

# Chapter 24

## Digital Transformation and Environmental Management Applications: Approaches Used for Value Creation in the White Goods Industry

**Yasemin Hancioğlu**  
*Ordu University, Turkey*

### **ABSTRACT**

*Today, when determining competitive strategies, businesses should consider environmentally-sensitive approaches and Industry 4.0. The fact that the world is increasingly affected by environmental negativities leads businesses to adopt green thinking. Increasing the orientation of the businesses to green is possible with the concentrated roles of all business functions. In this study, it was determined how much of the Industrial 4.0 approach of the White Goods sector in Turkey was adopted. In addition to this, it is examined how much they integrate the approaches that aim to minimize the harm to the environment to their enterprises in order to create an effective management system. As a result, it can be said that environmental awareness has been formed in the leading enterprises of Turkey such as Arçelik and Vestel and that developments in the world have been followed and tried to be integrated in the name of Industry 4.0.*

### **INTRODUCTION**

Digitalization in industry is a result of decades of evolution in industry and has been named in the USA (smart manufacturing) and Germany (Industry 4.0), which are two separate advanced industrial countries. Although the names stand out manufacturing, digitalization covers all sectors of the economy and all aspects of daily life. Industry 4.0 suggests that advanced industrialized countries considerably increase the competitiveness of their manufacturing industries by reducing the competitiveness of developing countries in this area by significantly reducing the needs of digitalization and labor force in the industry.

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The sectors that first felt the necessity of digitization in the industry in Turkey were automotive, white goods and electronic main industry companies, especially those engaged in intensive export activities to EU countries and exporting supplier companies in these sectors.

The rapid development of technology, communication and information technology has a serious impact on human life in all aspects. These developments also affect production processes and forms. As a result of the so-called Industry 4.0 developments, production processes and structures in the future will be very different from today's structure. The enterprises which foresee this process and prepare their infrastructure, and thus the countries, will provide a high level of competitiveness. Enterprises that are prepared for rapid changes in global markets and that are experiencing these changing conditions will be able to create production processes that are closer to customer wishes and needs by taking advantage of technological developments thanks to their infrastructure, physical and intellectual skills. Together with these changes, environmental awareness has become a factor that is considered in the wishes and needs of customers. The adoption of green thinking is becoming an increasingly important issue with the demand of customers and suppliers to minimize the negative impact on the environment. The approaches of the enterprises towards the direction of green may vary. It is clear that the world is increasingly affected by environmental negativities and that global warming is expected to reach irreversible proportions. Prevention of this situation is possible by the movement of the state, society and enterprises. Unless it is understood that damage to the environment in any part of the world will pose a threat to everyone in the future, measures taken will be inadequate. Laws and obligations to protect the environment, the adoption of green thinking, green sustainability, green production and green product choice indicate that an awareness has started to be created in order to protect the environment.

In increasing the orientation of enterprises to green, it is possible to have all the functions of the business with their ecologically concentrated roles. These roles bring with them environmentally sensitive approaches. Firstly, digital transformation, green thinking and environmentally sensitive applications will be discussed. While discussing the issues, the ways in which these two approaches, which are very important in achieving competitive advantage to enterprises, will be discussed from a strategic management perspective. Finally, the digital transformation process experienced by the company in the white goods industry in Turkey and the environmental approach that aims to minimize the damage of which they will be put forth in order to create an effective management system has adopted.

## **DIGITAL TRANSFORMATION**

Digitalization in industry is a result of decades of evolution in industry, and it has been named in the same years in two different advanced industrial countries. This paradigm shift in the industry was first launched in the USA in 2010 with the names of Smart Manufacturing and in Germany in 2011 with the names of Industrie 4.0. Although manufacturing is promoted by names, digitalization covers all sectors of the economy and all aspects of our daily life (Ulusoy, 2018).

The 4th industrial revolution has some characteristics that are different from the first three industrial revolutions before it. The first of these is that it is a revolution that was first named before it took place in history. Secondly, the operators who had acquired the equipment in the first three industrial revolutions and founded it with their machines and production could say that they were keeping up with this revolution. For example, after the 2<sup>nd</sup> Industrial Revolution, a manufacturer who established the assembly line system at the factory or a manufacturer who installed a computer programed production bench after the

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