Sustainability of Social Media: Design, Engagement, and Business Models

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ABSTRACT

Social media services are complex ecosystems of human and technology where the user engagement and the infrastructure support need to be in balance. Sustainability of social media fundamentally depends on the ability to instigate and maintain the user engagement over time and develop business models that leverage that engagement to support the underlying technology. Thus, it is of paramount importance to develop techniques and metrics to monitor the health of the community and to adopt business models that are effective yet compatible with the users' expectations and established trust. In this presentation we discuss the design challenges of social media, the tools for network analysis, and the implications of the advertising business models for user privacy.

1 INTRODUCTION

In contrast to the traditional computing systems which are focused on computation, social media services fundamentally depend on the human engagement. Social media aim to satisfy and leverage specific user needs that are met through social interactions. This can range from intellectual engagements in online forums and question answering services to role playing in online social games.

Real time monitoring of the service use is important to provide adequate technical support. However, it is equally essential to develop methods for more in-depth analysis of the user engagements. We need to understand the roles of individuals, the community dynamics, and the opportunities for designing new applications to meet the needs and desires of the community. This requires involvement of sociologists, interaction designers, and experts from other non-technical domains. They, in turn, need the means for analyzing data without having to write programs to implement network analysis algorithms.

2 DESIGN AND USER ENGAGEMENT

Designing user interfaces for social media is a challenge. An apparently small feature can have a significant impact on the user activities and the development of the community. Thus, it is essential to develop tools and metrics that are accessible to non-programmers and enable them to observe the impact of designs. Tools like NodeXL (http://nodexl.codeplex.com) exploit the traditional spreadsheet paradigm to enable import of network data and analyses through interactive visualization. While the layout and analysis features may seem simple, the algorithms that support them can be rather sophisticated. Our latest research has focused on novel methods for encoding network propagation events so that one can efficiently identify and visualize dynamic motifs in the propagating networks.

Similar visualization tools can be used to increase self-awareness of individuals within the community. The desire and ability of individuals to shape their persona are fundamental to human beings and the societies establish practices to support self-determination of individuals. We suggest that the designs of social media equally empower digital self-determination of the users since that is a powerful factor in shaping a community.

3 ADVERTISING AND PRIVACY

Dominant business model in social media is advertising although successful businesses have managed to introduce alternative streams of revenue from the distribution of media content to the sales of virtual goods in online games. Underpinning the current advertising practices are extensive user profiling and real time tracking. In many instances the users are not informed about the extent of surveillance they are subject to. The designs of the user interfaces provide no indications of such practices. For example, third-party monitoring based on browser cookies is invisible to the user. Yet, the user is followed across Web sites and the private browsing information is shared among the participating sites. While cookie monitoring is, in principle, anonymous, the social media sites may in fact have information about the physical persona. By cross referencing the data from social media with cookie tracking, the user's online interactions cease to be anonymous.

4 CONCLUDNIG REMARKS

Social media platforms provide opportunities for innovative services that can improve the way our societies function. However, that requires effort by inter-disciplinary teams of experts who can address a wide range of issues, from design to policies and economic models that can ensure sustainability of social media and foster fundamental human values and civil liberties.