

# Chapter 4

## Linear Economy to Circular Economy: Planned Obsolescence to Cradle- to-Cradle Product Perspective

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### **ABSTRACT**

*The reflections of linear and circular economy models, which are completely separated from each other in the ways of evaluating resources and wastes, also differ completely in the production and consumption processes. The linear economy, which consists of production and consumption mechanisms, converts resources into waste after using one time and is supported by planned obsolescence practices and causes economic and environmental damages. The scarcity of resources and the pressure of environmental pollution have led to an industrial transformation in which production and consumption forms redesigned in a way that does not create waste. Because of this transformation, the circular economy model emerged, and its application direction evolved to cradle-to-cradle practices. In this study, firstly, the linear economy model and planned obsolescence are discussed, and then circular economy and cradle-to-cradle applications are explained with examples.*

### **INTRODUCTION**

In the economic systems consisting of consumption and production, the interaction between economy and environment takes place in terms of the use of resources, the way of disposal/utilization of wastes, the increase of population and consumption and the globalized consumption patterns. The management

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process and style of the economy change the environment, in return environmental characteristics steer the economy and lead it to success.

There are two different approaches in the economy that are completely separated from each other in the way they utilize resources and waste; *linear economy* and *circular economy*. Linear economic model starting with the industrial revolution consists of production and consumption mechanisms in which resources are returned into waste after a single-use. Those mechanisms ignore the environment and have to return processes. Due to the unidirectional flow and eventual depletion of resources, this structure has been considered to be linear. On the other hand, the circular economy model has realized the harm caused by the linear economy to the environment and refers to the mechanisms that focus on sustainability, redesigning the production processes and consumption patterns in a way that does not create waste and enables the continuous use of resources. In these models which have completely opposite points of view, this difference is clearly visible in the supply and production processes and strategies of the enterprises.

In the linear economy that continued throughout the 20th century, the operating activities in accordance with this economic model and, most especially, the marketing activities and practices caused economic, social and environmental devastation. This situation underlined the importance of business and marketing practices in achieving sustainability. Based on this fact, in this study firstly, “planned obsolescence strategy” which is among the marketing practices of the business manner imposed by the linear economic model and which is widely used product strategy, will be examined. Then, information about the circular economy model which aims to prevent ecocide and the product strategy, namely “cradle-to-cradle”, applied by this model, will be given.

## **BACKGROUND**

### **Linear Economy Model**

*Take-make-dispose* consumption model and the global economy which started with the industrial revolution have operated in a structure that promotes the consumption constantly. This structure, in addition to expanding the companies, has provided income and development opportunities to individuals and macro-economies through creating income sources and employment power. The linear economy with this point of view has constituted an infrastructure supporting the increased quality of life.

*The linear economy model*, a unidirectional system in which natural resources are turned into waste by means of production, based on the assumption that natural resources are available, adequate, easily accessible and wasted, and that waste is cheap and trouble-free, this has resulted in exceeding the capacity of the planet in many areas (Steffen et al., 2015).

The first assumption on which the linear economic model is based is that the natural resources are unlimited; that is, there is continuity of the new resources to be used as long as industrial production continues. The second assumption is that the resources turning into waste after being used disappear. These two assumptions are based on the perception that resources are endless and that waste is harmless. This perception stems from the early periods of the industrial revolution and has accelerated the tendency of resource consumption and waste generation until today and has determined the development direction of production and consumption mechanisms (Ellen MacArthur Foundation, 2013; Barbier, 2003; World Economic Forum, 2016; Steffen et. al., 2015).

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