

Adoption and Diffusion of Blockchain Technology

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Abstract

A widespread approach to measuring the innovative capacity of a firm, sector, region or even of an entire economy is to analyze patents and trademarks. Particularly in digitally driven but also in other sectors, this is becoming increasingly difficult. For example, computer code/programs are usually not patented or protected by trademarks and are often even provided as open source. This holds particularly true for the only recently developed blockchain technology which is in essence, a decentralized and distributed database (management system) that is increasingly used well beyond its originally intended purpose as the underlying infrastructure for a peer-to-peer payment system.

In this article, we introduce a novel method based on web-analysis and machine/deep learning techniques that allows us to determine firms that use the blockchain technology and, aggregating the data on regional/country level, to determine its diffusion within the D/A/CH-region (i.e., Germany, Austria, Switzerland).

Our analysis yields that the blockchain technology is still a niche technology with only 0.88% of the analyzed firms in the D/A/CH-region using it. At the same time, certain sectors, namely ICT, banking & finance, and (management) consulting, show much higher adoption rates ranging from 3.50% to 4.50%. Hence, it does not come as a surprise that many blockchain companies are located at or close to one of the financial centers within the D/A/CH-region.

At the same time, we find that young firms and start-ups whose business model is (partly) based on the blockchain technology seem to intentionally decide to locate themselves close to the very same financial centers. Ironically, despite the blockchain technology often being explicitly characterized as decentralized and distributed in nature, these adoption and strategic location decisions lead to “blockchain clusters” and firms that are adopting this new technology are far from being distributed in geographical terms.