EIRAVATO
CIRCULAR ECONOMY DELIVERED

The Most Comprehensive Waste Management Software

Systemic Waste Digitization technology enabling commercially driven, multi-stakeholder Circular Economy.

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Old solutions to new problems in a changing world.

Waste is designed with linear approach, outcomes are measured in landfill, incineration and recycling.

Transformation Barriers:

- Lack of data standardisation and transparency.

- Linear Waste Classification – no access to intelligence.

- No visibility of infrastructure deficits and cost generators.

- Near Impossible to discover potential projects.

- No benchmarking or collaboration.

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DEFINE

MEASURE

ANALYSE

IMPROVE

CONTROL

Systemic Digital Solution for Circular Transformation.

With data, EIRAVATO empowers customers to deliver **Net Zero targets TODAY**, by adopting **data driven LEAN strategies** transforming **waste into Circular Opportunity**.

We help to:

- **Analyse existing lifecycle**
- **Discover Material Opportunities**
- **Reduce Risk**
- **Identify Hidden Costs**
- **Advance ESG Reporting**

- **Capture Value & Revenue**
- **Source Sustainable Materials**
- **Create Long term Goals**
- **Achieve Accreditation**

Defining Value.

Real transformation starts from within.

EIRAVATO has devised digitized material classification model that productises waste by capturing unique material characteristics.

Aligned material data enables value chain collaboration, supporting communication and understanding of supply-demand relationships.

Our waste classification model has been certified by Carbon Trust and is compliant with **PAS:2050**.

Partnerships towards lifecycle control.

Sustainability is not the domain of one, it is a collective effort of many that rewards real commercial and environmental impact.

EIRAVATO delivers tool enabling multi-stakeholder collaboration in support of each stage of the material lifecycle. From waste creation to end of life.

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Build innovative Solutions with Partner Network:

- Collaborate with actors and partners.

- Establish common goals and roadmaps.

- Retain control over lifecycle of materials.

- Reduce Waste, Landfill and Incineration towards Circular Reuse

- Discover Local solutions to value chain problems.

Different roles, common goal.

Shared Focus & **Knowledge Exchange** towards cross-organization **Collective Solutions**.

Enabling **Global 360 Visibility** with **Real Time Data Feeds** to **Command & Control**.

Tools for:

- Data Teams
- EHSS
- Plant Managers
- Sustainable Design Teams

- PR & Marketing
- Governance Leads
- Finance
- C-Level

Pilot.

Proposed pilot is to digitize existing data sets and assess lifecycle of various materials to discover potential cost and sustainability driven opportunities.

Work towards organization goals to deliver tools that support delivery of SDG targets and accreditations.

Proposed Actions:

- Digitize existing data and deliver data automation. Automating data, allows people on site to be more efficient and focus on their core business.

- Design lifecycle assessment of existing materials. This allows build relevant roadmap/action plans for waste.

- Support in delivery of compliance standards and accreditations (EN, EMAS, ZWTL) Deliver Traceability to know final recovery – landfill, incineration, recovery.

- Understand organization needs and goals.

- Identify potential new ways for material recovery or optimisation of existing process.

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What can be discovered

Whilst many organizations deliver outstanding waste management practices, some hidden elements can only be discovered with the power of machine learning. Here are some examples of most common discoveries:

- Sources of contamination/cost generators.

- Data gaps.

- Unnecessary waste management costs.

- Lean process improvements.

- Confirmation of the destination of waste.

- Lifecycle journey optimisations.

- Better outcomes of for waste.

What is required.

- Point of contact with knowledge of location.

- Access to waste data 2 past years.
  - In-house reports
  - Waste partner reports
  - Invoices from waste partners
  - Transport and Waste Facility Licences

- Waste contractor information.

- Site blueprints with bin allocation.

- Photo images of waste.
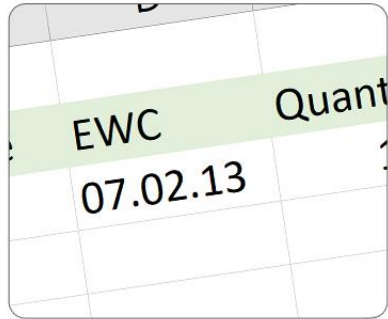
Case Studies.

How data can enable SDG Goals.

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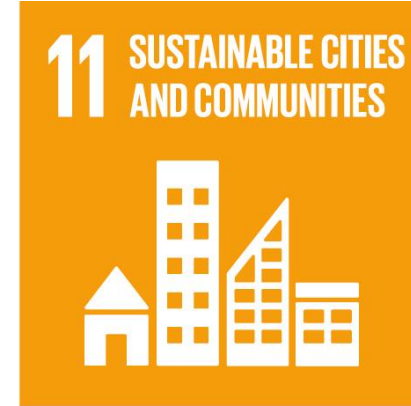
Example 1

Post production material mixed with other plastics. Due to low quantities of various resin within the mix Waste considered non-recyclable and used for waste to energy.

Basic Waste Data Digitized

Valuable Material Discovered

LEAN capture method implemented.
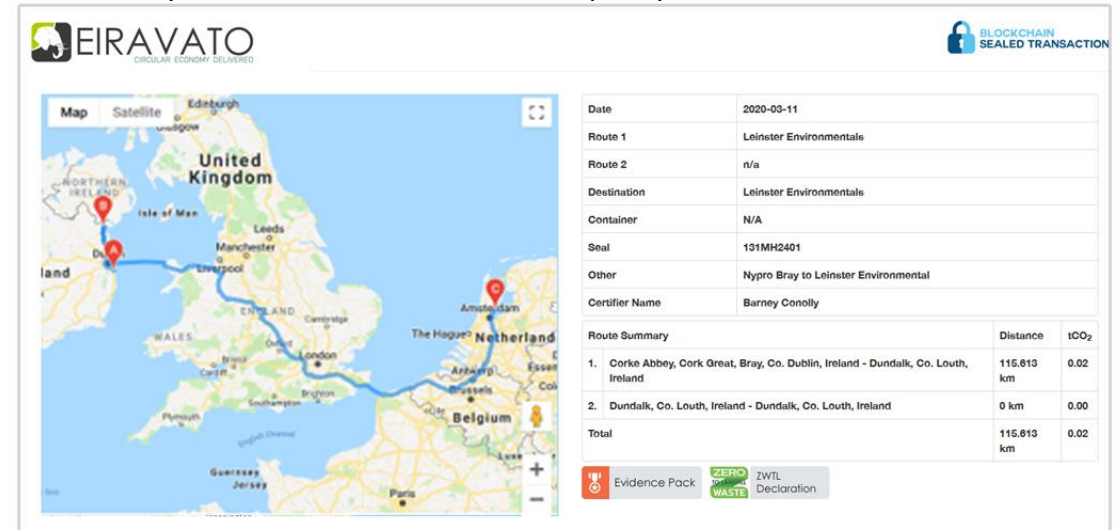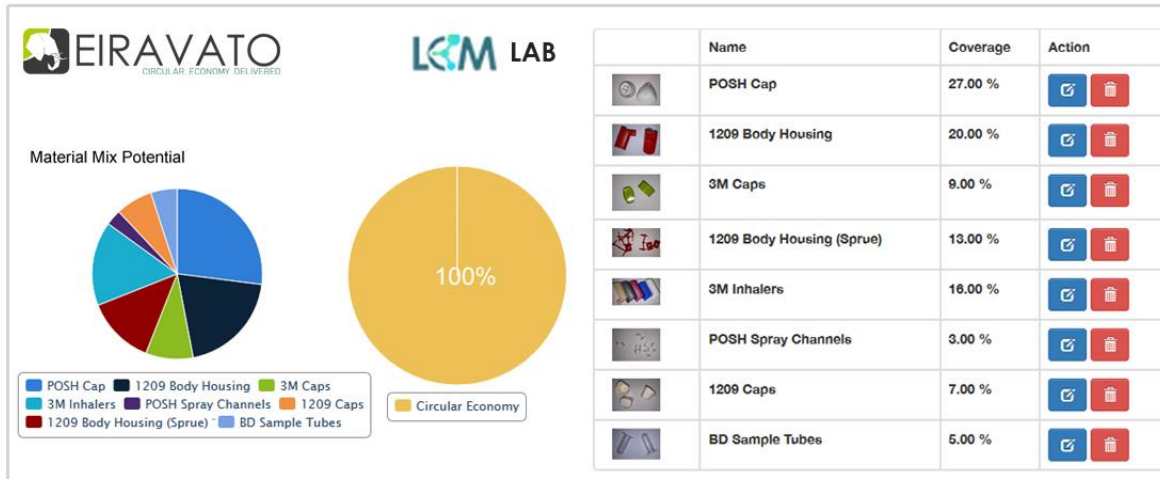
New Partner discovered.

New Product

EWC
07.02.13

Quant

EIRAVATO deploys deep material analytics and predictive assessment identifying materials.

Traceability enabled to maximise material quality and value.

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Material Mix Potential

100%

	Name	Coverage	Action
	POSH Cap	27.00 %	
	1209 Body Housing	20.00 %	
	3M Caps	9.00 %	
	1209 Body Housing (Sprue)	13.00 %	
	3M Inhalers	16.00 %	
	POSH Spray Channels	3.00 %	
	1209 Caps	7.00 %	
	BD Sample Tubes	5.00 %	

POSH Cap · 1209 Body Housing · 3M Caps · 3M Inhalers · POSH Spray Channels · 1209 Caps · 1209 Body Housing (Sprue) · BD Sample Tubes · Circular Economy

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Date	2020-03-11
Route 1	Leinster Environmentals
Route 2	n/a
Destination	Leinster Environmentals
Container	N/A
Seal	131MH2401
Other	Nypro Bray to Leinster Environmental
Certifier Name	Barney Conolly

Route Summary	Distance	tCO₂
1. Corke Abbey, Cork Great, Bray, Co. Dublin, Ireland - Dundalk, Co. Louth, Ireland	115.613 km	0.02
2. Dundalk, Co. Louth, Ireland - Dundalk, Co. Louth, Ireland	0 km	0.00
Total	115.613 km	0.02

Evidence Pack | ZWTL Declaration

Solution:
EIRAVATO analysed various materials within the mix developing a new LEAN capture method allowing to capture valuable materials at low cost. The materials are now sold generating profit.

Example 2
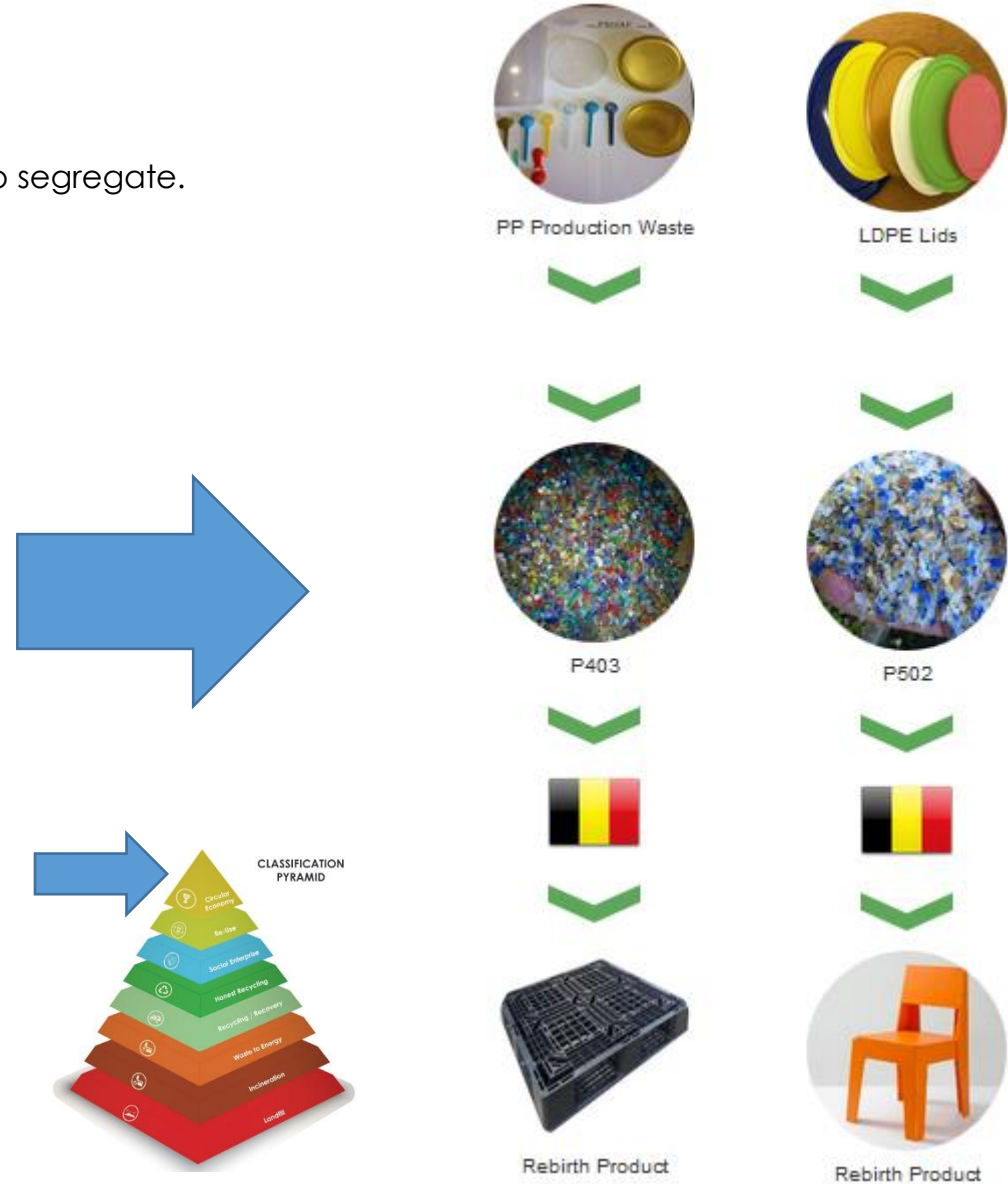
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Problem:
Mixed production residue. Due to similar look of the products impossible to segregate.
Material mix ending up in incinerator with cost of €72 per tonne.
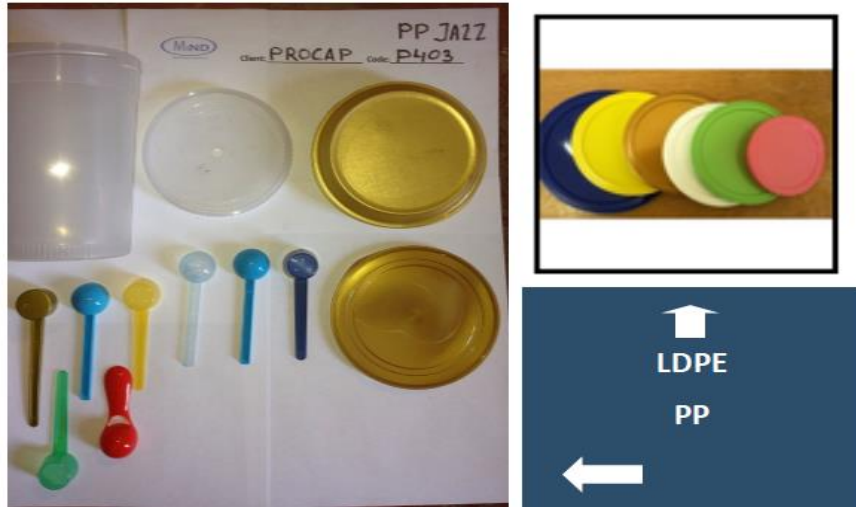
Solution:
EIRAVATO discovered two valuable main material streams. Customer implemented EIRAVATO's WITG lean strategy allow early intervention in the material lifecycle. Our software discovered new buying partners, traceability was enabled. Waste is converted into two new products with cost transformed into revenue.

LDPE
PP

CLASSIFICATION PYRAMID

PP Production Waste

LDPE Lids

P403

P502

Rebirth Product

Rebirth Product

Example 3

![EIRAVATO - CIRCULAR ECONOMY DELIVERED]

Problem:

Complex waste product considered hazardous and non-recyclable due to small gas container. The waste was incinerated, generating huge cost of over 30,000 euro per transport.
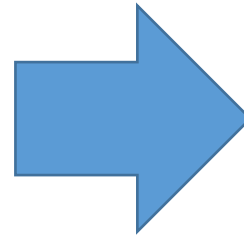

Solution:

EIRAVATO deployed Project Lean with Design 360 tool allowing to analyse material content of complex products, discover circular potential and analyse cost. The project resulted in 70% of cost saving and transformation of 93% of the product into circular materials.

Currently we are working on the technology that will enable recycling of remaining 7% which will make product 100% circular with nil cost.

Example 4

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Problem:

Mixed production residue and failed product. Due to high IP risk (customer products) and material mix the only solution was to incinerate. Cost €92 per tonne.
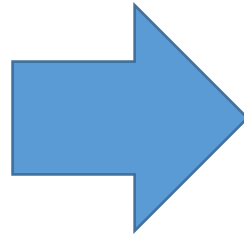

Solution:

EIRAVATO discover early intervention points within product lifecycle. Financial analysis shown that project could result in high profitability, customer decided to take part of material processing on site. This removed IP issue, reduced transport 6:1 and generated quality material that is now sold to produce car mirrors (and other parts).

Example 5

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Problem:
Masterbatch, paint for plastic. Nightmare material as a waste due to low volumes, IP and high contamination properties.

Solution:
EIRAVATO enabled partnership with ReCharge, local charity working with Autistic children. Together with UCD University the whitepaper was created confirming highly beneficial effect of material on sensory development of children, Due to bright colours and texture. Material is used as arts and crafts, cost reduced to zero. Local image of company highly increased, as a token of appreciation local school created artwork that is now displayed at company reception.


EIRAVATO CLASSIFICATION PYRAMID

Masterbatch diverted to a Charity group concerned with the care of children in vulnerable areas.

LEM LEAN

Social Enterprise

Example 6

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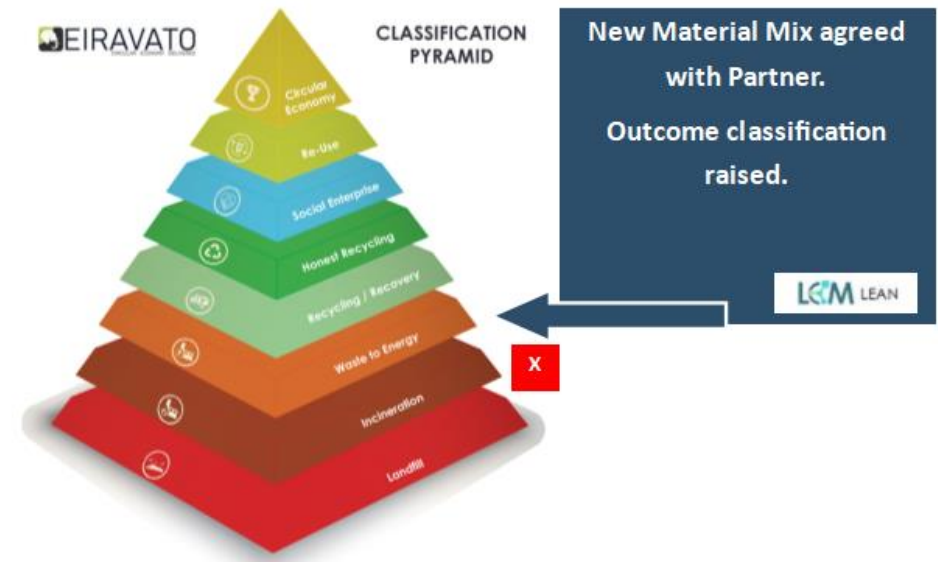**Problem:**
Clean room waste was disposed in traditional bins, resulting in high disposal cost and single use materials ending up in landfill.

New Material Mix agreed with Partner.

Outcome classification raised.
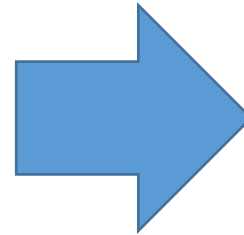
Solution:
Thanks to EIRAVATO analysis the volumes were calculated and business case was created. New partner Cement Manufacturer agreed to accept the material for Waste to Energy due to highly calorific content. Cost was reduced to zero.

EIRAVATO CLASSIFICATION PYRAMID

Circular Economy
Re-Use
Social Enterprise
Honest Recycling
Recycling / Recovery
Waste to Energy
Incineration
Landfill

Example 7

Problem:
Company tried to utilise their waste to produce pallets to be used internally.
The project failed due to uncontrolled feed of materials. Created pallets would not be stable and project was abandoned.
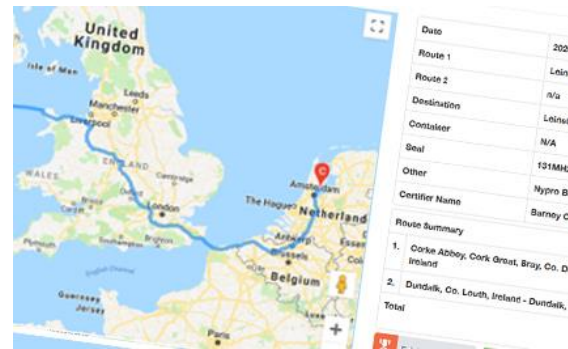
Solution:
EIRAVATO helped company to revisit the project. By implementing of material tracking component and LEAN material capture strategy Company was able to create quality pallets that replaced traditional wooden pallets, completing circular lifecycle of waste materials.

THANK YOU

Visit **www.eiravato.com**
for more information.

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