Problem Statement:

The CTO of Blackwell Electronics asked to predict the sales of four different product types. The program used 3 different regression algorithms and Random forest was selected since it yielded a better Rsquared (bigger the better) and MAE value (smaller the better). SVMLinear2 produced negative Sales Volume. So that has to be excluded for the final prediction.

Algorithms and Results:

Model	RMSE	Rsquared	MAE
SVM Linear2	1079.5146060	0.6419166	449.6969079
Random Forest	1242.434977	0.521433	385.190211
GBM	1170.1565907	0.5057308	472.5976777

Results:

Summary(resamp

```
> summary(resamps)

Call:
summary.resamples(object = resamps)

Models: gbm, rf, svm
Number of resamples: 4

MAE
        Min.   1st Qu.   Median     Mean  3rd Qu.     Max. NA's
gbm 253.85266 316.2555 341.9461 436.0498 461.7404 806.4543    0
rf   79.22917 174.5575 229.3550 299.2318 354.0292 658.9879    0
svm 113.86046 202.7616 275.5528 277.5584 350.3496 445.2674    0

RMSE
        Min.   1st Qu.   Median     Mean  3rd Qu.     Max. NA's
gbm 330.0238 420.7403 462.7133 939.5571 981.5301 2502.778     0
rf  176.5270 377.1195 464.9650 876.2301 964.0756 2398.463     0
svm 226.3173 498.8421 620.4004 751.3760 872.9342 1538.386     0

Rsquared
        Min.   1st Qu.   Median     Mean  3rd Qu.     Max. NA's
gbm 0.2970111 0.6372247 0.7561711 0.6681706 0.7871169 0.8633292    0
rf  0.5715947 0.7388035 0.8327766 0.7927640 0.8867370 0.9339082    0
svm 0.6946929 0.7095828 0.7811493 0.8083718 0.8799382 0.9764958    0

> # Final Prediction using random forest
```
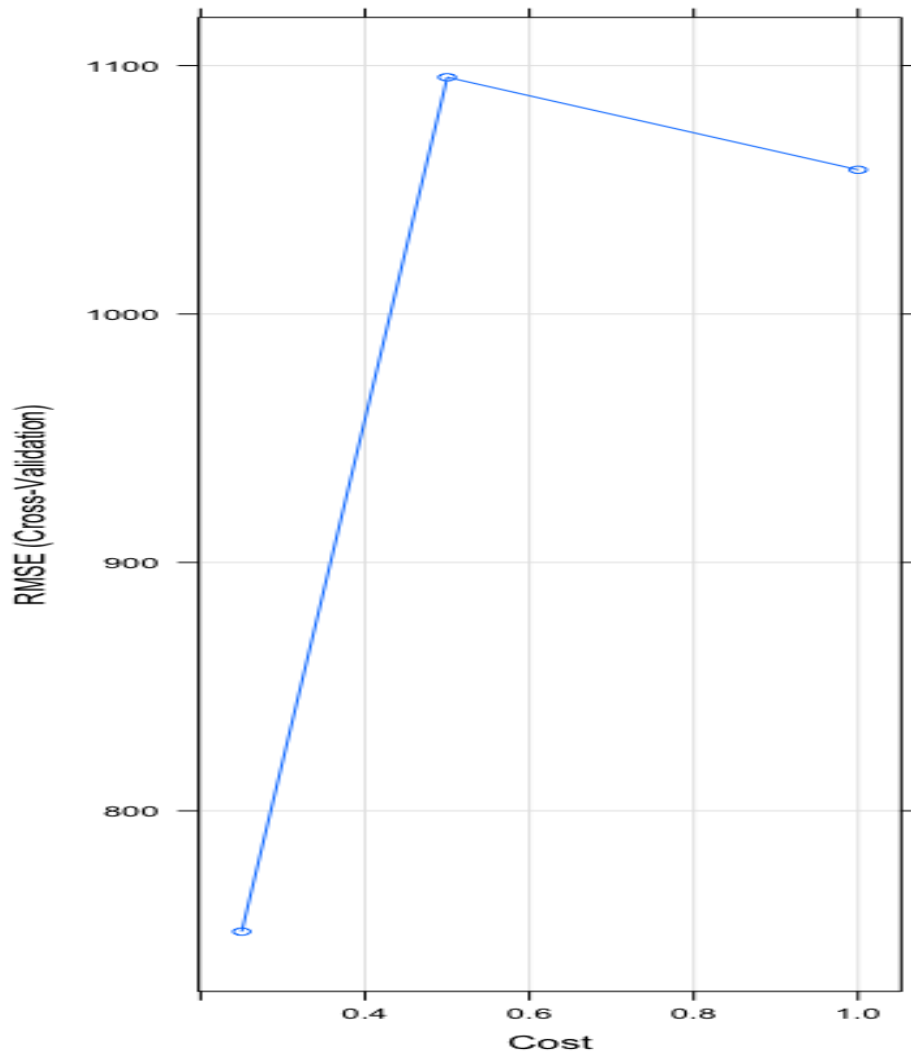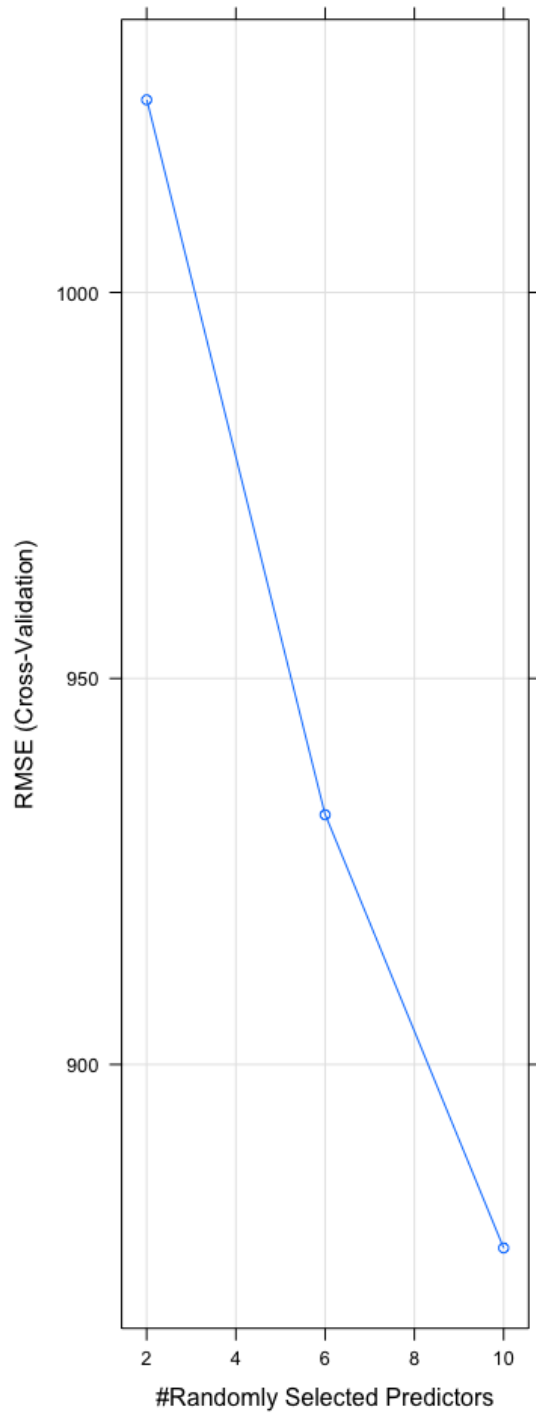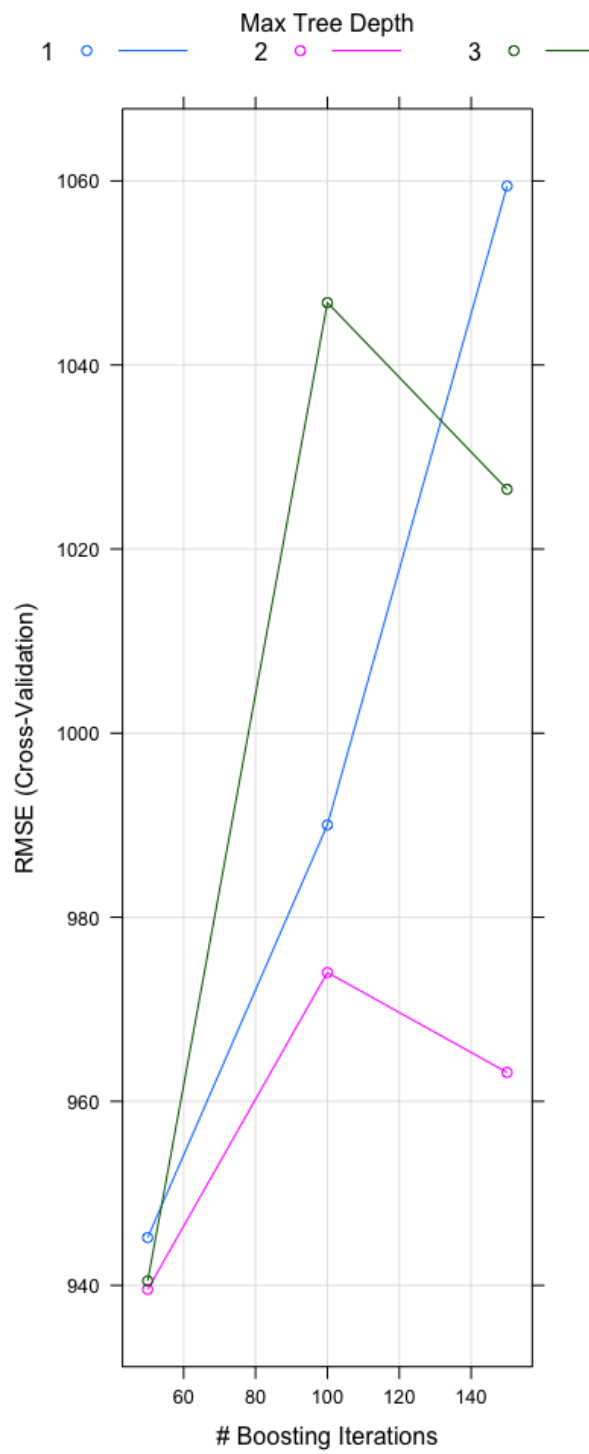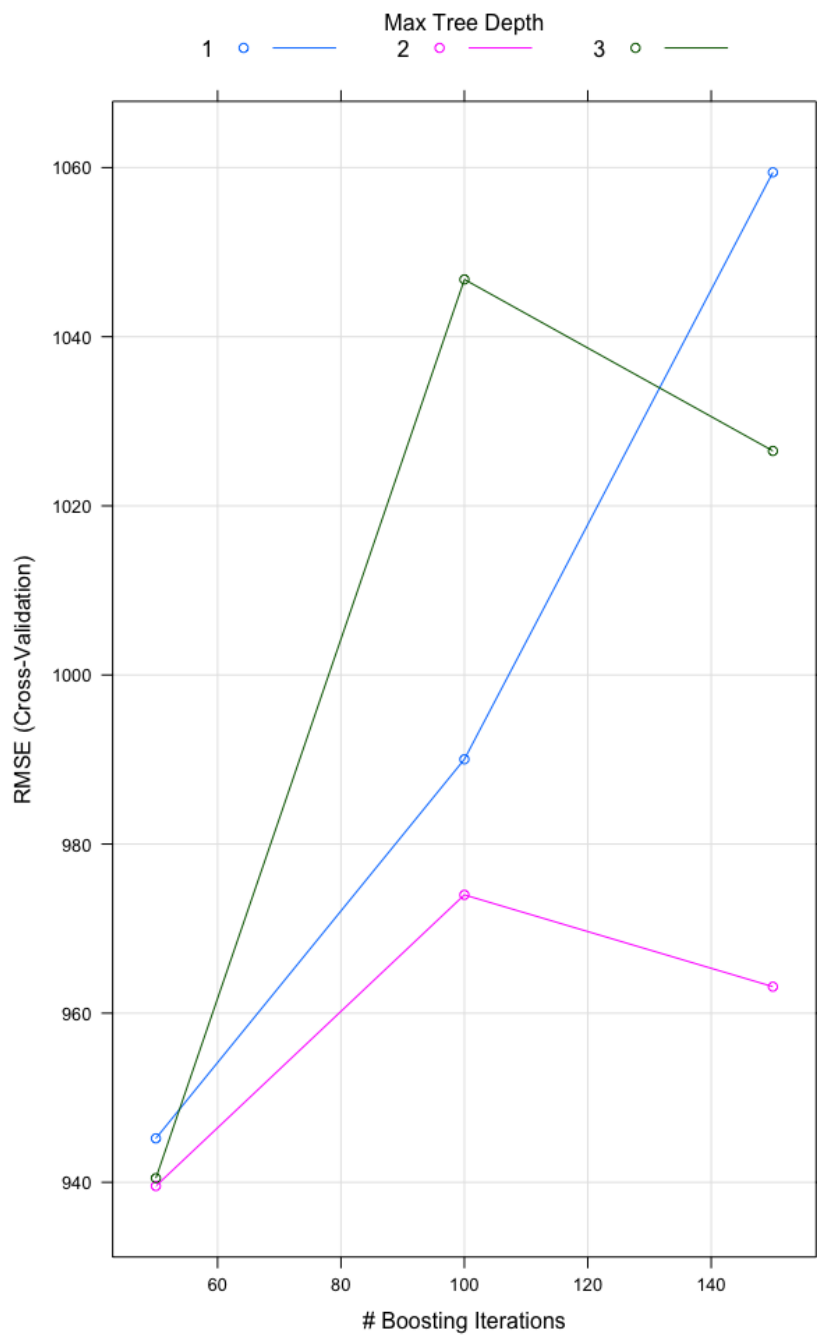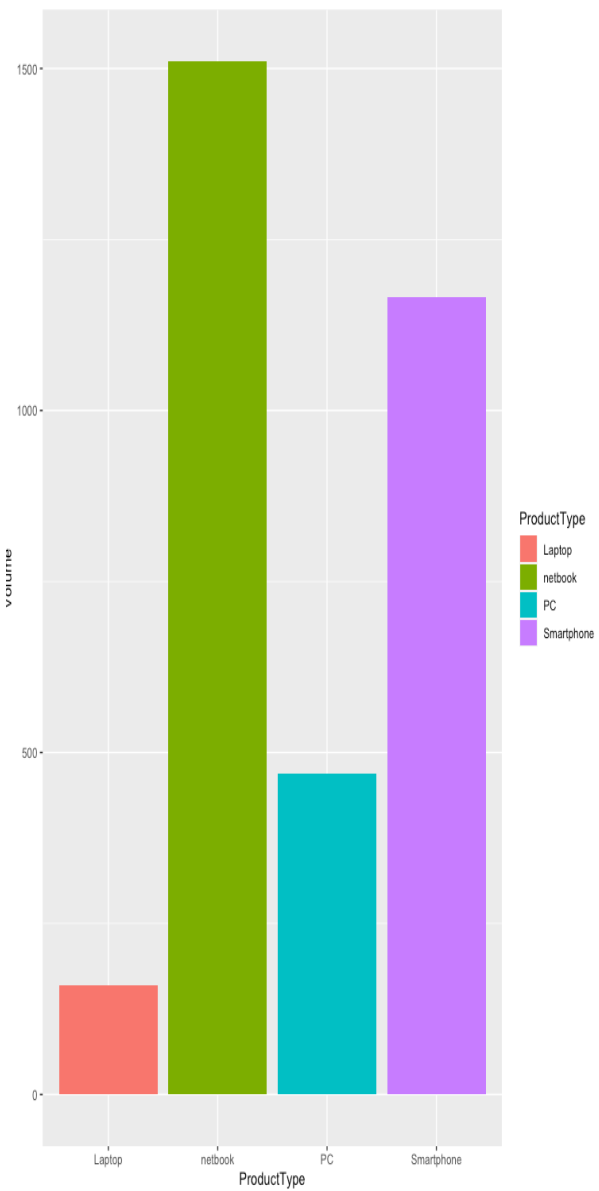
s)

SVM_Linear2:

Random Forest:

GBM:

Algorithms selected:

Random Forest is selected for the final prediction.

Sales Predictions:

	x
1	352.526933
2	117.243600
3	133.042533
4	13.924133
5	12.430933
6	80.640667
7	1289.365867
8	119.390533
9	21.137467
10	1214.558933
11	5419.852400
12	320.877067
13	597.854400
14	78.682533
15	168.053867
16	1334.920800
17	19.405333
18	25.178533
19	70.633333
20	100.750267
21	52.298667
22	16.384400
23	8.140267
24	1629.198267

	ProductType	Volume
1	PC	469.7705
2	Smartphone	1165.4679
3	Laptop	159.3976
4	netbook	1510.5345

Impact of Customer and Service Reviews on sales Volume

Since there is no separate Volume for each of the reviews, the impact of reviews can't be related.