FINANCIAL ANALYSIS CASE STUDY

Sales and Performance Dashboard

Sales, profit and margin analysis with a Q1 2020 outlook

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Finance, Strategy & Decision Intelligence

Business context

The data

Six years of order data (2014–2019) for a US business selling Furniture, Office Supplies and Technology across four regions: **15,892 order lines**, **793 customers**, **49 states**.

Objective

Show where sales are earned, where profit is lost, and what to expect in Q1 2020.

Approach

1. **Model**
   Combined two order tables (2014–17, 2018–19) and joined customer, product, location and shipping tables.

2. **Measure**
   Built KPI calculations: profit ratio, average order value and days to ship.

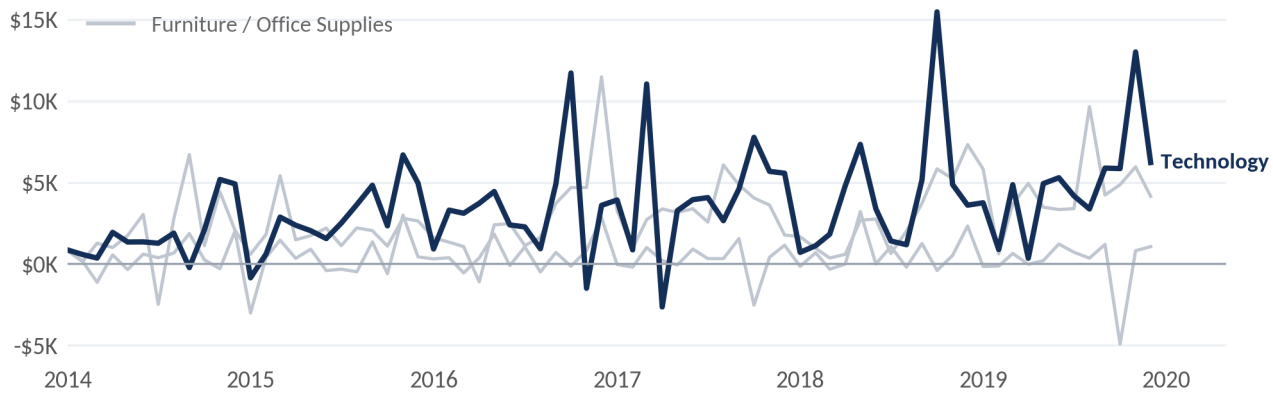
3. **Visualise**
   Two interactive dashboards with filters, a Top-N parameter and click-through actions.

4. **Forecast**
   Projected Q1 2020 sales with seasonal smoothing, tested on 2018–19 actuals.

Growth is strong; margin is uneven

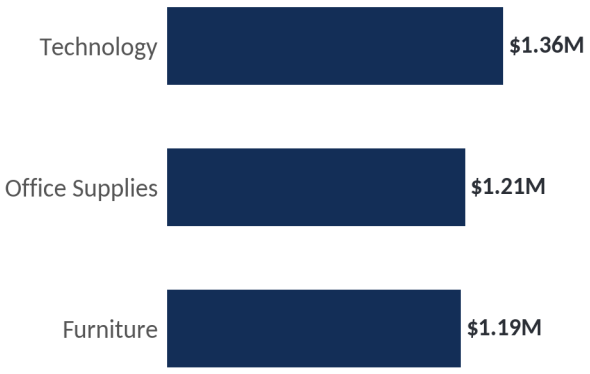
Sales	Profit	Profit ratio	Avg. days to ship
$3.76M	$492K	13.1%	3.9

Profit by Month (Technology highlighted)



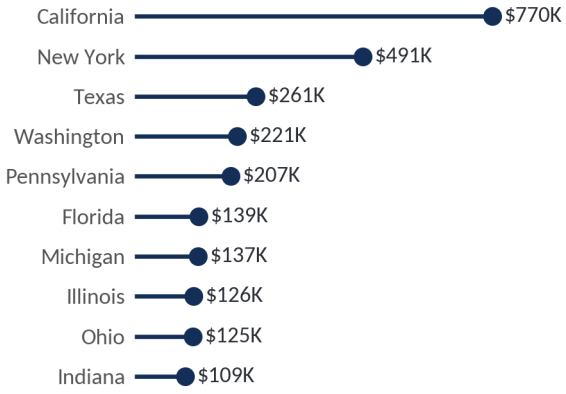
Annual profit more than doubled, from $49.5K (2014) to $113.5K (2019), lifting margin from 10.2% to 14.1%.

Sales by Category ($USD)



Furniture is 32% of sales but earns a **2.3%** margin. Technology earns 18.7%.

Top 10 States by Sales ($USD)



The top 10 states generate 69% of sales, but **five are loss-making**: TX, PA, FL, IL and OH.

Charts from the Tableau workbook (sheets: Perf OverTime LINE, Sales by Cat BAR, Sale by State LOL). All segments, 2014–2019.

03 · OUTLOOK

Q1 2020 forecast

Month	Forecast sales	Forecast profit	Q1 2019 sales
Jan 2020	$40.0K	$5.6K	$59.4K
Feb 2020	$33.8K	$4.8K	$22.2K
Mar 2020	$68.3K	$9.6K	$52.9K
Q1 total	**$142.1K**	**$20.0K**	**$134.4K**

Expected range for the quarter: **$124K – $160K**, or **+5.7%** on Q1 2019.

Assumptions

- Seasonal exponential smoothing (Holt-Winters) on 72 months of sales.
- Profit equals forecast sales × the last-12-month margin of 14.1%.
- Backtested on 2018–19: the quarterly error averaged 12.5%, which sets the range above.

Recommendations

1 **Cap discounts at 30%.** Lines discounted 30% or more lost $204K, equal to 41% of total profit.

2 **Fix pricing in Tables and four states.** Tables lost $29K (–8.5% margin); TX, PA, IL and OH lose money despite high sales.

3 **Prioritise high-margin growth.** Push Technology and Copiers (36.9% margin) over Furniture.

Supplementary analysis: the Tableau workbook has no forecast. Calculated from the workbook's monthly sales data.

What this project shows

Skills demonstrated

Tableau
Calculated fields, parameters, dashboard actions

Data modelling
Table union and joins in a star schema

Profitability analysis
Margin by category, state and customer

Forecasting
Seasonal smoothing with a backtest

Decision support
Findings turned into three actions

Data quality
Spotting inconsistencies across sources

Limitations

- Order counts and average order value are not comparable across years: 2018–19 records about 1 line per order versus 2 before.
- Profit is line-level only, with no overheads or cost-to-serve.
- The forecast is a single-variable model with a 12.5% average error.

TAKEAWAY

Sales grew 11% a year, but profit depends more on discounting and mix than on volume. Fixing both is the clearest route to higher margin.