



Platform for Data Trusts as a Service for Multi-Party Data Exchange

Boris Perce^{*}

Department of Computer Science, University of Toulon, Toulon, France

DESCRIPTION

The main obstacle to data sharing is that data producers cannot monitor how data collectors are using or misusing their data (custodians). Data trusts have been proposed as a solution to the mistrust issue in multi-partner data sharing scenarios in light of this difficulty. In this investigation, we suggested Data Trusts as a Service (DTaaS), a cloud-based platform made to promote multi-partner data sharing and give data subject's visibility into the location of their data. Additionally, based on policies and contracts, they can use the built DTaaS to limit who has access to their information and the purposes for which it may be used. In the DTaaS, workflows are examined through visualisation, events are used to monitor data streams, and block chain is used to guarantee provenance and auditability. The system is transparent, allows users to follow their data in a multi-data sharing context, and fosters stakeholder confidence, according to evaluations of the DTaaS deployment.

Data sharing has established itself as a crucial and beneficial strategic tool for attaining the objectives of several partner institutions. For instance, exchanging data in the healthcare industry fosters new hypotheses' creation and increases confidence during clinical studies. Data sharing improves internal and external operational efficiencies, boosts strategic opportunities, modernizes digital platform. Data sharing can improve personalized pricing, services customization, and customer poaching for some companies. Government organizations, social institutions, educational institutions, marketing, advertising, and other businesses all continue to gain from data sharing. Data producers are concerned about how their data is being utilized or misused, despite the fact that the acceptance of data sharing is beneficial. In a scenario with multiple data sharing partners, this may result in the deterioration of relationships based on mutual trust, and it may also discourage user participation in situations requiring user interaction. The public is also upset about how data is shared, with privacy danger being the main worry. Where processes like data anonymization and sanitization techniques have been used to obscure sensitive and personally identifiable information.

Inclusion of data subjects, data custodians, and third party data users is therefore necessary. For instance, in a clinical trial situation, the patient, clinicians, and researchers all need to collaborate thoroughly. Expectations may be better handled and a prior agreement on data consumption will be helpful. Furthermore, inclusion will fulfil data stewards' moral responsibility to data subjects. These factors lead to some existing solutions choosing a third party as a reliable entity for data exchange, but there are also drawbacks such having to monitor and manage data flow and utilization.

In this investigation, we propose that some of the problems can be handled by using data trusts. The recommendations include the need for agencies to create data trusts, which are tried-and-true frameworks and agreements to guarantee secure and advantageous exchanges, in order to promote multi-organization artificial intelligence (AI) data sharing. This will make access to and exchange of data easier across a larger range of industries. The creation of a Data Trusts Support Organization (DTSO), which would result in the development of tools, templates, and guidance for those who want to share and use data, is a logical suggestion for the deployment of successful data trusts. Data owners and consumers could unite to form data trusts as and when they so choose.

Built and created Data Trusts as a Service (DTaaS), a cloud-based digital platform that strengthens multi-partner data sharing and gives data subjects more control over their information by letting them know where it is. As a result, data subjects can use the DTaaS as intended to control who has access to their information and how it may be used in accordance with established policies. The rules for sharing data, using it for certain purposes, identifying authorized data controllers, and dealing with violations are based on predicates. DTaaS enforces the provenance and auditability of all past operations on the data using a middleware controller and block chain. Every data sharing activity is depicted as a data stream that is tracked as an event. The data-sharing operations in a multi-partner data-sharing environment can be analyzed using DTaaS' visualization interface, which is its final feature. An evaluation of the deployed

Correspondence to: Boris Perce, Department of Computer Science, University of Toulon, Toulon, France Email: boperce@gmail.com

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DTaaS was done based on several real-world use scenarios, and the findings demonstrate high workflow openness, allow data subjects to follow their data in a multi-data sharing environment, and foster confidence between data subjects and

data collectors. Additionally, system assessments were carried out, and the results show that DTaaS is highly scalable and capable of supporting multi-partner data sharing use cases with minimal delay.