Improving the Consumer Journey with Advanced Analytics: Promotion Design, Content Optimization and Decision Algorithms

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Session Chair:

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Session Paper:

1. In-Store Coupons: A Large-Scale Field Experiment
   Sebastian Gabel* (Erasmus University Rotterdam), Duncan Simester (MIT Sloan School of Management), Artem Timoshenko (Northwestern University)
2. Content Release Strategies and User Engagement on Advertising-Based Streaming Platforms
   Sibo Zhang* (University of New South Wales, Australia), Yiting Deng (University College London, United Kingdom), Yu-Ting Lin (University of New South Wales, Australia), Maggie (Chuoyan) Dong (University of New South Wales, Australia)
3. Transforming the Customer Journey: Improving Firm Actions to Drive Customer Behavior
   Luuk van Maasakkers (Erasmus University Rotterdam), Dennis Fok (Erasmus University Rotterdam), **Bas Donkers* (Erasmus University Rotterdam)**
4. Model-Learning Bandits for Personalization with High-Dimensional Data
   Hong Deng* (London Business School), Bas Donkers (Erasmus University Rotterdam), Dennis Fok (Erasmus University Rotterdam)

Abstract

This session examines how firms can rely on experimental designs and cutting-edge algorithms to better understand and influence customer behavior across diverse contexts, including promotional campaigns, streaming platforms, and insurance services. The four papers jointly offer insights into enhancing firm interventions in offline and online environments and support scalable, personalized customer experiences, through causal inference and methodological innovation:

(1) **In-Store Coupons: A Large-Scale Field Experiment** (Sebastian Gabel, Duncan Simester, Artem Timoshenko)

New technologies are transforming the way retailers promote consumer packaged goods, including in-store coupons to prompt unplanned decisions. This study investigates the effectiveness of in-store coupons using a large-scale field experiment involving 101 CPG brands. On average, in-store coupons triple sales of the promoted brands. This is not merely cannibalization from future sales or stealing share from other brands in the category. Instead, in-store coupons drive substantial category expansion. Category expansion benefits both the focal brand and other brands in the same category. The study is complemented with multi-retailer household panel data, to reveal not only what in-store coupons do, but how they work and where the incremental sales originate.

(2) **Content Release Strategies and User Engagement on Advertising-Based Streaming Platforms** (Sibo Zhang, Yiting Deng, Yu-Ting Lin, Maggie Dong)

Streaming platforms increasingly differ in how they release serialized content—either all at once ("binge") or sequentially ("episodic")—yet little is known about how these strategies shape user engagement in advertising-based video-on-demand (AVoD) environments. This study examines how release strategy affects both within-season engagement (progression rate) and cross-show spillover (viewing of other series) using three years of viewing records from a major AVoD platform. Binge-released shows yield significantly higher progression rates and stronger positive spillover across the platform. The findings highlight release strategy as a key content-scheduling lever for affecting engagement and enhancing the overall customer journey.

(3) **Transforming the Customer Journey: Improving Firm Actions to Drive Customer Behavior** (Luuk van Maasakkers, Dennis Fok, Bas Donkers)

We propose a novel, transformer-based approach to model and improve customer journeys. Customer journeys are sequences of touchpoints between firms and customers, potentially ending in a purchase. Much of the previous literature has modeled the sequence of all

touchpoints, without distinguishing between contacts initiated by the firm versus the customer. Our model jointly predicts the type and timing of the next customer action as well as the likelihood of conversion, using the entire prior sequence of firm- and customer-initiated touchpoints. We use data from a large Dutch insurance company to demonstrate that the model accurately predicts the type and timing of customer actions and the likelihood of conversion, outperforming commonly used benchmarks. We find that the impact of company actions on conversion vary strongly across different customer journeys and over time within the same journey.

(4) **Model-Learning Bandits for Personalization with High-Dimensional Data** (Hong Deng, Bas Donkers, Dennis Fok)

Personalization strategies in marketing often build on a large set of customer-specific and other contextual features. Conventional bandit algorithms enable marketers to learn optimal personalized actions by balancing exploration and exploitation, but may suffer from over-exploration by attempting to estimate the impacts of all features, many of which may be irrelevant. To address this challenge, we propose a framework that embeds model selection into contextual bandit algorithms to adaptively learns the model specification to support the exploration process and to effectively resolve the uncertainty in feature importance.