A Study on How to Develop the Usage Metering Functions of BIM (Building Information Modeling) Software under Cloud Computing Environment

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Abstract : As project opportunities for the Architecture, Engineering and Construction (AEC) industry have grown more complex and larger, the utilization of BIM (Building Information Modeling) technologies for 3D design and simulation practices has been increasing significantly; the typical applications of the BIM technologies include clash detection and design alternative based on 3D planning, which have been expanded over to the technology of construction management in the AEC industry for virtual design and construction. As for now, commercial BIM software has been operated under a single-user environment, which is why initial costs for its introduction are very high. Cloud computing, one of the most promising next-generation Internet technologies, enables simple Internet devices to use services and resources provided with BIM software. Recently in Korea, studies to link between BIM and cloud computing technologies have been directed toward saving costs to build BIM-related infrastructure, and providing various BIM services for small- and medium-sized enterprises (SMEs). This study addressed how to develop the usage metering functions of BIM software under cloud computing architecture in order to archive and use BIM data and create an optimal revenue structure so that the BIM services may grow spontaneously, considering a demand for cloud resources. To this end, the author surveyed relevant cases, and then analyzed needs and requirements from AEC industry. Based on the results & findings of the foregoing survey & analysis, the author proposed herein how to optimally develop the usage metering functions of cloud BIM software.

Keywords : construction IT, BIM (Building Information Modeling), cloud computing, BIM-based cloud computing, 3D design, cloud BIM

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