Profitability Analysis for Apple Inc.*

MSIN0094 Case Study

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Pre-class exercise from last week

Please complete the following exercises on your RStudio before class. The answer sheet is named `_Case-BreakEvenAnalysis-stu.qmd`, which can be found on Moodle.

Solutions can be found here. Please check your answers with the solutions before class.

1. Create a sequence of {1,1,2,2,3,3,3}.
2. Create a geometric sequence {2,4,8,16,32}.
3. Create a vector of 10 numbers from 1 to 10, and extract the 2nd, 4th, and 6th elements.
4. Create a vector of 5 numbers from 1 to 5, and check if 3 is in the vector.
5. Now the interest rate is 0.1, and you have 1000 pounds in your bank account. Calculate the amount in your bank account after 1 year, 2 years, and 3 years, respectively.

*This case was prepared by Wei Miao, UCL School of Management, University College London for MSIN0094 Marketing Analytics module. This case was developed to provide material for class discussion rather than to illustrate either effective or ineffective handling of a business situation. Names and data may have been disguised or fabricated. Please do not circulate without permission. All copyrights reserved.

1 Situation Analysis

Tom, the newly promoted Senior Marketing Manager of Apple UK, felt a rush of nostalgia as he stepped into the lecture theatre on Level 38 of the UCL School of Management. Having graduated from UCL's esteemed MSc Business Analytics programme, the world's best BA programme, coming back felt like reuniting with an old friend. But the actual magnet pulling him back wasn't just academic—it was the T4 Bubble Tea in Jubilee Place. After all, everyone has their little secrets, right?

Tom was looking to launch a series of marketing campaigns to further promote Apple's new product, the iPhone 17 series, together with other new products launched earlier this month. As Tom remembered from Marketing Analytics's Week 1 class, the first step of a marketing campaign is the 5C analysis—a framework that examines Company, Collaborators, Customers, Competitors, and Climate to understand the business environment. For Apple UK, this analysis is essential to identify market opportunities, assess competitive threats, and tailor marketing strategies to the UK's unique regulatory and consumer landscape. So Tom would like to conduct a 5C situation analysis for Apple:

> **Question 1**
> Conduct a 5C situation analysis for Apple Inc. Reflect on the difference from Uber's case.

2 Break-Even Analysis

The marketing analytics team at Apple Inc had applied predictive analytics models on historical sales data for previous years and market survey this year and predicted that the sales this year will reach **10 million** units at the retail price of **£799**, with the usual marketing activities. The team had also collected the information on the Cost of Goods Sold of iPhone 17, which is **47%**.

The total Research and Development (R&D) costs for iPhone 17 is **100 million** pounds. These substantial R&D investments encompass key innovations including the **A19 Pro chip** with enhanced Neural Engine capabilities, **Apple Intelligence** features with on-device AI and Live Translation, **advanced camera system** with three 48MP Fusion cameras and tetraprism telephoto design, **thermal management** with Apple-designed vapour chamber, and **iOS 26** with Liquid Glass design elements.

> **Question 2**
> *Contribution Margin*: In the world of business, the **contribution margin** is a fancy way of expressing how much profit each unit brings in after accounting for variable costs. Can you help Tom and his team at Apple to crunch these numbers for the iPhone 17?
>
> 1. Based on the information at hand, in R, create 2 variables called `price` and `COGS` with the given values.

2. Calculate the contribution margin per unit, `contribution_margin`, using the formula learned in class.

In the class Tom sat in, the module leader, Dr Meow, was introducing the concepts of break-even analysis and the methods to evaluate the feasibility of a marketing campaign, which was just handy for the task. Tom would like to use the concept of break-even analysis to help guide Apple Inc.'s marketing decisions.

Calculating the **break-even quantity** is one way to determine the feasibility of a marketing campaign. The break-even quantity determines how many **incremental units** the company must sell to cover the expense of the campaign. If the business sells fewer than the break-even quantity, it loses money since it does not sell enough to recover its investment. If the company sells more than the break-even quantity, the marketing campaign can be approved as it is profitable to the company.

After a few months of researching, the marketing analytics team under Tom's lead has come up with several marketing campaign proposals for Tom to decide. Tom, taking another sip of the delicious QQ Style Milk Tea[1], started to review the proposals.

2.1 Marketing Decision: A Static View

The marketing analytics team has proposed a plan of an influencer marketing campaign. Influencer marketing is a type of social media marketing that entails endorsements and product placement by influencers, individuals and organisations with a reputed expert degree of knowledge or social influence in their industry. Influencers are individuals who have the ability to influence others' purchasing habits other quantifiable activities by uploading original—often sponsored—content to social media platforms such as TikTok, Instagram, YouTube, Snapchat, or other social media platforms.

The team proposes to collaborate with both celebrities and the top tech influencers on Tiktok, Instagram, and Youtube to promote the new iPhone 17. The total one-off budget for the endorsement fee is **£100** million.

And from historical data, the team estimates that such an influencer campaign can boost the total sales within the next financial year by **2.5%**.

Question 3
Based on the information at hand, should Tom approve the influencer marketing plan?

[1] Dr Meow's personal favourite! Highly recommended after a long day of studies. Go for 30% sugar, less ice—trust me, it's perfection!

2.2 Marketing Decision: A Dynamic View

In the afternoon, during a board meeting, the CFO reported that the company was facing increasing uncertainty regarding future cash flows due to more strict EU regulations on Apple. Specifically, since mid-September, alternative app distribution platforms have been allowed on Apple's devices, which may lead to a significant decrease in Apple's App Store revenue. Meanwhile, the good news is that the Bank of England has announced a 0.5% decrease in the base interest rate, which will reduce the cost of financing for Apple Inc.

The current cost of financing, weighted average cost of capital (WACC),[2] is **10%** annually. Therefore, any marketing event is recommended to take the time value of money into consideration.

Right after the meeting, Tom asked his team for a decomposition of the predicted annual incremental sales, **2.5%**, into a more granular monthly level analysis. The annual figure of 2.5% represents the total cumulative effect over 12 months, but Tom needed to understand how this impact would be distributed month by month.

The team came back with the predicted monthly incremental sales breakdown: with influencer marketing, the first month's sales will increase by **0.3%** and **0.2%** in each of the following 11 months. This means the monthly increases add up to the annual total: $0.3\% + (0.2 \times 11) = 2.5\%$.

> **Question 4**
> Based on the information at hand, should Tom approve the influencer marketing plan based on Net Present Value method?

3 After-Class Exercise

Another marketing campaign proposal is to purchase a series of advertisements on the London Underground. The total one-off budget for the advertisement fee is **£125** million. The team estimates that such an advertisement campaign can boost the total sales within the next financial year by **3%**. If we decompose the predicted annual incremental sales, **3%**, into a more granular monthly level analysis, the team estimates that the sales will increase by **0.3%** in the first 6 months and **0.2%** in the following 6 months.

> **Question 5**
> Based on the information at hand, should Tom approve the advertisement marketing plan based on Net Present Value method?

[2] WACC is the average rate of return a company expects to compensate all its different investors. It reflects the cost of capital for the company, which is usually a blend of the cost of equity and the cost of debt.