

Optimal online channel configuration for a Manufacturer under price and lead time-sensitive demand

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Abstract

The purpose of this paper is to model and compare the performance of online dual-channel supply chain configurations comprising of a Manufacturer and an E-tailer and to identify the optimal configuration under the assumption that demand is both price and lead time sensitive. The study considers two distinct online dual-channel formats, viz. (i) E-tailer–direct online channel (DOC) of the Manufacturer and (ii) E-tailer and an Agency Channel (e-marketplace) of the Manufacturer. The competition between the channels has been modelled with the help of game theory and optimal decisions of the channel members were derived from equilibrium analysis. Further, a numerical analysis was carried out to quantify the optimal decisions and to derive the managerial insights. The study finds that E-tailer–DOC configuration is beneficial for the Manufacturers compared to E-tailer–Agency Channel configuration in the case of products for which customers’ price sensitivity is higher than the lead time sensitivity. However, the Manufacturer is gainful by choosing E-tailer–Agency Channel configuration over E-tailer–DOC configuration in the case of products having higher lead time sensitivity.

Key words: Online retailing, Game theory, Dual-channel supply chain, Direct online channel, Agency Channel and The E-tailer

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