

Accepted Manuscript

The wider, the better? The interaction between the IoT diffusion and online retailers' decisions

Sen Hu, Bin Hu, Ya Cao

PII: S0378-4371(18)30735-0

DOI: <https://doi.org/10.1016/j.physa.2018.06.008>

Reference: PHYSA 19702

To appear in: *Physica A*

Received date: 19 February 2018

Revised date: 1 May 2018

Please cite this article as: S. Hu, B. Hu, Y. Cao, The wider, the better? The interaction between the IoT diffusion and online retailers' decisions, *Physica A* (2018), <https://doi.org/10.1016/j.physa.2018.06.008>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



The wider, the better? The interaction between the IoT diffusion and online retailers' decisions

Sen Hu^{a,b}, Bin Hu^{a,*}, Ya Cao^b

^aManagement college, Huazhong University of Science and Technology, Wuhan, China, 430074

^bBusiness college, Yancheng Teachers University, Yancheng, China, 224002

Abstract

Diffusion process is a hot topic in various subjects. However, much existing literature ignores the dynamic influence of the environment on the diffusion process and the impact of the diffusion process on the environment. Taking the IoT diffusion process in the e-commerce industry as example, we investigate the dynamic interaction between the IoT diffusion process and the external environment, i.e., the adjustment of retail prices and the profit of an online retailer through a simulation model. The simulation model combines the price adjustment mechanism and the diffusion evolution mechanism. We obtain two main conclusions. First, price adjustment of retailers blocks the IoT diffusion process, and a higher online shopping disutility level could amplify the impediment influence of price adjustment. Second, the IoT diffusion is of influence on the pricing and profit of the online retailers. The influence type (i.e., positive or neglect, monotonous or non-monotonous) depends on the special circumstance. Under some conditions, a wider diffusion does not inevitably result in a larger profit of the online retailer. This shows us that a wider or faster diffusion is not always better.

Keywords: diffusion of innovation, IoT, simulation model, complex system, e-commerce

*Corresponding author

Email addresses: D201677854@hust.edu.cn (Sen Hu), bin_hu@hust.edu.cn (Bin Hu)

Download English Version:

<https://daneshyari.com/en/article/7374853>

Download Persian Version:

<https://daneshyari.com/article/7374853>

[Daneshyari.com](https://daneshyari.com)