This is a data analytics problem where network structure is at the heart of the issue.

Scenario: The client is a leading global specialty food retailer, and have developed a novel approach to identifying associations among customers (essentially customers who shop together). Our primary client contact is the CMO, who is keen to improve the efficiency of promotional spend via the loyalty program (special offers, discounts, etc.)

In terms of network science here – some of the business questions on the team's mind include:
1. Given a fixed budget of promotional spend, which members of the network should be targeted?

2. Are there links between strength and number of relationships and the revenue a customer spends with the retailer in a given year?

3. Are there links between the size / strength of networks and certain zip codes and neighborhood-types in Seattle?

4. How balanced are relationships? Are customers often paired with others who have similar number of friends, or is it typically one sided? Similarly for revenue – big spenders with big spenders or not?

Of course, we also have much, much more – we have this network through time, for entire US, co-spend transactions vs. solo transactions, customer age, long-terms spend habits, food and beverage preferences, place and time context for transactions, historical response to promotions, etc.

 Information contained in the data set: In the excel file attached, you will find two sheets – 'nodes' are retail customers and 'links' are relationships we've identified between customers. In terms of attributes:
- 'Strength' is the frequency of the link – proportional to the number of times the customers co-shop
- 'RevYear' is proportional to the total spend for the customer in a given calendar year
- 'Zip' is zipcode for the customer – they are the core zips comprising Seattle

A whole host of rich investigations are possible. Your ideas on what some next steps could be, armed with such data is also of interest.