

TRACE T3 project

IoT, Blockchain & Resale market for the lifestyle industry

WP1 – recap, conclusions and reflections

Copenhagen Business School:

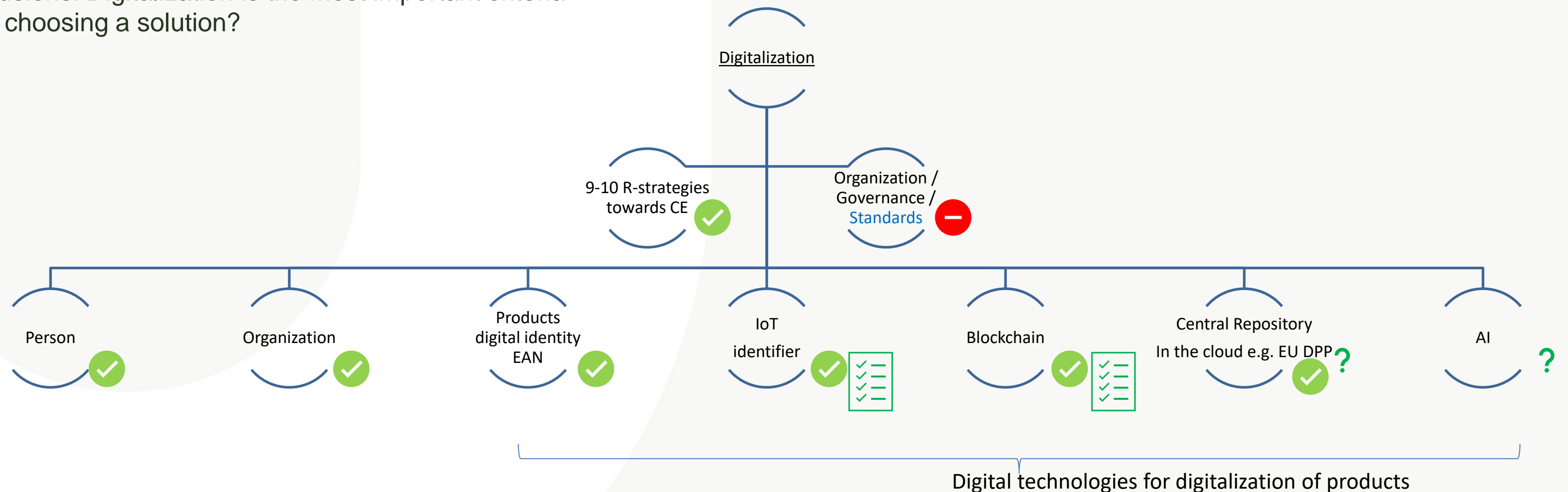
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Overview IoT, Blockchain & Resale market for the lifestyle industry

- Which digital technologies can support to scale the resale market?
 - * Conclusions: A solid base of digital technologies exist e.g. IoT, Blockchain, and the new AI
- How can new technologies accelerate the business opportunities toward circular economy?
 - * Conclusions: Digitalization is the most important criteria when choosing a solution?



IoT technology

- Which digital technologies can support to scale the resale market?
 - * Conclusion: IoT as digital identifier linking each product to its digital twin
 - * For an overview of IoT technologies, the table provides a solid base
 - * Reflection: Danish examples!

- How can new technologies *accelerate* the business opportunities toward circular economy?

* Conclusions: digitalization starting with digital identity is the most important criteria when choosing a solution for physical products!

* Reflection: how can digital technology accelerate resale for new products:

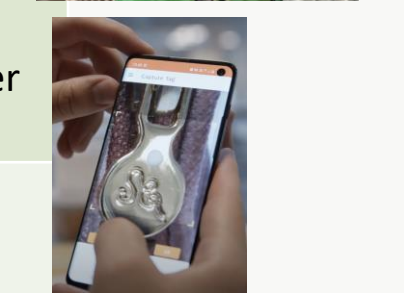
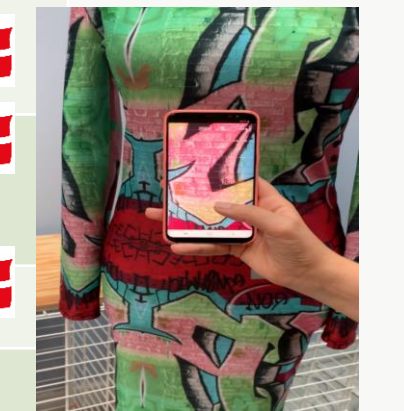
- Embed IoT(s) in products as digital identifier of its digital twin
- By a digital wardrobe with digital twins of products owned
- Providing sustainability information for all the 9-10 R-strategies
- Digital Product Passport demand by European Union*

* Reflection: how can digital technology accelerate resale for re-use of products:

- Attach IoT on or to products as digital identifier of its digital twin
- Embed IoT in products as counterfeit
- By a digital resell-webshop with the digital twins of products
- By a digital wardrobe with digital twins of products owned

* [Cirpass² DPP Expert Working Group 3 for Textile Stakeholders](#)

IoT technology	Use: Internal only / Consumers	Business examples
No physical identifier	Webshop with digital wardrobe	By Green Cotton Relove Reshopper Sassylab
Barcode	Internal Consumers via app on smartphone	Loppeklubben Coop
Rfid	Internal Consumers in shop via terminals	Samsøe Samsøe Textilia / Upcy Uniqlo
Qr code	Consumers via smartphone	Auktionshuset Ralph Lauren By Green Cotton Dilling Roccamore
Bluetooth	Consumers via smartphone	Avery Dennison
NFC	Consumers via smartphone	ARMEDANGELS Wehlers Fritz Hansen
Printed electronics, elastic/flexible	Consumers via app on smartphone	Mekoprint
Watermark	Consumers via app on smartphone	United Textile Group
Pufin	Consumers via app on smartphone	Ganni
Identifier by dna	Internal	Spoor
QR/NFC combined with NFT No identifier only NFT for textile batches	Consumers via app on smartphone Internal	Ariane Textile Genesis: Bestseller and H&M
Identifier marked on textile fibers	Internal	Aware



R0-strategy: Re-refuse / preference
R2-strategy: Re-use / re-sale



Blockchain technology

- Which digital technologies can support to scale the resale market?

* Conclusion:

- Blockchain technology can support sustainability across borders, utilizing Proof of Stake / Proof of Authority rather than PoW!
- For an overview of blockchain providers, the table provides a base for benchmarking solutions with main characteristics

* Reflections:

- Danish blockchain providers? [BrandTag](#)  and [Concordium](#) 
- How can SME businesses use blockchains?

- How can new technologies specifically blockchain *accelerate* the business opportunities toward circular economy?

* Conclusion:

- The organization and governance of digitalization is the most important and challenging criteria for scaling blockchain solutions

* Reflections:

- Blockchain technology can accelerate resale, but how to organize blockchain solutions? DAO, Nordic, EU DPP, UN, ..

Non exhaustive list							
BC provider	Provenance	After Sale	Fashion brands	Permission	Consensus	Token	Platform
Ariane	No	Yes	Moncler	Open permissionless	PoS	ERC-721	Polygon
Aware	Yes	No	Armed Angels	Open permissioned	PoS	ERC-1155	lotex
Bext	Yes	No	C&A	Private permissioned	PoA	No	Stellar
Aura	Yes	Yes	Loro Piana	private/ public	PoA	ERC-722	Quorum/ Polygon
Everledger	Yes	Yes	Alexander McQueen	private/ Consortium	N/A	NFT	Hyperledger Fabric (IBM)
Textile Genesis	Yes	No	H&M  Bestseller	private	N/A	Yes	Hyperledger Fabric (IBM)
Virgo	Yes	Yes	N/A	public/private	N/A	ERC-721	Ethereum
VeChain	Yes	Yes	BLOCKME	open	PoA	Own NFT	VeChainThor
Lukso	No	Yes	N/A	open	N/A	Own NFT	Lukso

Source: Thesis presentation by Caspar & Lotta, 2023