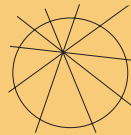


Nordic Blockchain Alliance

FINNISH
TEXTILE &
FASHION

+Lab

interior cluster
sweden



Lifestyle & Design Cluster.

NF&TA



Nordic
Innovation

**Nordic Blockchain
– The brand perspective**

Introduction

The project Nordic Blockchain Alliance aims to explore the potential of a common Nordic blockchain by drawing on different experiences and knowledge sources from Finland, Norway, Sweden, and Denmark.

Work package II is conducted by the organizations NF&TA and PlussLab, representing the Norwegian design- and lifestyle industries. The ideas and recommendations for the potential for a Nordic design blockchain has been completed in close collaboration with EY in Norway.

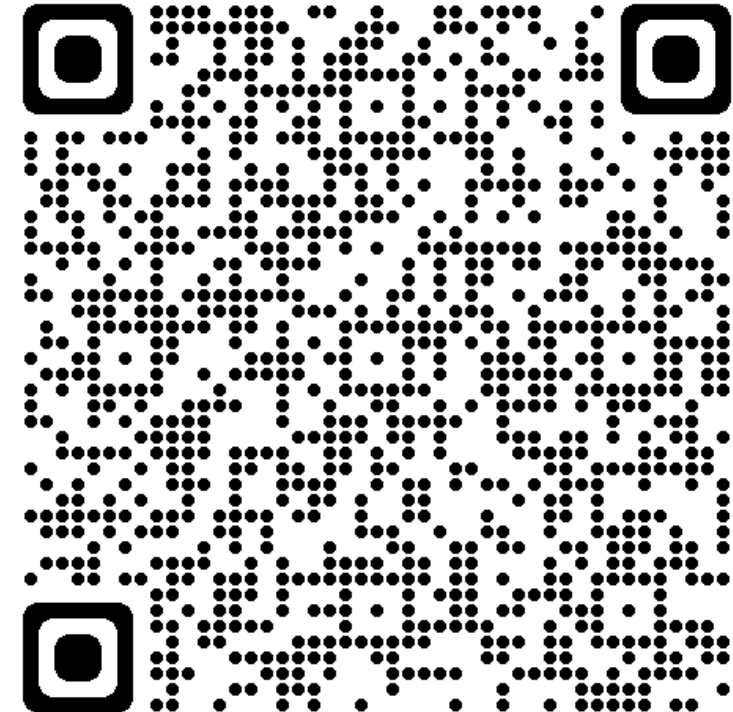
The aim of the project is to create and connect a strong knowledge pool across the Nordics regarding the potential of blockchain technology. During roundtables in each country, webinars, conferences, and conversations we have created a stronger knowledge and consciousness among the industry and stakeholders on transparency and traceability aligned with the use of blockchain technology.

At the beginning of the project the knowledge within the countries and across the countries was both unknown and on different levels. During the project we have learned a lot about the maturity when it comes to terms and the use of blockchain technology. An important learning is that the discussions are around transparency and traceability more than the use of blockchain as a technology. Most of the companies are aware of the digital product passports and are working on transparency and traceability in their value-chains.

In this part of the report, we will explain more around terms and technology to understand how blockchain can be useful in the discussions around transparency and traceability in the design and lifestyle industries across the Nordics. We will show the findings from the roundtables and discuss the potential of a common Nordic blockchain.

We hope that this report will make you even a little wiser, happy reading!

Elin Kathrine Saunes (NF&TA), Anita C. Drabløs (PlussLab) and Jonathan Sinnes (EY)

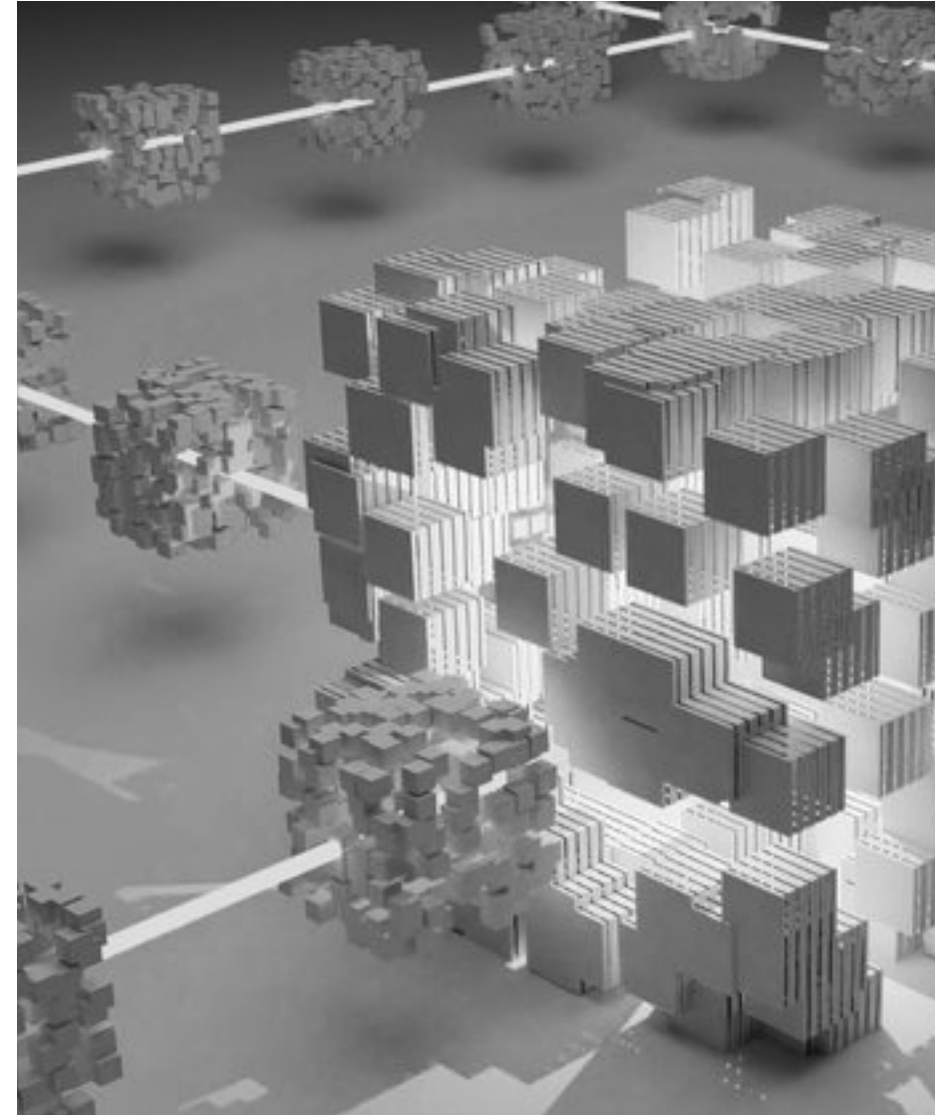


**Scan to read part one:
- Nordic Blockchain
Knowledge pool**

Background

Organizations in the Nordic countries Finland, Norway, Sweden and Denmark has started a collaboration to explore the potential and the preconditions of a joint Nordic Blockchain in the lifestyle industries. The first step in this project was to collect and research relevant use cases in the lifestyle market. It resulted in a report named [“Nordic Blockchain Inspirational Catalogue”](#) which presents a long range of different blockchain solutions that has been piloted by different brands. It also concludes with a checklist for brands to assess blockchain solutions and if they are fit for purpose.

For input to this report the “Nordic Blockchain Inspirational Catalogue” and other data has been used. Each member country of the collaboration has conducted their own roundtables with brands for the same purpose, explore and discuss the potentials and barriers for a Nordic Blockchain solution that is aligned with the digital product passport. Furthermore, the project leads in each country has contributed in workshops to discuss the topic further. The following report is a result of these activities.

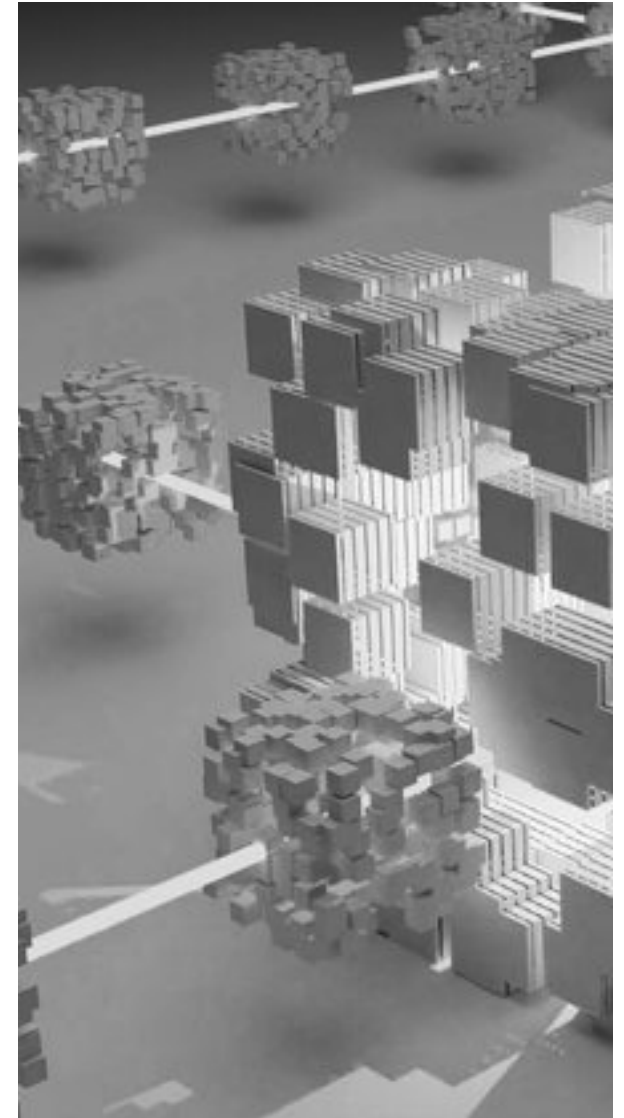


Understanding blockchain

Blockchain is an emerging technology with a lot of new terms that is important to know in the context of its application in lifestyle industries. We will mention the most important terms and describe them as well as describe what blockchain is in the context of this report.

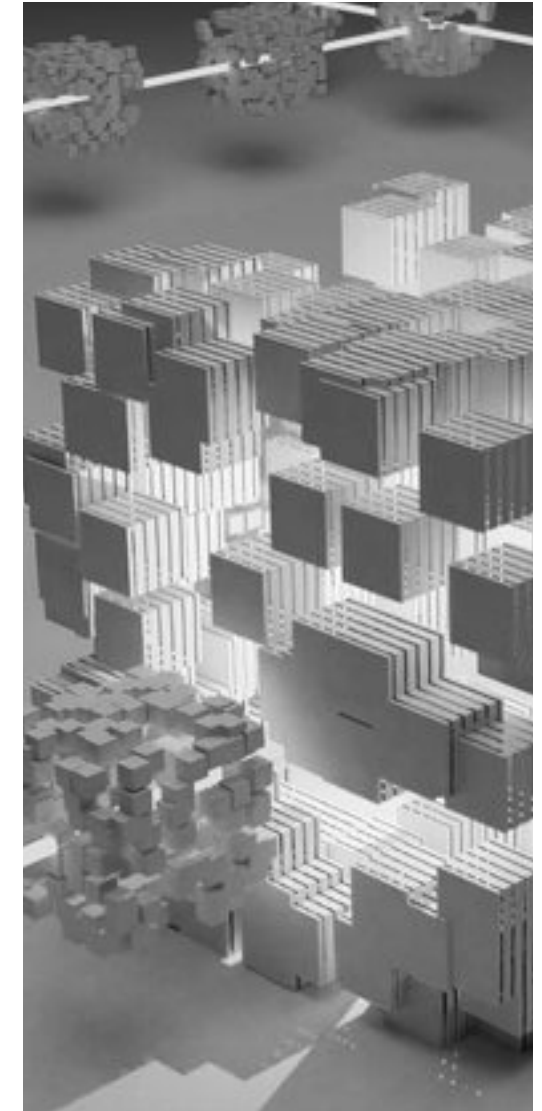
Blockchain operates on the principles of blocks, consensus and decentralization. Blocks as a concept is at the core of a blockchain. A block serves as a container that holds a set of transactions (recorded information). Each block is linked to the previous block through a unique identifier, forming a chain of blocks, hence the name “blockchain”. This linking mechanism ensures the integrity and chronological order of the transactions (recorded information) recorded on the blockchain. To determine the order and validity of blocks added to the chain a process called consensus is used. This process involves all participants in a network coming to an agreement on which transactions (recorded information) should be added to which block and added to the blockchain in what order. Consensus ensure that all participants have a shared and synchronized version of the blockchain.

Participants in a blockchain is usually decentralized and authority is distributed across multiple participants in a network. This eliminates the need for a central authority to validate or control transactions, instead participants collectively maintain and verify the blockchain. However, there are different degrees of decentralization in blockchain, the most common are public networks where the blockchain operates transparently, allowing anyone to join and participate. The less common is private networks where the blockchain are restricted to a specific group of participants. Both have pros and cons which need to be understood and evaluated before a decision of which is preferred is taken.



Additional terms & concepts in the context of blockchain

- **Smart contracts** is a self-executing agreement that is encoded on a blockchain. It has predefined rules and conditions that automatically executes when certain conditions are met. Smart contracts can automate transactions and eliminate need for intermediaries. It is an application of blockchain that is used in supply chain management among others.
- **Cryptocurrency** is not a legal term, but under anti-money laundering legislation (EU/EEA) a “virtual currency” is defined as a digital expression of value, which is not issued by a central bank or public authority, which is not necessarily linked to an official currency, and which does not have the legal status of currency or money, but which is accepted as a means of payment, and which can be transferred, stored or traded electronically. Public networks like Ethereum and Polygon have native currencies like ETH and MATIC.
- **DAO** – decentralized autonomous organization – is a type of organization that is run by smart contracts on a blockchain, without the need for human intervention or intermediaries. DAOs can have various purposes and goals, such as governance, funding, or collaboration between community members.
- **Immutable** is a term that describes the inherent trust in blockchain technology. When data is recorded on the blockchain as a decentralized network, it is (almost) impossible to alter or delete it. Immutability ensures the integrity and authenticity of transactions (recorded information), providing a trustworthy record of information.
- **DLT** – Distributed Ledger Technology - refers to a digital system for recording the transaction of assets in which the transactions and their details are recorded in multiple places at the same time. Unlike traditional databases, DLT does not have a central data store or administration functionality, so DLT is the basis for blockchain.



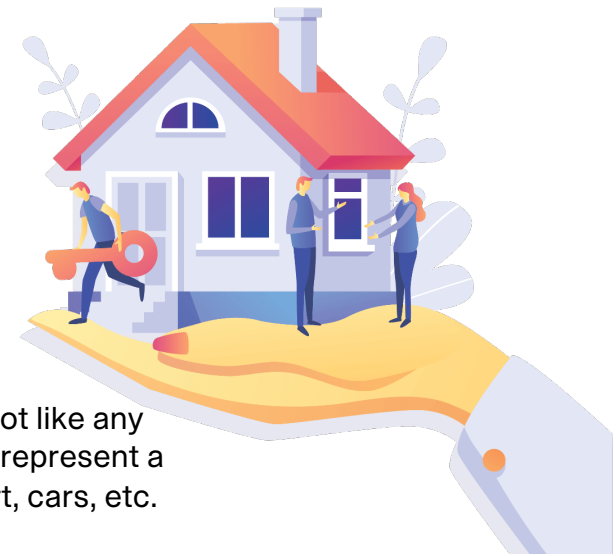
Tokens are objects that can be transferred in a transaction on the blockchain

Token is a digital representation of an asset or a right that is issued and managed on a blockchain. It is a flexible instrument with embedded rights/attributes as decided by the issuer, such as representing value, used as payment instrument, community/voting rights, rewards, etc. A token may be fractionalized and exchanged (e.g. on crypto exchanges). Each unit of token can only be present in one wallet at a time, so the same unit of token cannot be owned by two users at the same time.



Fungibles

Tokens are identical and similar in nature and function. Examples: utility token, payment instrument, lottery ticket, fiat currency (USD), a gram of gold, etc.



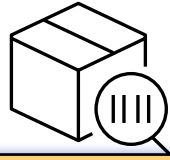
Non-fungible

Tokens are unique in nature and not like any other NFTs. They can, for example, represent a particular clothing/shoes/purse, art, cars, etc.

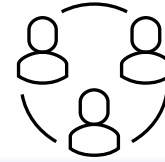
&

What makes blockchain interesting?

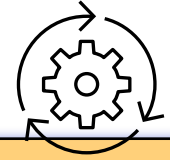
The figure illustrate the main benefits of blockchain for complex supply chains like in lifestyle industries



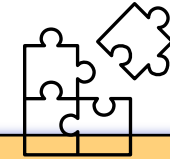
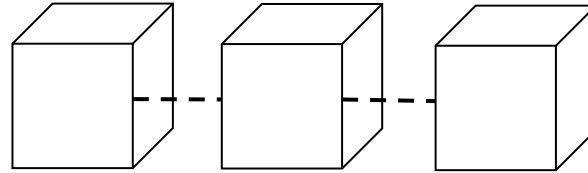
Traceability



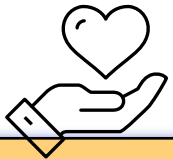
Collaboration/
Decentralized
structure



Automation



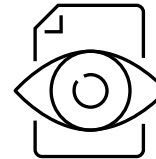
Immutability



Trust



Verifiability/Authenti
city



Transparency



Security

Benefits of blockchain

The design of blockchain as a decentralized network ensures transparency, immutability and security of information, which makes it especially relevant in complex supply chains with many third parties.

- **Traceability:** Blockchain can enable the tracking of products and materials from their origin to their destination, creating a digital record of their journey. This can help verify the quality, authenticity, and sustainability of the products, as well as reduce fraud, waste, and errors.
- **Collaboration:** Blockchain can facilitate the sharing of information and documents among different parties involved in a supply chain, such as suppliers, manufacturers, distributors, retailers, and consumers. This can improve coordination, communication, and trust among the stakeholders, as well as reduce costs and delays.
- **Automation:** Blockchain can enable the use of smart contracts, which are agreements/terms encoded on the blockchain to be automatically executed. Smart contracts can automate transactions and workflows based on predefined conditions and triggers, such as payments, deliveries, inspections, etc.
- **Verifiability:** Blockchain can allow the parties to verify the data and transactions on the blockchain, without relying on a third-party intermediary or authority. This can reduce the risk of manipulation, corruption, or tampering of the data.
- **Transparency:** Blockchain can allow the parties to access and view the data and transactions on the blockchain, subject to their permissions and privacy preferences. This can increase the visibility and accountability of the supply chain activities and performance.
- **Security:** Blockchain can protect the data and transactions on the blockchain from unauthorized access or modification, using cryptography and consensus mechanisms. This can prevent cyberattacks, data breaches, or identity theft.
- **Compliance:** Blockchain technology can help ensure compliance with regulations by creating a transparent and auditable record of transactions. This can help businesses meet regulatory requirements, reduce the risk of non-compliance and increase trust between parties in the network

Roundtable discussion across the Nordics

- Presentation of data:

In relation to the collaboration in the Nordics on a joint Nordic Blockchain for the design and lifestyle industry, a survey has been issued to brands within this sector. Each country's roundtable has used the same questions as guidance, and it was agreed upon by all parties to address and discuss opportunities and barriers of a Nordic blockchain solution.

The questions were given digitally to the participants in the roundtable and could be answered during the roundtable or later. In total 150 brands partook in roundtable and 38 in the questionnaire, answers are collected, which represent brands from the textile and furniture industry in the Nordics.

All were asked the following questions:

1. Inspired by the presentations, what type of data will be most important to collect from a transparency, traceability and Digital Product Passport perspective?
2. What are main barriers?
3. What are your concrete steps on the way towards increased traceability, transparency and the Digital Product Passport?
4. What do you need from technology suppliers to enable better traceability in your supply chain?
5. Based on today, do you see a potential for a Nordic Design Blockchain. Try to identify common actions?

«Yes, as I believe blockchain has a great potential, and probably the best option to be traceable and transparent.»

– Anonymous answer on the question if there is potential for a Nordic Blockchain

Collecting data



The survey was distributed after workshops in each country. The participants were presented with inspirational insights and key facts about digital product passports and blockchain technology.



150 brands from the Nordic countries Finland, Sweden, Norway and Denmark participated in the roundtables and 50 conducted the survey distributed



In total four Roundtables were conducted, one in each country, together with brands and tech-providers. The survey was distributed via Podio and shared with the participants during and after the Roundtable. The data from the survey was collected by PlussLAB and NF&TA and analysed in collaboration with EY.



It was of great importance to raise discussions and to collect data qualitative and quantitative through survey and roundtable. Data from the Roundtables and data from the survey have increased our knowledge and helped us to make this report relevant.

Is there a potential for a Nordic blockchain? - Summary of survey results

Data collection perspectives

The information that is most important for brands from a traceability, transparency, and digital product passport perspective includes data from the raw material state (Tier 4) and make sure that the data quality is high. Furthermore, the most mentioned phrase is to prioritize collecting data of the origin and certifications on material. Within the data collected a product identifier needs to be included and the totality of data collected needs to be sufficient to support environmental, social and governance (ESG) claims. Additionally, some mention that they are hesitant to speculate much on data that is necessary in the digital product passport because they trust the EU to create the framework of data needed.

Main barriers of a blockchain solution

According to the answers in the survey several barriers can impede the successful implementation of a traceability system via blockchain. The main barrier mentioned by the brands is in relation to education. They are mentioning lack of knowledge at both the brand itself and their suppliers, lack of knowledge and uncertainty about how and why to participate in a blockchain partnership, and a lack of supplier knowledge when it comes to secure and trustworthy data. Some brands mention the need for quality data and see a challenge in including the whole-value chain and ensure high data quality. Furthermore, it is mentioned that shifting the mindset of suppliers and the market from linear to circular vision also is a significant barrier. For the use of blockchain for this purpose brands are concerned on data secrecy and see their suppliers as a competitive advantage and do not want to share this openly.

Proposed steps to improve

When asked, the brands suggest some concrete steps taken by brands in the lifestyle industries towards increasing traceability, transparency, and getting a step closer to a digital product passport. They mainly mention the mapping of tiers in the supply chain, as well as validating and verifying data points from suppliers. To aid in mapping data points in their supply chain it is proposed to make sure that the solution is an easy-to-use system for collecting and sharing data. Also, as a first step they suggest to reduce the granularity and depth of data to ease adoption in the beginning. The need for industry-wide standards and regulation by the EU bodies are also mentioned as crucial steps for some. On a more practical and individual level, it is mentioned that brands should have an open dialog with suppliers from the start to make collaboration as good as possible.

Technology requirements for a blockchain solution

To enable better traceability in the supply chain, technology suppliers should according to the answers from the survey provide certain key capabilities. Firstly, they should offer a user-friendly and efficient data collection system that simplifies the process of gathering relevant information. This system should be intuitive and accessible for all stakeholders involved. Secondly, scalability and seamless integration with existing systems are essential to ensure a smooth implementation of traceability measures. Thirdly, validation of data is paramount to ensure accuracy and credibility throughout the supply chain. This involves mechanisms and tools to verify the integrity and authenticity of the collected information. Lastly, suppliers need to adhere to standards and establish rigorous data quality assurance processes. By implementing robust quality control measures, technology providers can enable and support brands with effective traceability in the supply chain.

The third work package in the Nordic Blockchain Alliance project will describe the technology requirements and providers in more detail. Read more here: <https://ldcluster.com/portfolio-item/nordic-blockchain-alliance/>

«Brands are aware that EU imposes new regulations that will force a change. They see both challenges and possibilities with this change»

– Observation after analysing survey results and roundtables

The majority considers a Nordic blockchain solution to be beneficial provided the implementation is a joint effort

Based on the inputs from participants in the survey, many participants responded positively and that there was potential for a Nordic Design Blockchain. However, mainly participants seem to see a joint effort as beneficial to avoid individual solutions and reduce cost through economics of scale. Furthermore, the joint effort will make it possible to get supplier data more easily if brands have the same suppliers. Some also state that blockchain enables ownership of data, and the possibility to provide incentives for suppliers to share data.

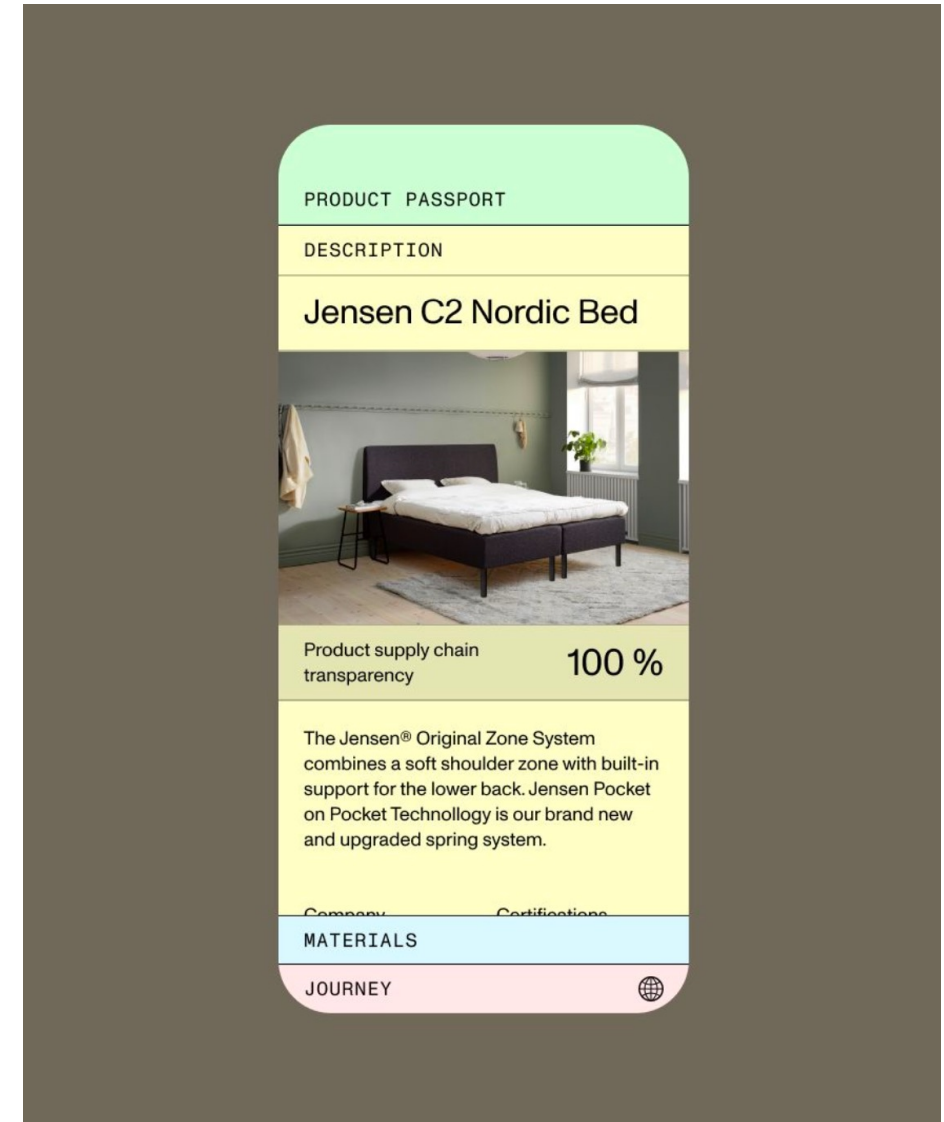
The responses indicate that there is potential for using blockchain with a digital product passport to establish traceability and transparency in the lifestyle industry. While some barriers remain to be addressed, steps towards increased traceability and transparency are identified by some and some not. Technology suppliers have an important role to play in supporting the implementation of the proposed system. A joint focus on scalable solutions and a common system is also crucial for success in the industry. A common system would not be a new native blockchain, already existing and proven blockchains needs to be used. The important part is that the Nordic clusters use the same solution so that we do not see a fractionalized market with individual solutions. In the rest of this report, we will describe how a solution might look like and how the challenges might be addressed.



Going forward

- A blockchain solution can provide a Digital Product Passport

As mentioned before, blockchain operates as a decentralized and immutable ledger, ensuring that every entry, once made, cannot be altered retrospectively without the change being evident and traceable. This inherent characteristic assures stakeholders of the data's authenticity and integrity. While the initial trust still relies on the entity entering the data, the unalterable nature of blockchain ensures that any post-entry modifications are transparently logged. It is also possible to include measures to validate the data entry by third parties or automate the process of data entry to avoid human error. When applied to traceability, this means that every step in a product's lifecycle, from raw material sourcing to its final sale, can be tracked, verified, and authenticated with confidence. Digital product passports, which encapsulate a product's entire history, can be stored on a blockchain, offering consumers and businesses an unalterable, transparent record. This not only bolsters trust in the supply chain but also empowers consumers to make informed decisions based on the provenance and sustainability of the products they purchase.



Pilot: Digital product passport, by Empower for Jensen Beds

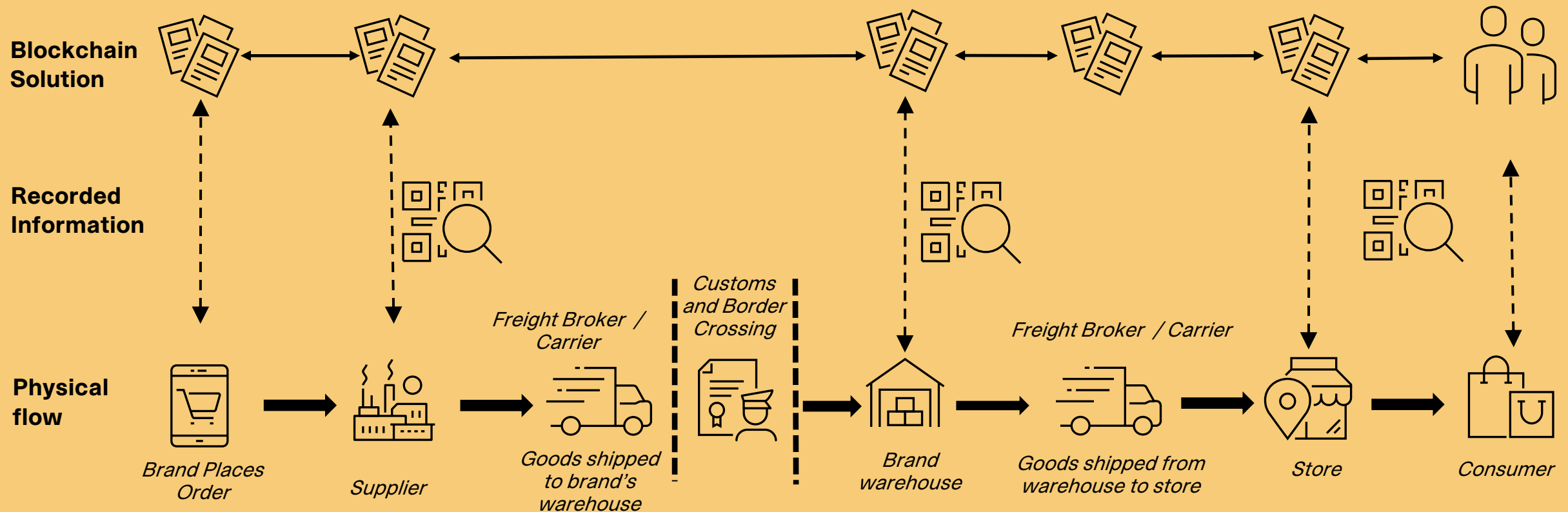
Technical description of a blockchain solution

The following is an exemplification of how a blockchain solution can look like for the purpose of enabling digital product passport for traceability. It all begins with delineating the supply chain. Brands need to recognize key data points and ascertain from which supplier, and at which stage, this data emerges. Once these suppliers are identified, they're seamlessly integrated into a dedicated data entry solution. This could be achieved either through an API, ensuring a smooth flow with their current systems, or via a web-based portal where data is manually registered. Feedback presented in the "Data presentation" section of this report has consistently emphasized the importance of usability. With a myriad of suppliers across various products, the data entry process must be uniform and intuitive. This not only simplifies the process for suppliers but also reduces the oversight required by brands. The data entry process is of high importance because the data entered is what gives the solution value. It needs to be correct and trustful, therefore it is important that some data entries are verified by independent third parties to ensure the accuracy of the data inputs.

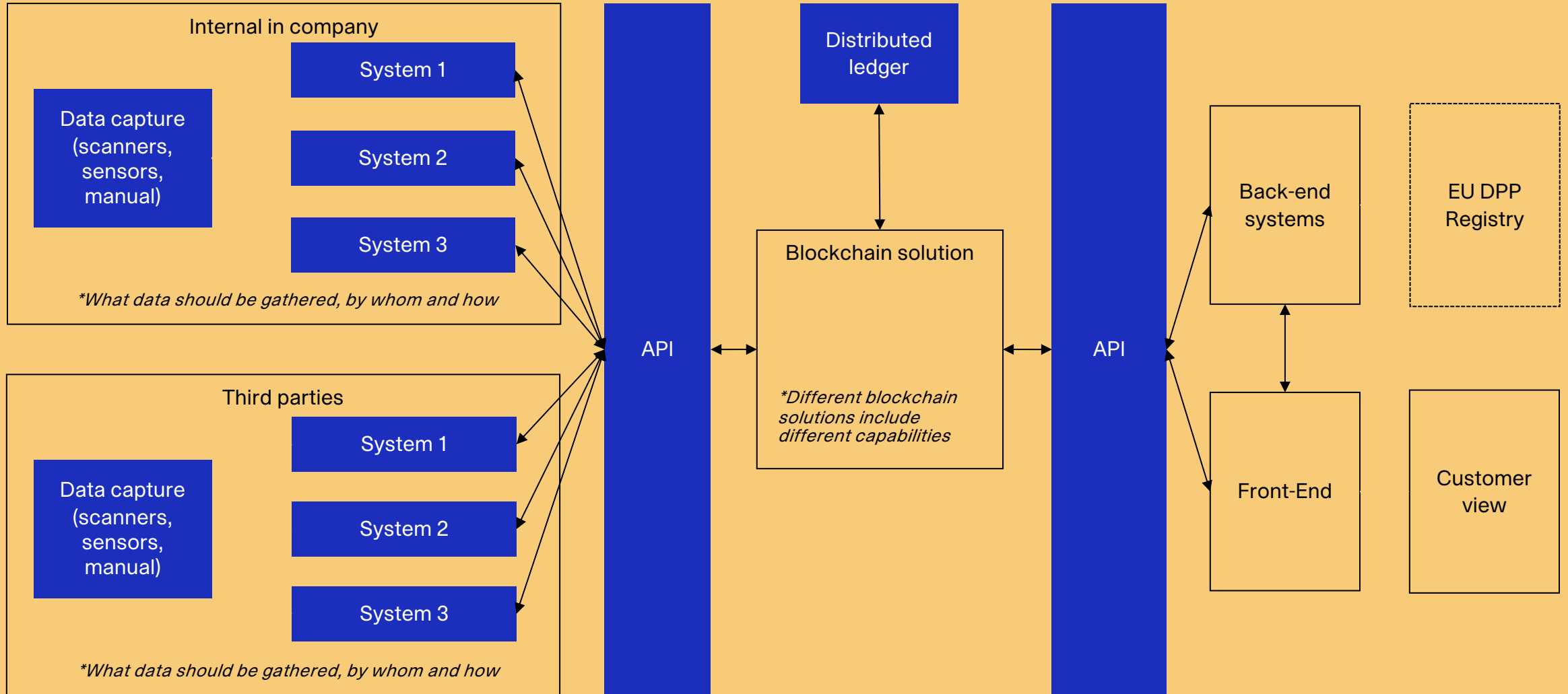
As data is collated from these suppliers, it's funneled into the blockchain system, where it is immortalized in the form of transactions. But here's a distinction – while the blockchain is immutable and serves as a point of verification, it's not always the primary repository of information. This data is simultaneously stored in a conventional database, facilitating prompt retrieval and presentation. This dual-system of a database paired with the blockchain's indelible nature assures stakeholders of data integrity. Any modifications in the database can be cross-referenced with the blockchain, highlighting any changes and the reasons behind them. This level of transparency and trust in data provides an additional layer of value for the Digital Product Passport and the customers.

This information powers the frontend display, serving as the digital product passport. Both brands and customers can delve into this resource, with the added assurance that any data can be verified on the blockchain, ensuring its credibility. Adding another display is the anticipated EU Digital Product Passport Registry, it is a centralized registry where all digital product passports should be saved. It is possible to create an integration so that digital product passports are automatically shared with the EU Digital Passport Registry.

Example of a supply chain and where information is recorded on a blockchain solution



Nordic Blockchain Alliance - WP 2



Tokenizing assets to be tracked

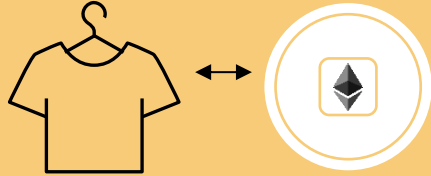
On the preceding page, we provided an overarching perspective of a potential blockchain structure. Here, we dive deeper, describing the intricate logic governing the storage of information tied to an object within this system. The next page presents a visual representation that further elucidates this mechanism.

In the context of textiles, consider each garment, or a batch of garments, being uniquely represented by a dedicated token, a non-fungible token. It's essential that this token possesses the capacity to store information. As these garments traverse the supply chain, pivotal data points at each juncture are meticulously appended to this token. This encapsulates the garment's journey, recording the predefined movement and transformation. While the methodology through which data is entered by various supply chain entities has been previously outlined on the preceding page, the essence remains consistent: each token continuously accrues data as it moves.

The scope and depth of data associated with a token can be tailored based on specific requirements. The granularity of data capture is a cost/benefit assessment each brand need to do, the higher granularity the higher the cost. Regardless of the quantum or nature of data registered, the fundamental logic remains unchanged – it's all about capturing the 'who', 'what', and 'where' at every step. By the end of its journey, the token becomes a repository of extensive, verifiable information. This data can then be extracted and authenticated via a blockchain solution, ensuring that end-users, through a front-end display, can trace the garment's provenance with utmost confidence and clarity.

1

Unit or bulk of units are tokenized

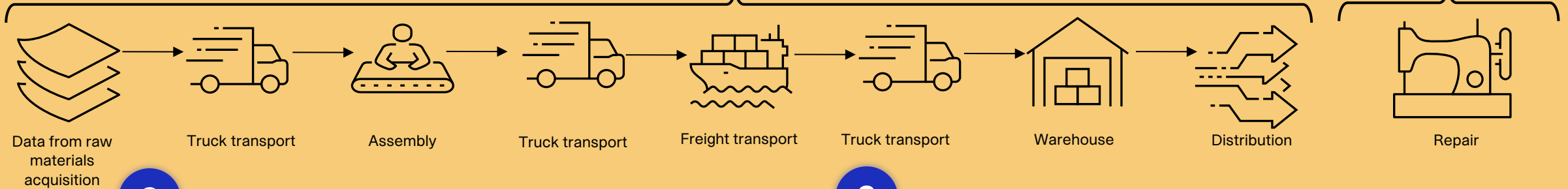


The metadata is stored within the token and contains all the traceability information to reconstruct the supply chain



4

At end of life the unit is repaired or recycled, and the metadata of the token is updated to reflect the circularity of the unit. Still accessible for customers from smart labels

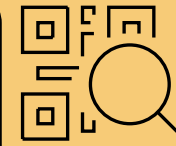


2

Data along the entire supply chain is collected (using trackers, sensors, manually inputted or other datapoints) to confirm origin, location, quality and authenticity.

3

Traceability information is available to consumer through landing page accessible from smart labels



*Supply chain is an example. The supply chain of the brand using blockchain needs to be identified and mapped, so that all wanted data capture happens.

In summary, with the use of blockchain it is possible to track products in a supply chain in a transparent, safe and trusting way

The strategic value of a Nordic Blockchain over National alternatives

Considering the comprehensive solution described, the decision between adopting a Nordic versus a country-specific approach is pivotal. An essential realization is that there's no need to construct an entirely new blockchain infrastructure for a Nordic Design Blockchain. Doing so, in fact, might run counter to the very essence of employing blockchain technology. Blockchain's unique value proposition is its trustworthiness. This trust is amplified when a public blockchain is utilized as the base-infrastructure, allowing full decentralization without a controlling party and open participation among its users. Building a bespoke Nordic design blockchain not only involves exorbitant costs but also runs the risk of reinventing the wheel. Given the maturity of blockchain technology, it's more pragmatic to harness established and tested solutions. The core of collaboration then hinges on data aggregation. Brands, regardless of their origin, would need to navigate similar challenges and likely reach parallel conclusions. Hence, pooling resources and knowledge would offer a strategic advantage.

Yet, one element does stand out when contemplating a collective approach – the term 'Nordic'. This label resonates with inherent brand strength, often synonymous with premium quality and steadfast reliability. The Nordic brand carries a cachet that often surpasses what an individual country might claim. By integrating this powerful brand ethos into the frontend, both suppliers and customers would likely perceive and trust the solution with higher regard.

In essence, while the backend infrastructure could be universally applicable, capitalizing on the Nordic brand in the frontend could amplify trust and adoption, underscoring the merits of a collaborative, regional approach over an isolated, country-specific one.

Arguments for a Nordic Design blockchain solution

When we delve into the merits of a blockchain solution for digital product traceability, especially within the Nordic context, several compelling arguments arise. The cornerstone, undoubtedly, is trust. Blockchain's decentralized and immutable nature assures stakeholders of the authenticity and integrity of data. Every piece of information recorded has a transparent lineage, fostering unparalleled trust.

A collective Nordic initiative brings forth the strength of collaborative intelligence. The challenges faced by individual brands in understanding supply chains, ensuring data accuracy, and staying compliant are universal. By uniting resources, knowledge, and experiences, the Nordic nations can collectively devise best practices, share learnings, and circumvent pitfalls. This not only streamlines implementation but also fosters innovation.

Furthermore, such an initiative would pave the way for a robust ecosystem where knowledge and networks are actively constructed across brands, experts, and technology providers. It would encourage an environment of continuous learning and shared expertise, crucial for the ever-evolving marketplace. Cross-brand collaborations and technology exchanges within this framework would not only build a resilient infrastructure but also enhance the competitive edge of all participants. This knowledge-sharing network, underpinned by the trustworthy foundation of blockchain, could become a beacon for global best practices in product traceability.

«Blockchain embodies many benefits origin in trust which is vital in a Digital Product Passport. Transparency and traceability is less valued if the data cannot be trusted»

– Observation from the project and roundtable discussions

Critical success factors for a Nordic Design Blockchain

When talking about creating a Nordic Design Blockchain, several points emerge as foundational for a successful transition and adoption.

1. Educational Initiatives: The journey begins with understanding. Before the tangible integration of blockchain into the design and lifestyle industry there's an intangible aspect that needs to be addressed – awareness. The myriad complexities of blockchain technology, while offering robust solutions, can also be its barrier. By introducing regional workshops, interactive webinars, and hands-on training programs, the industry can alleviate misconceptions and elucidate the tangible benefits of blockchain. Furthermore, the MiCA (Markets in Crypto-Assets) framework proposed by the European union will bolster blockchain adoption and awareness by establishing a clear and predictable regulatory environment.

2. Supplier Collaboration: The backbone of the lifestyle industry is its vast network of suppliers. As brands look toward a future of digitized traceability, they must also look back and extend a hand of partnership to their suppliers. Establishing an open channel of communication, fostering a spirit of mutual benefit, and elucidating the collective advantages of traceability can harmonize the steps.

3. Data Quality and Validation: A blockchain's trustworthiness is closely connected with the credibility of its data. As brands and suppliers upload information, rigorous quality control measures need to be in place. Mechanisms like independent third parties that validate the authenticity and accuracy of the data, from source to finish, ensure that the blockchain remains a trustworthy repository.

4. User-Centric Design: While blockchain's underpinnings are technical, its interface does not need to be. Recognizing the diversity of its users, which even may differentiate between different brands, the platform should prioritize simplicity. A clean, intuitive, and user-friendly interface can expedite adoption, making the transition smoother for all stakeholders.

5. Scalability and Integration: As Nordic design expands its footprint, the blockchain solution needs to walk in tandem, ready to scale up or adapt as required. Seamless integration with existing operational systems and a design capable of handling voluminous data influxes are non-negotiable features.

6. Guarding Data Secrecy: Transparency, though intrinsic to blockchain, does not necessitate revealing all. Recognizing that some trade relationships and processes might be proprietary, the blockchain should be nimble, offering layers of data access. Technology called Zero knowledge proof can be integrated in blockchain solutions, which makes it possible for businesses to shield sensitive information even on a public blockchain.

7. Standardization: Nordic brands have a diverse set of stakeholders with different cultures and businesses, in this situation consistent standards become pivotal. This ensures a uniform 'digital language' across brands, suppliers, and countries, streamlining interactions and operations. While technical uniformity is crucial, aligning stakeholder visions and expectations is equally significant.

8. Start Small and Scale Gradually: Initiating the blockchain journey with small, manageable projects allows brands to learn and adapt without overwhelming risk. Pilot projects serve as a testing ground for the processes, allowing for fine-tuning before scaling to larger operations. By starting small, brands can validate the blockchain's effectiveness in real-world scenarios and demonstrate quick wins, which can then be used to garner wider support and buy-in from all stakeholders. Each step of growth should be backed by solid experience and understanding

TrackIT - use case

Italian trade agency have successfully established a blockchain solution for the purpose of traceability and authenticity. It is a use case where an organization have created a solution for other companies to participate and adopt. This is an example where several companies even across sectors are using the same solution.

A Nordic Design Blockchain solution could be created similarly building on the Nordic brand.

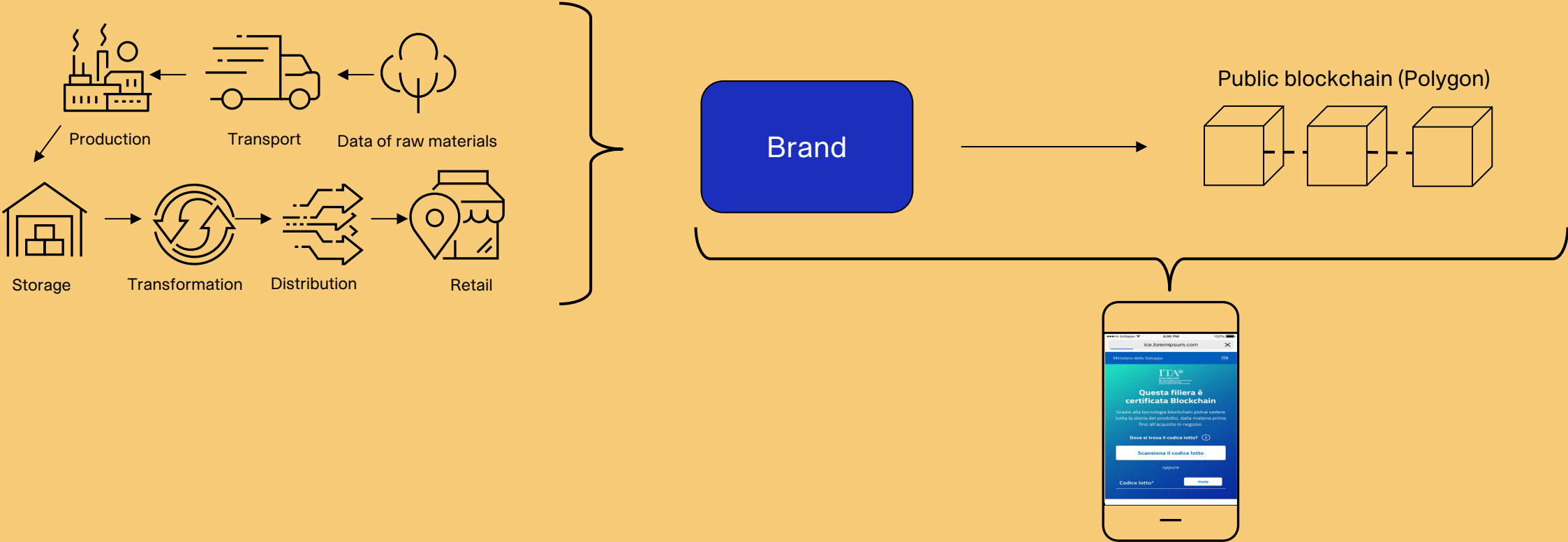
Example & experience – TrackIT

Initiated by the Italian Trade Agency (ITA) in 2021, TrackIT is more than just a blockchain project; it's a testament to Italy's commitment to upholding the integrity and authenticity of its world-renowned exports. Focusing primarily on the agri-food, cosmetics, and furniture/design sectors – industries that deeply resonate with the "Made in Italy" ethos – TrackIT offers a free service to Italian export companies.

The reason Italian government initiated this project lies in the dual challenges of counterfeiting and consumer trust. As global demand for Italian products has surged, so has the proliferation of counterfeit goods. These imitations not only compromise Italy's economic interests but also dilute the intrinsic value associated with Italian craftsmanship. Having been operational for a year, the TrackIT platform is now embraced by approximately 13 businesses, spanning textiles, design, wine, and more. With the ambitious aim to on-board 30 companies by the end of the year, the growth trajectory of TrackIT is unmistakable. EY, the global consultancy, played an instrumental role by providing both blockchain backend and frontend solutions, as well as assisting in the seamless onboarding of new companies.

TrackIT, by leveraging blockchain technology, provides an immutable, transparent record of product journeys – from production to point-of-sale. In doing so, it assures consumers that what they purchase is genuinely Italian, enhancing trust and reinforcing loyalty to the "Made in Italy" brand. By marrying technology with tradition, TrackIT champions Italy's rich heritage, ensuring that every product wearing the "Made in Italy" label is a genuine ambassador of Italian craftsmanship and quality. TrackIT is more than just a tracking tool by established a fresh communication avenue. Producers could narrate the unique stories and inherent value of their products, allowing consumers to connect, not just with the product, but also with its rich history and significance.

TrackIT is a blockchain project initiated by the Italian Trade Agency (ITA) in 2021. It is a free service for Italian export companies in the agri-food, cosmetics, and furniture/design sectors. The purpose is to increase trust and loyalty among consumers as well as combat counterfeiting by promoting and protecting the Italian "Made in Italy" brand with blockchain technology.



Summary

Blockchain technology necessitates a robust educational level to fully comprehend its inherent benefits and its suitability for Digital Product Passports (DPP). Insights gathered from our comprehensive survey, roundtable discussions, and other dialogues reveal a consensus on the value that blockchain technology imparts to a DPP. Yet, the findings also cast a spotlight on the challenges faced by the lifestyle industry, particularly in data management. Brands are struggling to work well with their suppliers and to get the detailed information they need from every step of their supply chain. These problems are common and happen no matter what technology they use to track their products.

This report outlines a blockchain-based approach, demonstrating its application in generating a DPP that tracks the lifecycle of a product—from production to sale, and onto secondary use and repair—anchored by verified and trusted data. Moreover, blockchain's potential to streamline compliance with various EU directives, such as the Corporate Sustainability Reporting Directive (CSRD) and the Corporate Sustainability Due Diligence Directive (CSDDD), underscores a strong argument for its wider adoption.

Additionally, the report identifies and proposes solutions to several critical success factors. These factors, while tailored for the implementation of a Nordic Design Blockchain, are broadly applicable and essential for the success of any traceability solution.

The business case for using blockchain technology hinges on the enhanced trust it offers consumers regarding data integrity. We hypothesize that consumer demand for transparency and traceability will intensify over time, making a blockchain-enabled DPP increasingly crucial. Assessing the extent of consumer valuation of these aspects, and whether it justifies the investment, is an area that warrants further inquiry.

Next steps

In the authors of this report's perspective, it is important to acknowledge that we are in need of more research, competence and development for a Nordic Blockchain to be successful. We need to understand the complexity of the value chain even more, the technology has to be accessible for Small and medium sized enterprises. Regulations, legal framework and cost structures needs to be set and we need to know more about the consumers expectations, value of trust and consumers behaviours for a Nordic blockchain to be materialized.

The next workpackages in this joint project will provide insights from the technology providers, and will further strengthen our knowledge, and provide valuable information of how to connect and collect data.

We believe that a collective effort is important in this phase of development and urge clusters and organizations across the field to provide insights and common ground.

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