**Financial Modelling of Personalized Health and Wellness Companion**

The Personalized Health and Wellness Companion is designed to offer tailored health insights to users through an AI-driven mobile application. The financial model for this product is based on the following assumptions:

* Unit Price: ₹500 per subscription
* Running Cost: ₹2,000 per month
* Units Sold in June: 300

Using these parameters, we will calculate the total revenue and profit for the product.

**Financial Equations:**

The basic financial equation used to calculate total revenue is:

Total Revenue=(Unit Price×Total Number of Sales)−Cost to Produce (Running Cost)

Total Revenue for June=(500×300)−2000

Total Revenue for June=150,000−2,000=₹148,000

**Detailed Financial Analysis**

1. **Revenue Generation**: The primary revenue stream for the Personalized Health and Wellness Companion comes from subscription sales. Each unit sold represents a single subscription priced at ₹500.
2. **Monthly Operational Costs**: The running costs include expenses such as server maintenance, customer support, and ongoing development. For June, this cost is estimated to be ₹2,000.
3. **Sales Performance for June**: In the month of June, the product successfully sold 300 units, translating to a gross revenue of ₹150,000.
4. **Net Revenue**: After accounting for the running costs, the net revenue for June is ₹148,000. This figure represents the product's profitability before any additional expenses such as marketing, taxes, or further development costs.

**Strategic Implications**

1. **Scalability**: Given the current financial model, the Personalized Health and Wellness Companion is highly scalable. As the user base increases, the running costs will grow more slowly compared to the revenue, potentially increasing profit margins.
2. **Market Penetration**: The current pricing strategy of ₹500 per subscription is competitive, ensuring broad accessibility while maintaining profitability. If sales volume increases in subsequent months, this could significantly boost overall revenue.
3. **Cost Management**: Monitoring and optimizing running costs will be crucial to maximizing profitability. Strategies such as optimizing server usage, automating customer support, and scaling marketing efforts efficiently could help maintain or even reduce the monthly operational costs.

**Future Projections**

1. **Revenue Growth**: Assuming a 10% month-over-month increase in units sold, future revenues will increase substantially. For instance, selling 330 units in July at the same unit price would result in total revenue of ₹163,000, given the same running cost.
2. **Break-even Analysis**: The break-even point occurs when the total revenue equals the total costs. Given the current model, the break-even point can be easily surpassed, ensuring early profitability.
3. **Expansion Plans**: The current financial model supports further investment in marketing and customer acquisition. This could include digital marketing campaigns, partnerships with health organizations, or developing additional features to justify a higher subscription fee.

Based on the provided data and calculations, we can derive a financial equation to evaluate the business performance of the Personalized Health and Wellness Companion. The financial equation will include components such as BMI, health risk factor, engagement level, churn rate, ARPU (Average Revenue Per User), and CLTV (Customer Lifetime Value).

1. **Total Revenue**: Total Revenue is the sum of revenue generated from all users. It is influenced by the number of users, their engagement level, and the pricing model.

Total Revenue=∑(Revenue per User)

Revenue per user is calculated based on the Health Score:

**Revenue per User=Health Score×10.**

1. **Cost to Produce**: This includes the operational costs, which may be influenced by factors such as the number of users, data processing costs, and other variable costs.

**Total Cost=Running Cost**

1. **Churn Rate**: The churn rate is the percentage of users likely to stop using the service, identified by the “**Anomaly Flag**”.

**Churn Rate= Number of Users with Anomaly Flag = 1/Total Number of Users**

1. **Average Revenue Per User (ARPU)**: ARPU is calculated as the average revenue generated per user.

**ARPU = Total Revenue/ Total Number of Users**

1. **Customer Lifetime Value (CLTV)**: CLTV is calculated by multiplying ARPU by the gross margin and dividing by the churn rate.

**CLTV =** **ARPU × Gross Margin / Churn Rate**

1. **Profit**: Finally, the profit is determined by subtracting the total cost from the total revenue.

**Profit=Total Revenue−Total Cost**

**Calculation :**

* **Total Revenue:** Sum of all ‘Revenue’ values from the users
* **Running Cost:** Given as ₹2,000 (assumed monthly).
* **Churn Rate**: Calculated from the dataset as Churn Rate=62.28%
* **ARPU**: Calculated as ₹496.93.
* **CLTV**: Calculated as ₹558.52 using a gross margin of 70%.

**Final Financial Equation**:

Based on the financial data provided:

**Total Revenue for June** = 500×300−2000 = ₹148,000

**ARPU** = ₹496.93

**CLTV** = 0.6228496.93×0.7​ = ₹558.52

**Conclusion**: This financial equation helps in evaluating the business performance, understanding customer value, and making strategic decisions for growth and sustainability. The key is optimizing the engagement level, reducing churn rate, and maximizing ARPU to enhance CLTV and overall profitability.