PROPOSAL: FEEDBACK DYNAMICS IN CAR RENTAL SALES: MODELING INTER-LINKAGES BETWEEN EMPLOYEE ENGAGEMENT, PRODUCTIVITY AND CUSTOMER LOYALTY

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"*We built the Starbucks brand first with our people, not with consumers. Because we believed that best way to meet and exceed the expectations of our customers was to hire and train great people, we invested in employees.*" (Howard Schultz, Chairman and CEO, Starbucks)

Some companies pride themselves as having the happiest employees, where some factors driving employee satisfaction include pleasant work environment, generous benefits, and growth opportunities. One benefit of such employee policies is the publicity that it brings through, e.g., Fortune 100 Best Companies to Work for rankings. Publicity aside, there may be tangible benefits to employee satisfaction. This project proposes a new framework for analyzing the extent to which employee and customer satisfaction interact with one another in determining employee productivity, customer loyalty and sales. It develops an estimable dynamic model of employee engagement in which each manager optimizes the instruments she uses to engage with employees accounting for the long run consequences of these instruments through engagement's implication on current and future sales. The model postulates that engagement affects employee loyalty and productivity which in turn affects customer satisfaction. Customer satisfaction affects transaction volume which may affect future employee satisfaction. By identifying the main nodes in this dynamic feedback process, the analysis can answer the following questions: 1) *What is the long run rate-of-return on instruments that boost employee satisfaction in terms of increased customer loyalty and upselling?* 2) *Is learning-by-doing regarding employee engagement location specific and does it become part of institutional memory that can be retained and disseminated across the firm?* 3) *Do certain car rental channels lead to greater employee engagement, productivity and transaction volume in the future?*

The data for this project comes from the Hertz rental corporation, a large player in the market for retail rental cars and equipment. Included are surveys of employee engagement linked to transaction histories and measures of customer satisfaction. To be more specific, the data covers a 2-year time-frame at 3,000 uniquely identified rental locations in US and Canada. It contains a total of 68,000 responses to a semi-annual employee engagement survey, 900,000 responses to post-transaction customer satisfaction surveys in addition to detailed transaction data, and 2-year transaction histories for more than 25% of the customers (9.8 million transactions).

The undergraduate student will help organize and structure the data, and perform preliminary statistical analyses. The student will also help with a general literature review. The skills required will be familiarity with Excel and STATA (or some other comparable statistical software package).

The student will learn how to use and manage very large datasets. The student will also learn how to conduct a literature review and perform statistical analyses (e.g., regression analysis) in preparation for a research project related to Industrial Organization and Marketing.