

Construction Project Management Using Digital Models: Construction Cost Planning in Early Project Phases

Sara Bender and Christian Stoy (Germany)

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SUMMARY

Construction project management is the key to economic and resource-efficient project success and supports project participants in strategic project decisions already in early project phases. Due to increasing digitalization and the application of Building Information Modeling, construction cost planning benefits from new workflows and digital tools as well. However, in the application of model-based cost planning, barriers and interruptions repeatedly occur in the workflows. In order to determine their causes, the entire cost planning process is examined by an expert surveys. The interviews are then evaluated using a qualitative content analysis. The results show that software-based barriers exist, which include insufficient software-neutral exchange formats and cross-interface software solutions. Furthermore, there are data-based barriers, which are caused by a lack of information exchange between the participants and a lack of standardization of the model contents. This results in a lack of data quality in the cost planning process. According to the participants, the sub-processes of cost control and cost management are not carried out in a model-based manner. Also the implementation of specialist planner models does not or only partially take place in practice. This study serves to classify and improve the model-based cost planning process in digitized construction projects. It identifies the causes of barriers and interruptions and, as a result, recommendations for avoiding them and for improving process quality can be derived.

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