Blockchain beyond finance

Blockchain technology goes far beyond cryptocurrencies and tokens, and its usefulness as a wider economic and administrative tool is well worth exploring. The table below describes just a small sample of blockchain's potential to transform supply chains, healthcare and the energy sector.

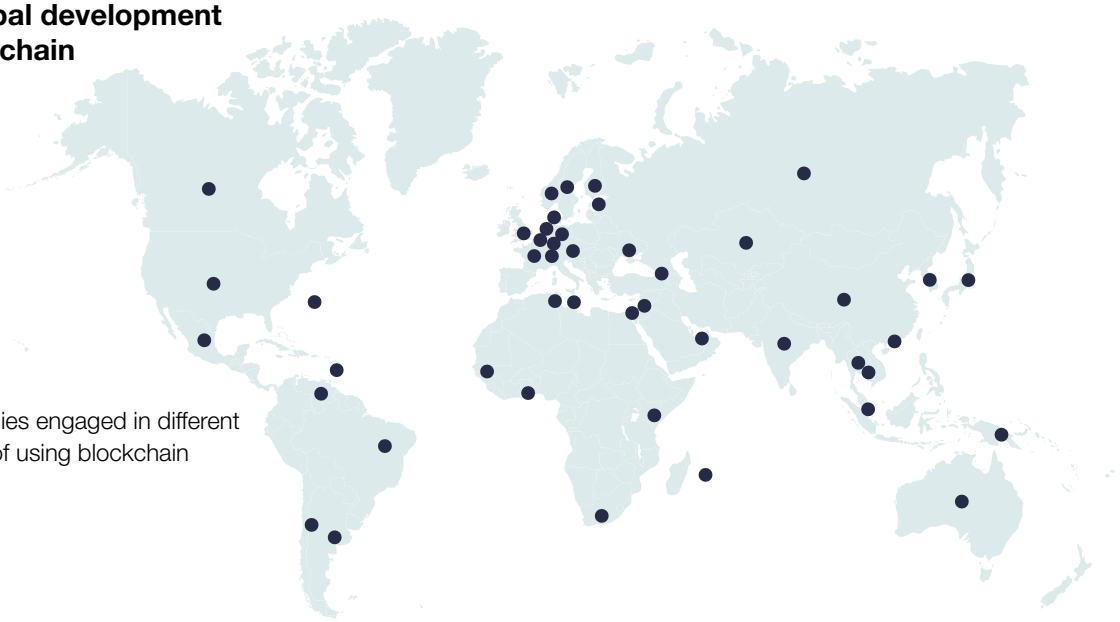
Table 2. Examples of blockchain's potential in supply chains, healthcare and the energy sector

Policy area	Description	Potential benefits	Potential risks/Obstacles
Due diligence in supply chains	Blockchains allow multiple parties to access the same database to track and record and audit products as they move along the supply chain	**Enhanced transparency** A more transparent supply chain will help companies and consumers identify risks of adverse impacts (i.e. human rights abuse and financial crime), and on that basis, prioritise further efforts to prevent or mitigate such risks. **Sharing value of due diligence** Using blockchain technology to tokenise due diligence data (attaching a monetary value to access to the data), could potentially help fund due diligence efforts. **Financial inclusion** Blockchain technology can lead to greater integration of informal actors and SMEs in the formal supply chain by helping overcome cash flow barriers through self-executing smart contracts.	**Difficulty controlling data quality** Widely known as the "garbage in garbage out" issue where the information entered on the blockchain is only as good as its source. **Upfront costs and lack of access** In order to link the physical world to the digital, supply chain stakeholders have to invest in technology as well as facilitate access to and encourage uptake of the technology. **Fragmentation** Despite being created for very similar purposes, multiple blockchain initiatives have developed, operating on different platforms, identifying and collecting information differently, and with different governance structures.
Healthcare	Blockchain could be used to provide more robust patient healthcare information data management systems. Instead of information siloed in different data systems, patients and healthcare providers could choose what they share and with whom.	**Continuity of care** Information can be shared between different healthcare stakeholders and end users could find it easier to share information to new providers. **Cost effectiveness** Providing better data sharing between stakeholders can increase the ability of healthcare organisations to provide cost effective care and reduce clerical errors that are at best inefficient and at worst life threatening.	**Privacy rules** While some healthcare blockchain solutions will make only high level demographic information publicly viewable, it is conceivable that the combination of demographic data and geographic location could reveal sensitive information. **Data security** Given the information stored (or linked onto the blockchain) is highly sensitive, data security is a potential risk.
Energy	Blockchain can enable decentralised peer-to-peer electricity markets, allowing individuals and entities to balance supply and demand and trade electricity without going through a central entity.	**Lower transaction costs** Without intermediaries, costs can be significantly reduced along the electricity value chain. This could potentially lead to more competition and a broader range of options for consumers. **Facilitating distributed and low carbon electricity** Blockchain could reduce the complexity of managing systems with large numbers of small-scale renewable and distributed energy resources, accelerating their deployment.	**Scalability and technical performance** As is, several types of blockchain have difficulties scaling (for example, due to data volumes and transaction speeds). **Energy consumption** To reach scale in energy applications, blockchain technologies will have to develop less energy-intensive frameworks for processing transactions.

Blockchain beyond borders

The areas where major blockchain progress is taking place are as diverse as the applications they are creating. The global nature of blockchain's development can help distribute opportunities for wealth creation and economic development more widely than before. It is important for governments to develop the right policies to harness the potential benefits of this technology while mitigating its risks and potential for misuse. To do so, it is essential for countries to cooperate in order to share best practices and ensure interoperability. Regulatory fragmentation will hinder the progress towards useful applications of blockchain technology.

The global development of blockchain



● Economies engaged in different stages of using blockchain

Note: The economies engaged in different stages of using blockchain include: Argentina, Australia, Austria, Barbados, Belgium, Bermuda, Brazil, Cambodia, Canada, Chile, China, Denmark, Estonia, Finland, France, Georgia, Germany, Ghana, Hong Kong (China), India, Israel, Japan, Kazakhstan, Kenya, Luxembourg, Malta, Mauritius, Mexico, Netherlands, Norway, Palestinian Authority, Papua New Guinea, Russia, Senegal, Singapore, South Africa, South Korea, Sweden, Switzerland, Thailand, Tunisia, Ukraine, United Arab Emirates, United Kingdom, United States, Venezuela.

Source: OECD calculations based on data collected by the Illinois Blockchain Initiative.
https://illinoisblockchain.tech and https://bit.ly/blockchain-govt-tracker

The role of the OECD

The OECD provides a forum for discussion, sets international standards, and helps build capacity in governments – and is bringing these core competencies to the opportunities and challenges presented by blockchain. It is already helping governments find the right experts and practitioners to engage with, consider the need for cooperation in the international policy environment, and identify and share best practice for governments managing and using blockchain.

An integrated and holistic approach is key to maximising the benefits of this technology, both between sectors and between markets. The OECD's multidisciplinary expertise and deep links with industry, academia, governments and other international organisations mean it is able to join the dots for domestic priorities and global actions. If blockchain is going to be one of the transformative technologies of our time, the OECD is here to make sure governments are ready.

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