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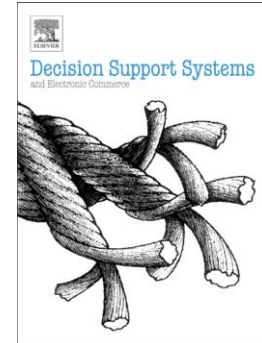
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Identifying influencers in a social network: the value of real referral data

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Abstract

Individuals influence each other through social interactions and marketers aim to leverage this interpersonal influence to attract new customers. It still remains a challenge to identify those customers in a social network that have the most influence on their social connections. A common approach to the influence maximization problem is to simulate influence cascades through the network based on the existence of links in the network using diffusion models. Our study contributes to the literature by evaluating these principles using real-life referral behaviour data. A new ranking metric, called Referral Rank, is introduced that builds on the game theoretic concept of the Shapley value for assigning each individual in the network a value that reflects the likelihood of referring new customers. We also explore whether these methods can be further improved by looking beyond the one-hop neighbourhood of the influencers. Experiments on a large telecommunication data set and referral data set demonstrate that using traditional simulation based methods to identify influencers in a social network can lead to suboptimal decisions as the results overestimate actual referral cascades. We also find that looking at the influence of the two-hop neighbours of the customers improves the influence spread and product adoption. Our findings suggest that companies can

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