

Innovation Within Networks – Patent Strategies for Blockchain Technology

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Introduction / Motivation

The Blockchain Technology market was valued at \$210.2 million in 2016 and is predicted to be worth \$2.31 billion by 2021 (Statista, 2016) and \$7.59 billion by 2024 (Grand View Research, 2018).

A recent PwC survey of 600 executives has shown that 84% of organizations are involved with Blockchain Technology. However, only 15% have gone to production with a solution (PwC, 2018).

Organizations need to know how to position themselves in terms of their Blockchain Technology patenting before the market truly explodes.

Background

NIST Blockchain Definition: “Tamper evident and tamper resistant digital ledgers implemented in a distributed fashion (i.e., without a central repository) and usually without a central authority (i.e., a bank, company, or government)” (Yaga, Mell, Roby, & Scarfone, 2018, p.1)

Major Blockchain benefits: “Instantly tracking and tracing assets, providing data provenance, settling transactions quickly and cheaply, and enabling a security model that is fault tolerant, resilient and available”

Three main Patent Strategies: Proprietary, Defensive and Leveraging.

Patent Analysis: Analyzing the historical data of patent applicants, citation information and industry patent classifications can develop R&D and market strategies.

Research Question: What strategic information can be realized by analyzing Blockchain patent data and how are patent filings being used strategically for blockchain technology by North American organizations?

Objective: Contribute both quantitative and qualitative data regarding Blockchain patents and patent strategies to aid organizations in their search for novel and innovative strategic approaches to patent new technology.

Methodologies

Descriptive Analytics and Text Mining/Clustering: Using carefully selected keywords, 3234 patents were collected from Clarivate Analytics between 2012-2018. Microsoft Excel was used to conduct the analysis. In addition, VOSviewer was used to construct and visualize patent keyword clusters.

Interviews: Primary data was collected from one-to-one interviews, consisting of 15 questions, conducted with 10 experts representing 9 different organizations based on North America. The organizations were of a variety of sizes and were from a diverse range of industries. Two Lawyers/Patent experts were also interviewed.

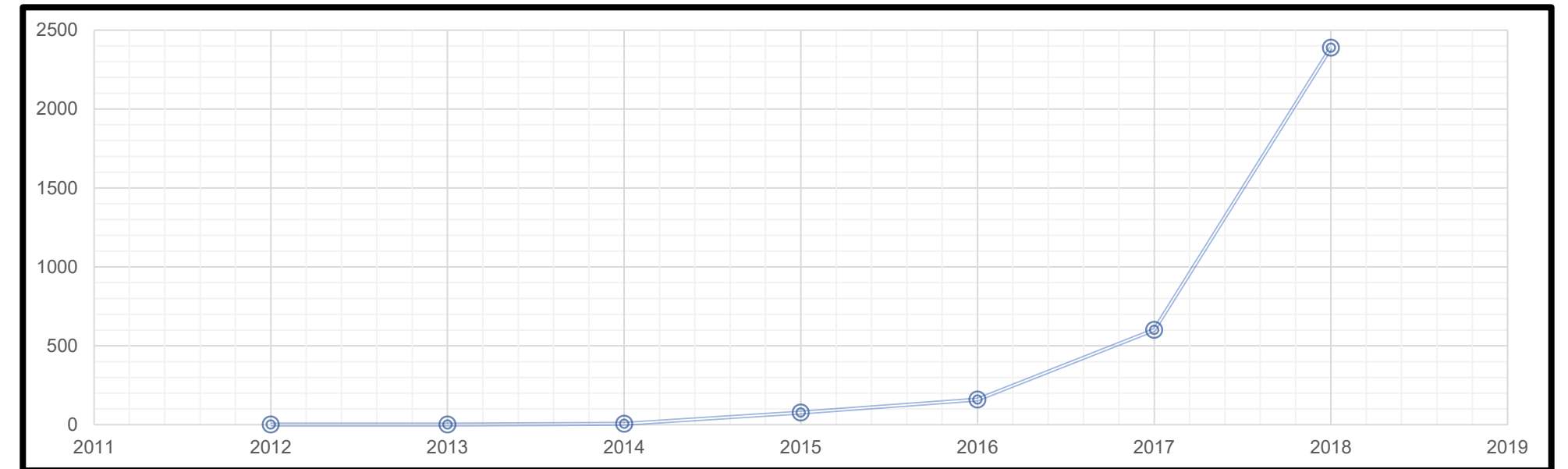


Figure 2 - Distribution of Patent Filings Between 2012-2018

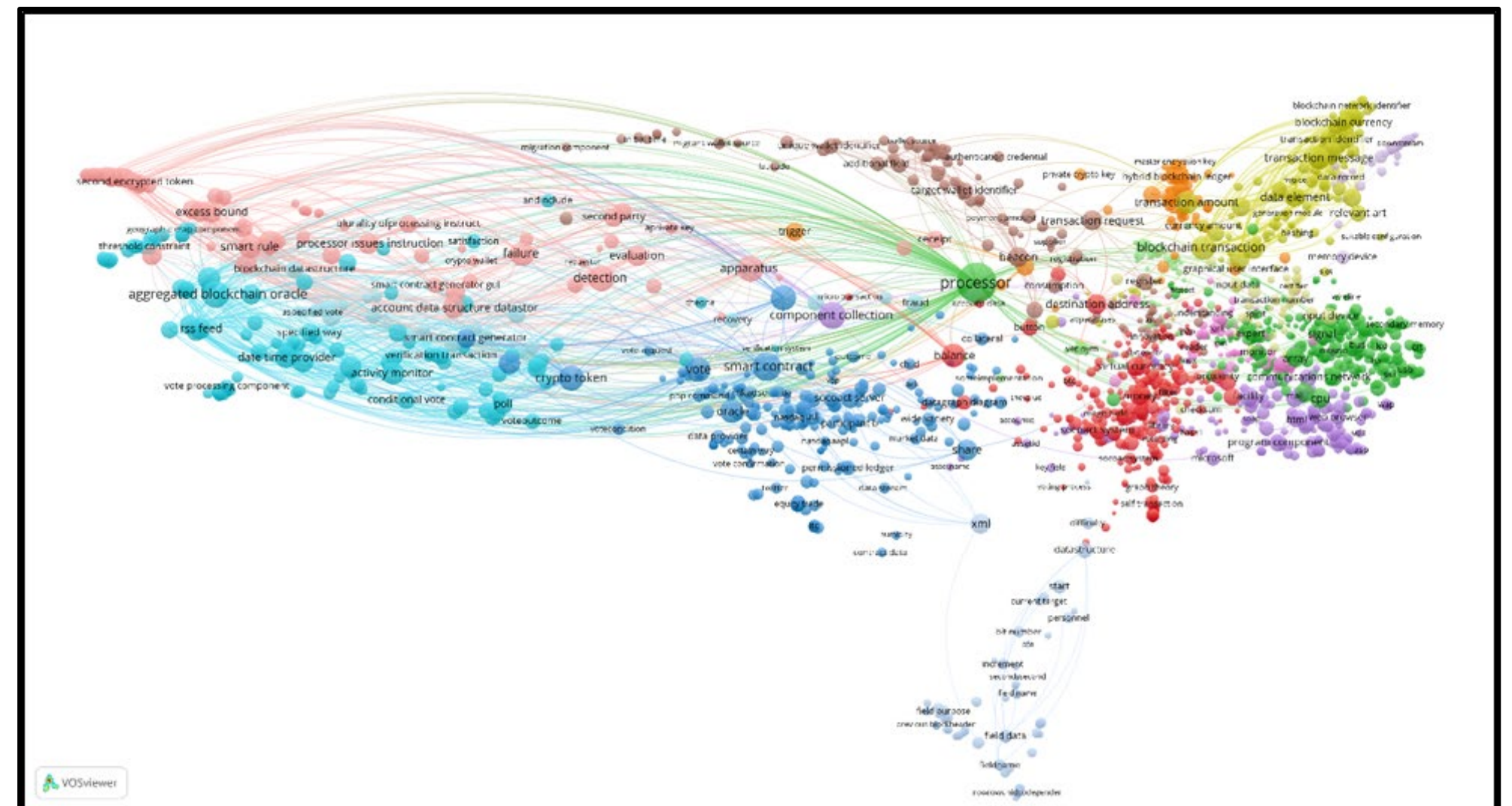


Figure 3 - Six Main Word Clusters

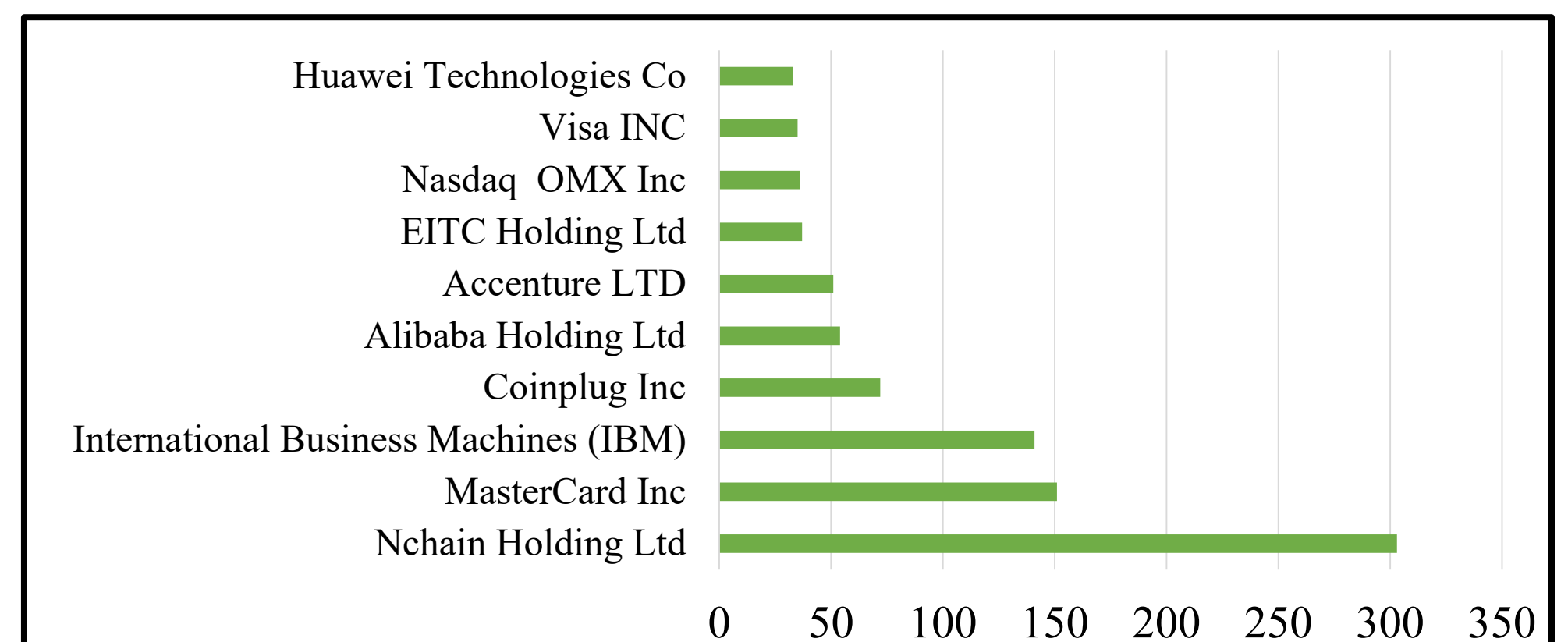


Figure 4: Organizations Filing Patents

Table 1: Demographic information of interviewees

Interview	Organization Type	Patent Strategy
1	SME	Defensive
2	Large Financial Institution	Leveraging and Defensive
3	Large Financial Institution	Leveraging
4	Independent but Filed while at Large Financial Institution	Leveraging
5	Start-Up	Proprietary/ Offensive
6	Start-Up	Leveraging
7	Start-Up	Proprietary/ Offensive
8	Start-Up	Defensive
9	Law Firm / Patent Expert	Leveraging
10	Law Firm / Patent Expert	Proprietary and Offensive

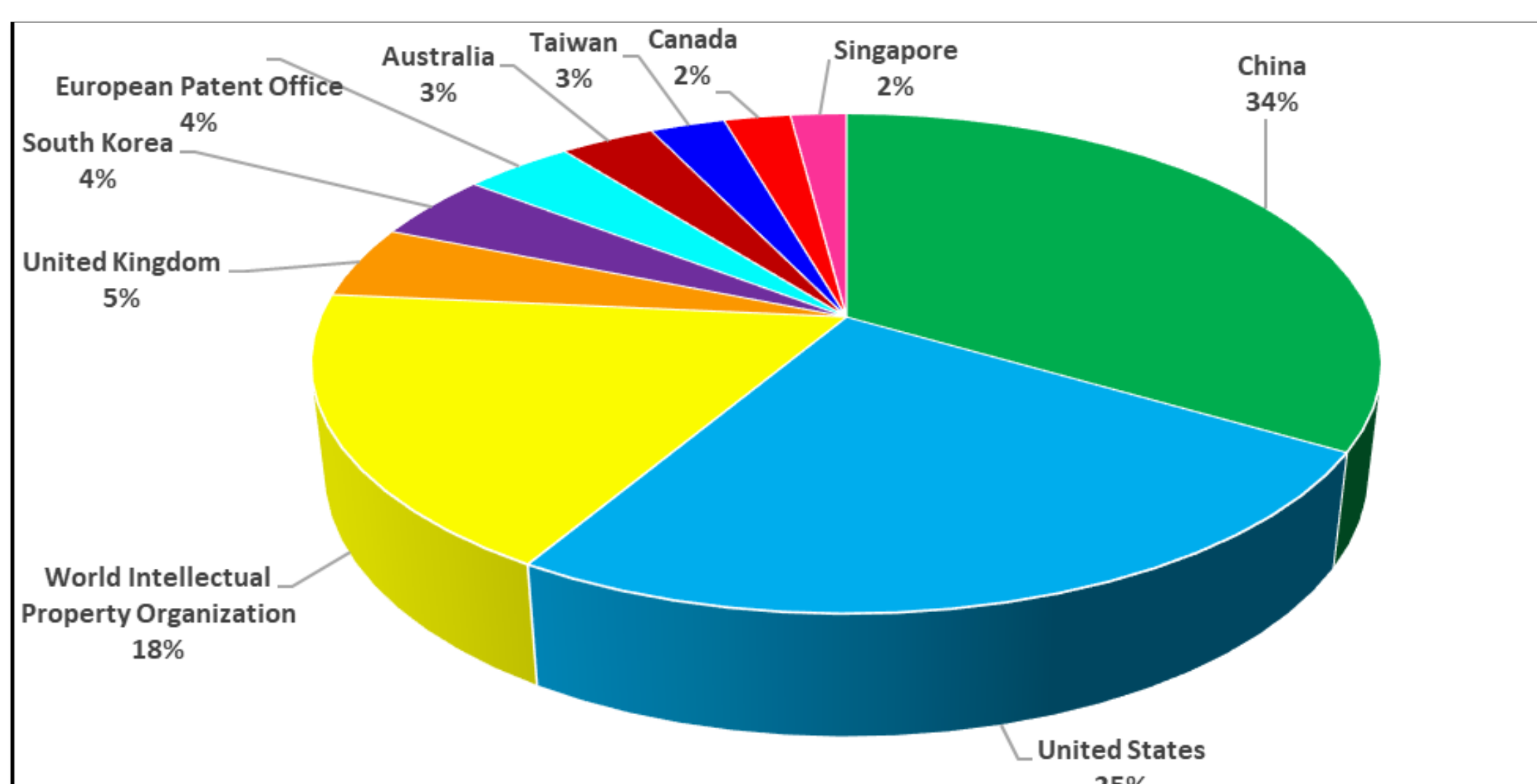


Figure 1: The Geographic Distribution of Patents Registered

Results

The six clusters show that Blockchain patenting is occurring on three main verticals; the core components of a Blockchain, Blockchain technology use cases (voting and/or transaction system), and Blockchain technology improvements (wallet management and confidentiality).

The empirical study has revealed several novel insights about the strategic motivations of North American organizations patenting Blockchain Technology. The results show organizations are using all three-core patent strategies. This demonstrates no single strategy is dominating Blockchain patenting. The proprietary strategy was the most predominant; being mentioned in 80% of the cases.

One particularly intriguing insight gleaned from the empirical study was the presence of anti-patent sentiment. Several start-up organizations we interviewed explained that innovation for Blockchain Technology should be conducted in an open source network and in a collaborative manner.

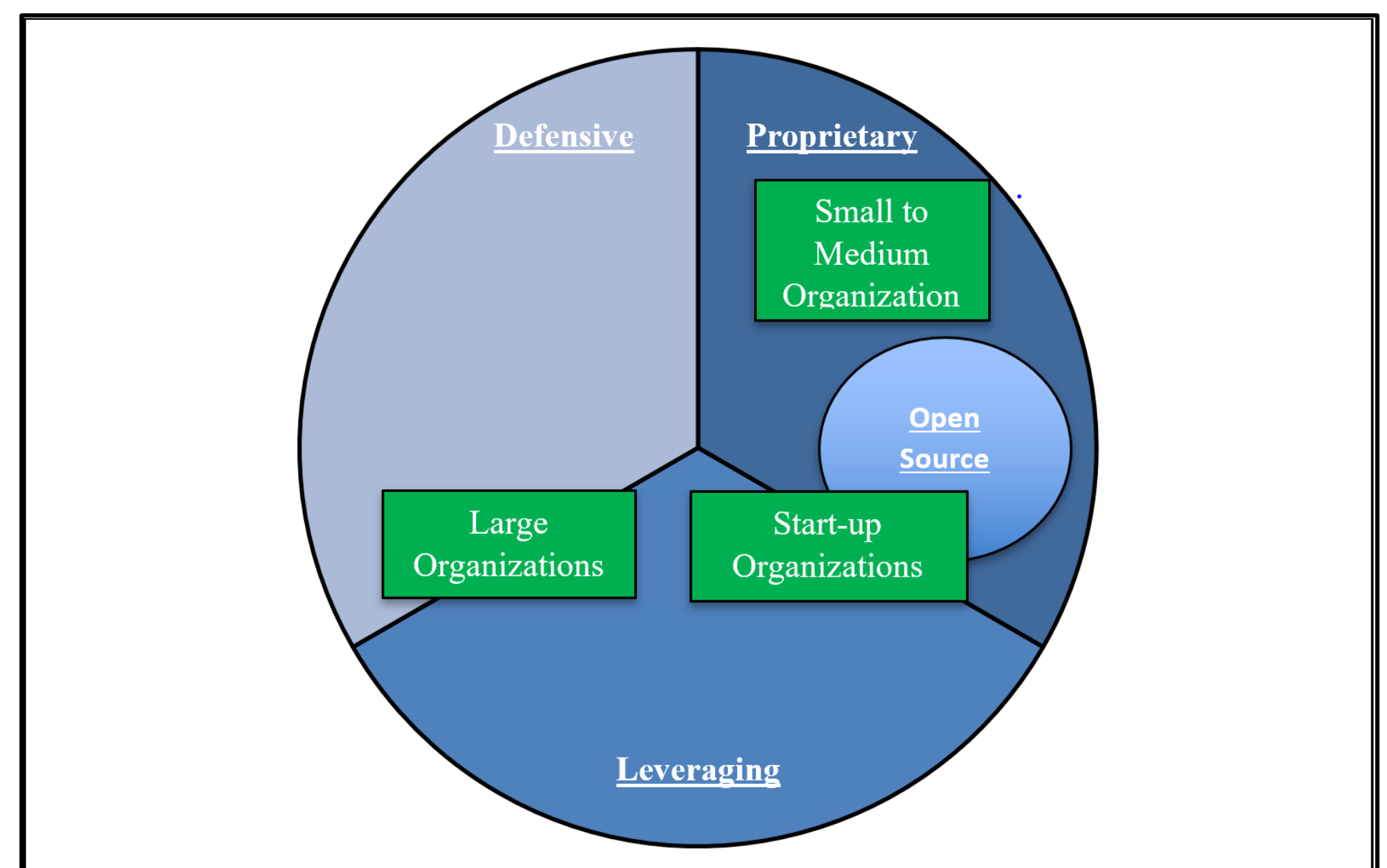


Figure 5: Patent Strategies by Organizational Size

Theoretical Implications

One of the first studies of Blockchain patenting and one of the first to determine patent strategies for Blockchain Technology.

Provides strategic insight for organizations to review when considering their patenting strategy or behavior for Blockchain Technology.

The empirical analysis has revealed that within the Blockchain space, there exists strong anti-patent sentiment which results in the lack of patenting by start-up organizations. However, this anti-patent sentiment has led to a form of open source patenting, whereby an organization patents the technology, but makes it available for other innovators to use.

Industry Implications

Organizations can also understand the geographical distribution of Blockchain patenting and determine where gaps exist to enter the market.

Start-up organizations harboring anti-patent sentiment and refusing to patent, should consider the open source patenting strategy to ensure that collaborative and open source innovation network survives and to ensure competitors can not control their activities.

As Blockchain Technology is a significant enabler of B2B networks, organizations can patent in a collaborative manner when establishing shared solutions.