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The Use of Blockchain Technology to Solve Common Challenges in the Supply Chain

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The Use of Blockchain Technology to Solve Common Challenges in the Supply Chain

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Abstract

The idea of the research conducted is to see how people perceive blockchain and the usage of it within supply chains around the world. Using the data gathered, one will be able to recognize if our current society is ready for implementation.

Background

When blockchain was first invented by Satoshi Nakamoto in 2008 it was thought to only be used for Bitcoin; a digital currency. Blockchain showed the ability to reduce costs, speed up transactions, and reinvent the processes of how things are done. Once people fully understood what blockchain did, entrepreneurs and investors realized it could be applied to transportation, products sold, food, the medical industry, and much more.

Question

How do twitter users perceive the use of blockchain in supply chains?

Methods

•Descriptive Analytics (DA)

•Tweet Metrics

(Tweets statistics, hashtags, over time, @ user)

•User Metrics

(User statistics, activity, visibility, groups)

•URL Metrics

(URL total tweets, per tweet, user groups, top)

•Content Analytics (CA)

•Word Analysis

(Term frequency, clustered document-level analysis)

•Hashtag Analysis

(Frequency, association analysis)

•Sentiment Analysis

(Sentiment analysis for entire tweets, clustered tweets)

For collecting the twitter data several R packages were used

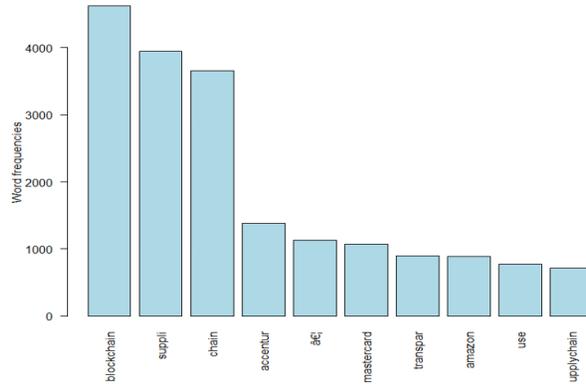


Figure 1. Blockchain and Supply Chain Word Frequency Analysis

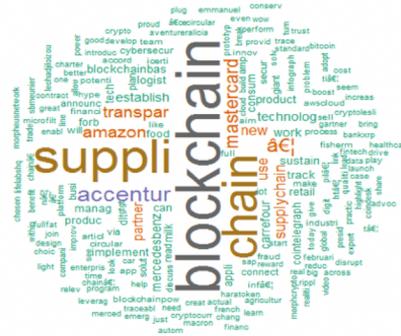


Figure 2. Blockchain and Supply Chain Word Cloud

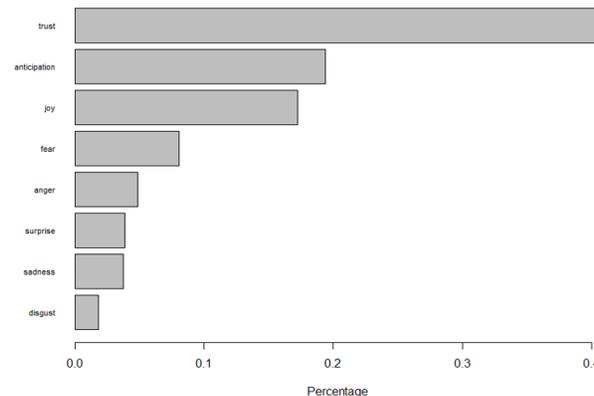


Figure 3. Blockchain and Supply Chain Sentiment Analysis

Results

Observing Figure 1, one see some of the most frequently used words are blockchain, Mastercard, and Amazon. The rest are misspellings or different languages relating to the search terms.

In Figure 2, one can see a Word Cloud made up of a 50 of the most frequently used words relating to the search terms.

In Figure 3, one can see a Sentiment Analysis of the tweets that have been collected from 1/24/19 to 3/24/19. A large percentage of tweets are showing trust, anticipation, and joy in the idea.

Conclusions

Based on the results, it suggests that a large majority of our society is expecting to soon have blockchain integrated into supply chains. From the information gathered, large companies are looking into the technology, as general industries have already started the implementation. The industries include transportation, products sold, food, medical and health, finance, and more. If large companies are looking to adapt their businesses to accommodate to blockchain, it is intended that others will follow.

This information gathered is significant because it gives a clear understanding of how the public grasps onto the idea. It allows researchers and other professionals to look at what has been accomplished with the technology and what the next steps are for execution; without feeling as if they are developing unwanted and unapproved technology within these industries.

There appears to be a slight response of fear, anger, and surprise. This can be explained by how quickly it is being developed and the ideology of fear of change.

Acknowledgements

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References

Chae, Bongsug. (2015). Insights from hashtag #supplychain and Twitter Analytics: Considering Twitter and Twitter data for supply chain practice and research. *Int. J. Production Economics*, 165, 247-259.