Title: Mapping Business Models in Circular Economy

Problem:

The today's dominant economic development model is the so called "take, make, and dispose" – model is now challenged. Turning to more sustainable methods of consuming and managing materials and natural resources is becoming an increasingly important topic both on a regional and global scale. Consumers in countries such as China and India are having more opportunities to consume products and services, and economies in developed countries are also expecting and hoping to continue on a track of continuous economic growth (Charonis 2012) leading to exponential growth of consumption. From the perspective of resource intake, the current model creates a direct link between economic activities and use of natural resources, as products are in overwhelming majority made from virgin material resources (Yuan et al. 2006). With many natural resources being limited in quantity, the use of natural resources will inevitably lead to needs to create new methods of harnessing resources from increasingly difficult places (Mathews & Tan 2011).

In this challenging situation, the concept of Circular Economy (CE) has been proposed to solve the issues by offering an alternative to the model of extracting natural resources for new products and disposing of them at the end of their life-cycle. The principles of CE therefore provide a fertile basis for generating innovative technologies, products, services and solutions. In CE, products and materials are to be kept in circulation for as long as they can provide value in so called "closed-loops", while simultaneously promoting activities that reduce the need for material per unit of value produced. These activities could for example include service-based offerings such as rental services, better durability of products, creating leaner products, and increasing the use of recycled materials. (Zhu et al. 2010).

However, for the concept of CE to truly be viable as an alternative growth model, it needs to be able to deliver on its promises of being able to provide economic growth while being sustainable. If CE business is unable to compete economically with the current linear model of "take, make, waste", then the implementation of CE will be a difficult goal to achieve (Charonis 2012). This makes studying business models in circular economy a crucial topic to study. Thus it is crucial to identify what kind of business models can be successful for business ventures.

Current understanding:

The business model concept illustrates the details of how a business is designed to operate and achieve its goals, and can be used as a managerial tool to analyze current business models (Chesbrough & Rosenbloom 2002) and create new ones (Osterwalder et al. 2005). There are multiple definitions of a business model (Osterwalder et al. 2005), but despite the variation, defining the value proposition and the way it is delivered are notably universal. In brief, the most common components for a business model in the business model literature are value proposition (or value offering), value creation, value delivery and value capture that together give an overview how the business is designed to happen.

However, when examining the extant literature applying the business model approach to CE field, there are only a handful of recent studies. Hence, surprisingly there is a gap in scholarly literature

examining business models for CE. The majority of studies in the area of CE have focused on the material flows in circular economy, while leaving the business model of these potentially viable ventures unexplored (e.g. Mathews & Tan 2011). Circular economy (Yuan et al. 2006) itself and circular economy initiatives such as industrial symbioses (Mathews & Tan 2011) and increased waste recycling activities (Zhu et al. 2010) have received increasing attention in literature but only handful of studies have examined how the CE should create economic benefits and new business opportunities.

While studying business models that implement activities helping the economy move towards a circular model, a market perspective is also taken. This is to increase the understanding of basic challenges for circular economy, many of which might change depending on the geographical market area under analysis. In emerging countries, recycling is a much newer phenomenon and its implementation can greatly differ from developed countries. Circular economy initiatives in different geographical markets is a subject that has been studied before by providing exemplary cases of circular economy initiatives such as industrial symbiosis and recycling that could be implemented elsewhere (e.g. Mathews & Tan 2011).

Research question:

Due to gaps identified above, this study analyzes and compares business models of circular economy driven business ventures. The main research question of this study is: With what kind of business models do circular economy driven business ventures operate?

While the main objective is to fill the gap of business model thinking in academic circular economy literature, we address also to the question how business models are applied in different markets. In other words, we are also interested how CE business models realize in different market locations.

Research design:

To solve the research questions, a case strategy is chosen and multiple case study is conducted. The analysis of multiple cases is important due to multiple issues: Firstly, the circular economy can be advanced by multiple types of initiatives (Mathews & Tan 2011, Zhu et al. 2010), and thus only conducting a single case study would be inadequate when the phenomena of circular economy is under research. Secondly, it is necessary to analyze cases from multiple geographical markets and different contexts to provide any kind of comparison. Therefore, four different cases were chosen by following “maximum variation” principles: these chosen cases come from different geographic locations and follow different circular economy initiatives. Our extensive data set comprises interviews and media-originated data gathered via LexisNexis. We applied our framework comprising three BM elements (value proposition; value creation and delivery; value capture) when analyzing the cases via within and cross case analyses.

Findings:

Our analysis reveals patterns of CE business models. In case 1, the access to suitable waste that can be economically turned into new products is identified as a very important factor. Case 2 showcases how innovative combinations of existing processes can be used to increase usage of waste as a resource. In case 3, the issue of taking into account the actors outside of the formal actors in developing waste management infrastructures is highlighted. Case 4 shows that when circular economy initiatives are scaled up, the global nature of material flows today becomes more important.

In cross case analysis, the benefit of being able to successfully collect gate fees for waste versus needing to pay for acquisition of recyclables is identified as a major benefit of the established waste management infrastructure in developed countries, while the cost differences in processing between geographic areas reduces this benefit.

Practical implications:

For practitioners this study is to give valuable insights that enable firms to make more informed decisions on whether implementing activities that increase circularity would make sense to them, and especially how those activities could be organized and what effects or benefits those activities could have to their overall business operations. In addition, any company or business practitioner regardless of them having adopted circular economy or not, will get to have a glimpse of what challenges are to be addressed in this area, and how their venture might be able to benefit itself and others from fostering material circulation. Also, business models in the circular economy can be very systemic due to their nature of turning one actor's waste into another actor's resource, requiring the collaboration of businesses that have traditionally operated separately or with a very different type of relationship. In the analysis of the cases in this research, systematic business opportunities will be identified that can help advance the concept of circular economy becoming more impactful in multiple geographical markets.

Contribution:

In the study, circular economy is viewed through the lens of business models and new understanding of CE business models are created by conducting a multiple case study. Thus, we are able to contribute to two streams: firstly, contributions are addressed to the rapidly increasing stream of circular economy, as our findings extend our understanding of CE from business perspective, by focusing on business models and value flows instead of resource flows. Thus, we provide structured analyses on how to conduct CE business and what kind of business model elements enable making business in the field of CE. Secondly, our findings contribute to business model literature, as we analyze in detail and compare different business models and their elements in multiple locations from CE business perspective. These two contributions increase also understanding of how to conduct sustainable business, in general.

Reference List

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