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

Fernando Enrique Garcia Muiña
Rey Juan Carlos University, Madrid (Spain)
Department of Business Administration

Davide Settembre Blundo
Gruppo Ceramiche Gresmalt, Sassuolo (Italy)
Project Management Office Department

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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: GRESMALT
Associated Beneficiaries: Università degli Studi di Modena e Reggio Emilia, Universidad Rey Juan Carlos
Consultants Partners: POOL ITI, R&S

With the contribution of the LIFE financial instrument of the European Community.
Project Duration: October 2017 – September 2020
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)
7. Critical topics of Circular Economy and Sustainability

Naive and simplistic approaches can lead to misconceptions and strategic mistakes:

- 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 proposal

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 capture

Value proposal

CONTENT DIMENSION
Other stakeholders than customers
Negative externalities
17. Diagram of a ceramic manufacturing process
18. Monitoring of manufacturing data in an IoT environment
19. Assessing of manufacturing data in an IoT environment
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>
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<tr>
<td>Value Added</td>
<td>%</td>
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<tr>
<td>Free Cash Flow</td>
<td>%</td>
<td>18.0</td>
<td>13.1</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>Environmental Index</th>
<th>UNIT</th>
<th>GRESMALT</th>
<th>BENCHMARK</th>
<th>Δ</th>
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<tbody>
<tr>
<td>Global warming potential</td>
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# 21. Current Business Model

## Linear Business Model

<table>
<thead>
<tr>
<th><strong>Key Partnerships</strong></th>
<th><strong>Key Activities</strong></th>
<th><strong>Value Proposition</strong></th>
<th><strong>Customer Relationships</strong></th>
<th><strong>Customer Segments</strong></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></td>
<td>Commercial buildings</td>
</tr>
<tr>
<td>Plant and machinery suppliers</td>
<td>Marketing and sales</td>
<td></td>
<td>1:1 Interaction with distributors</td>
<td>Public buildings</td>
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<tr>
<td>Suppliers of electricity</td>
<td>Facilities operations &amp; maintenance</td>
<td></td>
<td>Offer of ancillary services to the product</td>
<td>Business customer</td>
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<tr>
<td>Suppliers of methane</td>
<td>Sourcing</td>
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<tr>
<td>Packaging suppliers</td>
<td>Logistics planning</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Suppliers of chemical additives</td>
<td>Management Accounting &amp; Control</td>
<td></td>
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<tr>
<td>IT Solution Providers</td>
<td></td>
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<tr>
<td>Financial services providers</td>
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</tr>
</tbody>
</table>

### 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

- Manufacturing costs
- Commercial costs
- Research & development costs
- General and administrative costs
- Financing costs

### Revenue Stream

- Volume of sales
## Circular Business Model

### Key Partnerships

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<td>Manufacturing of ceramic tiles</td>
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<td>Start interaction with distributors</td>
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<td>Plant and machinery suppliers</td>
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</tbody>
</table>

### Key Stakeholders

<table>
<thead>
<tr>
<th>Private business</th>
<th>Trade channel operators</th>
<th>Key Resources</th>
<th>Key Activities</th>
<th>Value Proposition</th>
<th>Customer Relationships</th>
<th>Customer Segments</th>
</tr>
</thead>
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<tr>
<td>Suppliers</td>
<td>Three manufacturing units</td>
<td>Energy-efficient manufacturing system</td>
<td>Ceramic tile designs</td>
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<td>Extensive sales network</td>
<td>Residential customers</td>
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<tr>
<td>Staff person</td>
<td>Five logistics warehouses</td>
<td>Resource-efficient manufacturing system</td>
<td>Manufacturing of ceramic tiles</td>
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<td>Start interaction with distributors</td>
<td>Commercial buildings</td>
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<td>Final consumers</td>
<td>IT infrastructure</td>
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<tr>
<td>Trade unions</td>
<td>Resource-efficient manufacturing system</td>
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<td>IT Solution Providers</td>
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<td></td>
<td></td>
<td>Financial services providers</td>
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<td></td>
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### Distribution Channels

<table>
<thead>
<tr>
<th>Large-scale retails</th>
<th>Independent distributors</th>
<th>Specialized stores</th>
<th>Cloud-based interactive multi-channel</th>
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</thead>
</table>

### Costs Structure

<table>
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<tr>
<th>Manufacturing costs</th>
<th>Commercial costs</th>
<th>Research &amp; development costs</th>
<th>General and administrative costs</th>
<th>Financing cost</th>
<th>Environmental costs (externalities)</th>
<th>Social costs</th>
<th>Volume of sales</th>
<th>Value recovered from the use of recyclable materials</th>
</tr>
</thead>
</table>

### Revenue Stream

- Volume of sales
- Value recovered from the use of recyclable materials
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?

Fernando Enrique García Muñía
guardado@urjc.es

Davide Settembre Blundo
davide.settembre@gresmalt.it

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