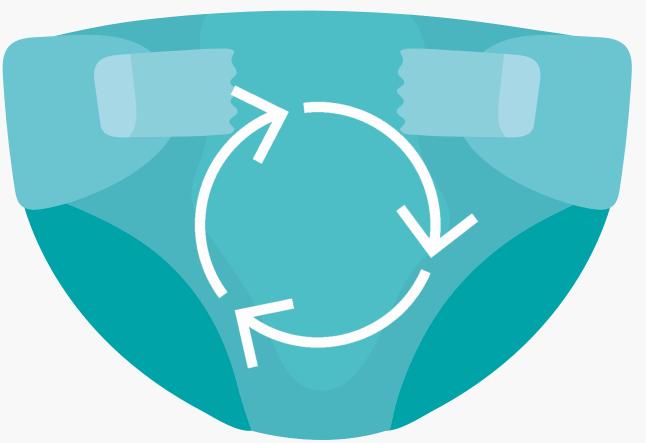


Hackathon: the circular diaper

Team 7 - FLOSS

The Circular Diaper Project



FLOSS team for Edena hackaton

THE CIRCULAR DIAPER PROJECT

Meet the team

Swarno Bhattacharya



Project Manager CDP

Selene Lepoutre



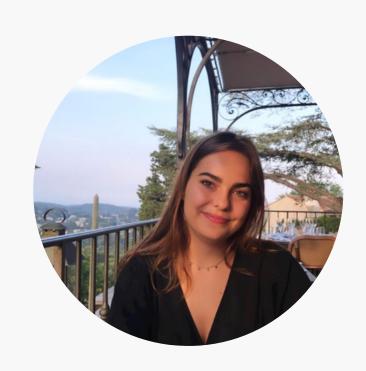
Partnership Manager CDP

Lorenzo Roveda



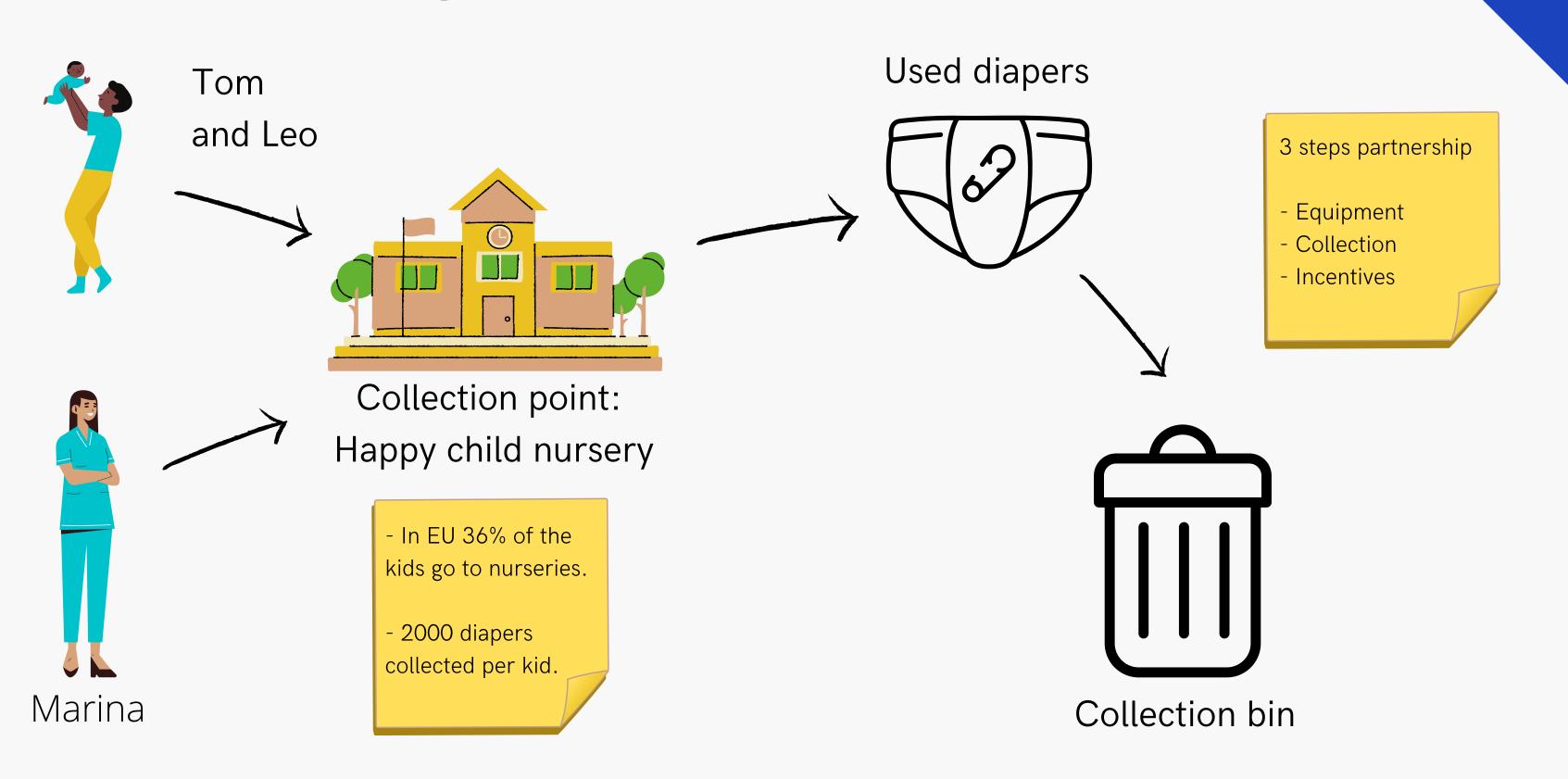
Product expert CDP

Flore Pradelle

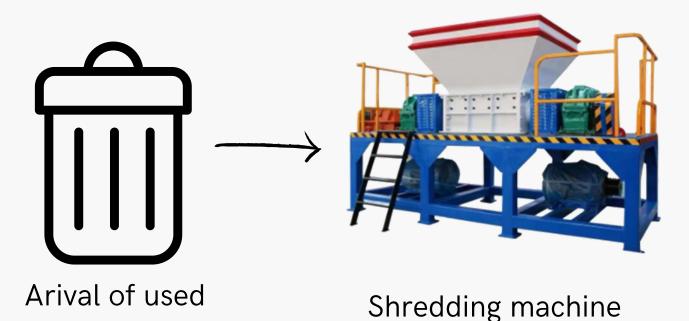


Marketing
Manager at a
diaper company

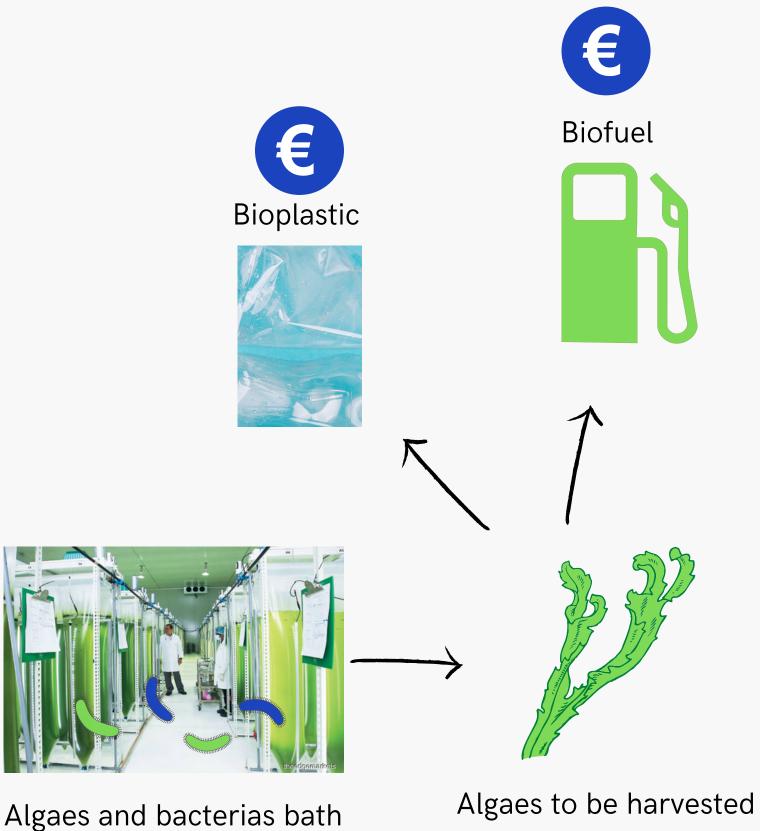
Collecting the diapers



Transforming the diapers: process



diapers

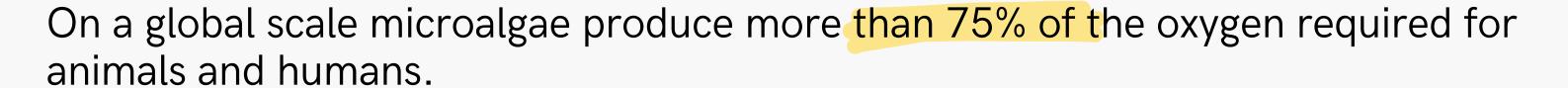


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Introducing Chlorella Algae

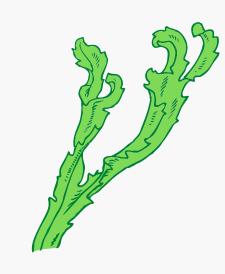
Algae and Cyanobacteria create an ecosystem.

Absorbs plastic and CO2.



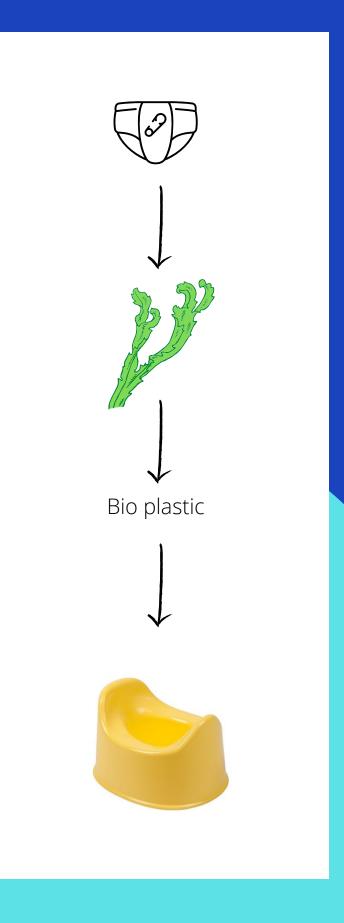
Used for the generation of Bioplastic & Biofuel.





New opportunities

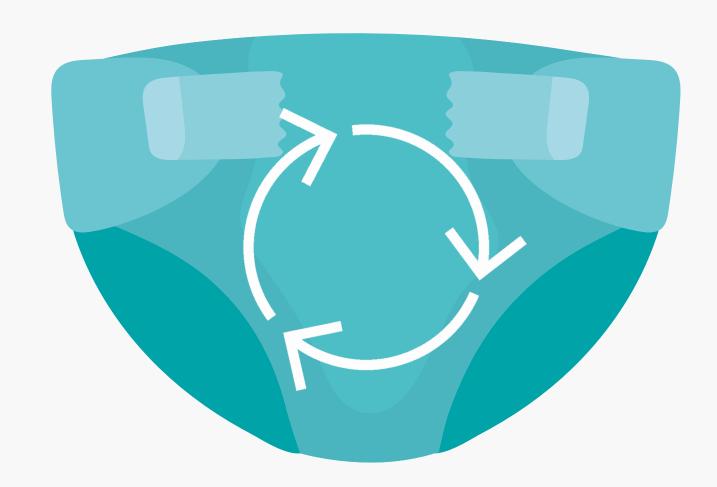
- Becoming an industry pioneer in sustainability.
- Great marketing opportunities
- Reaching a new segment (toddlers) and adding
- a product to our portfolio
- Taxation incentives
- Making money out of waste



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or Vistening! Thank lave any

Appendix



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Key Partners



Key Activities



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Value Propositions



Customer Relationships



Customer Segments



- Baby nurseries
- Logistic companies
- Partner companies like Ontex, Woosh, P&G
- Research institutions
- Governments

- Collecting the diapers
- Transforming the diapers
- Partnership management
- Supply chain management
- Creation of sustainable way to recycle used diapers
- Conversion of Algae to bio plastic which can be used to create more sustainable plastic products
- Conversion of Algae to bio fuel which is a more sustainable energy source
- Saving the Earths environment as Algae creates oxygen at massive levels

- Customers' involvement in the circular processes
- Customers preference to use new products which are more sustainable
- Incentives for nuseries
- -Companies buying the raw materials.
- End-consumers (for the potty project)
- Partner companies

- Algae & Cyanobacteria
- Networks

Key Resources

Experts

Channels



- Business to Business (Collecting and sending of Diapers to plants)
- Business to Business (Use of bio plastic and bio fuel)
- Business to Consumers (Parents of babies purchasing diapers)

Cost Structure

- Transportation & Collection cost
- Cost of establishing the Plants
- Cost of Operation (Marginal cost of Operation)



Revenue Streams



- Selling the new raw material
- Turning the new raw material into a new product and reselling this product (eg. potty)
- Incentives from the government

SWOT analysis

Strength

Sustainable Process

Creation of a circular business

model for diapers

Obtaining bioplastic and

renewable energy in biofuel

Weakness

Expensive technology (currently)

Requires a lot of space

Opportunities

Mass scale expansion

Government funding and tax incentive

Mass awareness and brand

preferability

Threats

Climate change (optimal temperatures required)

Alternative solutions

Researches proved that Pleurotus ostreatus fungi can degrade 90% of the mass and volume of diapers in 70 days. The fungi are edible and can be used to extract proteins and other nutritients.

<u>A second solution</u> is to obtain <u>BioHydrogen</u> from diapers, based on the solid substrate anaerobic hydrogen fermentation with intermittent venting and headspace flushing.

References

- 1. Review of plastic biodegradation and bioplastic production techniques using algae, to solve the increased global plastic waste.
- 2. <u>Different approaches</u> for composting diapers
- 3. Bioplastic production from microalgae
- 4. A state of the art review on the cultivation of algae for energy and other valuable products: Application, challenges, and opportunities.
- 5. <u>Production of bioplastic using Spirulina</u> platensis and comparison with commercial plastic
- 6. Microalgae to biofuels: 'Promising' alternative and renewable energy, review
- 7. <u>Hints at the Applicability</u> of Microalgae and Cyanobacteria for the Biodegradation of Plastics
- 8. <u>Biohydrogen production from used diapers</u>
- 9. <u>Abiotic and Biotic Degradation of Oxo-Biodegradable Plastic Bags by Pleurotus</u> ostreatus

References

- 10. <u>Bioplastics and their thermoplastic blends from Spirulina and Chlorella microalgae</u>
- 11. Microalgae as bioreactors for bioplastic production
- 12. Degradation of Green Polyethylene by Pleurotus ostreatus