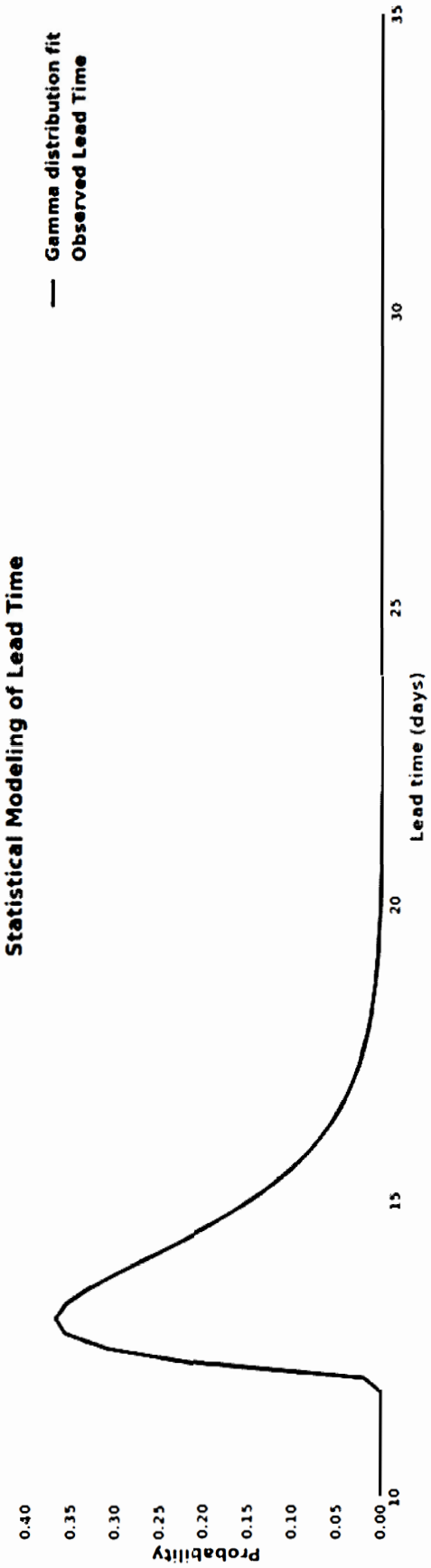
Statistical Modeling of Lead Time
Gamma distribution fit
Observed Lead Time
Probability
0.00
0.05
0.10
0.15
0.20
0.25
0.30
0.35
0.40
10
15
20
25
30
35
Lead time (days)

FIG. 2

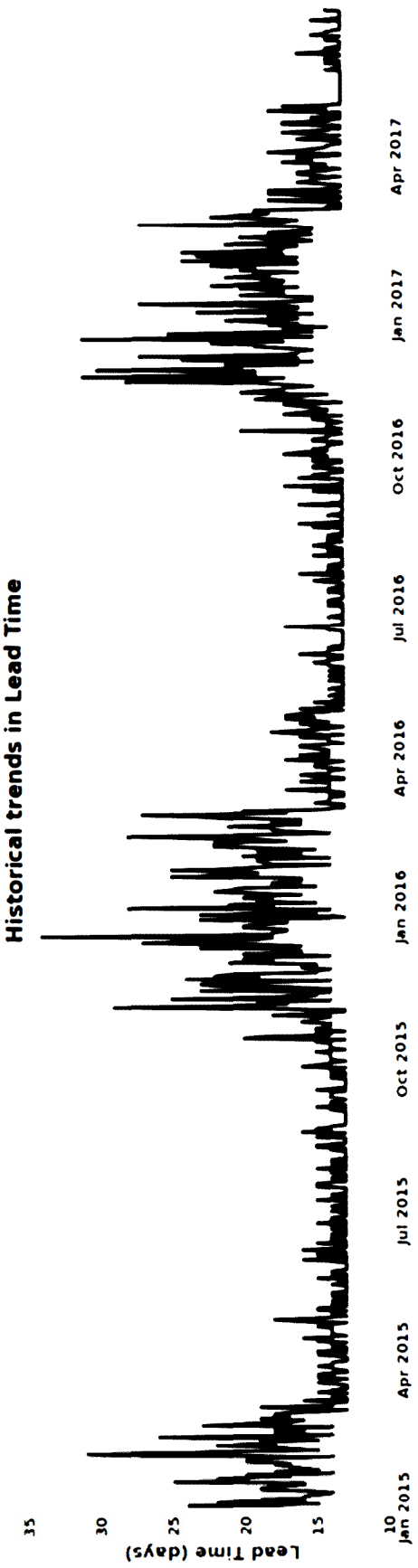
Historical trends in Lead Time
Lead Time (days)
35
30
25
20
15
10
Jan 2015
Apr 2015
Jul 2015
Oct 2015
Jan 2016
Apr 2016
Jul 2016
Oct 2016
Jan 2017
Apr 2017

FIG. 3

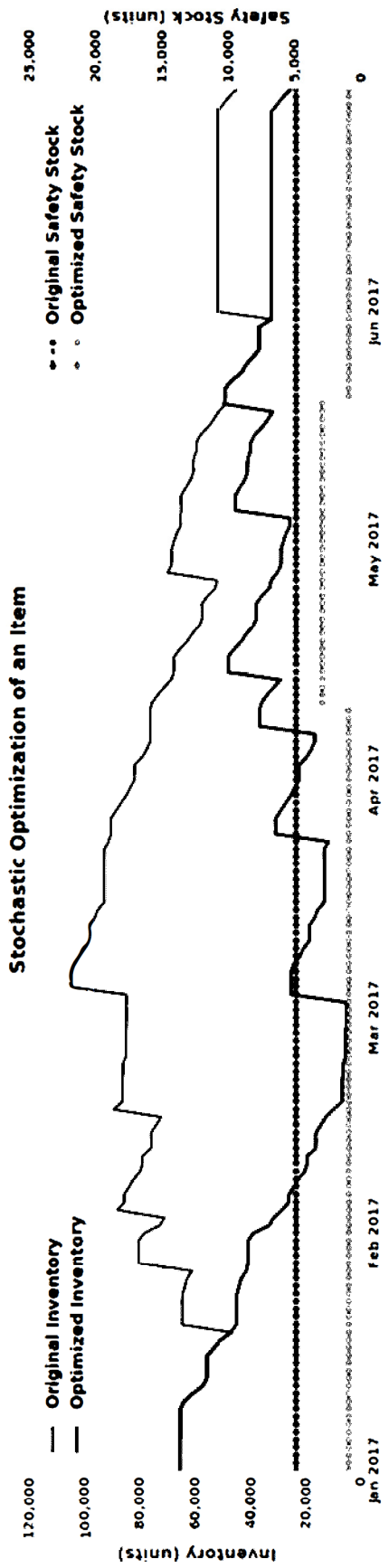
Stochastic Optimization of an Item
Original Inventory
Optimized Inventory
Original Safety Stock
Optimized Safety Stock
Inventory (units)
Safety Stock (units)
120,000
100,000
80,000
60,000
40,000
20,000
0
25,000
20,000
15,000
10,000
5,000
0
Jan 2017
Feb 2017
Mar 2017
Apr 2017
May 2017
Jun 2017

FIG. 4

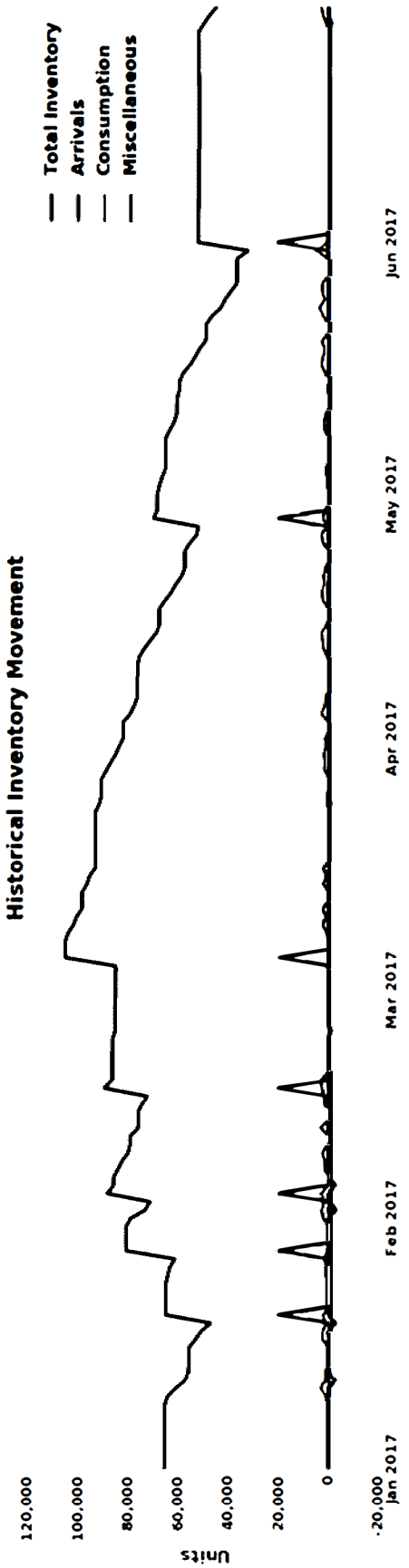
Historical Inventory Movement
Total Inventory
Arrivals
Consumption
Miscellaneous
Units
120,000
100,000
80,000
60,000
40,000
20,000
0
-20,000
Jan 2017
Feb 2017
Mar 2017
Apr 2017
May 2017
Jun 2017

FIG. 5

G.

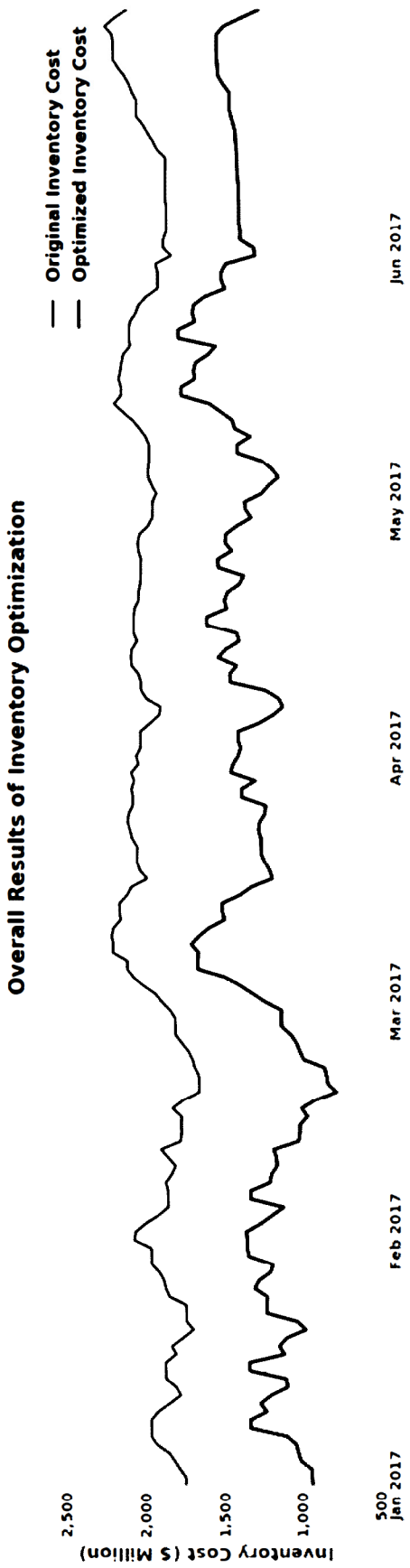
Overall Results of Inventory Optimization
Original Inventory Cost
Optimized Inventory Cost
Inventory Cost ($ Million)
2,500
2,000
1,500
1,000
500
Jan 2017
Feb 2017
Mar 2017
Apr 2017
May 2017
Jun 2017

FIG. 6