**Part 2 ‐ Experiment and metrics design**

The neighboring cities of Gotham and Metropolis have complementary circadian rhythms: on weekdays, Ultimate Gotham is most active at night, and Ultimate Metropolis is most active during the day. On weekends, there is reasonable activity in both cities.

However, a toll bridge, with a two­ way toll, between the two cities causes driver partners to tend to be exclusive to each city. The Ultimate managers of city operations for the two cities have proposed an experiment to encourage driver partners to be available in both cities, by reimbursing all toll costs.

1. What would you choose as the key measure of success of this experiment in encouraging driver partners to serve both cities, and why would you choose this metric?

I would choose the driver’s income as a measure of success. Longer drives creates opportunities for more earning. Increase in income can be a good incentive for drives to be available to both cities.

1. Describe a practical experiment you would design to compare the effectiveness of the proposed change in relation to the key measure of success. Please provide details on:
   1. how you will implement the experiment

A/B testing. Divide drivers in two groups control and experiment. Control drivers are exclusive to one city and Experiment drivers are available in both cities with their toll cost being compensated.

* 1. what statistical test(s) you will conduct to verify the significance of the observation

t-test. H0: no difference in income of two groups. Ha: difference in income of two groups. By rejecting H0 we can encourage drives to work in both cities and increase their income.