

PepsiCo Management Dilemma in Revenue Decline

As one of the top two leading companies in the beverages industry, PepsiCo consists of 53 percent foods and 47 percent beverages, with carbonated beverages as its major offering ("PepsiCo."). However, it has been experiencing a **management dilemma** -- declining revenue in the North American Beverage (NAB) division's performance since the third quarter of 2017 (Maloney). The year of 2018 witnessed a 2% case revenue decline and an 18% operating profit decrease (Jackson).

CEO: Internal & External Data Needed to Diagnose the Situation

Data needed to diagnose the major trends in the market	Data Type (Internal / External)	Data Source
The revenues of PepsiCo's carbonated beverage division in North America area over the past 10 years	Internal Data	obtained from PepsiCo's company filings
The revenues of PepsiCo's other offerings in North America area over the past 10 years	Internal Data	obtained from PepsiCo's company filings
The revenues of competitors in the carbonated beverage market in North America	External Data	obtained from competitors' company filings
The change in people's consumption of carbonated beverage in North America	External Data	obtained from the carbonated beverage industry report, such as the "Carbonated Beverages Market Analysis, Market Size, Application Analysis, Regional Outlook, Competitive Strategies, And Segment Forecasts"

Data needed to diagnose the trends in PepsiCo's share of the market	Data Type (Internal / External)	Data Source
The revenues of PepsiCo's carbonated beverage division in North America area over the past 10 years	Internal Data	obtained from PepsiCo's company filings
The revenues of the carbonated beverage market in North America area over the past 10 years	External Data	obtained from the carbonated beverage industry report, such as Statista.

Data needed to diagnose the PepsiCo's profitability	Data Type (Internal / External)	Data Source
The costs of PepsiCo's carbonated beverage division in North America area over the past 10 years	Internal Data	obtained from PepsiCo's company filings
The net income of PepsiCo's carbonated beverage division in North America area over the past 10 years	Internal Data	obtained from PepsiCo's company filings
The total assets of PepsiCo's carbonated beverage division in North America area over the past 10 years	Internal Data	obtained from PepsiCo's company filings
The total equity of PepsiCo's carbonated beverage division in North America area over the past 10 years	Internal Data	obtained from PepsiCo's company filings
The costs of competitors' carbonated beverage division in North America area over the past 10 years	External Data	obtained from competitors' company filings
The net income of competitors' carbonated beverage division in North America area over the past 10 years	External Data	obtained from competitors' company filings

Data needed to diagnose the issues with the supply chain	Data Type (Internal / External)	Data Source
The basic information of PepsiCo's major distributors that experience sporadic stock-outs, such as revenue, location, season, similar products	External Data	obtained from PepsiCo's major distributors

CEO: Analysis Needed to Diagnose the Situation

I would run deep descriptive analytics, diagnostic analytics, and predictive analytics. These types of analytics would show a detailed picture of what happened to PepsiCo's carbonated beverage division, why this phenomenon occurred, and what is likely to happen in the short run and the long run.

In the analysis of the significant trends in the market and PepsiCo's share of the market, on the internal side, I will obtain the revenues of PepsiCo's carbonated beverage division and the revenues of PepsiCo's other offerings in North America area over the past ten years. Then I will calculate and compare the growth rates of both the carbonated beverage division and other divisions over the past ten years. The comparison helps us to see if the declining revenue phenomenon happens only in the carbonated beverage division, or it is PepsiCo-wide. If the declining revenue only appears in this specific division, then we will focus on the division, while if it looks in other divisions as well, probably something going wrong with PepsiCo as a whole.

On the external side, I will obtain the revenues of competitor companies' carbonated beverage division in the North America area over the past ten years. These competitor companies include Coca-Cola, Dr. Pepper Snapple, Red Bull, Nestle, and Parle. Then I will calculate and compare the growth rates of both PepsiCo's carbonated beverage division and its competitors' over the past ten years. The comparison helps us to see if the declines in Revenue is only PepsiCo or it is industry-wide. If the declining Revenue is only PepsiCo, then we will conduct analysis and gain insights from the key findings to improve PepsiCo's competitive advantages in carbonated beverage. If the declining Revenue is industry-wide, then we will need to understand what happens in the carbonated beverage industry. For example, if the declining of Revenue is because customers consume less or change their preferences, we will conduct research on consumers' changing favors, making effective strategies to seize the opportunity of sales and securing market share for PepsiCo.

In the analysis of company profitability, based on the data collected, I would calculate the growth rate of Revenue, the Profit Margin and its growth rate, the Return on Assets (ROA) and its growth rate, and the Return on Equity (ROE) and its growth rate. Since the decline in Revenue does not have the direct implication of its profitability, which is calculated by "Revenue minus Cost," all of these critical metrics could provide a comprehensive view on the profitability of the company. It is also necessary to calculate the growth rate to compare the current year with previous years since positive growth rates in Profit Margin, ROA, and ROE are significant indicators of business health.

The key metrics to report to the CEO	Data Type (Internal / External)	Data Source	Calculation
The growth rate of the revenue of the carbonated beverage industry	External Data	obtained from the carbonated beverage industry report, such as Statista.	calculated with the revenues in the previous years of the carbonated beverage industry
The growth rate of the revenue of PepsiCo's carbonated beverage division	Internal Data	obtained from PepsiCo's company filings	calculated with the revenues in the previous years of the PepsiCo's carbonated beverage division
The profit margin & profit margin growth rate of the revenue of PepsiCo's carbonated beverage division	Internal Data	obtained from PepsiCo's company filings	calculated by net income / revenue
The Return on Assets& ROA growth rate of PepsiCo's carbonated beverage division	Internal Data	obtained from PepsiCo's company filings	calculated by net income / total assets
The Return on Equity& ROE growth rate of PepsiCo's carbonated beverage division	Internal Data	obtained from PepsiCo's company filings	calculated by net income / total equity
The market share & market share growth rate of PepsiCo's carbonated beverage division	Internal Data & External Data	obtained from PepsiCo's company filings, and from the carbonated beverage industry report , such as Statista.	calculated by PepsiCo's revenue in carbonated beverage / revenue of the industry

CMO: Analysis Needed to Diagnose the Situation

Data of PepsiCo needed to diagnose the situation	Data could be accessed from
Net Promoter Scores	conducting online surveys to obtain the NPS
Customer Reviews	conducting online surveys + Searching rating websites such as Trustpilot and ConsumerAffairs
Customer Ratings	conducting online surveys + Searching rating websites such as Trustpilot and ConsumerAffairs
Revenues	obtaining from PepsiCo's quarterly and annual report
Quantities of offerings sold	obtaining from PepsiCo's quarterly and annual report
Market Share	calculated by revenue of PepsiCo's carbonated beverage divided by that of the industry

Data of PepsiCo's competitors needed to diagnose the situation	Data could be accessed from
Customer Reviews	conducting online surveys + Searching rating websites such as Trustpilot and ConsumerAffairs
Customer Ratings	conducting online surveys + Searching rating websites such as Trustpilot and ConsumerAffairs
Revenues	obtaining from competitors' quarterly and annual report
Quantities of offerings sold	obtaining from competitors' quarterly and annual report

Consumer-wise, firstly, I would calculate Net Promoter Scores, an effective indicator of consumer satisfaction with the product. NPS can be calculated based on the data collected via an online survey or engagement survey. I would compare the NPS of PepsiCo and its competitors to get a clear perspective on how consumers view PepsiCo's products and its counterparts. Meanwhile, I would collect the customer ratings and customer reviews of both PepsiCo and its competitors, using the functionality of word filtering and counting the word frequency to analyze what consumers like/dislike about PepsiCo and what areas PepsiCo can improve.

Marketing-wise, I would calculate Market Share, which shows how the product is positioned in the market. Market Share could be calculated with the revenue of PepsiCo and the total revenue of the industry. Besides, I would analyze the Return on Investment (ROI), Leads Generated, and Consumer Acquisition Cost (CAC) based on previous marketing campaigns to understand the effectiveness of campaigns and ads. In the analysis of these metrics, I would plot them as well as their growth rate to have a better understanding of the improvements or ineffectiveness during the campaigns and ads.

Key Metrics for CMO	Measure	Resource
Net Promoter Scores	How likely a customer is in recommending PepsiCo carbonated beverage to his/her friend	conducting online surveys to obtain the NPS
Market Share	The percentage of customers in the market that buys from PepsiCo	calculated by revenue of PepsiCo's carbonated beverage divided by that of the industry
Return on Investment (ROI)	How much revenue is generated per dollar spent on marketing.	Internal data collected by the marketing team
Leads Generated	the raw number of sales leads brought in by marketing	Internal data collected by the marketing team
Customer Acquisition Cost (CAC)	how much it costs to acquire a customer	Internal data collected by the marketing team
Online Rating of PepsiCo and its competitors in carbonated beverage industry	customers' preferences and satisfaction Of various brands of carbonated beverage	conducting online surveys + Searching rating websites such as Trustpilot and ConsumerAffairs

HR: Development of Succession Plans for the Senior Roles

I would help the head of HR develop succession plans for the senior roles in **five steps**.

Step 1: identify the key areas and key positions that are both crucial for the company and potential to have a risk of bleeding talent based on the engagement survey.

Step 2: identify capabilities, skills, and competencies for these key areas and positions.

Step 3: identify employees that are interested in these key areas and positions, and assess them against the capabilities, skills, and competencies.

Step 4: after a full assessment, develop and implement succession and transfer plans.

Step 5: evaluate the effectiveness of the succession and transfer plans, and make adjustments on a timely basis.

Extra things to keep in mind when developing succession plans for senior roles in the organization:

1. The current succession plans need to be integrated with other HR activities.
2. At the same time, we need to develop pools of talent for current and future HR needs.
3. The assessment of succession candidates need to be based on feedback from multiple perspectives and sources of information.

HR: Internal & External Data Needed to Diagnose the Situation

Data needed to diagnose the risk of bleeding talent from the organization	Data Type (Internal / External)	Data Source	Aspect Focused
Employee Satisfaction Rate of PepsiCo	Internal Data	the latest engagement survey + the previous five engagement surveys	culture
Employee Net Promoter Score (NPS) of PepsiCo	Internal Data	the latest engagement survey + the previous five engagement surveys	culture
Employee Net Promoter Score (NPS) of competitor companies	External Data	gained from industry report	culture
Employee Turnover Rate in PepsiCo	Internal Data	internal data from PepsiCo's HR department	employment
Retention Rate per Manager in PepsiCo	Internal Data	internal data from PepsiCo's HR department	employment
Voluntary Turnover in PepsiCo	Internal Data	internal data from PepsiCo's HR department	employment
Involuntary Turnover in PepsiCo	Internal Data	internal data from PepsiCo's HR department	employment
Internal Promotion Rate in PepsiCo	Internal Data	internal data from PepsiCo's HR department	performance
Salary Information in PepsiCo	Internal Data	internal data from PepsiCo's HR department	compensation
Salary Information in competitor companies	External Data	gained from industry report	compensation
Benefits Satisfaction of PepsiCo	Internal Data	internal data from PepsiCo's HR department	compensation

HR: Analysis Needed to Diagnose the Situation & Metrics for HR

Based on the internal and external data listed above, I plan to conduct analysis with several key metrics in the areas of company culture, employment, performance and compensation.

Area 1: Company Culture

I would calculate the Employee Satisfaction Rate, Employee Net Promoter Score (NPS) in PepsiCo, and NPS in competitor companies. These key metrics provide a comprehensive valuation on how satisfied employees are in PepsiCo as well as compared with its competitor companies. The potential risk of bleeding talents lies on both employee's satisfactions with his/her current company and with competitor companies.

Area2: Employment

I would calculate the Employee Turnover Rate in PepsiCo to understand how likely an employee will leave the company. This evaluation will be divided into Employee Voluntary Turnover rate and Employee Involuntary Turnover.

Area3: Performance

I would calculate the Internal Promotion Rate in PepsiCo since it might influence greatly on employees' choice of staying at the company or switching to another one.

Area4: Compensation

Compensation is an important factor in employees' consideration of career. So I would calculate PepsiCo's Salary Compensation Ratio compared to the industry's, and Employee Satisfaction of Benefits in PepsiCo.

Key Metrics for HR	Data Type (Internal / External)	Measure	Aspect Focused
Employee Satisfaction Rate of Pepsico	Internal Data	key metric underlying talent retention Using a company-wide survey can be helpful in gauging employee happiness.	culture
Employee Net Promoter Score (NPS) of Pepsico	Internal Data	Measures how likely an employee is to recommend their organization as a place to work. determined by the difference in percentage of promoters and detractors.	culture
Employee Net Promoter Score (NPS) of competitor companies	External Data	Measures how likely an employee is to recommend their organization as a place to work. determined by the difference in percentage of promoters and detractors.	culture
Employee Turnover Rate in PepsiCo	Internal Data	indicates the success of retention efforts and aids planning for talent replacement.	employment
Internal Promotion Rate in PepsiCo	Internal Data	indicate successful retention and growth of top performers. determined by dividing the number of promoted individuals by the total number of employees.	performance
Salary Compensation Ratio (SCR)	Internal Data + External Data	evaluate the competitiveness of compensation options. determined by dividing the average company salary by the average salary offered from competitors or by the rest of your industry.	compensation
Benefits Satisfaction of PepsiCo	Internal Data	how satisfied an employee is with specific benefits they are offered	compensation

Final Part I: Learning from Analytics in Resource Utilization & Optimization -- Accenture



I learned that Accenture uses analytics to track real estate utilization and technology device by regulating on the dashboards. These dashboards indicate utilization information and trends by location, the use of seats, and meeting rooms in offices and delivering centers (Boulton). The application of analytics in resource utilization and optimization in Accenture provides great insights for senior leadership to make critical decisions in improving employees' experiences and minimizing operating expenses (Boulton). The bigger the company is, the more value and resources could be reallocated, optimized, and saved (Boulton). Learning from Accenture, PepsiCo could work on the optimization in resource utilization, including human capital, operation resource, and inventory, to save millions of dollars in its business.

Final Part II: Learning from Analytics in Anticipating Machine Failure -- Shell



I learned that Oil giant Shell decided to harvest data to anticipate machine failure and save millions of dollars from machine downtime costing. Based on predictive models, the analytics platform that Shell built could help companies to anticipate when more than 3,000 oil drifting machine parts might fail in less than 45 minutes (Boulton). More specifically, Shell uses this tool to efficiently plan when to purchase machine parts, how long they can be kept, which machine part should be replaced, and when it should be replaced by a new one (Boulton). In general, Shell uses more than five analytics tools to stave off machine failure, saving millions of dollars for companies (Boulton).

Final Part III: Learning from Analytics in Airline Business -- ARC



I learned that Airlines Reporting Corp. (ARC) relies heavily on data, which is just like its lifeblood. ARC captures the data, refines data, and generates reports for its customers, including Delta, American Airlines, British Airways, Alaska Airlines, and travel agencies (Boulton). More specifically, ARC analyzes and provides insights from data about where travelers are going, when they travel, and how much they are paying for (Boulton). It recently adapts to a new analytics platform, which enables ARC to rapidly and automatically build reports for its customers, greatly enhancing the efficiency of generating the report (Boulton).

Final Part IV: Diagnose the Situation for CEO & Decide Focus Area

In choosing the area to focus, I consider these three aspects: which area has the most severe problem given there are all kinds of current issues, which city has the most significant potential in achieving constructive progress, and which area I am most confident and experienced in.

Aspect 1+2:

Which area has the most severe problem?

Which area has the most significant potential in achieving constructive progress?

PepsiCo has been experiencing a constant decline in revenue for several years, which is a severe signal for the health of the business. Meanwhile, PepsiCo has other problems in market competition, talent bleeding, and operational inefficiency. It is essential to take aspects 1 and 2 into consideration, especially in a situation where the time and resources are inadequate. PepsiCo is also in a hard case where competitors have significant advantages in branding and customer preference. Nowadays, customers change their preferences and favor rapidly, especially in the saturated and highly-competitive carbonated beverage industry. Time and quick actions are critical for a company to obtain market share and have a strong market position. Combining these two ideas, the area that has the most severe problem is the revenue decline, and the area that has the most significant potential in achieving constructive progress is the marketing area, which directly contributes to PepsiCo's revenue.

Aspect 3: Which area I am most confident and experienced in?

Working on the area where I am most confident and experienced in ensures the efficiency and effectiveness of my analytic work. My previous career focuses on marketing analytics and consumer analytics, where I created online surveys, obtained data, performed consumer analytics, and provides key findings. These key findings significantly enhanced the efficiency of leadership in understanding the business and making effective business decisions. Thus, I would decide to focus on the marketing and consumer study where is the most critical for PepsiCo and where I am most experienced in given the limited time and resource.

Research Methodology: Market Analysis & Online Survey

The research design is composed of two sides: **market analysis methodology** and **online survey methodology**. First of all, a market analysis of the beverage industry and significant competitors provides us with insights on how other competitors perform, whether the sales decline is a widespread phenomenon, and how the competitors respond to proposed changes of consumer preferences. More specifically, the market analysis is mainly conducted on the analysis of the performance of major players in the North American beverage industry.

Secondly, an online survey on consumers' preferences over the beverage provides us with the primary source of data in a reasonable administrative cost. The online survey contains two types of questions: personal questions and preference questions. The personal questions include the participant's gender, age, salary range, and how many beverages the participant consumes every week and how health-conscious the participant considers himself/herself to be. The preference questions are what types of beverages the participant consumes, how often the participant consume beverages, whether the participant is concerned by the level of sugar in beverage, whether the levels of calories/price/taste/caffeine influences the participant's decision, and whether the participant prefers the diet beverage over regular beverage.

Population & Sampling of the Online Survey Methodology

The population of the online survey is residents in North America since our study is aiming at understanding the customer preferences over beverages in the North American Beverage division. To calculate the sample size of the survey, we set the margin error to be 5%, and the confidence level to be 95%. Since the population of North America is 580 million, according to the chart below, the number of completed surveys we hope to require is 400.

Population	Margin of Error			Confidence Level		
	10%	5%	1%	90%	95%	99%
100	50	80	99	74	80	88
500	81	218	476	176	218	286
1,000	88	278	906	215	278	400
10,000	96	370	4,900	264	370	623
100,000	96	383	8,763	270	383	660
1,000,000+	97	384	9,513	271	384	664

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Citation & Resources

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