NICER PROGRAMME & INNOVATE UK

CIRCULAR ECONOMY FOR SMEs

RoundRack

MEASURING IMPACT, DIGITIZING SUPPLY CHAINS: A MATERIAL IMPACT TOOL FOR THE CIRCULAR TEXTILES ECONOMY

The Challenge: What We Were Trying to Achieve

The textiles industry has long struggled with the lack of a standardised approach to evaluating the sustainability of materials. While there are some general ideas about what criteria should be used to assess sustainability, the industry has been slow to adopt these standards due to the complex and challenging nature of obtaining, extracting, and communicating this information. However, RoundRack has taken up the challenge to create a Material Impact Tool (MIT) that will assess the sustainability of materials in real-time, based on minimum sustainability requirements (MSR) co-developed with the Royal College of Art and tested with brands and suppliers. By streamlining the assessment process and enabling real-time alignment between brands and suppliers, RoundRack's MIT has the potential to revolutionise the industry and drive widespread adoption of sustainability standards.

The Approach: How We Tackled the Challenge

A collaborative session attended by the full project team identified key objectives and criteria for the minimum sustainability requirements (MSR) and Material Impact Tool (MIT).

- **Minimum Sustainability Requirements** that are both necessary and feasible to obtain from a given material.
- **Material Impact Tool** that can extract and assess the sustainability levels of a given material based on the MSR criteria. Since this tool theoretically involves AI/ML capabilities, we aim for the project to reach a satisfactory level of accuracy within the timeline and budget of the project.

In the early months of the project, we focused on the development of the MSR, including identifying the MSR criteria, conducted data research for MSR design and build, developed MSR assessments, and defined the resulting technical development plan.

We then entered a pre-trial build and testing phase, putting the MIT to the test. This helped us to understand the tech stack structure and included algorithm development, a security audit, the creation of high-level fidelity wireframes and prototypes of the MIT and resulting dashboards based on MSR criteria, and testing customer journeys by focusing on User Experience (UX) and User Interface (UI).

The latter stages of the project focused on testing the

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MIT with trial partners and monitoring and disseminating trial data. Based on the findings, any necessary adjustments were made to the technology plan. During this time, we also paid a lot of attention to commercial development and exploitation. This included assessing the IP (Intellectual Property) strategy, refining the business case for adoption based on trial results and data, and disseminating research and trial findings.

Unexpected Outcomes: What We Learned Along the Way

RoundRack has taken a proactive approach in identifying the primary challenges faced by the supply chain strand and is proposing a platform solution to encourage brands to adopt innovative materials. The development of this solution involved collaborating with the UKRI Textiles Circularity Centre at RCA, as well as engaging brands and suppliers. As a result, a self-service platform has been created, along with an impact and sustainability assessment guide, to support the adoption of sustainable materials by brands.

Key Learning: What We Would Do Differently Next Time

The focus of the project started with creating a 'baseline' for impact assessment and a standard for communicating sustainability highlights. As we moved along it became clear that the greater challenge is a technical and logistical one – understanding the technical aspects of these materials and streamlining the work, the knowledge transfer, and correspondence in an innovation project. The focus then shifted to making the data and functionality accessible, testing it with 2 pilots.

The Outcome: What We Achieved and How It Has Impacted the Business, Society and Key Stakeholders

RoundRack could be the platform that aligns industry players, encourages openness, networking, and collaboration to achieve a common goal and the industry would benefit from a system that supports greater transparency. We believe we have demonstrated this throughout the research project. The feedback received, combined with the connections that we have established, has been clearly an instrumental part of our work and we are looking forward to continuing in this direction, increasing our collaboration with the wider industry.

Looking Forward: Next Steps and Future Directions

Next up, we intend to build on the important insights developed throughout the project. Namely, we will:

1. Further develop self-service capabilities for both brands and suppliers to fully hone their own data, with more choice of what to share (supplier) and what to request (brand)
2. Invest in development of AI capabilities to streamline the data uploading and sharing function of materials, as this is perhaps the greatest blocker from users using this platform and adopting sustainable materials

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