

# **A study on the Digitalization Development and Competition Regulation in the Petrochemical Industry**

## **Abstract**

Keyword(s) : petrochemical industry 、 digitalization 、 antitrust laws

Information and communications technology have led to the evolution of production and service business models. In manufacturing process has been developed to the stage of application digital and AI to respond and predict market demand quickly. The petrochemical industry, which has always been regarded as a traditional industry, has also begun to undergo digital transformation. However, the digital transformation of the petrochemical industry may not only have an impact on the overall structure, but may also on the strategies being adopted, resulting in a new type of digital collusion.

In Chinese-Taipei, petrochemical industry invests in artificial intelligence and big data application has not so popular at this time, there is no anti-competition concern. Once the industry has been familiar with the digital technologies tools, such as use big data and algorithms to exchange data or collaboratively build data set by many petrochemical firms, the possibility of collusion could be happened in the future. It is worth noting by competition authorities. The upstream and downstream cooperation of petrochemical industry often uses a Central Satellite Factory System to improve its power on supply chain pricing or raising entry barriers and oppressing competitors, higher than not in central satellite factory systems. If the petrochemical industry central satellite system has violated the vertical restrictions, the competition law should still be applied. In addition, to the petrochemical industry's digital service providers with essential facility elements (such as essential market information), it is worth to examine whether there are transactions refusal or pricing differential. Therefore, this study recommends that competition authorities should pay attention to the advantages with big data gradually, merger evaluation with digital innovation should think outside the traditional box, digital law enforcement requires digital economic departments or digital economic talents, relax the exceptions field for collusion and continue to pay attention to the changes of leading companies' market share in the petrochemical industry.

The paper and pulp industry is the world's oldest sustainable recycling industry, and it is also one of the most resource-consuming and polluting industries. This industry accounts for up to one-third of the world's timber harvesting. For each ton of paper, 20 unsawn timbers need to be felled. With the rise of the e-commerce platform economy, industrial paper manufacturers began to develop high value-added paper and cartons with design and marketing orientation. They also changed to use electronic equipment and strengthened ecommerce capabilities. In the digital age, industrial paper companies often adopt upstream and downstream strategic alliances to improve their competitive advantage. Based on the current development of the industrial paper industry in the United States, Europe, Asian countries and Chinese-Taipei in the digital and environmental protection era, this research discussed the important issues of the development of competition law. Additionally, this research assists the entrusting agency to establish the handling principles for the interactive relationship between the industrial development of the industrial paper field and the competition law regulations. The goal of this research is to assist the entrusting agency to handle the legal measures for the industrial paper industry and competition law in the era of digital and environmental protection while taking into account fair competition and consumer rights, which will be beneficial to the competition law authority. In the future, because a proper legislative structure and law enforcement mindset will be developed for related industries.