and others) account for a combined 104 patents (13%). This is surprising for an industry where the blockchain, at least on the surface, should be most amenable to it or, conversely, most threatened by it. Of the 248 organizations that hold blockchain patents, only 10 (4%) are in the financial services sector. Figure 4 shows that more and more organizations are getting into the blockchain innovation race, although 149 of the 248 assignees hold only a single blockchain patent; only 11 orgs hold ten or more blockchain patents.

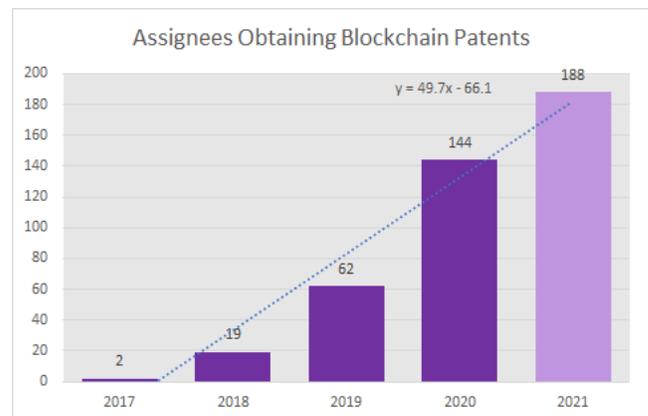


Figure 4 - Number of Orgs getting Blockchain Patents Each Year

Looking at an organization-by-organization patent production rate we see a few examples (Note: Year 2021 is thru 19-Oct) (Note: Blue=HighTech, Green=Financial, Gold=Telecom):



Figure 5 - Org-by-Org Samples

## Where are the largest concentrations of blockchain talent?

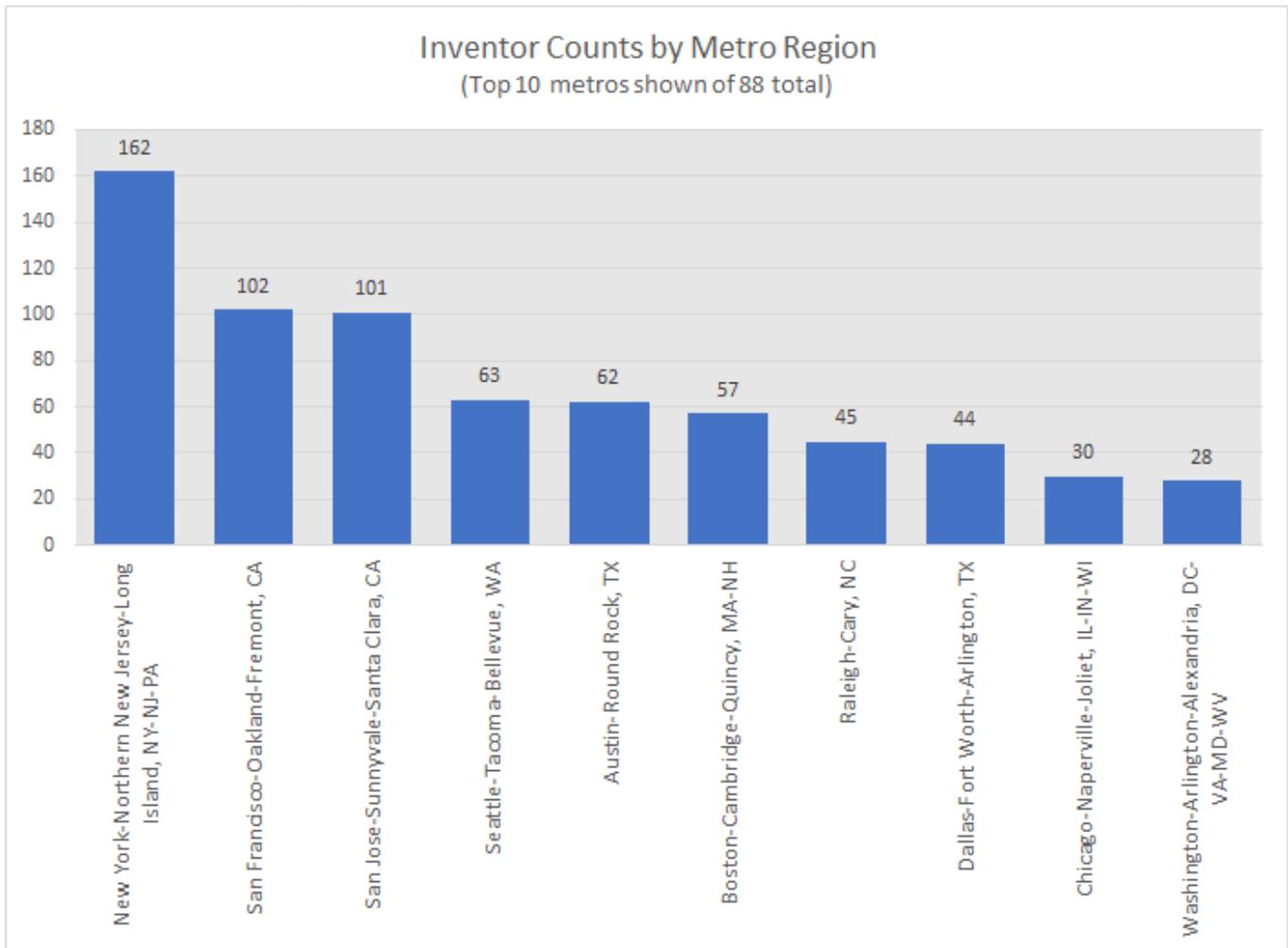


Figure 6 - Inventor concentration by metro region

Figure 6 shows the highest concentration of blockchain innovative talent is in NYC metro and Silicon Valley metro regions (counting both San Jose and San Francisco as one).

[NOTE: inventors are often NOT co-resident with the assignee. Just because a patent is assigned to IBM in NYC, for example, it doesn't mean that the inventor lives there also. In fact, in IBM's particular case, for blockchain patents, of the 224 inventors that worked on their 170 patents, only 65 of the 224 (29%) reside in the same NYC metro region as IBM. And this trend may accelerate in our Covid-driven-remote-work-culture.]

## Conclusions:

- Overall growth (YoY) in blockchain patents is still growing but has begun to slow. Is this because the enthusiasm for blockchain is beginning to wane? Some pundits say that is the case.
- IBM is clearly out in the lead innovating on blockchain.
- Financial institutions (banks, insurance companies, etc.) that would seem to be early adopters of this technology comprise only 4% of all the entities patenting in this space. However, that 4% of companies does hold about 13% of all the blockchain patents. So, while financial institutions seem to be coming to the party late, those that are in, are in materially.
- The growth rate in companies patenting blockchain innovations is growing.

Are some organizations choosing to NOT patent their blockchain work? Many organizations, particularly small tech startups who are building products on the blockchain, are taking a more socialized approach whereby they publish whitepapers describing their innovations – instead of filing for a patent. Thus, patent production – alone – cannot fully capture the innovation that is happening around the blockchain.

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