Evaluation of potential social impacts of hypothetical novel business models



- UNEP Guidelines for social life cycle assessment of products and organisations (2020) as a methodological background. No systemic evaluation made, however.
- Reflecting the framework also towards the Global Reporting Initiative (GRI) social standards (GRI:401-419), which are often used in sustainability reporting.
- Results based on literature, company workshops and interviews.
- <u>Scope</u>: Operational environment Finland and extentented to Europe, the hypothetical market however is Finland. Scope does not include the impacts on traditional production countries. Evaluation of use phase and end-of-life, not of production phase.

Product as a service – comprehensive solution for companies



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Business model	Marketing	Ownership	Stakeholders	Service offering	 Customer relationship 	Reference
Comprehensive, customizable The company offers their customer rental and repair services	B2B Marketing channels Online F2F	Ownership remains in the service provider's hands	B2B Platform provider ERP Data Logistics Repair/maintenance	Product portfolio for segmented B2B customer, customizable for each customer	Periodical charge Minimum time for rental	
****	·	· · · · · · · · · · · · · · · · · · ·	partners	*	**************************************	*• • • •
Ordering	Warehousing	Logistics	Use time	 Maintenace & repair 	Returns	••• End-of-life
Direct customer contacts Customized for B2B customers Online product portfolio	In service provider's warehouse	At the beginning of contract products are delivered for the customer During the rental period, the partner laundry delivers products for the customer or service provider	Rental time customizable	Partner laundry checks, washes, repairs and delivers back to customer or the service provider	Laundry returns the products to the service provider	Partner laundry checks the products The company defines end-of-life and usage of textile waste
/			Potential social impa	acts		
Transparency of product value chain > Solution: Product pass > Impact: trust, value chain/partners, consumers	Partners > Solution: laundry as a service > Impact: employment Hygiene > Solution: validation from the service provider > Impact: social norm like hygiene and quality	Partners Solution: wide logistical network Impact: employment, decentralised reponsibility	Customers and contract > Solution: personalisation > Impact: customer's commitment Tracking > Solution: product passport > Impact: matching the need Hazardous substances > Solution: laundry as a service, product pass > Impact: safety, wellbeing	Quality and efficiency > Solution: realiable partner > Impact: social norms like quality and intact Responsibility > Solution: realiable partner > Impact: decentralised responsibility, employment Price > Solution: traceability > Impact: value and appreciation > remunaration	Partners > Solution: realiable partner > Impact: employment User-frindly > Solution: wide network for returns > Impact: accessibility Price > Solution: traceability > Impact: accessibility, appreciation	Reponsibility > Solution: reliable partner, traceable value chain > Impact: decentralised responsibility, employment

Reuse – take back



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Business model	Marketing	Ownership	Stakeholders	Service offering	Customer · · · · · · · · · · · · · · · · · · ·	Reference
Take Back & 2nd life Company takes back their products from consumers, resale/2nd life	B2C Marketing channels	Ownership returns to the brand Consumer gets ownership when buying the products	Consumers Platform(s) Logistics	Brands own products (defective, samples, removals from stocks)	Consumers buys a used product online or at store	
Compensation for the consumer	Online Social media					
****	****	*••• •••	****	****	****	****
···		·**	******		******	*******
• Formation of • offering	Warehousing	Purchase	Logistics	Returns	Reuse potential	End-of-life
Brand takes back the product from a consumer Repairs and puts back in sales Resale	In service provider's warehouse	Customer gets the products online or at store	Customer returns used product (code for return) Company delivers the used product for the next customer (resale)	Product returns to the brand Second-hand products are not in resale (end-of-life)	Second-hand products recycled or upcycled	The company defines end-of-life and usage of textile waste
			Potential social impa	cts	_	
Customers > Solution: contract > Impact: commitment Consumption > Solution: supporting reuse > Impact: price, appreciation	Employees > Solution: competitive salary > Impact: wellbeing	Customers > Solution: contract > Impact: commitment	Partners > Solution: wide network for logistics > Impact: accessibility Tracking > Solution: product passport > Impact: privacy policy, traceability	Price > Solution: rating by condition > Impact: accessibility Partners > Solution: decentralised responsibility > Impact: growth in value	Quality > Solution: limited collection, extra services > Impact: longevity	Responsibility > Solution: reliable partner, traceable value chain > Impact: decentralised responsibility, employment



Social responsibility in business

- Read the table from left to right.
- The column on the left tells the name of each variable.
- The company or other actor can implement the variables on four separate stages (ok, good, very good, excellent).
- The stages are cumulative, each level must materialize for the actor to move onto the next stage.
- The company or other actor can at the same time be on different stages at different variables.



Social responsibility stages in circular business of textiles

	IMPLEMENTATION OF VARIABLES					
NAME OF THE VARIABLE	ОК	GOOD	VERY GOOD	EXCELLENT		
Code of Conduct	Code of conduct in effect	CoC followed	Implementation evaluated (possibly via 3rd party)	Results reported publicly		
Internal feedback	Grievance mechanism	Measuring and monitoring	Interference with problems	Changes in company policies and operation		
External feedback	Grievance mechanism	Reaction to feedback	Procedure	Changes in company policies and operation		
Remuneration	Employees with employment contract	Living wage	Equal pay	Employment of locals		
Stakeholders	Transparent and public value chain	Established partnerships	Partners involved in development work	Economically viable business ecosystem		
Product as a service	The product is sustainable, comfortable and safe	Repairable and refurbishable	Sustainable material	Closed loop system		
Reusable product	The product is sustainable, comfortable and safe	Remains its value (even repaired)	Recyclable material	Closed loop system		
Accessibility in reuse	Promise of product durability	Platform supporting reuse	Product used up	Valuable material returns to the company		
Transparency of product data	Internal trackability of products	Link to up-to-date product data within the product	Product data includes scope 3	Product data during use-phase collected		
Business model	Test	Pilot	Established part of business	Decreases the production of new products		
Sustainability communications	Communication on the current situation	Communication on the development	Communication on the future	Communication on the results and reaching the targets set		

Literature review references



Borg, D., Mont, O., Schoonover, H. 2020. Consumer Acceptance and Value in Use-Oriented Product-Service Systems: Lessons from Swedish Consumer Goods Companies. *Sustainability*. 2020; 12(19):8079. <u>https://www.mdpi.com/2071-1050/12/19/8079/htm</u>

Johnson, E. 2020. Dressing up the environmental potential for product-service systems: A comparative life cycle assessment on consumption in rental clothing vs. linear business models. *IIIEE Theses*. 2020; 16. <u>https://lup.lub.lu.se/luur/download?func=downloadFile&recordOld=9025941&fileOld=9025943</u>

Gray, S., Druckman, A., Sadhukhan, J., Keith, J. 2022. Reducing the Environmental Impact of Clothing: An Exploration of the Potential of Alternative Business Models. Sustainability, Basel. 2022; 14(10): 6292. DOI:10.3390/su14106292

Levänen, J., Uusitalo, V., Härri, A., Kareinen, E., Linnanen, L. 2021. Innovative recycling or extended use? Comparing the global warming potential of different ownership and end-of-life scenarios for textiles. *Environmental Research Letters*. 2021; 16(5). DOI 10.1088/1748-9326/abfac3

Zamani, B., Sandin, G., Peters, G. 2017. Life cycle assessment of clothing libraries: can collaborative consumption reduce the environmental impact of fast fashion? *Journal of Cleaner Production*. 2017; 162: 1368-1375. <u>https://dx.doi.org/10.1016/j.jclepro.2017.06.128</u>

Laukkanen, M., Tura, N. 2020. The Potential of Sharing Economy Business Models for Sustainable Value Creation. *Journal of Cleaner Production*, 2020; 253: 120004. https://doi.org/10.1016/j.jclepro.2020.120004

Hultberg, E., Pal, R. 2021. Lessons on business model scalability for circular economy in the fashion retail value chain: Towards a conceptual model. Sustainable Production and Consumption. 2021; 28: 686-698. <u>https://doi.org/10.1016/j.spc.2021.06.033</u>

Rossi, E., Bertassini, A., dos Santos Ferreira, C., do Amaral, W., Ometto, A. 2020. Circular economy indicators for organizations considering sustainability and business models: Plastic, textile and electro-electronic cases. *Journal of Cleaner Production*. 2020; 247: 119137. <u>https://doi-org.ezproxy.turkuamk.fi/10.1016/j.jclepro.2019.119137</u>

Daňo, F., Drábik, P., Hanuláková, E. 2020. Circular Business Models in Textiles and Apparel Sector in Slovakia. *Central European Business Review; Prague.* 2020; 9(1): 1-19. DOI:10.18267/j.cebr.226

Conscieme, L., Manshoven, S., Gillabel, J., Grossi, F., Mortensen, L. 2022. A framework of circular business models for fashion and textiles: the role of business-model, technical, and social innovation. Sustainability: Science, Practice and Policy. 2022; 18(1). <u>https://doi.org/10.1080/15487733.2022.2083792</u>

Sandin, G., Roos, S., Spak, B., Zamani, B., Peters, G. 2019. Environmental assessment of Swedish clothing consumption - six garments, sustainable futures. *Mistra Future Fashion;* 2019;05. ISBN:978-91-89049-05-5

Elander, M., Watson, D., Gylling, A. 2017. Evaluation of business models for increased reuse, collective use and prolonged life time of textiles. *Mistra Future Fashion;* 2017;4. ISBN: 978-91-88695-03-1

Gonçalves, A., Silva, C. 2021. Looking for Sustainability Scoring in Apparel: A Review on Environmental Footprint, Social Impacts and Transparency. Energies; Basel. 2021; 14(11): 3032. DOI:10.3390/en14113032

Bianchini, A., Guarnieri, P., Rossi, J. 2022. A Framework to Assess Social Indicators in a Circular Economy Perspective. Sustainability; Basel. 2022; 14(13):7970. DOI:10.3390/su14137970

Repp, L., Hekkert, M., Kirchherr, J. 2021. Circular economy-induced global employment shifts in apparel value chains: Job reduction in apparel production activities, job growth in reuse and recycling activities. *Reseources, conservation and recycling*. 2021: 171. <u>https://doi.org/10.1016/j.resconrec.2021.105621</u>

Scrapellini, S. 2021. Social impacts of a circular business model: An approach from a sustainability accounting and reporting perspective. Corporate Social Responsibility and Environmental Management. 2021; 29(3): 646-656. <u>https://doi.org/10.1002/csr.2226</u>

Wang, S., Su, D., Wu, Y. 2022. Environmental and social life cycle assessments of an industrial LED lighting product. *Environmental Impact Assessment Review*, 2022; 95: 106804. https://doi.org/10.1016/j.eiar.2022.106804

Lenzo, P., Traverso, M., Salomone, R., Ioppolo, G. 2017. Social Life Cycle Assessment in the Textile Sector: An Italian Case Study. Sustainability, Basel. 2017; 9(11): 2092. DOI:10.3390/su9112092

Sumter, D., Bakker, C., Balkenende, R. 2018. he Role of Product Design in Creating Circular Business Models: A Case Study on the Lease and Refurbishment of Baby Strollers. *Sustainability, Basel.* 2018; 10(7): 2415. DOI:10.3390/su10072415

Chong-Wen, C., Johnson, M. 2020. Improving Circular Economy Business Models: Opportunities for Business and Innovation: A new framework for businesses to create a truly circular economy. *Technology Review, London.* 2020; 64(1): 48-58. DOI:10.1595/205651320x15710564137538

Howard, M., Hopkinson, P., Miemczyk, J. The regenerative supply chain: a framework for developing circular economy indicators. *International journal of production research*. 2019; 57(23): 7300-7318. https://doi-org.ezproxy.turkuamk.fi/10.1080/00207543.2018.1524166

Vezzoli, C., Kohtala, C., Srinivasan, A. Product-Service System Design for Sustainability, 1st ed.; Greenleaf Publishing Limited: Sheffield, UK. 2014. ISBN 978-1-909493-69-8.

Mishra, JL., Hopkinson, PG., Tidridge, G. 2018. Value creation from circular economy-led closed loop supply chains: a case study of fast-moving consumer goods. *Production Planning & Control.* 2018; 9(6): 509-521. ISSN 0953-7287

Silva, S., Santos, A., Duarte, P., Vlačić, B. 2921. The role of social embarrassment, sustainability, familiarity and perception of hygiene in second-hand clothing purchase experience. International Journal of Retail & Distribution Management. 2021; 49(6). ISSN: 0959-0552

Trzepacz, S., Bekkevold, D., Asscherickx, L., Peeters, K., van Duijn, H., Akerboom, M. 2023. LCA-based assessment of the management of European used textiles. *EuRIC Textiles Report*. <u>https://euric.org/images/Position-papers/lca-based-assessment-of-the-management-of-european-used-textiles_corrected.pdf</u>.

Suarez-Visbal, L., Carreón, J., Corona, B., Worrell, E.. The Social Impacts of Circular Strategies in the Apparel Value Chain; a Comparative Study Between Three Countries. *Circular Economy and Sustainability*. 2023; 3: 757-790. https://doi.org/10.1007/s43615-022-00203-8

