

# Blockchain in Payment Space

## INVALIDATION CASE STUDY

### OVERVIEW

The invention focused on payment processing using blockchain technology.

#### Step 1

When we make an online payment at any merchant or shop (like G-Pay), the transaction carries a few documents or details (name of payer or payee, amount, and purpose of payment), which are recorded inside a bank database. The bank database will generate an enriched data record (like grouping based on attributes, etc.). This enriched data record is added to a blockchain (say, a public ledger).

#### Step 2

A request for a token is sent to a token server.



#### Step 3

The token server generates the token and sends it to the bank database. One copy of the token is also added to the blockchain to be linked with the previously stored enriched data record. This will help track, find, search, analyze, or audit the past transactions at any future time.



# CHALLENGES

## Stage- 2

### Digging the concept!

- ❖ The first decentralized blockchain was conceptualized by a person (or group of people) known as Satoshi Nakamoto in 2008. It provided a lot of benefits that every bank wants to avail of, like better security. So the use of blockchain for recording financial transactions before August 2015 was our target.
- ❖ We did another round of searching and got a few patent results that mention the use of blockchain in the finance process and generating a data record for transactions. But there were post-August 2015 results and no hint of token requests, token generation, or adding tokens to the blockchain.

## Stage- 1

### Search Begins!

We started with our search and gathered a few key terms, major classes, and who all were the major players at that time. We identified a couple of documents and patents. They do mention a bank database, a token server, generating tokens, and storing them, but this token was not for "tracking the enriched data." Instead, the token was used for gift vouchers, virtual money, offers, etc. There was no clue about blockchain for recording enriched data and then adding a token to be used for future audits.

## Stage- 3

### The first reply and new game plan!

- ❖ "We think you are on the right track, but we really need the focus to be on pre-August 2015 results. "Some additional search term ideas are "distributed ledger," "reconciliation" or "settlement," and "tokenization" or "tokenization."
- ❖ The date was the main challenge that we have to overcome now. We were getting a lot of evidences post-August 2015, but now we have shifted our gear to only those strategies that could lead us to strong evidence pre-August 2015.



One thing we noticed was that some industry terms were not standardized pre-2015. Accordingly, there are references that use alternative terms, such as “title chain” or “ledger chain” instead of “blockchain” and “data coin” instead of “data token”. More such terms like “hash chain,” “hash tree,” “digital ledger,” “chain of transactions,” etc.

This direction led to a fresh area where we executed a few queries pre-August 2015, and guess what? We got three fresh results that mention “generation of a token” in the context of “Blockchain.” Although a token has the same purpose as our target patent—to identify an entry or transaction in the database for future verification, but the complete step-by-step method for requesting a generation-addition token in the blockchain was a little vague.

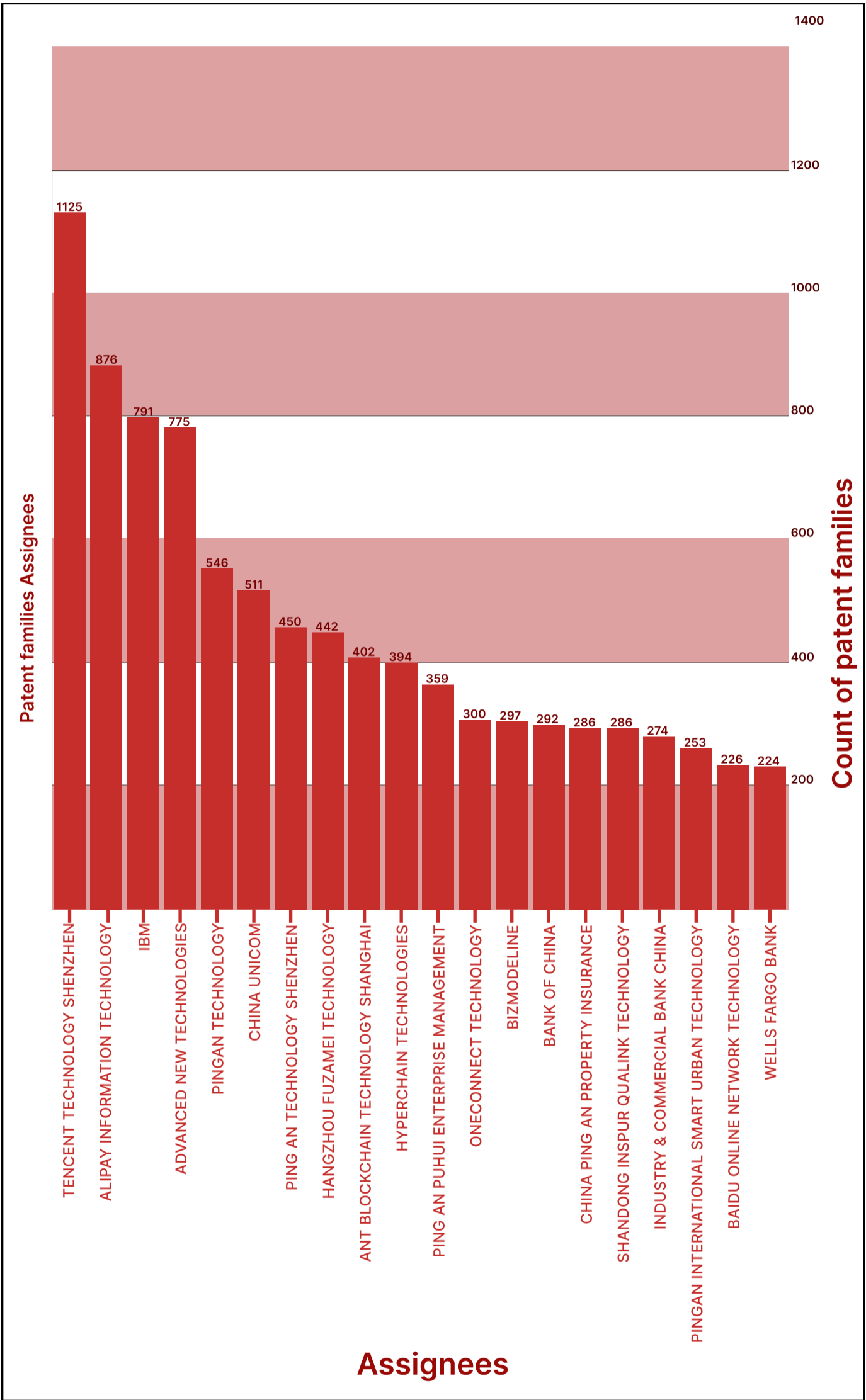
Along with these, we also spotted one strong patent lead. A patent on digital lottery transactions. It mentions generating a “unique meta data identifier” (i.e., a token) for a digital lottery transaction. Then directly write it into a blockchain database. But this patent had a priority application post-2016.



Stage- 4

The Second reply !

“Also, it appears that a lot of the top patent holders in the blockchain space are Chinese companies (see below). Perhaps searching by assignee could yield some good results.”



That’s right! We went ahead and ran a few strategies on the problem discussed, objective, or solution offered by the subject patent—a token in the blockchain could be used as a pointer for tracking entries in the database for future verification and audits. The next plan was to dig up the top players in this domain.

## 🔧 Stage- 5

### The final hit and confirmation!

- 🔧 Did we hit our target? We found one post-August 2015 filed and published result. Everything seems to be on the spot, for example, requesting a payment token, generating a payment token in a token module, or adding a payment token to a blockchain. The earliest priority application was filed in January 2015, which was pre-August 2015 (our cut-off date). Now the only thing left was to check its priority application.
- 🔧 And we found our text in the priority application. It was a good hit !
- 🔧 Finally, we mapped our result and shared it with our client.

## 🔧 Stage- 6

### Key-learnings!

- 🔧 Agile communication and team-work can lead to success.
- 🔧 Timely feedback from the client helped us crack this case.
- 🔧 Look for different alternatives for technology terms and draw a timeline.
- 🔧 Always look for major key players and check their citations.
- 🔧 Use unconventional approach, when get stuck.

### Fact

The blockchain technology has changed the world by introducing decentralized, secure, and transparent systems of record-keeping. Leveraging the power of blockchain payments, financial institutions are introducing new services that will change how we view commerce.

## Expert

**Ankush** is a leading tech analyst with a curiosity for groundbreaking inventions. With an engineering degree in Electronics and Communications from UIET, Chandigarh, Ankush holds over 6 years of hands-on experience in the field. Leading a skilled team, he excels in conducting accurate prior art searches, comprehensive portfolio analyses, and crafting strategies tailored to client's unique needs. His expertise spans a wide spectrum of cutting-edge technologies including 3G/4G/5G, Wifi, IoT, AI/ML, smart and power electronics, and beyond.

