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Digital Solutions to Improve Traceability and Transparency in the Textile and Agricultural Sectors

Factsheet

INTRODUCTION

Global supply chains are long, complex, fragmented, continuously evolving, and notoriously opaque. The fragmented and opaque information can create a breeding ground of exploitative and unsafe working conditions while obscuring who has the responsibility and power to address them. For this reason, traceability and transparency are vital in creating sustainable and resilient supply chains and effective corporate governance.

Several digital solutions have been developed and introduced in the past decade to improve traceability and transparency, however, it is difficult for industrial stakeholders to understand these complex technologies and how to use them in daily operations. Hence, in order to break down the technical jargon, the objective of this project is to introduce the usability, practicability, and benefits as well as the challenges of digital solutions to improve traceability and transparency in the textile and agricultural sectors and provide recommendations to stakeholders who are interested in applying the solutions to their supply chains.

APPROACH AND DELIVERABLES

Through desk research and key informant interviews, a comprehensive report was developed as one of the final deliverables of this project. To ensure the ease of understanding of the complex technical information, 4 visually attractive infographic documents were developed along with this factsheet to introduce the overall project: digital solutions' challenges and its applications in the textile and agriculture sectors.

TECHNOLOGY OVERVIEW

Various technologies are used by these digital solutions to improve traceability and transparency. The technologies mentioned most in the report and infographic are listed below.

Distributed Ledger Technology (DLT)

DLT is a digital system for documenting asset transactions. The transactions and their data are stored simultaneously in multiple locations.

Artificial Intelligence (AI) and the Internet of Things (IoT)

Artificial Intelligence refers to systems or machines that mimic human intelligence by combining computer science and robust datasets to enable problem-solving. Both IoT and AI are often mentioned because data capture and analysis are crucial steps in supply chain traceability, transparency and resilience.

Blockchain

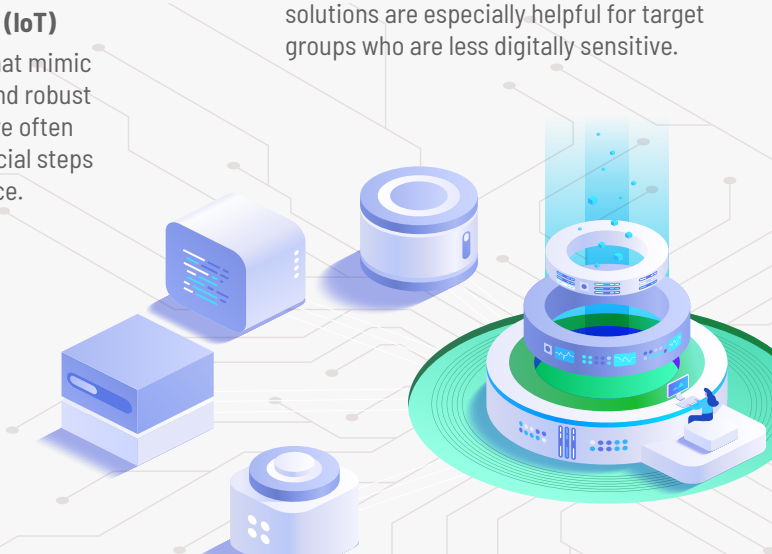
Blockchains are the most well-known implementation of Distributed Ledger Technology. It has been widely applied among various digital solutions to improve traceability and transparency.

Cloud-based Technology

Essentially, the cloud is in fact the Internet. Cloud-based technology enables SaaS (Software as a Service) and PaaS (Platform as a Service) operation models, which may reduce the complexity of developing and operating traceability solutions.

SMS & MS Office

Some simple but cost effective digital solutions such as Short Message Service (SMS) and MS Office software have and are being utilised for traceability. These solutions are especially helpful for target groups who are less digitally sensitive.



KEY FINDINGS

Different understanding of the definition of traceability and transparency among industrial stakeholders leads to different needs and usage of digital tools.

The tools described for this study are mostly based on blockchain technology, since blockchain offers the most secure platform/method to preserve and disseminate information.

The need for traceability and popularising it depends highly on consumers, both in textile and agricultural industries.

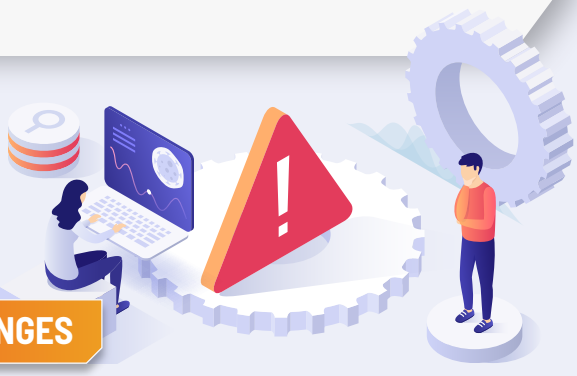
In agricultural industries, a significant portion of cost is associated with adopting traceability tools, but when it comes to scaling up the operations, the structure or the business model does not seem to work well.

A common set of standards in terms of traceability should be established for each industry.

Several advanced technology solutions that employ blockchain, AI, Cloud-based technology, etc. are applied by international or big corporations while simpler solutions such as SMS or MS-excel are utilised by small to medium enterprises or less hi-tech sensitive target groups.

BENEFITS

- Improving the efficiency, performance, operations of various businesses along the supply chain.
- Improving traceability and transparency from the product origin to final consumers.
- Increasing data integrity and security, therefore, facilitate trust among all stakeholders.
- Mitigating potential ESG related risks along the supply chain.
- Attaining a competitive advantage through transparent processes.
- Some solutions can reach the workers in remote areas, make information easily available and accessible and is cost effective for providers.

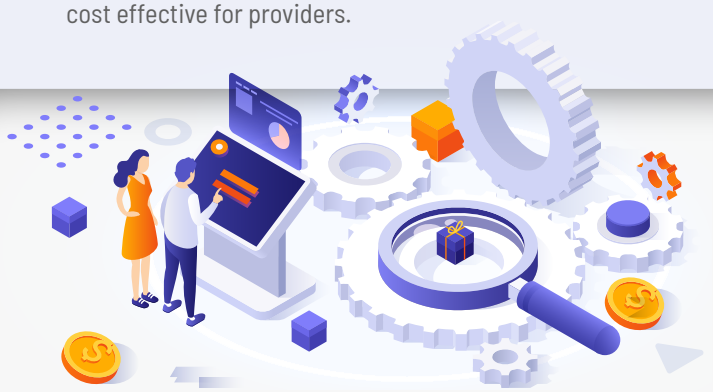


CHALLENGES

Several challenges were identified during the research for both digital solutions and its users in both sectors.

For solution providers: Communication with clients on technology and the data collection process, price negotiation, keeping the solution updated, training, lack of human resources, scalability.

For solution users: Substantial cost, lack of awareness, knowledge and willingness of using digital tools for upstream suppliers, different levels of employee digital literacy, lack of support from local governments.



RECOMMENDATIONS

- Collaboration: Better connect service providers and users through different formats of dialogue. Share best practices to enhance collaboration in the whole supply chain.
- Solution upgrade: Improve the usability and user-friendliness of specific software and applications.
- Training: Both awareness raising and technology trainings (e.g. data collection) are needed for manufacturers to realise the benefits and knowledge of applying digital tools to their business operations.
- Standardisation: A common set of standards in terms of traceability should be established for each industry.
- Government intervention: Governments should support the process of increasing traceability and transparency in supply chains and the usage of digital solutions. Related incentives should be considered.

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