



THE CHINESE UNIVERSITY OF HONG KONG
 Department of Information Engineering
Seminar

Incentive Design for Ad-Sponsored Data

by

Professor Soumya Sen

Department of Information Systems & Decision Sciences

Carlson School of Management

University of Minnesota

U.S.A.

Date : 5 September, 2017 (Tuesday)
Time : 11:00am – 12:00noon
Venue : Room 121, Ho Sin Hang Engineering Building
The Chinese University of Hong Kong

Abstract

Mobile devices have changed the way in which people interact, consume, and share information with their friends. Much of this information flow is in the form of mobile video traffic, which has grown 18 fold in the last 5 years and now accounts for 60% of total mobile data traffic. While these trends are exciting for content providers and ISPs, consumers increasingly face a high cost for accessing content on a mobile device. Consequently, mobile ISPs like AT&T and Verizon have begun to explore novel subsidy-oriented business models, such as “Sponsored Data” plans, which allow advertisers and content providers to subsidize users’ consumption of data. Such realizations of the “watch ads, get paid” model are initial attempts at the design of customer incentive-based advertisement campaigns.

This study therefore investigates the effectiveness of financial incentives (hereafter, simply incentives) in increasing viewership and social sharing of advertisements. Incentives can, in principle, help advertisers reach a larger audience, but there are two aspects of their application that have yet to receive much attention: (a) How large of an incentive will be needed to engage users with advertisements in the real world? (b) How does the design of a system that offers incentives in exchange for advertising exposure impact said incentives’ effectiveness? To this end, we develop a system called NURM (Network User Rewarding Mechanism) that uses a mobile application to offer users with ad-subsidized access to data (and thus content) in exchange for exposing herself or her social network to advertisements. We conduct a randomized experiment in which users were offered a monetary incentive in exchange for engaging with an advertisement, watching or sharing the advertisement with their social network on Twitter. Our work speaks to two open questions in the networking and economics literature: how can we design effective “Sponsored data plans” and how can we convert individuals into agents of social sharing in “Paid advertising.” Our initial results from the experiment show that users do respond to incentives, but they do so in interesting heterogeneous fashion, conditional on a variety of factors, including advertisement characteristics, incentive amount, and the type of engagement (i.e., watch vs. share).

Biography

Soumya Sen is an Assistant Professor of Information & Decision Sciences at the Carlson School of Management of the University of Minnesota. He received his M.S. and Ph.D. in Electrical and Systems Engineering from the University of Pennsylvania in 2008 and 2011, respectively, during which he collaborated with faculties from both engineering and the Wharton Business School. He carried out his postdoctoral research at the Princeton University before joining the University of Minnesota.

Soumya’s research takes a multi-disciplinary approach involving computer networks, economics, and human-computer interaction. His research interests are in Internet economics, communication systems, and social networks. He has published in and served as a reviewer for several highly cited AIS, IEEE, and ACM conferences and journals. Soumya received the BITSAA 30 under 30 Award in 2012, Princeton Keller Center Innovation Award in 2013, Grant-in-Aid Award from the University of Minnesota in 2014, and the Timothy Nantell Teaching Grant Award in 2016. His works on Internet pricing and resource allocation was a finalist for the 2011 Vodafone Wireless Innovation, and has won the Best Paper Award at IEEE INFOCOM 2012, the INFORMS ISS Design Science Award 2014, and the IEEE INFOCOM SDP Best Workshop Paper Award in 2017. Soumya is the founder of the Smart Data Pricing (SDP) Forum, a industry-academic partnership for network pricing research and served as the chair of IEEE SDP workshops from 2012 - 2016. He is a co-founder of a telecommunication startup, DataMi, and an editor of the book titled "Smart Data Pricing", published by J. Wiley & Sons. He is a senior member of the IEEE.

**** ALL ARE WELCOME ****