Corporate Social Responsibility: how to integrate the principles of sustainability into business models

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2. Project Overview

LIFE: Force of the Future (Forture)
New circular business concepts for the predictive and dynamic environmental and social design of the economic activities

Coordinating Beneficiary:

Associated Beneficiaries:

Consultants Partners:

With the contribution of the LIFE financial instrument of the European Community.
Project Duration: October 2017 – September 2020
3. Circular Economy for Corporate Social Responsibility

CE forces firms to:

- Include sustainability principles in every process (horizontal effects -HE- on BM) $\rightarrow$ SBM
- Redefine the portfolio of activities (vertical effects -VE- on BM) SBM+VE $\rightarrow$ CBM

“Scientists tend to define pollution differently from economists” (Pearce and Turner, 1990: 67)
CE is an alternative to the current and dominant production model called "take-make-waste-dispose" (Blomsma, 2018; Veleva and Bodkin, 2018).

1. To provide a coherent framework on Circular Economy Business Models
   - There is still significant terminological confusion (Homrich et al., 2018).
   - There is also an important route widening the focus of study and considering the social and economic scenarios that affect the different stakeholders (Lahti et al., 2018).

2. To provide some practical guidelines to implement sustainability practices throughout the business models (path dependent and context specific)
5. Circular Economy: An "umbrella", but not new concept

CIRCULAR ECONOMY

- Regenerative Design (Lyle, 1994)
- Industrial symbiosis (Lyle, 1994)
- Performance Economy (Stahel, 2006)
- Cradle-to-Cradle (McDonough and Braungart, 2002)
- Industrial ecology (Graedel and Allenby, 1995)
- Natural capitalism (Lovins et al., 1999)
- Biomimicry (Benyus, 2002)
- Blue Economy (Pauli, 2010)
6. Conceptualization of the Circular Economy

Closed economic model that develops sustainable strategies to optimize the productive process minimizing its negative externalities towards all its ecosystems -productive, economic and social-

Companies are externally connected to a dense network of complex relationships between stakeholders

Focuses on the three Rs of Reduction, Reuse and Recycling (Liu et al., 2017; Murray et al., 2017)

CE context: company conditions, product conditions, value chain conditions and society/market conditions (Sánchez et al., 2004)
Naive and simplistic approaches can lead to misconceptions and strategic mistakes:

- There is a widespread tendency to emphasize the environmental aspect, underestimating the economic and social one.
  - From the entrepreneurial point of view, there can be no environmental protection without the economic sustainability of investments and the respect of stakeholders' expectations.
  - From an ethical point of view, the way in which the CE will lead to greater social equality (inter and intra-generational, gender, racial and religious) as well as equality of socio-economic opportunities remains vague.

- Not all products can be easily recycled with proven environmental, economic and social benefits.
  - The components of an industrial equipment at the end of its life could have very high recycling and reuse costs also from the environmental point of view.
  - In the specific case of ceramic products (tiles and sanitary ware) at the end of use, therefore at the time of demolition of the building, they are unlikely to be sustainably recycled.

- Extending the life of a product is not necessarily environmentally (but also economically and socially) efficient.
  - An old equipment consumes more resources and pollutes more than a new one.
  - An industrial equipment, still working but technologically outdated, "sold" to companies in emerging countries (lengthening its life cycle), moves the environmental problem to another point on the planet without solving it.

Is it easier (and more convenient) to declare oneself sustainable than to effectively be so?
8. Open issues

How has the concept of the Circular Economy been defined and evolved?

What would be the key factors to improve its instrumentalization?

What is the evolution of circular business models that allow the Circular Economy to be properly instrumented?

How can we design and implement a circular business model (CBM) in a company?

Are the CBMs the appropriate tools to overcome the simplism and the surrounding Circular economy and Sustainability?
The business model reflects the logic of the company and it is a tool that makes easier to understand the articulation of strategies in companies, associated with their value (Casadesus-Masanell and Ricart, 2010; Teece, 2010; Witjes and Lozano, 2016).

- Value proposition
- Value creation
- Value capture (Richardson, 2008; Veleva and Bodkin, 2018)
10. Conceptual scheme of the Business Model

Value creation

STRUCTURAL DIMENSION
Capabilities

CONTENT DIMENSION
(Input approach: resources)

GOVERNANCE DIMENSION

CONTENT DIMENSION
(Output approach: products)

Value capture

From Linear to Circular Business Models
11. Theoretical basis of the Circular Business Model

**Resource-Based View (RBV)**
- Complementary of R&C of the partners
- Identification of new R&C: Reuse, new partners and organizational structures
- Breaking organizational inertia

**Agency Theory (AT)**
- Change in ownership rights: Ownership for the seller
- Contractual and technological changes to facilitate product return

**Interfirm Network Approach (INA)**
- Reverse logistics networks
- Direction: Vertical integration Method: External Development

CONTENT & STRUCTURAL DIMENSIONS

GOVERNANCE DIMENSION

CONTENT & STRUCTURAL DIMENSIONS
12. Theoretical basis of the Circular Business Model

THE DEFINITION OF CIRCULAR BUSINESS MODELS SHOULD BE BASED ON THE APPLICATION OF THESE THEORIES
Disruption with the linear system advocated until now that ignored the negative externalities associated with the consumption of resources in their environmental, economic or social environment (Nußholz, 2017; Lahti et al., 2018).
14. Circular Business Model: Strategic Analysis

External factors:
- Legal context
- Institutional context
- Relational resources: trusted partners

Internal factors:
- Ownership structure
- Profile of the managers
- Financial resources
- Firm size
- Organizational inertia (organizational design)
- Relational resources: central position or power dependence position
- Highly skilled human resources
15. Conceptual scheme of the Circular Business Model

**Value creation**

**STRUCTURAL DIMENSION**
Technological, innovation, dynamic and relation capacity with stakeholders

**CONTENT DIMENSION**
- Relational resources
- Financial resources
- Technological resources

**GOVERNANCE DIMENSION**
- New agents, new property rights →
- New (long-term) contracts are needed: formal and informal ones (trust, close/strong relationships)

**Value proposal**
- Other stakeholders than customers
- Negative externalities

**Value capture**
16. Diagram of a general manufacturing process
17. Diagram of a ceramic manufacturing process

Cradle
- Raw Materials Supply
  - Raw Materials Logistic
    - Ceramic Body Grinding
      - Spray Drying
      - Pressing
      - Tiles Drying
      - Tiles Glazing
      - Tiles Firing
      - Tiles Sorting and Packing

Gate
- Glazes Supply
  - Glazes Logistic
  - Glazes Grinding
  - Cutting and Squaring
  - Tiles Sales and Logistic

Retailers

Consumers

GresMalt
18. Monitoring of manufacturing data in an IoT environment
19. Assessing of manufacturing data in an IoT environment

- **GREMAIT**: Manufacturing
- **IoT**: Environmental

**BUSINESS INTELLIGENCE**
- Technical Analysis
  - LCA: Environmental Life Cycle Assessment
  - EIR: Environmental Impact Report
- Strategic Design
  - CBP: Circular Business Plan
- S-LCA: Social Life Cycle Assessment
- SEP: Stakeholders Engagement Plan

**SUSTAINABILITY REPORTS**
- CORPORATE SOCIAL RESPONSIBILITY
20. Preliminary sustainability indices

<table>
<thead>
<tr>
<th>ECONOMIC INDEX</th>
<th>UNIT</th>
<th>GRESMALT</th>
<th>BENCHMARK</th>
<th>Δ</th>
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<tbody>
<tr>
<td>EBITDA</td>
<td>%</td>
<td>25.7</td>
<td>15.9</td>
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<tr>
<td>Value Added</td>
<td>%</td>
<td>44.8</td>
<td>38.4</td>
<td>6.4</td>
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<tr>
<td>Free Cash Flow</td>
<td>%</td>
<td>18.0</td>
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<tr>
<td>Revenue per employee</td>
<td>€</td>
<td>350</td>
<td>286</td>
<td>64</td>
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### ENVIRONMENTAL INDEX

<table>
<thead>
<tr>
<th>Environme ntal Index</th>
<th>UNIT</th>
<th>GRESMALT</th>
<th>BENCHMARK</th>
<th>Δ</th>
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</thead>
<tbody>
<tr>
<td>Global warming potential</td>
<td>kgCO₂</td>
<td>3.77E+00</td>
<td>1.05E+01</td>
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<tr>
<td>Ozone depletion potential</td>
<td>kgCO₂</td>
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<td>6.10E+10</td>
<td>-0.68E+00</td>
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<tr>
<td>Acidification potential</td>
<td>kgH₂O</td>
<td>1.84E+02</td>
<td>2.47E+02</td>
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<tr>
<td>Eutrophication potential</td>
<td>kgN</td>
<td>1.96E+03</td>
<td>2.75E+03</td>
<td>-0.008</td>
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<tr>
<td>Photochemical ozone creation potential</td>
<td>kgO</td>
<td>1.60E+03</td>
<td>2.57E+03</td>
<td>0.0118</td>
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<td>Abiotic depletion potential for non fossil resources</td>
<td>kg CO₂</td>
<td>3.41E+05</td>
<td>5.19E+05</td>
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<td>Abiotic depletion potential for fossil resources</td>
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<td>1.45E+06</td>
<td>1.57E+06</td>
<td>-1.2</td>
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</tbody>
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## 21. Current Business Model

### LINEAR BUSINESS MODEL

<table>
<thead>
<tr>
<th>KEY PARTNERSHIPS</th>
<th>KEY ACTIVITIES</th>
<th>VALUE PROPOSITION</th>
<th>CUSTOMER RELATIONSHIPS</th>
<th>CUSTOMER SEGMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raw material suppliers</td>
<td>Ceramic tile designs</td>
<td>Provide collections of porcelain stoneware tiles totally made in Italy and with the best value for money.</td>
<td>Extensive sales network</td>
<td>Residential customers</td>
</tr>
<tr>
<td>Suppliers of glasses and links</td>
<td>Manufacturing of ceramic tiles</td>
<td></td>
<td>1:1 Interaction with distributors</td>
<td>Commercial buildings</td>
</tr>
<tr>
<td>Plant and machinery suppliers</td>
<td>Marketing and sales</td>
<td></td>
<td>Offer of ancillary services to the product</td>
<td>Public buildings</td>
</tr>
<tr>
<td>Suppliers of electricity</td>
<td>Facilities operations &amp; maintenance</td>
<td></td>
<td></td>
<td>Business customer</td>
</tr>
<tr>
<td>Suppliers of methane</td>
<td>Sourcing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Packaging suppliers</td>
<td>Logistics planning</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Suppliers of chemical additives</td>
<td>Management Accounting &amp; Control</td>
<td></td>
<td></td>
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<tr>
<td>IT Solution Providers</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Financial services providers</td>
<td></td>
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</tbody>
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### KEY RESOURCES

- Three manufacturing units
- Five logistics warehouses
- IT infrastructure
- Human capital
- Operational know-how
- Financial assets

### DISTRIBUTION CHANNELS

- Large-scale retailers
- Independent distributors
- Specialized stores

### COSTS STRUCTURE

<table>
<thead>
<tr>
<th>Costs Structure</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Manufacturing costs</td>
<td></td>
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<tr>
<td>Commercial costs</td>
<td></td>
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<tr>
<td>Research &amp; development costs</td>
<td></td>
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<tr>
<td>General and administrative costs</td>
<td></td>
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<tr>
<td>Financing cost</td>
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</table>

### REVENUE STREAM

<table>
<thead>
<tr>
<th>Revenue Stream</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Volume of sales</td>
<td></td>
</tr>
</tbody>
</table>
# Circular Business Model

## Key Partnerships
- Raw material suppliers
- Suppliers of glasses and inks
- Plant and machinery suppliers
- Suppliers of electricity
- Suppliers of methane
- Packaging suppliers
- Suppliers of chemical additives
- IT Solution Providers
- Financial services provider

## Key Activities
- Ceramic tiles designs
- Manufacturing of ceramic tiles
- Marketing and sales
- Facilities operations & maintenance
- Sourcing
- Logistics planning
- Management Accounting & Control

## Value Proposition
- Provide collections of porcelain stoneware tiles totally made in Italy and with the best value for money.
- Develop innovative solutions for our manufacturing processes for sustainable growth while respecting people and the environment around us.

## Customer Relationships
- Extensive sales network
- Start interaction with distributors
- Office of ancillary services to the product
- On-demand product development

## Customer Segments
- Residential customers
- Commercial buildings
- Public buildings
- Business customer
- Green consumers

## Key Stakeholders
- Private business
- Trade channel operators
- Suppliers
- Staff person
- Final consumers
- Competitors
- Public Institutions
- Environment
- Partners
- Trade unions
- Public and private organizations
- Media

## Key Resources
- Three manufacturing units
- Five logistics warehouses
- IT infrastructure
- Human capital
- Operational knowhow
- Financial assets
- Energy-efficient manufacturing system
- Resource-efficient manufacturing system

## Distribution Channels
- Large-scale retail
- Independent distributors
- Specialized stores
- Cloud based interactive multi-channel

## Costs Structure
- Manufacturing costs
- Commercial costs
- Research & development costs
- General and administrative costs
- Financing cost
- Environmental costs (externalities)
- Social costs

## Revenue Stream
- Volume of sales
- Value recovered from the use of recyclable materials

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**UNIMORE**

**GRESMALT**

**Universidad Rey Juan Carlos**

**PROJECT LIFE16 ENV/IT/000307 - LIFE: Force of the Future**

[fortune-life.eu](http://fortune-life.eu)
23. Conclusions

1. Corporate social responsibility (CSR) is the responsible behavior that a company shows towards its stakeholders. The focus shifts from a product-oriented production and consumption model to a solution-oriented model.

2. The Circular Economy can be a way to approach the transition of CSR towards a concrete model of sustainable development. The efforts to build sustainable development give companies a new ethical role: to create new values in addition to economic growth.

3. Not everything that is potentially technically recyclable is environmentally, economically and socially sustainable. The approach to circularity is ineffective if the reusing, recycling and recovery mechanisms are not able to reabsorb the product at the end of its life efficiently.

4. Therefore, the paradigm shift towards sustainable development requires innovation of business models with the adoption of circular schemes (CBMs). The impact assessment methodologies (environmental, economic and social) implemented in a 4.0 manufacturing environment, are the appropriate tools to integrate sustainability in the company's business.

5. The Circular Economy is not an economic model that necessarily needs to be adopted in order to declare itself sustainable in our industrial activities. On the contrary, the adoption of (few, but rigorous) good practices aimed at environmental, economic and social sustainability may prevent the circular economy from being relegated to a temporary phenomenon.
Thank you for your attention.
Any questions?

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