Educational **Cases**

Empowering small-to-medium sized businesses with blockchain:

A guide to sustainable innovation

image: By Green Cotton

Blockchain's impact on fashion and furniture SMEs: realities and challenges

This article dives into the world of blockchain and real-life examples from the fashion and furniture industries, specifically within smaller businesses that have great sustainable and innovative ambitions yet dependent and resource limited by nature. But we won't just stop at the success stories; we'll also explore challenges and pilot projects, providing a more nuanced view than what has been produced in the past. Whether you're a blockchain enthusiast, a curious sceptic or simply unfamiliar, this piece aims to bridge the knowledge gap and spark a lively conversation about blockchain's true potential.

Fact box: Blockchain:

Blockchain is essentially a special kind of database that stores identical copies of data on many computers. To input new information, and by process transactions, everyone within the network of computers must agree and validate the action. This keeps the blockchain data safe, accurate and immutable. Therefore, not one entity or actor owns or controls it, making it more trustable, transparent, and traceable. (Forbes, 2023).

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Supported by: The Trace Innomission 4 - Blockchain, IoT and Resale.
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Proff & Graphic: Lifestyle & Design Cluster; Steen Ancher & Heidi Svane Pedersen

Key Insights:

→ Blockchain originated in the financial world, gaining popularity with the advent of Bitcoin (Nakamoto, 2008). Unfortunately, this has led to its applications and development being largely confined to the financial industry (Hileman & Rauchs, 2017). When blockchain has been explored in other sectors, it has primarily been situated within larger organizations, leaving small-to-medium sized enterprises (SMEs) overlooked both in academia and in practice.

→ This oversight is significant, as SMEs make up 99% of Denmark's businesses, amounting to 300,000 companies that support society and the economy (CBS Wire, 2021). Additionally, the fashion and furniture industries in particular are essential for driving innovation and sustainability (European Environmental Agency, 2024).
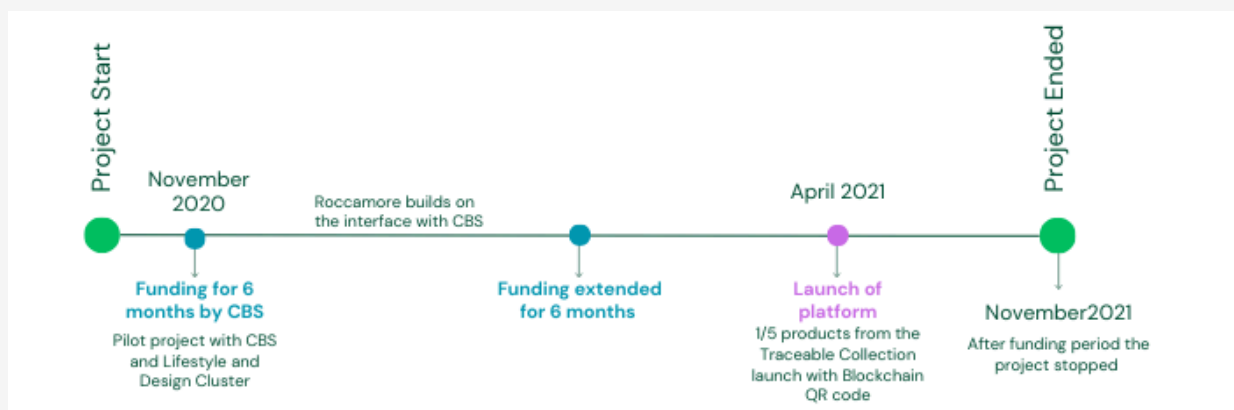
→ To address this gap, we interviewed three SMEs from the fashion and furniture industries along with their technology providers. Our case studies included Roccamore and By Green Cotton, both of which faced challenges and ultimately reached their full potential, while Wehlers emerged as a successful example of blockchain implementation.

Danish SMEs Pioneering Blockchain Innovations

Roccamore, founded in 2014, produces high-quality, sustainable shoes for women (Roccamore, n.d.). Their blockchain project involved printing QR codes on their products, which, when scanned, lead to an interactive map on their website that documents the production and product journey, 'from cow to shoe. Watch demo <u>here</u>.

image: Spoor & Roccamore

Project Start

November 2020

Roccamore builds on the interface with CBS

April 2021

Project Ended

Funding for 6 months by CBS

Pilot project with CBS and Lifestyle and Design Cluster

Funding extended for 6 months

Launch of platform

1/5 products from the Traceable Collection launch with Blockchain QR code

November 2021

After funding period the project stopped

Danish SMEs Pioneering Blockchain Innovations

Similarly, **Green Cotton Group A/S**, established in 1983, produces sustainable clothing for private labels and its own brand, and implemented a similar solution for their clothes in their webshop. For this pilot project they did not add an indentifier or QR code. This is something they did after the project (Green Cotton, n.d.). Both Roccamore and Green Cotton were part of a funded project with the Danish university Copenhagen Business School, which developed these solutions. Watch demo here.


image: By Green Cotton
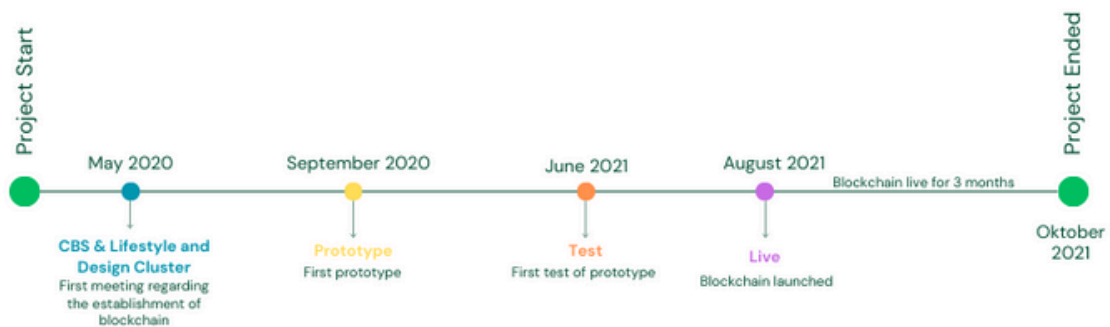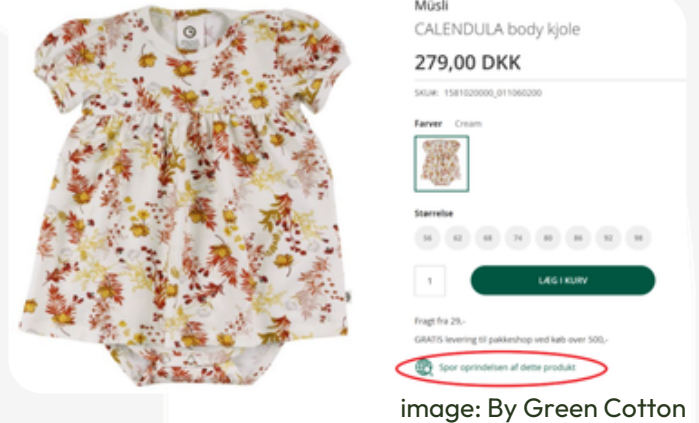
Wehlers, founded in 2017, produces furniture based on a circular economy model for businesses (Wehlers, n.d.). They collaborated with the technology provider MiCollect, to integrate NFC chips in their chair. This allows a connection between the physical product, the digital twin and the customers ownership, which supports Wehlers take back systemt and circular strategi.
Watch demo here.

image: Wehlers
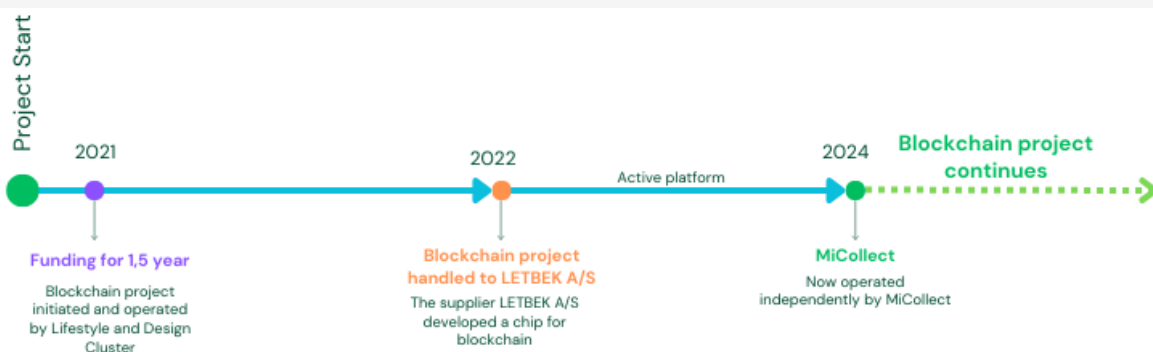
Fact box: Circular economy:
The circular economy is a system where materials never become waste and nature is regenerated (European Parliament, 2023). In a circular economy, products and materials are kept in circulation through processes like repair, reuse, refurbishment, remanufacture, recycling, finally composting.

We examined these cases, considering a comprehensive set of factors that encompassed both technology-related aspects and higher-level strategic and stakeholder considerations. From this extensive study, we identified three key factors that significantly influence the success or failure of blockchain adoption in SMEs. For reference, see our expansion of a traditional academic framework below.
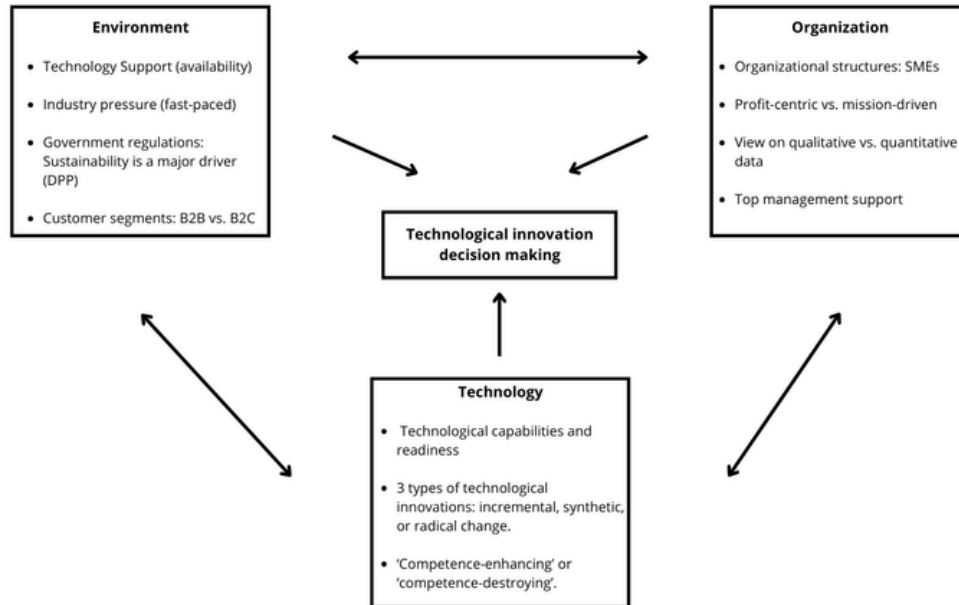
The theoretical framework "Technology-organization-environment framework" with an extension derived from the stakeholder analysis.

Blockchain's use case is too often misunderstood

Blockchain is often associated with buzzwords like Decentralization, Immutability, Security, Transparency, and Traceability. While these features sound appealing to many businesses, it's important to remember that they can also be achieved with other technologies.

Simply, blockchain is a database that records and stores information in a unique way. Therefore, it's crucial to educate ourselves on data literacy: understanding how data can bring value to the business, deciding where it should be stored, determining who should build the data structure, and evaluating how much data to collect and for what purpose.

Specifically, our research revealed that the circular economy approach used by Wehlers is an excellent use case for blockchain. Wehlers' focus on data and its value in enhancing products through detailed history and pattern tracking aligns perfectly with blockchain's capabilities. This combination allows for a more transparent, traceable, and accountable product lifecycle.

Customers have to see the value in the technology

There exist significant differences between B2B and B2C customers in blockchain adoption. B2C customers are often driven by varying personal interests and trends. For instance, our research found that German consumers prioritize transparency and traceability, demanding detailed proof of sustainability. In contrast, Danish consumers tend to trust brands' sustainability claims without requiring extensive verification, making it harder to gain their buy-in for blockchain solutions. On the other hand, B2B customers face stringent regulations and standards, such as the forth coming Eu Digital Product Passport and mandatory sustainability reporting. This connects better to blockchain's ability to provide detailed, verifiable data crucial for compliance and reporting. Additionally, allowing B2B customers to use blockchain data for their own reporting and on their websites, rather than limiting data access to the SME's platform, significantly enhances customer buy-in.

Fact box: EU's forthcoming Digital Product Passport:

The EU's Digital Product Passport is set to become operational by 2030, focusing on high-impact categories like batteries for electric vehicles, textiles, and furniture. The basic idea of the passport is to provide a digital record of comprehensive sustainability information about a product and its entire value chain. By revealing a product's journey and environmental impact, Digital Product Passports can empower consumers to make informed purchasing decisions and pave the way for a greener, more ethical future. (Ohana Consultancy, n.d.)

## SMEs operate in unique, crowded, and powerful environments.

A significant part of our research focused on the unique structure and environment of SMEs. These organizations often face a strategic divide between being profit-centric and mission-driven, especially since they are inherently more resource-limited.

This divide is crucial when adopting demanding technologies like blockchain.

SMEs must remain competitive and innovative, but their top management typically consists of a few individuals with broad roles who must maintain operational efficiency and cost-effectiveness. Consequently, many SMEs lack the technological maturity, resources, and capabilities to support dynamic technologies like blockchain.

In this context, the environment plays a critical role. Proactiveness, value alignment, and coordination among partners, stakeholders, and actors are essential to avoid imbalances of power. Selecting technology providers from similar industries and of similar size, who share similar values and strategies, can foster close, long-term collaboration. This approach is more effective than working with academic institutions, where funding constraints and limited timeframes can pose challenges for SMEs. Additionally, the relationship with suppliers is vital in blockchain adoption, as they significantly influence the project. Ensuring a collaborative network through formal agreements and aligned values and ambitions can greatly benefit SMEs in navigating blockchain implementation.
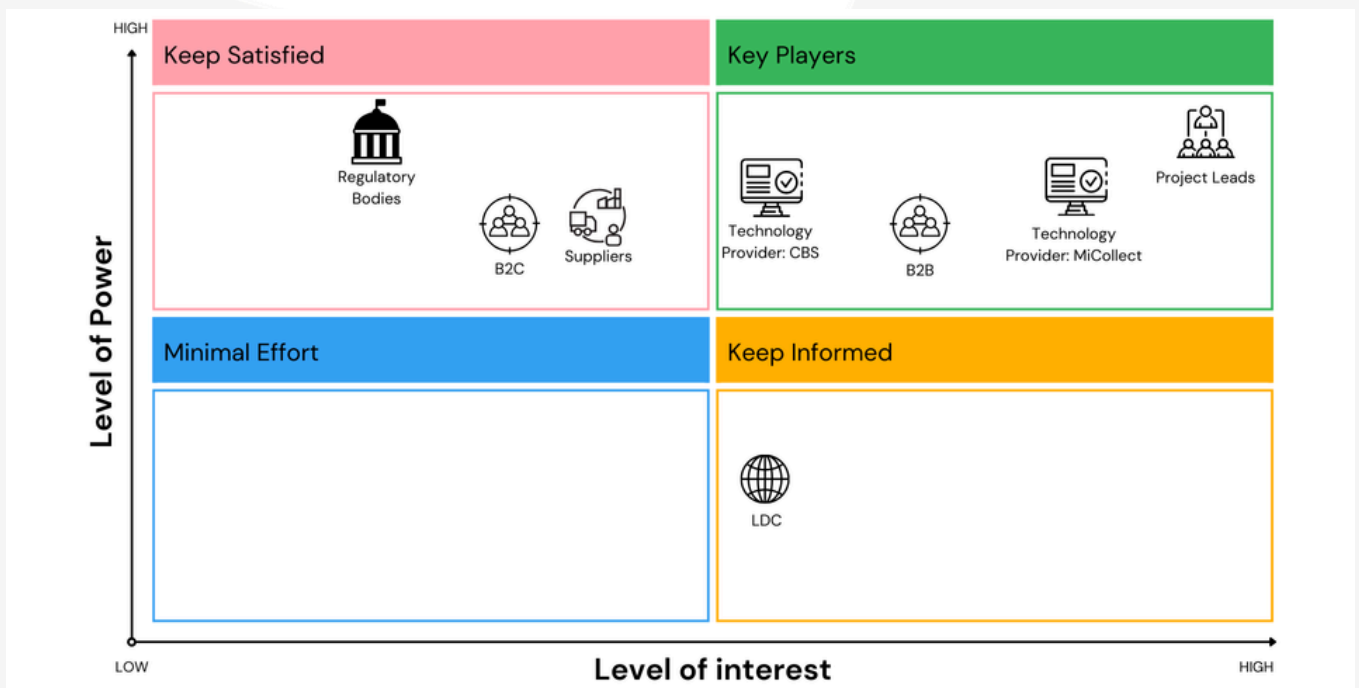
Stakeholder mapping: an illustration of the amount of actors in the quadrants of higher level of power/interest.

Conclusion

Regulations like the Digital Product Passport and a growing focus on sustainability will continue to drive blockchain applications and contribute to educational cases like this one. The cases discussed shows that pilot projects can offer significant learning opportunities. The cases do not necessarily indicate that blockchain was unsuitable for these businesses; rather, the decision-making processes, as with any technology implementation, were crucial. Unlike more familiar technologies, blockchain is less understood and has fewer use cases, making it more challenging to implement.

For SMEs, which lack the resources and flexibility of larger organizations, it's especially important to provide specific advice and lessons learned. By applying these insights and suggested improvements, more SMEs can make informed decisions and successfully harness the power of blockchain. This will foster innovation, enhance sustainability, and drive competitive advantage in a rapidly evolving market.

Key take-aways

→ Data discussions: Discussions on data literacy, value, storage, and collection are essential for understanding how blockchain can be leveraged to enhance business operations.

→ Use case: Identifying a clear use case for blockchain ensures that its implementation will address specific business needs.

→ Customer value proposition: A strong customer value proposition is key to demonstrating the benefits of blockchain technology to stakeholders.

→ Strategic project management: Strategic project management is crucial for the successful adoption and integration of blockchain solutions especially in smaller organizations.

image: Wehlers

Contact
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