### **Context**

### **The Challenge - One challenge of modelling retail data is the need to make decisions based on limited history. Holidays and select major events come once a year, and so does the chance to see how strategic decisions impacted the bottom line. In addition, markdowns are known to affect sales – the challenge is to predict which departments will be affected and to what extent.**

### **Content**

### **You are provided with historical sales data for 45 stores located in different regions - each store contains a number of departments. The company also runs several promotional markdown events throughout the year. These markdowns precede prominent holidays, the four largest of which are the Super Bowl, Labor Day, Thanksgiving, and Christmas. The weeks including these holidays are weighted five times higher in the evaluation than non-holiday weeks.**

### **Within the Excel Sheet, there are 3 Tabs – Stores, Features and Sales**

### **Stores**

### **Anonymized information about the 45 stores, indicating the type and size of store**

### **Features**

### **Contains additional data related to the store, department, and regional activity for the given dates.**

### **Store - the store number**

### **Date - the week**

### **Temperature - average temperature in the region**

### **Fuel\_Price - cost of fuel in the region**

### **MarkDown1-5 - anonymized data related to promotional markdowns. MarkDown data is only available after Nov 2011, and is not available for all stores all the time. Any missing value is marked with an NA**

### **CPI - the consumer price index**

### **Unemployment - the unemployment rate**

### **IsHoliday - whether the week is a special holiday week**

### **Sales**

### **Historical sales data, which covers to 2010-02-05 to 2012-11-01. Within this tab you will find the following fields:**

### **Store - the store number**

### **Dept - the department number**

### **Date - the week**

### **Weekly\_Sales - sales for the given department in the given store**

### **IsHoliday - whether the week is a special holiday week**

### **The Task**

### **Predict the department-wide sales for each store for the following year**

### **Model the effects of markdowns on holiday weeks**

### **Provide recommended actions based on the insights drawn, with prioritisation placed on largest business impact**

# UNDERSTAND THE PROBLEM STATEMENT/GOAL

### **- This dataset contains weekly sales from 99 departments belonging to 45 different stores.**

### **- Our aim is to forecast weekly sales from a particular department.**

### **- The objective of this case study is to forecast weekly retail store sales based on historical data.**

### **- The data contains holidays and promotional markdowns offered by various stores and several departments throughout the year.**

### **- Markdowns are crucial to promote sales especially before key events such as Super Bowl, Christmas and Thanksgiving.**

### **- Developing accurate model will enable make informed decisions and make recommendations to improve business processes in the future.**

### **- The data consists of three sheets:**

### **- Stores**

### **- Features**

### **- Sales**