1. **Dimensions**

Franchise: 350 (ERD).

Customer: 50,000 (ERD) + (150/spreadsheet \* 200 spreadsheets) = 80,000.

Sales Item: 500 (ERD – Merchandise) + 20 (ERD – ServCategory) + 1 (spreadsheet – Special

Events) = 521.

1. **Fact Table Size** (per year)

450,000 (ERD – Contains (merchandise)) + 100,000 (ERD – ServicePurchase) + 300 \* 200 (spreadsheets) = 610,000

1. **Sparsity estimate**

* 1 - (fact table size / product of dimensions )
* 1-(610,000/(350 \* 80,000 \* 521 \* 365) = 1-

(610,000/10,220,000,000) = 1-0.0000596885 = 0.9999403