

A Design Framework for an Open Market Platform of Enriched Card-Based Transactional Data for Big Data Analytics and Open Banking

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Abstract : Around a quarter of the world's data is generated by financial with an estimated 708.5 billion global non-cash transactions reached between 2018 and. And with Open Banking still a rapidly developing concept within the financial industry, there is an opportunity to create a secure mechanism for connecting its stakeholders to openly, legitimately and consensually share the data required to enable it. Integration and data sharing of anonymised transactional data are still operated in silos and centralised between the large corporate entities in the ecosystem that have the resources to do so. Smaller fintechs generating data and businesses looking to consume data are largely excluded from the process. Therefore there is a growing demand for accessible transactional data for analytical purposes and also to support the rapid global adoption of Open Banking. The following research has provided a solution framework that aims to provide a secure decentralised marketplace for 1.) data providers to list their transactional data, 2.) data consumers to find and access that data, and 3.) data subjects (the individuals making the transactions that generate the data) to manage and sell the data that relates to themselves. The platform also provides an integrated system for downstream transactional-related data from merchants, enriching the data product available to build a comprehensive view of a data subject's spending habits. A robust and sustainable data market can be developed by providing a more accessible mechanism for data producers to monetise their data investments and encouraging data subjects to share their data through the same financial incentives. At the centre of the platform is the market mechanism that connects the data providers and their data subjects to the data consumers. This core component of the platform is developed on a decentralised blockchain contract with a market layer that manages transaction, user, pricing, payment, tagging, contract, control, and lineage features that pertain to the user interactions on the platform. One of the platform's key features is enabling the participation and management of personal data by the individuals from whom the data is being generated. This framework developed a proof-of-concept on the Etheruem blockchain base where an individual can securely manage access to their own personal data and that individual's identifiable relationship to the card-based transaction data provided by financial institutions. This gives data consumers access to a complete view of transactional spending behaviour in correlation to key demographic information. This platform solution can ultimately support the growth, prosperity, and development of economies, businesses, communities, and individuals by providing accessible and relevant transactional data for big data analytics and open banking.

Keywords : big data markets, open banking, blockchain, personal data management

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