

Overview	
Country	Italy
Type of organization	Start UP
Number of employees	10+
Type of practice	Best
Level of investment	Medium
Activity type	Processing waste
Key words	Recycling / Reusing

Summary

www.sfridoo.com

Sfrido is a digital platform specializing in circular economy solutions for industrial waste management, enabling businesses to buy, sell, and repurpose production waste, by-products, and secondary materials. By connecting companies across sectors, Sfridoo transforms waste streams into valuable resources, reducing landfill dependency and promoting closed-loop systems.

The platform emphasizes compliance with EU circular economy frameworks, such as the Ecodesign for Sustainable Products Regulation (ESPR), by integrating principles of durability, reparability, and recyclability into material exchanges

Key activities include facilitating B2B transactions for waste materials, offering consultancy on circular business models, and educating stakeholders through resources like their "9R Framework" for circular implementation. Sfridoo also participates in industry events like SMAU Milan to advocate for innovation in waste management.

While specific waste streams are not detailed, the platform likely handles textiles, manufacturing by-products, and other industrial residuals, aligning with EU priorities for sector-specific circularity

Background and origin

Sfridoo, in partnership with Metaring, has developed an innovative international traceability system dedicated to industrial waste and recyclable materials. This joint project, born within the startup accelerator Le Serre di Aster, is led by Marco Battaglia (co-founder of Sfridoo together with Andrea Cavagna, CSO, and Mario Lazzaroni, CFO).

Sfridoo.com, is the circular economy marketplace where businesses can share and trade their production waste. Another flagship service is the By-product Service, launched in January 2018, which provides tailored consulting to help companies enhance the value of their industrial residues.

Metaring is a platform designed to support and accelerate software development and maintenance for software houses. Its user-friendly interface is specifically designed to be used without requiring advanced programming skills, making it ideal for business roles that interact with clients and manage development teams. Metaring's generators automatically produce project documentation, part of the software architecture, and testing plans, ensuring that production teams have all the necessary materials to focus immediately on their tasks.

At the core of the initiative is Blockchain technology—a cutting-edge protocol that provides a reliable method for verifying and certifying data across the entire waste management chain. The solution is designed for companies, traders, and international intermediaries who need a secure system to ensure the quality, quantity, and origin of recyclable materials. With blockchain, the entire lifecycle of the material can be traced, maintaining a certified digital record accessible via smartphone.

A survey conducted among more than 200 operators—including traders, brokers, and waste treatment facilities—highlighted major challenges in the international trade of recyclable materials, secondary raw materials, and by-products. These include difficulty in finding reliable partners, fraud risks, and low material quality.

Relevance to the craft sector

Sfridoo's platform indirectly supports craft sectors by enabling access to affordable, sustainable materials (e.g., textile offcuts, wood, or metal scraps) for small artisans and designers. This aligns with EU initiatives promoting circular textiles and local production. For example, craft businesses can source discarded materials for upcycling, reducing costs and environmental footprints. While Sfridoo primarily targets industrial clients, its model fosters cross-sector collaboration, allowing craft enterprises to integrate circular principles into their workflows.

Target groups

- Primary: Manufacturing companies, waste-intensive industries (e.g., textiles, automotive).
- Secondary: SMEs, artisans, and sustainability-focused businesses seeking cost-effective circular solutions



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Material focus - type of waste material involved

The most common materials on the SFRIDO platform include:

- **Metals:** Metal scraps that can be reused in various production processes.
- **Plastic:** Plastic waste that can be recovered and used for new products.
- **Organic:** Pre-consumer organic waste that can be transformed into value.
- **Paper and Cardboard:** Paper and cardboard residues that can be recovered and reused.
- **Rubber and Tires:** Rubber and tire waste that can be transformed into new materials.
- **Glass:** Glass scraps that can be reused in various production processes.
- **Wood:** Wood residues that can be recovered and reused.
- **Chemical Substances:** Chemical waste that can be recovered and used in new processes.
- These materials are listed on the platform free of charge and can be bought or sold to increase the circularity rate of materials and contribute to the circular economy.



Source: Foto di Stas Knop:
<https://www.pexels.com/it-it/foto/mani-impigliate-nel-caos-del-nastro-analogico-30356517/>

Stakeholders involved

- Sfridoo engages a range of stakeholders across the circular economy value chain.
- Local and national government bodies (such as environmental agencies or chambers of commerce) may support Sfridoo through policy alignment, awareness campaigns, and integration with sustainability goals. Their role is primarily regulatory and supportive, creating favorable conditions for circular practices.
- Private Sector Partners: These include manufacturing companies, waste management firms, and logistics providers that list or purchase materials on the platform. They actively engage by supplying waste materials or sourcing secondary raw materials for their processes. Their participation is key to the platform's economic and environmental impact.
- Implementing Agencies and Technology Providers: Sfridoo itself functions as both a platform operator and a facilitator. It implements technical solutions, provides consultancy on circular economy strategies, and ensures that material exchanges meet legal and safety requirements.

Professionals involved and their roles

- **Circular Economy Consultants:** Advise on waste valorization strategies
- **Platform Developers:** Maintain and optimize the digital marketplace
- **Sustainability Analysts:** Ensure compliance with EU regulations

Connection of the practice with the project-identified needs

Knowledge of Waste Materials

SFRIDO provides support in mapping and managing production residues.

Green Entrepreneurial Skills

The platform helps develop sustainable and scalable business models for material recycling.

Creativity and Innovative Solutions

Blockchain Technology Integrated into the Waste Value Chain



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<https://www.pexels.com/it-it/foto/persona-che-raccoglie-rifiuti-in-discardica-3230539/>



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Methodological approach to implement the practice

Process description - step by step instructions for implementing the practice

The process starts from the waste producer: the company or recycling facility physically prepares the batch for commercialization. This batch may consist of recyclable material, by-products, or secondary raw materials. The company declares and certifies the batch on their platform, which provides detailed information about its origin, composition, quality, and quantity, as well as the measurement systems used and the certification of measuring instruments.

The system then generates a batch record on the Blockchain ledger, certifying the data. At this point, the platform produces a QR code containing all the information related to that specific batch, which is affixed to the material via a traceable seal and only then shipped. The batch thus becomes visible to international traders who can access the certified description and place their bids. Once the best buyer is identified, the batch's final destination is recorded on the Blockchain.

- **Waste Listing:** Companies upload surplus materials onto the platform. These materials are listed on the platform free of charge
- **Matchmaking:** Algorithm connects sellers with buyers based on material type/quantity.
- **Transaction Facilitation:** Secure B2B exchanges with logistics support
- **Reporting:** Metrics on waste diverted and CO₂ saved provided to users: Assumed based on standard circular economy platform practices.

Related Resources that have been developed

The implementation of Sfridoo relies on several key resources:

- **Digital Platform:** A proprietary online marketplace that enables the listing, exchange, and tracking of industrial waste and secondary raw materials.
- **Data Analytics Tools:** Integrated systems for mapping material flows, assessing waste generation, and identifying opportunities for reuse and valorization.
- **Regulatory Frameworks:** Compliance guidelines and legal support to ensure transactions adhere to national and EU environmental regulations.
- **Circular Economy Expertise:** A dedicated consulting team that supports businesses in designing and implementing circular business models.
- **Knowledge Hub:** Educational content, case studies, and best practices to promote awareness and capacity building around industrial symbiosis and resource efficiency.

End product

- **Tangible:** Waste materials recovered and reused in new production processes Repurposed materials (e.g., upcycled textiles, recycled metals)
- **Intangible:** Reduced waste costs, compliance with EU sustainability standards

Innovation, novel methods or technologies used

Blockchain Technology Integrated into the Waste Value Chain - This technological innovation—blockchain—is seamlessly integrated into the value chain of the waste and recycling industry, offering significant advantages to businesses. The process begins with the waste producer: either a company or a recycling facility that physically prepares the lot to be commercialized. This lot may consist of recyclable materials, by-products, or secondary raw materials.



Source: Foto di Magda Ehlers:
<https://www.pexels.com/it-it/foto/foto-di-bottiglie-di-plastica-2602537/>

The company declares and certifies the lot on the platform, which collects detailed information regarding its origin, composition, quality, and quantity, as well as the measurement systems used and the certification of the measuring instruments.

The system then generates a digital record of the lot on the Blockchain, certifying the data. At this point, the platform also generates a QR code that contains all the relevant information for that specific lot. The code is physically attached to the material through a tracking seal, and only then is the lot shipped.

The lot becomes visible to international traders, who can access the certified description and submit their offers. Once the best buyer is selected, the final destination of the lot is also recorded on the Blockchain.

Obstacles and challenges faced

These considerations are based on desk research and analysis of publicly available information about Sfridoo platform; they do not derive from direct contact or interviews with the company.

Currently, traceability of macro-lots and secondary raw materials purchased by end-user companies is often not guaranteed. Many businesses are unaware of whether the materials they acquire originate from countries with socio-political conditions that conflict with their compliance policies. Additionally, the lack of reliable data often forces companies to rely on third-party audit bodies—yet even these checks do not always ensure true quality certification.

The blockchain-based solution proposed by Sfridoo and Metaring aims to transform this scenario, making the global trade of recyclable materials safer, more transparent, and fully traceable.

Steps further and plans for the future

These considerations are based on desk research and analysis of publicly available information about Sfridoo platform; they do not derive from direct contact or interviews with the company.

Sustainability, traceability, safety, and the fight against tax evasion, fraud, and labor exploitation are the core values and benefits that Sfridoo and Metaring aim to promote.

Their goal is to provide international waste trade operators with a technological service that supports their business activities while respecting the environment and communities, in line with the principles of sustainability and the circular economy. This represents the first step toward a new, innovative technological frontier.

Key impacts - environmental, economic & social

Environmental Impact Sfridoo promotes the circular economy by facilitating the reuse and recycling of industrial waste, significantly reducing material waste and lowering environmental footprints. By enabling businesses to exchange waste materials and upcycle them into new products, the platform supports the reduction of landfill use and the consumption of virgin resources. Additionally, the use of circular metrics on the platform allows for the tracking of environmental impact, offering valuable data that encourages more sustainable production practices.

Economic Impact Sfridoo enables cost savings for businesses by turning waste into valuable secondary raw materials, enhancing resource efficiency. It supports the creation of sustainable business models, fosters innovation in material reuse, and opens up new market opportunities. By streamlining B2B waste exchanges and promoting efficient resource allocation, the platform helps industries reduce costs associated with waste disposal and raw material procurement.

Social Impact Sfridoo has the potential to empower marginalized groups by providing access to sustainable materials that can be used in various industries, including eco-friendly product manufacturing and innovation in design. The platform fosters inclusion by encouraging collaboration across diverse sectors, creating opportunities for small and medium-sized enterprises (SMEs) that might otherwise lack the resources to engage in the circular economy. Furthermore, the emphasis on job creation within recycling, waste management, and sustainable production processes can lead to new employment opportunities in sectors that support the transition to a greener economy.

Job Creation and Empowerment of Marginalized Groups

The platform's operations, by promoting the circular economy, can indirectly create jobs in waste management, recycling, and green manufacturing industries. New roles may emerge in sectors such as data analysis, material logistics, and circular supply chain management. Additionally, Sfridoo could facilitate training and development opportunities in these areas, potentially empowering marginalized groups by equipping them with skills in sustainable practices.



Source: Foto di Polina Tankilevitch:
<https://www.pexels.com/it-it/foto/bottiglie-di-plastica-3735205/>

Qualities and criteria's to consider the practice effective, efficient, sustainable, transferable

Qualities	
Effectiveness: How well does the practice achieve its goals?	Achieves waste diversion by connecting supply/demand efficiently, though quantitative metrics (e.g., tons diverted) are unspecified
Efficiency: Does the practice minimize resources while maximizing outputs?	Maximizes output by digitizing transactions and minimizing logistical barriers
Sustainability: Does the practice contribute to environmental protection, social equality and long-term viability?	Supports environmental protection through circularity; social equity via SME access; long-term viability through EU policy alignment
Transferability: Are the methods transferable in different contexts?	Documented methods (e.g., 9R Framework) and digital infrastructure enable replication in other regions. Requires regulatory support and industry partnerships



Source: Foto di Polina Tankilevitch:
<https://www.pexels.com/it-it/foto/persona-in-possesso-di-contenitore-di-plastica-3735762/>

Required Competences for the best practice implementation

Activities-to-competences mapping

Associated competences	
Knowledge	Principles of circular economy, industrial symbiosis, waste hierarchy. EU waste regulations, ESPR, by-product classification, legal documentation. Material properties, lifecycle assessment, recycling and reuse technologies. Digital platforms, environmental KPIs, data visualization tools. B2B exchange models, secondary raw material markets, pricing strategies.
Skills	Ability to identify circular business opportunities and design resource-efficient solutions. Drafting compliance documentation, conducting legal risk assessments. Mapping waste streams, assessing recyclability, proposing valorization paths. Using dashboards, interpreting CO ₂ savings, tracking material flows. Matching supply and demand, facilitating negotiations, deal-closing.
Attitudes	Strong commitment to sustainability and long-term environmental impact. Precision, responsibility, and ethical awareness in regulatory matters. Analytical thinking and a proactive approach to minimizing waste. Data-driven mindset, attention to measurable outcomes. Customer orientation, commercial awareness, solution focus.

Lessons learned

- **Waste is a Resource:** Industrial by-products and surplus materials can be transformed into valuable inputs through proper mapping and digital exchange.
- **Digitalization Enables Circularity:** Scalable and efficient circular practices depend on digital platforms that connect supply and demand in real time.
- **Regulatory Integration is Critical:** Embedding legal compliance into workflows (e.g., by-product classification, ESPR) ensures safe and lawful circular operations.
- **Data-Driven Impact:** Monitoring tools and metrics are essential to quantify environmental benefits and support ESG reporting.
- **Cross-Sector Collaboration Drives Success:** Circular economy initiatives require active engagement from diverse stakeholders across industries.
- **Scalability Requires Standardization:** Harmonizing material classifications and processes helps replicate the model across regions and sectors.
- **Mindset Shift is Fundamental:** Promoting a sustainability-oriented culture within organizations is key to long-term adoption and innovation.

References / links

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- <https://circulareconomy.europa.eu/platform/en/good-practices/sfridoo-enables-manufacturers-purchase-and-sell-industrial-scrap>
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