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A STUDY OF THE ENGINEERING MODELING & SIMULATION INDUSTRY IN SOUTH KOREA

Abstract:

Engineering modeling and simulation (M&S) technology is a smart manufacturing technology that replaces physical product manufacturing and test activities with virtual product manufacturing and verification. Engineering M&S is recognized as a core manufacturing technology that determines the manufacturing competitiveness of not only a company but also a country, because it reduces the time and cost of product development, while improving the quality of the product. Even though South Korea recognizes the industrial importance of engineering M&S technology and invests at the national level, supply and demand in the engineering M&S industry is still poor. The market size of engineering M&S in South Korea was 528 million-dollar in 2015, with sustained growth at a compound average growth rate (CAGR) of 11.3%, but this amounted to only 1/10 of the market in the U.S. and 1/3 of the market in the People's Republic of China. The biggest reason for such market-size inferiority appears to be the improper formation of the related ecosystem, due to underutilization of M&S by manufacturing companies and the small size of engineering M&S companies. According to a KISTI (Korea Institute of Science and Technology Information) survey by 2015, only 16 of the 401 engineering M&S companies in South Korea were domestic engineering SW development companies. Additionally, the utilization of engineering M&S SW by manufacturing companies is about 8.2%, with only 9% of those companies using domestic engineering SW. Because the inferiority of the engineering M&S industry could lead to the inferiority of national manufacturing competitiveness in the long term, the national interest mandates an increased investment in development of the engineering M&S industry.

Keywords:

Engineering Modeling and Simulation, CAE, CFD/FEA, Engineering SW, Manufacturing Innovation

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