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Unlocking Blockchain Data For Enterprises

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How can enterprises access blockchain data?

Since the inception of [Bitcoin in 2009](#) and the subsequent proliferation of cryptocurrencies, blockchain has become a huge network and resource for businesses. The data that a blockchain records contains valuable information regarding tasks and transactions. All transactions are sent to pools where they are stored, until a validator picks them up. This means that the history of transactions are transparent and irreversible. But are enterprises using this data sufficiently? And what benefits can be found by engaging with this huge, potentially untapped data set?



Why would enterprises be interested in this data?

This huge ledger of information relating to both prices and product movement can be useful to enterprises in a number of ways. By accessing these huge amounts of data, organizations can find ways to administer the data infrastructure behind their enterprise. This includes both data lakes and nodes. [Data lakes can be of use](#) to a business because they are centralized repositories of data in their raw and original format. They can involve any number of different types of files including text files, PDFs, and audio files. [Nodes are network](#) stakeholders that keep track of the blockchain's ledger and confirm the legitimacy of network transactions. The system of nodes then broadcasts the different transactions to one another, creating a process of synchronicity.

This structure means that businesses can find a number of benefits in this data. There are a number of ways they can exploit this infrastructure and use the data access as a service. Firstly, businesses can securely store and transfer records, which is [often cheaper](#) than renting space in a data centre. So, for example, blockchain's use as a means of storing health records might massively reduce the costs of a health business. It means that this data would be shared amongst patients and providers securely.

Considering blockchain data also helps with supply chain management. Supply chains are naturally a complex and timely aspect of most business logistics. Particularly when enterprises are operating across different countries or time zones. But a blockchain's data brings transparency to the process and reduces many of the technology problems associated with gathering data across so many processes. It promotes transparency and reduces inefficiencies. For example, Walmart used blockchain to trace their food

sources. Consequently, sourcing the location of mangos [went from over six days to 2.2. seconds](#). This means that this reduction in time can have naturally profitable effects for an enterprise. Similarly, the use of the data can help to drive standards and quality control. For example, in the case of food stuffs, medicines, or other perishable goods, it can be used to ensure that goods are kept at the correct temperature. Examining this data then allows businesses to see where errors may be occurring, or standards are slipping, and make changes accordingly. In turn this means a better product, which can translate to greater customer retention or profit. It can also mean that businesses are able to authenticate products (ensuring against counterfeiting) or track attributes such as sustainability. These are attributes that consumers increasingly care about, so being able to deliver them grows more critical. Smart contracts streamline processes of working with partners or contractors, with self-fulfilling agreements that release payments upon both parties fulfilling the terms of their agreement. Once enterprises have established which particular benefits their data set offers, they can decide whether they wish to manage this infrastructure or to outsource the maintenance of that infrastructure.

The state of blockchain data

Blockchain technology is undeniably revolutionizing various sectors with its potential for transparency, security, and decentralization. Like any emergent technology, however, it comes with its unique set of challenges. One of the most pressing issues we face today is the extraction of data from smart contracts.

Due to the inherent design of blockchain, the data linked to a single smart contract is scattered across the entire chain. Without a straightforward method, tracking down all relevant transactions is a laborious, exhaustive process.

But this isn't the sole complexity. Each decentralized application—or Dapp—has its own distinct data format, introducing additional layers of complication. Further exacerbating the issue, different blockchains, notably those not based on the Ethereum Virtual Machine (EVM), employ diverse data storage systems. This variation makes it challenging to establish a one-size-fits-all technique for data extraction.

Moreover, decoding data from the chain necessitates a special "key," referred to as an Application Binary Interface (ABI). In its absence, the smart contract data stays indecipherable, akin to an unsolvable puzzle.

While these challenges seem daunting, they present significant opportunities for innovation and progress in the blockchain landscape. As we continue to explore and grow in this space, overcoming these obstacles will open up new avenues for us to establish our leadership and set new standards in blockchain technology.

But currently, how exactly do you find a way to access this data?

There are several tools that are available to actually access this data. Firstly, [RPC nodes](#) allow enterprises and users to access the data in its rawest blocks. This allows you to access entire transaction histories and logs. It should be both true to real time and entirely consistent with the wider, entire network. Similarly, [ready-to-use APIs](#) also facilitate access to the standard data on the Blockchain. These include technologies like fungible tokens, such as the [ERC-20](#) or the non-fungible [ERC-721/1155](#). If developers use providers of DeFi or NFTs they will be able to access data that is close to near real time. Additionally, they can also utilize providers such as [Dune Analytics](#) or [Footprint Network](#) in order to access data lakes.

While this data may not be quite as close to real time, it tends to offer a much more convenient interface for analysis. Another method of accessing data lakes—which focuses on smart contract data—is [The Graph Subgraphs](#). Of course, developers can create their own software to access this information, but it generally creates a heavy workload. So, using a pre-established platform allows enterprises all the benefits of accessing this data as needed but without the added time or financial cost of creating a new model.

Let's break down the tangible benefits of accessing this data

There are a number of ways that embracing blockchain data enhances an enterprise.

1. Competitive Advantage: A major benefit of seeing all of your customers' interactions and spending habits is that it gives you information regarding trends, behaviors, and decision-making patterns. As a result, it becomes possible to strategize and plan. Previously gathered data can therefore act as means of making predictive, informed decisions.

2. Customer Engagement: One of blockchain's key attributes is its transparency. This can help boost customer trust in a company. Benefits such as illustrating supply chains or sourcing of products help customers develop a stronger attachment to a product or service. Similarly, it can also build trust. Consumer trust regarding how businesses use and keep their data has sunk very low. In fact [85% of consumers](#) want to know a brand or business' data privacy policy before purchasing from them [and 46% would](#) switch to another brand if this was not clear. Data leaks and breaches continue to rise around the world and the cost can be huge. If businesses use blockchain to save this data, they can build trust with customers and offer transparent and secure policies.

3. Customer Retention: The data found in blockchain can make processes such as identity verification much easier and streamlined. In turn, this then creates a more convenient product for customers, which means greater retention. Blockchain data can also be used effectively to [build customer loyalty programs](#) and offer customers products that are beneficial and of interest to them. By understanding their customers better, businesses can offer a much more tailored experience and increase the likelihood they will return.

So, where next?

Many companies are already harnessing blockchain data to benefit their businesses. In fact, of the top companies in the world, current adopters include everything as diverse as [Apple, McDonald's, and JP Morgan](#). The technology has made huge breakthroughs in recent years. It seems probable then that this technology will continue to transform the way that enterprises do business and push them forward.

Currently, there are no ideal tools to access blockchain data, but developers can use multiple options to find ways to gain a competitive advantage from the information that is out there. This means that Web3 infrastructure providers need to strive to create new tools—things similar to [Subgraph Hosting](#) or [IPFS](#)—to utilize this huge resource to its best degree. This technology is in its infancy, but there is a need for enterprises and developers to focus on new ways to access blockchain technology and data because it brings many benefits to an enterprise's future.