



Information systems research

with Dr Aravindh Sekar

Talking points

Knowledge

1. What is blockchain technology?
2. What issues do typical supply chains face?

Comprehension

3. How is blockchain different from traditional databases?
4. How can AI augment blockchain?

Application

5. What knowledge gaps do you still have around how blockchain works, and how could you fill them?
6. Think about a company you know about (either through personal experience, or a well-known company). What specific challenges do you think they may face when implementing blockchain technology?

Analysis

7. Decentralised blockchain technology has been around since the early 2010s. Why do you think that many supply chains still do not use it?
8. What are the advantages of decentralised data over centralised data?

Evaluation

9. Extreme weather events, caused by climate change, are increasingly disrupting supply chains. To what extent do you think blockchain could mitigate these disruptions? Justify your answer.

Activity

Think about a product that you use or consume regularly. This could be anything from your smartphone to a food product.

Take a moment to think about the supply chain that brought this product to you. Consider:

- The raw materials (in a smartphone this might include metals and hydrocarbons, or in a chocolate bar this might include cacao, oils and packaging constituents).
- Where these raw materials came from, and how they were extracted and processed.
- How these materials were brought together to make the product.
- How the product was brought from its place of manufacture to you.

Where might there be weaknesses in this supply chain? These could be weaknesses in efficiency, transparency or sustainability.

Spend some time researching online to validate and supplement the conclusions of your thought experiment.

Now think about how blockchain might be able to improve the weaknesses you identified. What hurdles need to be overcome to implement blockchain effectively in this supply chain? How could the frameworks identified in the article help this process?

More resources

- This video from Simply Explained lays out the fundamentals of how blockchain works: youtube.com/watch?v=SSo_ElwHSd4
- This article from the World Economic Forum explores how blockchain is being used within food supply chains: weforum.org/stories/2024/08/blockchain-food-supply-chain

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