Report

"Microsoft Revenue Analysis: Unveiling Key Drivers through Advanced Regression Models"

By: **Sina Tijani**

Abstract

This comprehensive report analyses the interplay of Microsoft's marketing efforts on its quarterly revenue by employing statistical analyses and regression models. Initial model tested focusing on Research & Development and Sales & Marketing revealed strong relationships and significant impact on revenue. A complex model introduces additional variables, showcasing improved predictive capability. Performance testing illustrates accurate revenue predictions, though further data enhancement is recommended. Continuous refinement and external validation will ensure the model's adaptability and reliability. The report concludes with strategic recommendations, emphasizing data enrichment, model updates, and external insights to improve Microsoft's revenue forecasting.

Table of Contents

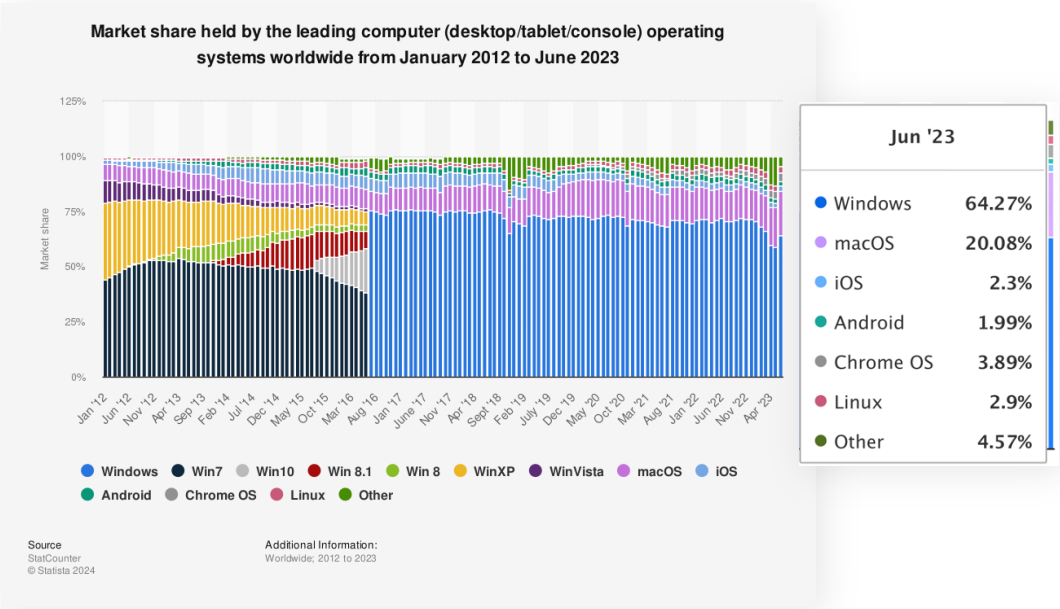
List of Figures

List of Tables

Overview

Microsoft is a global tech giant that empowers individuals for personal and professional productivity through its diverse product portfolio (Microsoft, 2024a). The company's widely prevalent Windows Operating System has a global market share of 64% in computing operating systems (Statista, 2023). Other products they offer encompass Office 365, Azure, LinkedIn, GitHub, and Xbox.

Figure 1. Windows-OS MarketShare

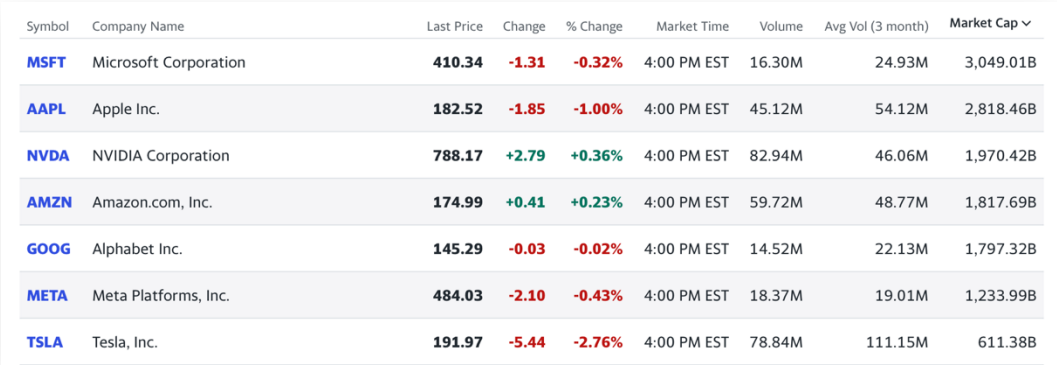


Source: (Statista, 2023).

The company's sustained growth hinges on a nuanced marketing strategy, extending beyond mere product promotion to foster a customer-centric culture. Employing a multi-channel approach, Microsoft relies on digital tools like Dynamics 365 and Power BI, complemented by traditional channels to ensure data-driven precision in marketing (Beaulieu, 2019).

This strategic alignment reflects in the company's robust organizational performance, with 2023FY revenues exceeding $211B (SEC, 2023). This stellar performance has moved Microsoft to emerge as the most valuable company with a $3T market cap, attesting to heightened investor confidence (Yahoo Finance, 2024).

Figure 2. Microsoft-MarketCap



Symbol	Company Name	Last Price	Change	% Change	Market Time	Volume	Avg Vol (3 month)	Market Cap
MSFT	Microsoft Corporation	410.34	-1.31	-0.32%	4:00 PM EST	16.30M	24.93M	3,049.01B
AAPL	Apple Inc.	182.52	-1.85	-1.00%	4:00 PM EST	45.12M	54.12M	2,818.46B
NVDA	NVIDIA Corporation	788.17	+2.79	+0.36%	4:00 PM EST	82.94M	46.06M	1,970.42B
AMZN	Amazon.com, Inc.	174.99	+0.41	+0.23%	4:00 PM EST	59.72M	48.77M	1,817.69B
GOOG	Alphabet Inc.	145.29	-0.03	-0.02%	4:00 PM EST	14.52M	22.13M	1,797.32B
META	Meta Platforms, Inc.	484.03	-2.10	-0.43%	4:00 PM EST	18.37M	19.01M	1,233.99B
TSLA	Tesla, Inc.	191.97	-5.44	-2.76%	4:00 PM EST	78.84M	111.15M	611.38B

Source: (Yahoo Finance, 2024).

A company of this scale uses predictive analytics to enhance customer conversion rates as it guides efficient allocation of their vast resources (Zaki et al., 2024). This report critically analyses Microsoft's key marketing data, employing multiple linear regression method to assess and evaluate the interplay in their performance.

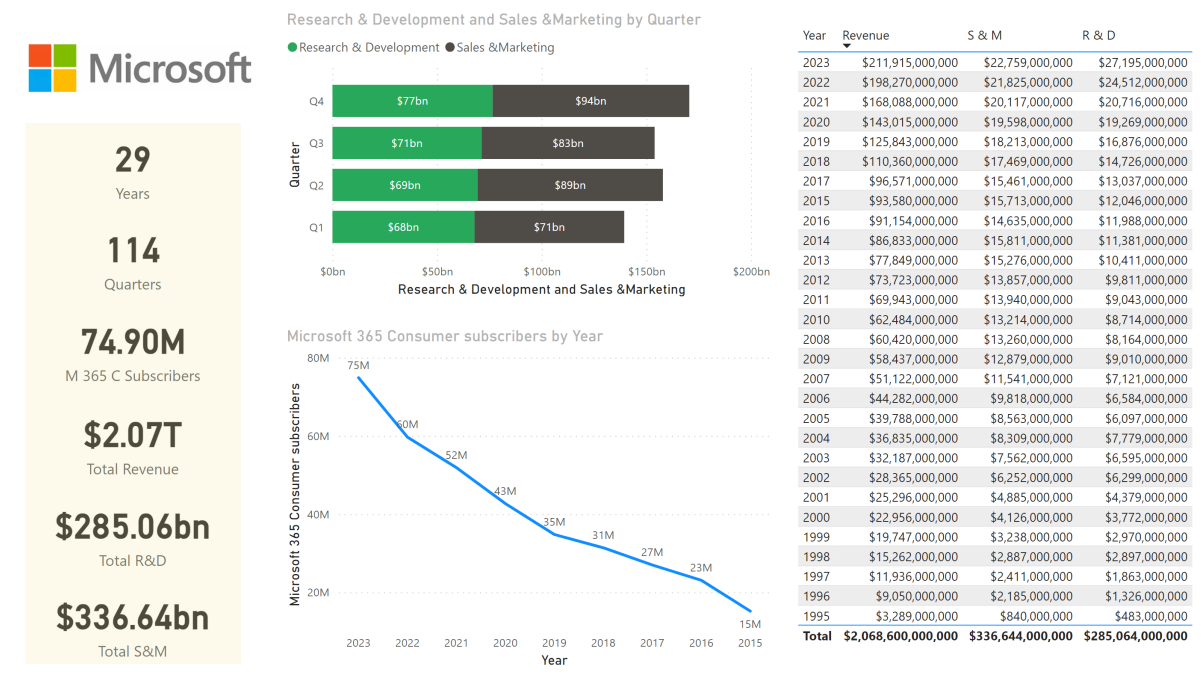
Methodology

The data used in this analysis was collected primarily from the source – Microsoft Investor relations website; and only few from secondary sources. Microsoft excel was used to clean, prepare, and analyse the data using multiple regression analysis. Power Bi was used to create the dashboard, visualizations, and few with Excel. Insights and recommendations were generated after various analysis.

Summary of Marketing Data

The dataset has a time frame of 29 years from 1995 to 2024 with 114 quarters. The following visualizations generated from the dataset provide a bird's eye view for the analysis in this report.

Figure 3. Marketing Dataset Dashboard



Year	Revenue	S & M	R & D
2023	$211,915,000,000	$22,759,000,000	$27,195,000,000
2022	$198,270,000,000	$21,825,000,000	$24,512,000,000
2021	$168,088,000,000	$20,117,000,000	$20,716,000,000
2020	$143,015,000,000	$19,598,000,000	$19,269,000,000
2019	$125,843,000,000	$18,213,000,000	$16,876,000,000
2018	$110,360,000,000	$17,469,000,000	$14,726,000,000
2017	$96,571,000,000	$15,461,000,000	$13,037,000,000
2015	$93,580,000,000	$15,713,000,000	$12,046,000,000
2016	$91,154,000,000	$14,635,000,000	$11,988,000,000
2014	$86,833,000,000	$15,811,000,000	$11,381,000,000
2013	$77,849,000,000	$15,276,000,000	$10,411,000,000
2012	$73,723,000,000	$13,857,000,000	$9,811,000,000
2011	$69,943,000,000	$13,940,000,000	$9,043,000,000
2010	$62,484,000,000	$13,214,000,000	$8,714,000,000
2008	$60,420,000,000	$13,260,000,000	$8,164,000,000
2009	$58,437,000,000	$12,879,000,000	$9,010,000,000
2007	$51,122,000,000	$11,541,000,000	$7,121,000,000
2006	$44,282,000,000	$9,818,000,000	$6,584,000,000
2005	$39,788,000,000	$8,563,000,000	$6,097,000,000
2004	$36,835,000,000	$8,309,000,000	$7,779,000,000
2003	$32,187,000,000	$7,562,000,000	$6,595,000,000
2002	$28,365,000,000	$6,252,000,000	$6,299,000,000
2001	$25,296,000,000	$4,885,000,000	$4,379,000,000
2000	$22,956,000,000	$4,126,000,000	$3,772,000,000
1999	$19,747,000,000	$3,238,000,000	$2,970,000,000
1998	$15,262,000,000	$2,887,000,000	$2,897,000,000
1997	$11,936,000,000	$2,411,000,000	$1,863,000,000
1996	$9,050,000,000	$2,185,000,000	$1,326,000,000
1995	$3,289,000,000	$840,000,000	$483,000,000
Total	**$2,068,600,000,000**	**$336,644,000,000**	**$285,064,000,000**

Source: (Microsoft, 2014, 2024b).

Discussion of the 5 key variables to be considered.

- Σ **Revenue** – Since the goal of marketing is to increase customer conversions and sales, Microsoft revenues over the years was collected (Morgan et al., 2019). Over its 29 years, the company has generated over $2T in revenue with a mean of $71.4B shown in Figure 3. Its standard deviation of $55.3B shows notable variability in annual

revenues indication a degree of fluctuations around the mean which can also be seen in Table.1 and Figure.5.

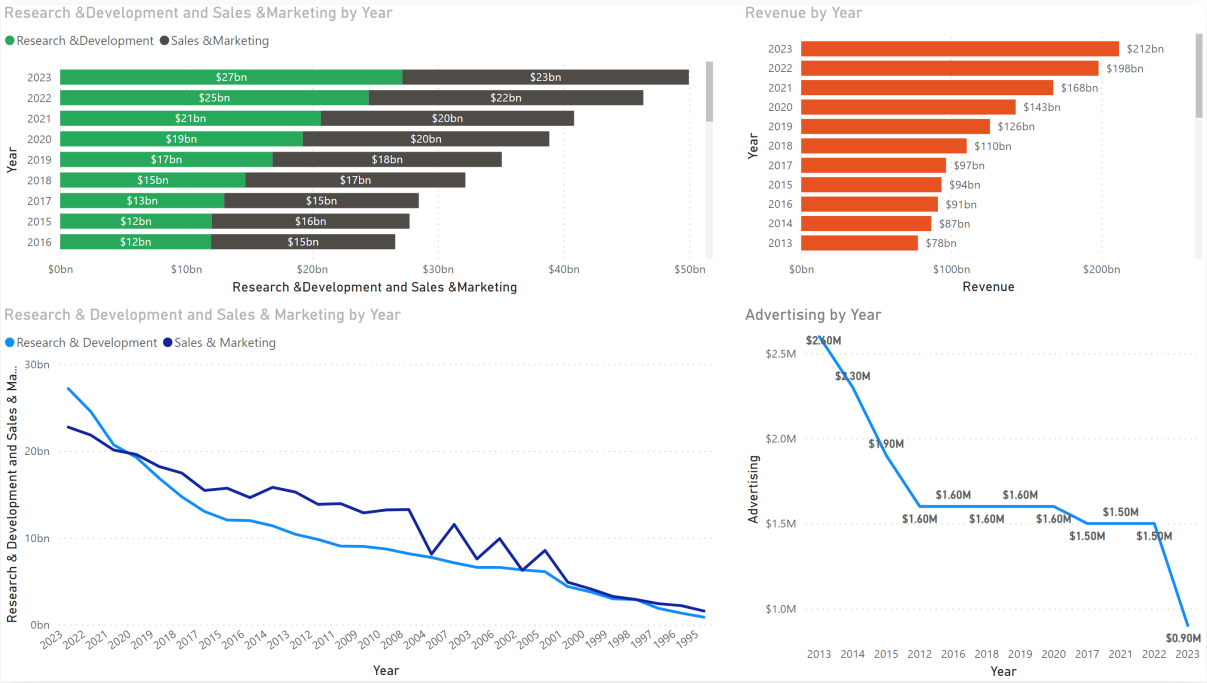
Table 1. Descriptive-Statistics

Revenue		Research & Development		Sales & Marketing		Advertising		Microsoft 365 Consumer subscribers	
Mean	71427103448	Mean	9841275862	Mean	11629551724	Mean	1683333.333	Mean	40077777.78
Standard Error	10272388614	Standard Error	1247238151	Standard Error	1176198964	Standard Error	123603.3081	Standard Error	6374423.237
Median	60420000000	Median	8714000000	Median	13214000000	Median	1600000	Median	34800000
Mode	#N/A	Mode	#N/A	Mode	#N/A	Mode	1600000	Mode	#N/A
Standard Deviation	55318505650	Standard Deviation	6716582996	Standard Deviation	6334025269	Standard Deviation	428174.4193	Standard Deviation	19123269.71
Sample Variance	3.06014E+21	Sample Variance	4.51125E+19	Sample Variance	4.01199E+19	Sample Variance	1.83333E+11	Sample Variance	3.65699E+14
Kurtosis	0.695126317	Kurtosis	0.680780505	Kurtosis	-1.085123955	Kurtosis	1.74736589	Kurtosis	-0.28522265
Skewness	1.095971388	Skewness	1.004114786	Skewness	-0.088685608	Skewness	0.712770471	Skewness	0.646285427
Range	2.0584E+11	Range	26335000000	Range	21195000000	Range	1700000	Range	59700000
Minimum	6075000000	Minimum	860000000	Minimum	1564000000	Minimum	900000	Minimum	15200000
Maximum	2.11915E+11	Maximum	27195000000	Maximum	22759000000	Maximum	2600000	Maximum	74900000
Sum	2.07139E+12	Sum	2.85397E+11	Sum	3.37257E+11	Sum	20200000	Sum	360700000
Count	29	Count	29	Count	29	Count	12	Count	9

Source: (Microsoft, 2014, 2024b).

Σ **Advertising** – This expenditure was included as it captures Microsoft's advertising efforts geared which could come in the form of traditional and direct marketing channels (Beaulieu, 2019). Microsoft spends a mean of $2M a year on advertising. There is a downward trend in advertising spent from $2.60M (2013) to $0.90M (2023) as shown in figure 4.

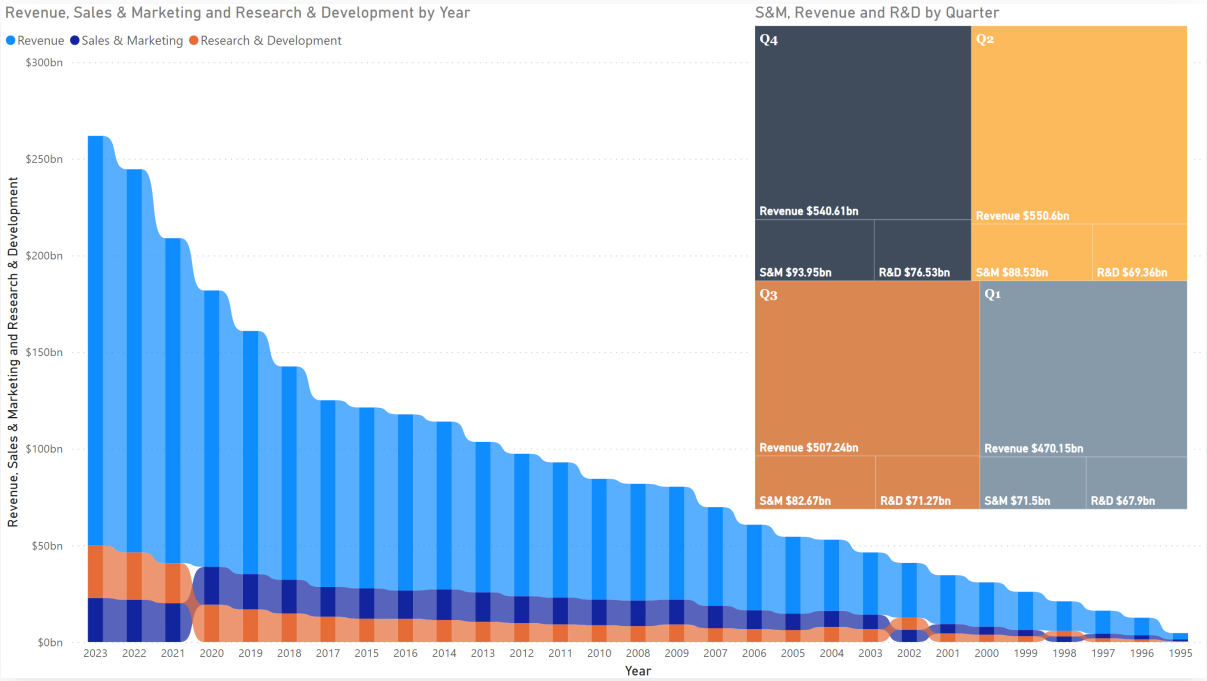
Figure 4. Dashboard2



Source: (Microsoft, 2014, 2024b)

- **Sales and Marketing (S&M)** – Microsoft's yearly events, series of webinars, and personal selling marketing efforts that attract new customers and lock in existing ones are captured in this expenditure (Microsoft, 2024c). Microsoft has incurred over $336B since 1995 with S&M expenses of $22.7B in 2023 (Figure.3). S&M expenditure and R&D have likeness in growth with S&M falling in 2021 (Figure.5).

Figure 5. RibbonChart and Heatmap



Source: (Microsoft, 2014, 2024b).

- **Research and Development (R&D)** – Since Product and Price are part of the four-marketing mix, the company's R&D efforts which influence their products, prices and their marketing strategies was included (Lahtinen et al., 2020). R&D has grown from

$860M to $27.20B reflecting emphasis on innovation across the years. With $9.84B average (Table.1), R&D received further boost from 2021 (Figure.5).

- **Microsoft 365 Consumer Subscribers** – Tracking successful customer conversions or marketing is an important data in marketing (Lamrhari et al., 2022). This product released in 2013 continues to convert users recording 74.9M users in 2023 (Figure.3).

Multiple Regression Analysis (MRA)

Multiple Regression Analysis will be used to analyse the data. With this technique, the relationship between the dependent variable (Revenue) and independent variables (R&D, S&M, Advertising) will be modelled to establish their predictability to Microsoft's revenue performance (El Aissaoui et al., 2020).

For this analysis, the dataset was divided into two parts:

- Σ Full Dataset and Partial Dataset (control experiment).

Table 2. Full Dataset

Year	Quarter	Revenue	Research & Development	Sales & Marketing
114	114	114	114	114
Years range from 1995 to 2024				

Source: (Microsoft, 1996, 2024b).

The Full Dataset ranges from 1995 to 2024; 1995 has only 2 quarters (Q). Since 2024 has not ended yet, it's Q1 & Q2 quarters which are available were excluded from the MRA with the intention to use it to compare to the model afterwards. Hence there are 114 quarters for each variable as shown in Table2.

Table 3. Partial Dataset

Year	Quarter	Revenue	Research & Development	Sales & Marketing	Microsoft 365 Consumer Subscribers	Advertising
36	36	36	36	36	36	36
Years ranges from 2015 to 2023						

Source: (Microsoft, 2014, 2024b).

The Partial Dataset which will be used as a control experiment has fewer rows' data ranging from 2015 to 2023. It has no Microsoft 365 Consumer subscriber count as the product was

launched In 2011 captured in this report: Microsoft launches Office 365 Globally (Microsoft, 2011). A careful look through all their Earnings Report showed the company only started reporting subscriber figures from 2015 (Microsoft, 2015), hence 36 quarters (rows).

MRA Results:

Table 4. MRA Full Dataset (1995 to 2023)

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.985789742
R Square	0.971781416
Adjusted R Square	0.971272973
Standard Error	2318576529
Observations	114

ANOVA

	df	SS	MS	F	Significance F
Regression	2	2.05494E+22	1.02747E+22	1911.289004	1.01089E-86
Residual	111	5.96713E+20	5.3758E+18		
Total	113	2.11461E+22			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	-3043495593	476731948.5	-6.384081458	4.12682E-09	-3988171774	-2098819412	-3988171774	-2098819412
Research & Devel	7.147971969	0.335829178	21.28454712	5.53377E-41	6.482504033	7.813439905	6.482504033	7.813439905
Sales & Marketing	1.122637018	0.352229259	3.18723385	0.001866093	0.424671227	1.820602809	0.424671227	1.820602809

Table 5. MRA Partial Dataset (2015 to 2023)

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.987807466
R Square	0.975763589
Adjusted R Square	0.97263631
Standard Error	1849401861
Observations	36

ANOVA

	df	SS	MS	F	Significance F
Regression	4	4.26875E+21	1.06719E+21	312.0168164	1.46805E-24
Residual	31	1.06029E+20	3.42029E+18		
Total	35	4.37478E+21			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	-8684181584	2649624143	-3.277514513	0.002585115	-14088125653	-3280237516	-14088125653	-3280237516
Research & Devel	0.889131198	1.432343881	0.620752607	0.539299937	-2.032153408	3.810415804	-2.032153408	3.810415804
Sales & Marketing	5.611216327	1.127510551	4.976641966	2.29645E-05	3.311643396	7.910789258	3.311643396	7.910789258
Microsoft 365 Cor	-218.6014204	111.1608308	-1.966532806	0.058245124	-445.3154295	8.112588591	-445.3154295	8.112588591
Advertising	2133.699054	532.1632134	4.009482431	0.000355799	1048.345025	3219.053084	1048.345025	3219.053084

The outcome above will be discussed and evaluated in the next chapter.

Microsoft Analytical Capabilities

Microsoft designs and build flagship analytical products that are used across many organizations to improve on their operational efficiencies. Some of which are Power Bi, Azure Analytics Service, Dynamics 365 Customer insights, Microsoft Teams Analytics and more (Microsoft Azure, 2023). So their capabilities to analyse big data, model and make predictions to guide its marketing efforts are impressive.

Discussion and Evaluation of MRA Results

MRA Results:

Table 6. MRA Full Dataset (1995 to 2023)

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.985789742
R Square	0.971781416
Adjusted R Square	0.971272973
Standard Error	2318576529
Observations	114

ANOVA

	df	SS	MS	F	Significance F
Regression	2	2.05494E+22	1.02747E+22	1911.289004	1.01089E-86
Residual	111	5.96713E+20	5.3758E+18		
Total	113	2.11461E+22			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	-3043495593	476731948.5	-6.384081458	4.12682E-09	-3988171774	-2098819412	-3988171774	-2098819412
Research & Devel	7.147971969	0.335829178	21.28454712	5.53377E-41	6.482504033	7.813439905	6.482504033	7.813439905
Sales & Marketing	1.122637018	0.352229259	3.18723385	0.001866093	0.424671227	1.820602809	0.424671227	1.820602809

In the MRA Full Dataset (1995 to 2023) above:

The regression analysis shows a robust model for Microsoft's quarterly revenue.

With a **Multiple R** of 0.99, a strong positive linear relationship with Research & Development and Sales & Marketing is evident.

The **R-squared** value of 0.97 indicates that a substantial 97% of the variability in revenue can be explained by these two key expenses.

ANOVA results are highly significant, as reflected in the F-statistic (1911.29) and a tiny p-value (1.01e-86), affirming the model's overall importance.

The **intercept** at -3.04 billion USD lacks practical interpretation. Also, Research & Development and Sales & Marketing coefficients are statistically significant (p-value < 0.05), signifying that each additional unit increase in these expenses contributes approximately 7.15 billion USD and 1.12 billion USD to revenue, respectively.

This underscores the substantial impact of these variables on Microsoft's financial performance.

The Control Experiment in Table 5. MRA Partial Dataset (2015 to 2023) shows contrasting results:

Table 7. MRA Partial Dataset (2015 to 2023)

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.987807466
R Square	0.975763589
Adjusted R Square	0.97263631
Standard Error	1849401861
Observations	36

ANOVA

	df	SS	MS	F	Significance F
Regression	4	4.26875E+21	1.06719E+21	312.0168164	1.46805E-24
Residual	31	1.06029E+20	3.42029E+18		
Total	35	4.37478E+21			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	-8684181584	2649624143	-3.277514513	0.002585115	-14088125653	-3280237516	-14088125653	-3280237516
Research & Devel	0.889131198	1.432343881	0.620752607	0.539299937	-2.032153408	3.810415804	-2.032153408	3.810415804
Sales & Marketing	5.611216327	1.127510551	4.976641966	2.29645E-05	3.311643396	7.910789258	3.311643396	7.910789258
Microsoft 365 Cor	-218.6014204	111.1608308	-1.966532806	0.058245124	-445.3154295	8.112588591	-445.3154295	8.112588591
Advertising	2133.699054	532.1632134	4.009482431	0.000355799	1048.345025	3219.053084	1048.345025	3219.053084

The second regression model, including additional Microsoft 365 Consumer Subscribers and Advertising alongside Research & Development and Sales & Marketing, introduces complexity. Despite the model's enhanced fit with an increased **R-squared** value of 0.976, the interpretation of coefficients undergoes changes.

The Research & Development **coefficient** diminishes to 0.89, losing statistical significance (p-value > 0.05), suggesting its weakened predictive power in the presence of other variables.

Sales & Marketing retains significance with a higher **coefficient** of 5.61, emphasizing its pronounced impact on revenue.

The addition of Microsoft 365 Consumer Subscribers brings marginal **significance** (p-value = 0.058), indicating a potential influence.

Advertising significantly impacts revenue with a **coefficient** of 2133.70.

Also, the **intercept** turns negative (-8.68 billion USD), signalling altered baseline assumptions and interpretations in the presence of new variables. The second model's ANOVA F-statistic (312.02) is considerably higher than the first model (1911.29). The second model's **ANOVA** F-statistic (312.02) is significantly lower than the first model (1911.29). This suggests that the overall fit of the model, considering all variables, is considerably reduced.

Also, the differences could be due to reasons like multicollinearity or insufficient sample size, which in this case is insufficient sample size with 36 rows vs 114 of the other.

Equation of the better MRA model:

y = a1X1 + a2X2 + C

Where:
y = Revenue
a1 = Research & Development
x1 = Coefficient of a1
a2 = Sales & Marketing
x2 = Coefficient of x2
c = intercept

Therefore,

Y = 7.14797196881069(x1) + 1.12263701797347(x2) + 3043495592.94484

Testing the MRA model:

Table 8. 2024 Omitted Data & Model Prediction

	Coefficients
Intercept	-3043495593
Research & Development	7.147971969
Sales & Marketing	1.122637018

Year	Quarter	Revenue (Actual)	Revenue (Predicted)	Research & Development	Sales & Marketing
2024	Q1	$ 56,517,000,000	$ 52,572,723,330	$ 6,659,000,000.00	$ 5,187,000,000.00
2024	Q2	$ 62,020,000,000	$ 55,019,311,023	$ 7,142,000,000.00	$ 6,246,000,000.00
2024 data omitted from the model used to test the MRA model					

Prediction error calculation					
Year	Quarter	Revenue (Actual)	Revenue (Predicted)	ERROR	% ERROR
2024	Q1	$ 56,517,000,000	$ 52,572,723,330	$ 3,944,276,670	6.98%
2024	Q2	$ 62,020,000,000	$ 55,019,311,023	$ 7,000,688,977	11.29%
					9.13%

Source: (Microsoft, 2014, 2024b).

Predicting Q1.2024:

As seen in Table 6, the model predicted 2024 Q1 $52,572,723,329.73 (revenue) with a 6.98% margin of error (ME).

Predicting Q2.2024:

And it predicted 2024 Q2 $55,019,311,022.56 (revenue) with 11.29% ME.

With an average of 9.13% ME for the two tests, the model is argued to be good considering the fact that it used only two independent variable.

Recommendations

The regression model can be enhanced by collecting more data on Microsoft 365 Consumer and Advertising data to improve the first model. The model can be refined with additional variables such as Price and Website Traffic. Periodic reviews should be implemented to adjust coefficients in response to emerging trends to ensure model relevance. External validation should be sought through collaboration with industry experts to identify potential blind spots and enhance reliability.

Conclusion

In conclusion, the multiple regression analysis successfully demonstrated a strong correlation between Microsoft's quarterly Revenue, and Research & Development, Sales & Marketing expenses. The model's predictive accuracy, as evidenced by the performance tests for Q1 and Q2 of 2024, shows promising results, considering the simplicity of the current model.

However, the model can be improved when missing data and new variables are added. The model should be viewed as a foundational framework, subject to continuous enhancement and validation. As Microsoft's business landscape evolves, so should the predictive model. By incorporating more data dimensions and staying adaptable, the company can harness the full potential of predictive analytics for strategic decision-making.

References

1. Beaulieu, V. (2019, January 31). *Modern Marketing: The Case of Microsoft US - Microsoft in Business Blogs*. https://www.microsoft.com/en-us/industry/microsoft-in-business/business-transformation/2019/01/31/modern-marketing-the-case-of-microsoft-us/
2. Ciulla, G., & D'Amico, A. (2019). Building energy performance forecasting: A multiple linear regression approach. *Applied Energy*, *253*, 113500. https://doi.org/10.1016/J.APENERGY.2019.113500
3. El Aissaoui, O., El Alami El Madani, Y., Oughdir, L., Dakkak, A., & El Allioui, Y. (2020). A Multiple Linear Regression-Based Approach to Predict Student Performance. *Advances in Intelligent Systems and Computing*, *1102 AISC*, 9–23. https://doi.org/10.1007/978-3-030-36653-7_2/TABLES/3
4. Gupta, I., Mittal, H., Rikhari, D., & Singh, A. K. (n.d.). *MLRM: A MULTIPLE LINEAR REGRESSION BASED MODEL FOR AVERAGE TEMPERATURE PREDICTION OF A DAY A PREPRINT*.
5. Hosseinzadeh, A., Baziar, M., Alidadi, H., Zhou, J. L., Altaee, A., Najafpoor, A. A., & Jafarpour, S. (2020). Application of artificial neural network and multiple linear regression in modeling nutrient recovery in vermicompost under different conditions. *Bioresource Technology*, *303*, 122926. https://doi.org/10.1016/J.BIORTECH.2020.122926
6. Lahtinen, V., Dietrich, T., & Rundle-Thiele, S. (2020). Long live the marketing mix. Testing the effectiveness of the commercial marketing mix in a social marketing context. *Journal of Social Marketing*, *10*(3), 357–375. https://doi.org/10.1108/JSOCM-10-2018-0122/FULL/PDF

7. Lamrhari, S., Ghazi, H. El, Oubrich, M., & Faker, A. El. (2022). A social CRM analytic framework for improving customer retention, acquisition, and conversion. *Technological Forecasting and Social Change*, *174*, 121275. https://doi.org/10.1016/J.TECHFORE.2021.121275
8. Microsoft. (1996, December 31). *FY96 - Press Releases - Investor Relations - Microsoft*. https://www.microsoft.com/en-us/investor/earnings/FY-1996/press-release-webcast
9. Microsoft. (2011, June 28). *Microsoft Launches Office 365 Globally - Stories*. https://news.microsoft.com/2011/06/28/microsoft-launches-office-365-globally/
10. Microsoft. (2014, December 31). *Microsoft 2014 Annual Report*. https://www.microsoft.com/investor/reports/ar14/index.html#
11. Microsoft. (2015, December 31). *FY15 Q4 - KPI - Investor Relations - Microsoft*. https://www.microsoft.com/en-us/investor/earnings/FY-2015-Q4/kpi
12. Microsoft. (2024a, 2). *About Microsoft*. About Microsoft. https://www.microsoft.com/en-gb/about/
13. Microsoft. (2024b, January 30). *FY24 Q2 - Press Releases - Investor Relations - Microsoft*. Earnings Release FY24 Q2. https://www.microsoft.com/en-us/Investor/earnings/FY-2024-Q2/press-release-webcast
14. Microsoft. (2024c, February 28). *Microsoft Events - Microsoft UK*. https://www.microsoft.com/en-gb/events/
15. Microsoft Azure. (2023, May 23). *Introducing Microsoft Fabric: The data platform for the era of AI | Microsoft Azure Blog | Microsoft Azure*. https://azure.microsoft.com/en-us/blog/introducing-microsoft-fabric-data-analytics-for-the-era-of-ai/

16. Morgan, N. A., Whitler, K. A., Feng, H., & Chari, S. (2019). Research in marketing strategy. *Journal of the Academy of Marketing Science*, *47*(1), 4–29. https://doi.org/10.1007/S11747-018-0598-1/TABLES/14
17. SEC. (2023). *10-K Microsoft Corporation*. https://www.sec.gov/Archives/edgar/data/789019/000095017023035122/msft-20230630.htm
18. Statista. (2023, July 5). *Computer operating systems market share 2012-2023 | Statista*. https://www.statista.com/statistics/268237/global-market-share-held-by-operating-systems-since-2009/
19. Yahoo Finance. (2024, February 26). *Stocks Most Watched by Yahoo Finance Users - Yahoo Finance*. https://finance.yahoo.com/u/yahoo-finance/watchlists/most-watched/
20. Zaki, A. M., Khodadadi, N., Lim, W. H., & Towfek, S. K. (2024). Predictive Analytics and Machine Learning in Direct Marketing for Anticipating Bank Term Deposit Subscriptions. *American Journal of Business and Operations Research (AJBOR)*, *11*(01), 79–88. https://doi.org/10.54216/AJBOR.110110