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Word-of-mouth dynamics with information seeking: information is not (only) epidemics

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Abstract

Word-of-mouth is known to determine the success or failure of innovations [1] and facilitate the diffusion of products [2]. Word-of-mouth is made of both individuals seeking out information and/or pro-actively spreading information [3, 1]. Information seeking is considered as a step mandatory for individuals to retrieve the expert knowledge necessary for them to understand the benefits of an innovation or decide to buy a product [4, 1]. Yet the role of information seeking in the word-of-mouth dynamics was not investigated in computational models. Here we study in which conditions word-of-mouth enables the population to retrieve the initial expertise scattered in the population. We design a computational model in which awareness and expert knowledge are both represented, and study the joint dynamics of information seeking and proactive transmission of information. Simulation experiments highlight the apparition of cascades of awareness, cascades of expertise and chains of information retrieval. We find that different strategies should be used depending on the initial proportion of expertise (disruptive innovations, incremental innovations or products belonging to well-known categories). Surprisingly, when there is too much expertise in the population prior the advertisement campaign, word-of-mouth is less efficient in the retrieval of this expertise than when less expertise is initially present. Our results suggest that information seeking plays a key role in the dynamics of word-of-mouth, which can therefore not be reduced solely to the epidemic aspect.

Keywords: information dynamics, word-of-mouth, diffusion of innovations, viral marketing, complex systems, multi-agent modelling, complex networks

1. Introduction

1.1. Evidence on word-of-mouth

When individuals discuss an innovation (a novel product, practice, idea) [1], they *spread the word* about its existence and qualities. More people become

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