

New 'data trust' technology could transform food supply chains, safety and traceability

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A new report by food industry researchers published by the UK's Food Standards Agency (FSA) highlights the potential of a breakthrough technology to promote information exchange across food industry supply

chains that may further support consumer confidence in food safety, origins and authenticity.

The study, 'Food Data Trust: A framework for information sharing, produced in conjunction with the RCUK-funded Internet of Food Things Network Plus and led by the University of Lincoln, UK, examines innovation in the burgeoning technology of 'data trusts', which have been described by technology experts as 'a glimpse into our collective future' in the secure and effective use of big data.

The term data trust can refer to a range of different data institutions, a general term for formal, often legally-based, structures for managing the sharing of data that protects privacy but enables benefits to be drawn from a collective approach. Unlike the pure data trust approach which puts responsibility for pooled data firmly in the hands of legally-bound trustees, the trust framework approach leaves responsibility for data firmly in the hands of owners and instead defines rules and mechanisms for securely sharing and exchanging data as and when needed.

A legal structure can then be developed to enable the sharing agreements to scale amongst a wider community. The data sharing framework approach is also technology agnostic. So, practitioners may draw upon established technologies such as blockchain to store data if they wish to.

With current challenges facing the [food](#) industry it is thought this new approach to using data could significantly improve supply chain processes while also boosting consumer confidence about where foods come from, how sustainably they're sourced and whether they are what they say they are.

The researchers propose a 'data trust framework' under which businesses at all points in the food supply chain, from growers and manufacturers to retailers, might safely share selective in-house data.

Professor Simon Pearson, Professor of Agri-Food Technology at the University of Lincoln, said: "It's easy to understand why businesses are reluctant to share such commercially sensitive information. No one wants to reveal their advantages to their competitors. But, in the data age, this reluctance is holding up much-needed advances. Sharing data in a secure and limited way can help to expose and tackle problems from incorrect labeling and widespread food fraud to tracing contaminated food, as well as speeding up product recalls.

"The data trust framework provides a structure under which data, including real-time and time-critical, ever-changing data, can be supplied to and held securely by independent and trusted repositories, with strong governance ensuring that data providers can trust that their data will only be used as specified while recipients of data and analysis can trust the accuracy and authenticity of what's provided."

Julie Pierce, Director of Wales, Information and Science at the Food Standards Agency said, "The food industry needs to be able to trust that if it exchanges vital knowledge to improve what it does, its sensitive knowledge will be secure. Governments and consumers need to be able to trust what the industry and individual companies are doing and telling them. The data trust framework aims to tackle both requirements."

Importantly, the solution proposed is a trust framework for data sharing amongst independent organizations rather than a managed [trust](#) responsible for pooled data. Food supply chains comprise of multiple decentralized, diverse data collections, and a framework is needed to control the way they might be linked temporarily, in specific, limited ways, to share information securely. It could also connect with regulators and other government departments needing to exchange secure and trustworthy data.

The framework has added potential to connect with AI services and

provide access to dynamic and fresh data in return for immediate AI-derived information that could benefit interconnected participants in the supply chain.

The full study includes a roadmap and full legal report that brings together technological services, viable business models and a legally sound two-tier governance system.

Andrew McMillan, Head of Technology & Digital Markets at the law firm Pinsent Masons said: "The secure and selective sharing of data is critical in further creating and advancing opportunities for societal, economic and environmental good. Even though the value of data is uncontroversial, many organizations could do more to maximize the value they derive from data they hold. They will only do so, however, within a trusted framework for data-sharing and this is where we have focused our efforts – to assist in designing and implementing a robust and efficient [framework](#) that will allow industry to realize the true value of its data."

More information: Food Data Trust: A framework for information sharing, and Food Data Trust: Legal, Structuring and Governance Report are available online: www.food.gov.uk/research/research-information-sharing

Provided by University of Lincoln

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