Circular Economy Business Models in the Automotive industry

Special Issue Call for papers from 'The Open Transportation Journal'

Guest Editors

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Key Dates

Abstract submission: 30 October
Interested authors should email their abstracts (300 to 500 words) to guest editors. Prof. Susana Azevedo (sazevedo@ubi.pt)
Notification of abstract acceptance: 15 November
Deadline for submitting the full papers: 30 January 2018
Special issue expected publication date: April 2018

What is this special issue about?

Today policy-makers, academics, and the business community increasingly recognize the need to move towards a new economic model whereby materials and energy from discarded products or by products are reintroduced into the economic system (Lehmann et al., 2014; Ellen MacArthur Foundation, 2015). Such an economy goes beyond the "end of pipe" approaches of the linear economy (Chamberlin et al., 2013) and seeks transformational changes across the value chain to retain materials in the "circular economy loop" and preserve their value for as long as possible (Vanner et al., 2014; Ellen MacArthur Foundation, 2014).

The circular economy is a concept rooted in several different schools of thought and theories that question the prevailing linear economic systems, which assume that resources are infinite (Ellen MacArthur Foundation, 2013; Preston, 2012). The circular economy concept has been considered under the industrial economy field

and relies on the "restorative capacity of natural resources" (Bastein et al., 2013) and aims to minimize and/or mitigate waste, utilize renewable sources of energy, and phase out the use of harmful substances.

Through fundamental changes to production and consumption systems the circular economy would entail several environmental benefits, for example decreased emissions and pollutants (Yuan and Moriguichi, 2006), reduce the loss of resources, and ease the burden on global ecosystems (EEA, 2016).

In terms of environmental benefits, it has been estimated that the transition to a circular economy in the transportation, food, and built environment sectors could lead to emissions reductions of 48% by 2030 and 83% by 2050, compared with 2012 levels. Moreover, the Ellen MacArthur Foundation (2015) estimates that the technological and organizational innovations underpinning a circular economy would allow Europe's resource productivity to grow by 3% by 2030 in three areas: transportation, food, and the built environment, including savings in primary resource costs and in costs linked to externalities, such as health impacts from air pollution.

"A business model describes the rationale of how an organization creates, delivers, and captures value "(Osterwalder and Pigneur, 2010). Business model concepts delineate categories such as revenue model, value proposition, and customer interface (Bieger, 2011; Zott and Amit, 2013; Hedman and Kalling, 2003). These broad categories allow for comparisons and overviews of different business model alternatives.

The growing recognition that current industrial practices cannot be sustained in the long term brings challenges, opportunities and hopes for both industry and academia. The expanding perception of 'value' beyond its economic monetary meaning and business models which treat the natural environment and society as equal stakeholders of the company are slowly becoming part of our reality.

The automotive industry represents a sector with high potential to the application of the CE since automakers are already contributing to resource efficiency by remanufacturing a wide variety of parts, including engines and gear-boxes. In practice, remanufactured components are contributing to reduce energy consumption during manufacturing by up to 80% when compared to new parts. Giving components a new life also requires 88% less water and more than 90% less chemicals. This circular approach can also contribute to reduce overall waste by an impressive 70%.

Some examples of circular economy business models are: i) hire and leasing - hire or leasing of products as an alternative to purchasing; ii) performance/service system - providing a service based on delivering the performance outputs of a product where the manufacturer retains ownership, has greater control over the production of a product, and therefore has more interest in producing a product that lasts; iii) incentivized return - offering a financial or other incentive for the return of 'used' products. Products can be refurbished and re-sold; iv) asset management - maximizing product lifetime and minimizing new purchase through

tracking an organization's assets, planning what can be re-used, repaired or redeployed at a different site; v) collaborative consumption - rental or sharing of products between members of businesses; vi) long life - products designed for long life, supported by guarantees and trusted repair services.

Being so, this special issue seeks to explore the areas related to Circular economy and business models in the automotive sector.

Topics of the special issue interests and focuses include, but not limited to:

- Economic, industrial and environmental policies aimed at fostering the development of the Circular Economy in the automotive industry
- Facilitators and barriers to the introduction and implementation of circular economy business models in automotive industry
- Circular economy and the market(s): the contribution of stakeholders
- Design and implementation of business models under the circular economy concept
- Circular economy business models in the automotive industry: Initiatives
- Technology and industry 4.0 opportunities for business model design and innovation
- Managing organizational change and orchestrating new business models under the circular economy concept
- Quantifying and qualifying the outcomes (social, economic, environmental, ethical, etc.) of new business models under the circular economy concept
- Business models designed in collaboration with Information Technologies and Data mining in the automotive industry

This list of topics is not exhaustive.

Submission Methods and Timeline

Deadline for submitting the full papers: 30 January 2018.

Online Submission Link:
http://bsp-cms.eurekaselect.com/index.php/TOTJ/user/register

Inquiries

Prospective authors are encouraged to contact the guest editors for feedback and comments about the topics of the research papers.

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