30-S: Ecuadorian Media's News Dissemination through Online Social Networks

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Abstract--- The presence of Internet and mobile communication devices are revolutionizing the dissemination of information. The appearance of online social networks is generating fully connected information networks with high availability, which are questioning the traditional models of information dissemination. From the field of mass media, the emergence of Internet, and especially of online social networks, generates a new environment for dissemination of news that is far from the traditional unidirectional environment of mass media. In this work, our interest is focused on developing an empirical analysis of the flow of information disseminated by mass media in online social networks. Specifically, we studied the dissemination of tweets from two Ecuadorian newspapers (one public and one private), with a large circulation and national coverage, during the events of police insubordination of September 30, 2010. Our results show that the network caused by information flow disseminates both newspapers and their followers were multi-stage and multi- directional. This agrees more with a "swarming" model than with the "two-step flow" model, widely used in the literature.

I. Introduction

The development of new information and communication technologies (ICTs), is changing the way in which people interact [1], [2]. A digital environment without time-space limitations, driven by ubiquitous access to the Internet and massive use of mobile communication devices (smartphones, tablets, notebooks, etc.), allows hundreds of millions of people to produce and consume content of very diverse kind: product recommendations, political opinions, ideas, etc. All this, in a simultaneous and instantaneous way [3].

This digital scenario, with high availability and completely interconnected user networks, poses a great challenge for traditional mass media. People have gone from being passive actors-receivers of information-to generators of content (text, multimedia, videos, ...) and, many cases, promoters of collective movements in political, social, and economic aspects [3]–[9]. In this context, online social networks (OSN), such as Twitter, Facebook, Youtube, WhatsApp, Flickr, etc., play a fundamental role on information diffusion [10]. These networks can be defined as a user-generate content system that allows its users to communicate with each other and share information [3].

Given the impact that online social networks are having on society, many mass media have adopted this environment as the means to spread their news and increase their reader- ship [11], [12]. Several theories have been raised about the influence of the traditional mass media in its users. For instance, in [13], the authors propose the idea that a small group of media users ("opinion leaders") act as intermediaries between the mass media and its consumers, influencing their opinion. This theory, known as two-step flow model of influence, has been widely used and accepted for modeling diffusion of innovation, communication research and marketing [14]. In the literature, we can find several works that model the diffusion of information in social networks: herd behavior, information cascades, diffusion of innovations, and epidemic models [2], [3], [15], [16]. Nevertheless, to the best of our