The most detailed grain is the combination of individual franchise, individual merchandise and date.

1.Days per year:365

2.530 merchnats:sum of merchants rows and merchant types rows

3.550 franchise:sum of franchise and franchise zip codes

4.50010 memners:sum of member rows and member type rows

5.Fact table size=no.of service purchase rows=100000

Sparsity estimate:1-(fact table size/product of dimensions)

=1-(100000/(530\*550)

=1-0.343

=0.657

The data cube has arpund 65.7 % odf cells with non zero values