Circular economy in fur and wood industry: Material Match Making Platform (M3P/LIFE15/IT)

Periklis Kafasis
Director of Supplies-Services-European projects
DIADYMA S.A.

26 June 2019
LIFE M3P – Material Match Making Platform

Project Objectives

Material Match Making Platform for promoting the use of industrial waste in local networks

• develop local networks to improve the treatment of industrial waste

• promote industrial waste use in other local businesses

• reduce industrial waste processing, storage and transport needs.

• demonstrate the utility of a digital online platform at European level for the recording, use and exploitation of industrial waste
M3P’s Local Networks

Belgium
- i-Cleantech Vlaanderen

Spain
- Confederacion Asturiana de la Construcción - ASPROCON

Italy
- Centro Tessile Cotoniero e Abbigliamento Spa
- Material Connexion Italia Srl
- Unione degli Industriali della Provincia di Varese

Greece
- Waste Management of Western Macedonia S.A. (DIADYMA S.A.)
Business segments by region

**Italy**/ Lombardy
Textiles and clothing
Plastic articles
Wood

**Spain**/ Asturias
Construction

**Belgium**/ Flanders
Multiple Sectors

**Greece**/ Western Macedonia
Fur
Wood
Local network research and waste identification

Research on the industrial areas (networks and clusters) to which the partners belong will allow optimization of industrial waste management at local level and overall lower environmental impact.

Data:

- Interviews with 230 SME’s
  (Western Macedonia: 25)
- Identification of 500 wastes
  (Western Macedonia: 30)
Local network research and waste identification

Ambitious targets...
How the SME’s will Involve???
Crucial issues

Identification of companies - low participation

Identification of waste (substances / objects)

Identification of finished products that could be manufactured with recycled materials

Transferability to other industrial environments / geographical areas / technology clusters
Action B1-2

• Interviews and fulfilling of questionnaires

• Workshops with SME’s for match making

• Target groups in the sectors of fur and wood

... in a few words: Industrial Symbiosis
E-platform

• One of the pillars of the LIFE M3P project is the development of the online Material Match Making Platform that will enable SMEs to exchange information to find alternatives to their waste.

• The online platform is the basis on which local networks will develop and companies will interact.

• It forms the basis of a "digital ecosystem" that strengthens the self-provision of local networks and allows for real industrial coexistence and a greener cyclical economy.
E-platform

- Data base
  - SME’s
  - Products/Waste
  - Technologies
  - Good examples
- Auto search engine
  - Labels/tags (tree of tags)
  - Search by tags
- Advanced search engine
  - Smart search
  - Search with the help of specialists

https://materialmatch.eu/
Creative Concepts

GR0_FUR OFFCUTS
Creative Concepts
Creative Concepts

Essenza

For millennials, the waste of a crucial and useless process. We believe we can give our material a new, glorious life. Our concept is a product with a specific function, a carpet or a tapestry, something really sensible and enjoyable in a more abstract way. It will be "wild" but also naturally chic.

For trimming can be dyed using different herbs and spices in order to have a double result: the final product gives off a nice scent, fresh and spicy, and also can be coloured in a natural and soft way. For trimming can be used in some patches, each one dyed differently: the final result has unique visual and olfactory properties. Various combinations of colours and perfumes result in different patterns. Human senses are playing the major role: you can look at it, touch it, smell it, feel it.
Sänky

The idea and story

Sänky is a cat bed inspired by the Scandinavian style. Not only does it work by harvesting your pet, it is also a nice coffee table that can be placed in every living room.

Few elements are designed to be easily assembled together: three legs and two shelves, both made of pine wood, some metallic connections and the bed. The latter is made entirely of felt, which comes from the connecting and cutting of fur trimmings, a waste of the fashion industry.

The concept is "back to basics", with the creation of a product for an animal from a material that comes from the same animal world.

The lifecycle

Sänky is made only with materials that can be both reused or recycled, so after its lifecycle is complete it can be disassembled, not causing any waste.

The product

1. Three small bars connect the legs to the shelf.
2. The legs are assembled in the shelf and to the central bar.
3. Some screws are used to ensure the structure remains.
Creative Concepts

GR1_ANIMAL SKIN
Creative Concepts
Creative Concepts

MATERIC LAMP

HERO SHOT:

Materic Lamp made with real animal skin. It is a significant innovation with an industrial character and makes a design object. They are small, shiny objects, to be hung from a ceiling. It can be made of different sizes depending on the available spaces. It is a very light object. Usually, the height is made of glass, and the light is filtered through it. The lamp is made of real animal skin, Vasell, water and a plastic support. Vasell is a water-based glue, very resistant and has the option of being seen or not to be seen. This means it is easier to filter the light. The reaction process develops in a yellow phase. First off, a layer of Vasell is added with water to make the glue a liquid and very easy to spread. Then, the skin is placed back, piece by piece, in the glue. The leather material is then placed and glued. The lamp is made of real animal skin and a certain animal material.

CONCEPT DETAILS:

PIECES OF ANIMAL SKIN

PRODUCT REALIZATION:

Sections of animal skin:

Height measure: Length measure;

Thickness: Color:

Desert beige

SKETCH

CONTENT:

The issues of the industrial waste material is being tackled with an innovative design model, able to protect the environment in the following way:

- Use of recycled materials
- Material transition
- Container in LED lights
- Less production steps
- Less waste using this production.

BUSINESS MODEL:

The main partner is the industry that uses leather for its product promotion. Using the production model it is feasible that these materials are used to produce material. The production process will be able to supply the waste materials. The cost is not too high.

- The main partner is the industry that uses leather for its product promotion. Using the production model it is feasible that these materials are used to produce material. The production process will be able to supply the waste materials. The cost is not too high.

- The main partner is the industry that uses leather for its product promotion. Using the production model it is feasible that these materials are used to produce material. The production process will be able to supply the waste materials. The cost is not too high.
Creative Concepts

PHONE LIGHT

HERO SHOT:

PRODUCT DESCRIPTION:
The product is Phone Light where the energy source is the cell phone that is placed under those animals, light of flares, that create a calm and warm atmosphere. The cells of the flares are made with biodegradable material like plastic, paper, and cloth. The base is made with a transparent glass that reduces the heat and allows the light to pass through. The design is inspired by the natural habitat of the animals. The product is also eco-friendly and reduces waste.

CONCEPT DETAILS:

PIECES OF ANIMAL SKIN

PRODUCT REALIZATION:

CONTENT:
The heart of the product is the flares that are made with biodegradable material. The production process includes:
- Cutting and shaping the flares
- Assembly of the product
- Testing and quality control

CIRCULAR ECONOMY

Production

Distribution

DODISPL

BUSINESS MODEL:
The main partner is the industry that uses flares for its insulating purposes. During this process, there is a reduction in the waste generated.

The proposed product has been designed to reduce waste and increase the efficiency of the production process. The flares are made with biodegradable materials, which reduce the impact on the environment.

21/03/2019
LEATHER MASH

PRODUCT DESCRIPTION:

The project is Leather Mash, it's inspired by the technique of so-called wet leather which is often used in the leather industry. It's a new material that allows you to reduce waste if it's properly used. The project is about the provision of continuous supply of products of different shapes with smooth or rough surfaces. Three-step production model first creating the base with the Cowhide, then a 3D model with a 3D printer and finally creating the final product. The model is a concept of a modern material that has the properties of leather and can be easily shaped, its density is similar to leather and it can be used in various applications. Its main advantage is that it can be easily molded into different shapes, it's waterproof, it's durable and has a long lifespan. Its main disadvantage is that it's difficult to produce and it's expensive. It's more suitable for commercial production and not for mass production. The product can be used in various applications such as furniture, bags, shoes, clothing, etc. It can be used as a replacement for leather in various applications. The product is made from a mixture of cowhide and plastic, which makes it more durable and resistant.
Creative Concepts
Creative Concepts
Creative Concepts

**Vallo**

Our concept is born from an experimental research started with the idea to show the intrinsic sand dust sensations, modifying its structure. From the beginning, the concept was designed to suggest a product relate to a primitive world, unrefined and raw, like the consistence of the material itself.

Taking the inspiration from the huts of ancient tribes, we explored different combinations of sawdust and filling materials, in order to create a more consistent and compact one.

Eventually, plaster and sawdust mixture allowed us to realize a tile with a coating purpose. We knelt different compositions of forms, colors and textures to perfect the initial prototype. The final product is a tile with a classic shape, in which the roughness of the dough is highlighted by the irregular surface.

The concept was inspired by the working waste of the product, and its peculiarities. Indeed, sawdust is a thermal and acoustic insulator, which in combination with a plaster mixture allows the creation of a coating. Thanks to their natural origins, and the quality of the gesso being a completely recyclable material, we designed a product that can be recovered after its disposal. Vallo can in fact be destroyed and re-creted just adding water.

When the lifetime of the product is completed, it can be reduced into a fine dust, allowing the separation of the materials. With these elements and the addition of water, then it will be possible to re-employ it in the creation of new products.
Creative Concepts

Building blocks for infants

1. Putting to use the materials which are discarded as particle wood waste by giving it a new meaning in the context of toys for children.

2. Short Description

The particle wood have different textures, colours, and patterns. This property can be utilised to make creative solution using transparent natural resin. Binding these particles together in various shapes using mould can create building blocks for children. These blocks are interesting to be looked at as there is an interplay of lights passing through it. And in these resin even tiny can be added to give it any exclusive translucent effect. End of the day, we get a premium looking product with waste reused as new raw material.

3. Advantage of material in this context

- Material benefit:
  - Natural and safe.
  - Distinct colour & texture.

- What people look for:
  - Friendliness
  - Safety
  - Engagement

4. Process of manufacturing

Filling: Identifying the required type of wood particle to be filled together with clear natural resin glue.

Coating: Cut outs the respective shapes in resin/glue using desiccant moulds.

Finishing: Cleaning and getting rid of the unwanted parts and dirt. Adding textures if necessary & painting.

Polishing: Polish the surfaces for the necessary visual and shine and apply colour side sticker.

5. Reference of colour, material and finish visualized for end product

- Bright Colourful Grain pattern
- Smoked wood
- Organic Patterns
- Clear base
- Light resin with contrasting glitter
- Smoked wood and Dark resin with glitter
- Metallic coloured resin
- Wood, resin & fitter materials
- Colourful Fillers

6. Why this concept?

- Degree of Innovation: Building blocks made as a concept since age, has never been modified at these modified point of view.
- Reuse: Our design can replace plastic toys, they are not very expensive, can improve the company's image.
- Feasibility: The company already has the initial know how to execute this concept without the facilities.

21/03/2019
Creative Concepts

Acoustic Décor blocks

1. Looking from particle wood's physical property, e.g. sound dampening, combining it together with aesthetic application for household and workplace.

2. Short Description

The required particle wood have three different tonal variants and sizes. This property can be utilized to make creative solutions combining transparent natural glue or resin. Binding these particles together in repetitive shapes using molds it can be mass produced for decorative and functional purposes. These blocks can be arranged in a specified pattern to create artistic decoration or wall panels of workplaces.

3. Advantage of material in this context

Material Benefits:

- Acoustic
- Sound Absorbing
- Distinct Colour & Texture

WHAT People look for:

- Aesthetics
- Customizability
- Integrated Solutions

4. Process of manufacturing

- Filling:
  - Identifying the required type of wood particle to be filled together with clear natural rubber glue.
- Casting:
  - Cast out the respective shapes in resin/glass using desired moulds.
- Finishing:
  - Cleaning and getting rid of the unwanted parts and dirt. Adding finishes if necessary & painting.
- Polishing:
  - Polishing the surfaces for the necessary gloss and shine and apply double-sided sticky paper.

5. Concept Details

- Peel the cover:
  - Peel the protective cover of the sticker to expose the glue area.
- Selection:
  - Select a preferred shape of acoustic block with required texture and tone.

- Glue placement:
  - Position the sheet against the frame to be achieved on the board/surface.

6. Why this concept?

- Degree of Innovation:
  - Innovative, For high quality, can replace plastic & timber of wood.
- Customizability:
  - Various sizes in appearance.
- Integrated Solutions:
  - 3. Integrated Solutions

- Feasibility:
  - The company probably has the technological form to mass-produce this concept within its facilities.
- Viability (Business):
  - 4. Viability (Business)

21/03/2019
Thank you!

To get in the e-platform: https://materialmatch.eu/