Tectonic Shifts in Television Advertising

How Set Top Box Data and Data Mining Techniques are Revolutionizing One of the Largest Advertising Mediums on the Planet

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Abstract—**We survey major technological shifts occurring in advertising and the role that data mining is playing in the television industry.**

Keywords-television; tv; targeting; ad; advertising

I. INTRODUCTION

Television (TV) is the arguably largest and most successful advertising medium on the planet. In the United States, TV accounts for 65 billion dollars per year which is larger than any other advertising category [1]. Despite predictions that television viewing would decline, Nielsen statistics are showing growth in all video-related areas. People are consuming more video than ever before, and both television and internet video consumption is on the increase. Hours per capita spent watching TV are the highest ever – over 5 hours per day, with all demographics showing increases [5, 6]. High definition TV sets have exploded. The number of new original programs created for TV are also at an all time high, twice the number in 2005 [2], and we would argue that the production quality of those programs is also very high. Advertising dollars are also at nearly peak levels again after the 2008 recession, and have continued to grow.

However despite its vitality, TV has lagged far behind other data intensive industries. One may be surprised to learn that very little has changed in TV measurement since the 1950s. The industry relies on volunteer panels to track ratings – a group of 5,000 to 25,000 people. Targeting is discussed in terms of vast age-gender brackets.

This is about to change.

In just a few short years, the percent of households with return path capable Set Top Boxes in the United States has increased to over 60% in 2011 [3]. This has resulted in an explosion of data.

This talk will discuss the revolution occurring due to Set Top Box data and the use of data mining techniques to solve the largest problem in advertising.

The talk will begin with a survey of the advertising space and the tectonic shifts that are occurring today. After 50 years of predictable growth, in less than a decade Newspapers, Magazines and Yellow Pages industries have been decimated, and are scrambling to evolve online advertising models. Despite themselves being challenged by new subscription and Content-On-Demand services such as Netflix, Hulu and Pandora, both television and radio broadcast advertising continues to do well. Although these industries could also shift, we discuss the latest Nielsen findings on how mobile and tablet devices are being used by consumers, and their findings that video consumption on all devices is increasing. This suggests that the future will be multi-screen but with consumers favoring "the best screen available".

The talk will then discuss the new frontiers that have been created from Set Top Box data. We discuss several applications including: (a) Buyer targeting using collaborative filtering-like methods, (b) View conversions which allow conversions due to TV to be measured, and (c) Graph mining of program viewing. We finally present a case study showing the performance of machine-based targeting versus human targeting, the lifts that were measured during those live campaigns, and the implications.

The talk will finish by contemplating how TV is likely to evolve. Today's ad relevance on TV is poor, but with the ability to target and measure conversions, we believe that auction dynamics will cause TV to evolve into a targeted medium similar to the internet.

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