

Abstract

Purpose

Abandoned materials and substances generated during construction, renovation, and demolition activities are collectively referred to as construction and demolition (C&D) waste. Inert C&D waste materials, such as sub-soil, sand, stone, and concrete, could either be directly reused on another construction site or recycled. Therefore, real-time information about site locations, dates, categories, prices, etc. provided on a centralized strategic platform, would make an efficient and effective contribution to the reuse of C&D waste and could consequently reduce the overall trading and social cost of construction. The so called ‘platform economy’ has proved to be transformational in upgrading many industries and has already changed people's way of life and ways of trading. However, the research and practice of platform-based information as a way of transforming and upgrading the construction industry has lagged far behind other industries.

Method

This study therefore investigated the feasibility of providing a trading platform for C&D waste as an integrated and effective strategy for current practices of C&D waste management and resource recovery in China, and proposes theoretical models based on platform economy theory and third-party governance. A timed Petri net was used to model and analyze the traditional transaction process and the platform transaction process of C&D waste.

Result and conclusion

By comparing the time delay of two kinds of transaction process, the superior efficiency of the platform was revealed. The paper concludes by summarizing the development dilemma faced by the platform and provides suggestions for resolving it.

Key word

Construction and demolition waste, platform economy, trading platform, network externality, timed petri net