The Grains are

* Franchises
  + 350 franchises for merchandise sales
  + 200 franchises for special events
  + Assume that franchises for special events are already included in the franchises with merchandise sales
* Goods for sale
  + Merchandise: 500
  + Service categories: 20
  + Event types: 1
  + Total types of goods/services for sale: 521
* Members and customers
  + Members: 50,000 members in the retail database
  + Corporate customers: 150 customers \* 200 franchises (30,000)
  + Total members and customers: 80,000 assuming no overlap
* Fact table size
  + Merchandise purchases: rows in the Contains table (450,000/year)
  + Service purchases: rows in the ServicePurchase table (100,000/year)
  + Special events: worksheet rows (300 events \* 200 franchises = 60,000 events per year)
  + Total rows: 610,000 rows per year
* Sparsity estimate:
  + 1 - ( fact table size / product of dimensions )
  + (1 – ( 610,000 / (350\*521\*365\*80,000) ) = 0.999999885