What's Trending in the Food & Beverage Industry?

Analysing New Trends in North American Region

Case Study Analysis
by
Ravi Chandrika

Important Links

- **Power BI Dashboard**

https://www.novypro.com/project/what%E2%80%99s-trending-in-the--food--beverage-industry--analysing-new-trends-in-north-american-region

- **Github link with project documents:**

https://github.com/RAVI-CHANDRIKA-05/Whats-Trending-in-the-Food-Beverage-Industry

Problem Statement

The current data set provides comprehensive information on new Food and Beverage (F&B) product launches globally, encompassing details such as product attributes, flavors, launch dates, and positioning categories. However, a challenge lies in extracting meaningful insights, particularly with regard to F&B flavors in the North America region.

The goal of this assignment is to derive actionable insights, particularly focusing on the North America region, to assist stakeholders in making informed decisions regarding F&B product launches and flavor preferences.

In addition to this as a As the Brand Manager in the Consumer Packaged Goods (CPG) - Foods business, for any Market-category, determining whether to launch a new brand variant involves a strategic decision-making process. The outcome of this analysis will impact the product portfolio, market positioning, and overall brand performance.

Here are the key outcomes from this analysis:

Prepared by
Ravi Chandrika B

Overview

- The attached data provides insights into global Food and Beverage (F&B) product launches.
- Explore details in:
    - **Product Launch Dataset.csv**
        - Each product may have multiple flavors separated by a semicolon.
        - "Launch date" indicates the product launch date.
    - **Flavor Classification Dataset.csv**
        - Maps unique flavors to "Flavor Groups."
    - **Positioning Category Mapping Dataset.csv**
        - Maps unique positioning categories to "Positioning Groups."

Flavor Classification Dataset.csv

Flavor_Group	Flavor
Alcohol	Vodka, Citron
Alcohol	Bacardi
Alcohol	Bacardi, Gold
Alcohol	Bacardi, Silver
Alcohol	Beer, Ale
Alcohol	Beer, Amber
Alcohol	Beer, Amber Ale
Alcohol	Beer, Amstel
Alcohol	Beer, Black
Alcohol	Beer, Blonde
Alcohol	Beer, Blonde Ale
Alcohol	Beer, Bock
Alcohol	Beer, Brown
Alcohol	Beer, Brown Ale
Alcohol	Beer, Dark
Alcohol	Beer, Dark Ale
Alcohol	Beer, Dark Amber
Alcohol	Beer, Draft

Product Launch Dataset.csv

Product id	Flavor	Market Subcategory	Launch Date	Country	Region	Positioning
1	Herbs, not specified; Fruit, not specified	Other Soft Drinks	01/01/2001	WE1	West Europe	Low Calorie, Natural
2	Fruit, not specified	Carbonates	01/01/2001	WE2	West Europe	Convenience - Consumption
3	Lemon; Honey; Ginger	Juice & Juice Drinks	01/01/2001	WE2	West Europe	100% Not from Concentrate, Convenience - Consumption, Natural
4	Mango; Passion Fruit	Juice & Juice Drinks	01/01/2001	WE2	West Europe	100% Not from Concentrate, Convenience - Consumption, No Added Sugar, No Additives/Preservatives
5	Mango	Juice & Juice Drinks	01/01/2001	WE2	West Europe	100% Not from Concentrate, Convenience - Consumption, No Additives/Preservatives
6	Fruit, not specified	Juice & Juice Drinks	01/01/2001	WE1	West Europe	Nectars (25-99% juice), Low Calorie, Vitamin/Mineral Fortified, Digestive/Gut Health, High/Source of Fibre
7	Fruit, not specified	Drink Concentrates & Mixes	01/01/2001	NA1	North America	Dry, Low Fat, Low Sodium, Low Calorie, Low Carb
8	Apple, Red; Pineapple; Guava	Juice & Juice Drinks	07/01/2001	AU1	Australasia	Nectars (25-99% juice), Antioxidant, Low Fat, No Added Sugar, No Additives/Preservatives, Immune Health
9	Cherry, Not specified; Vanilla, Not specified	Bottled Water - Flavoured	01/01/2001	NA1	North America	Convenience - Packaging
10	Orange, not specified	Juice & Juice Drinks	01/01/2001	NA1	North America	Low Calorie, Low Sugar
11	Superfruit, Pomegranate; Berry, Blackberry	Carbonates	01/01/2001	NA1	North America	Female, Antioxidant, Low Calorie, Low Carb, Sugar Free, Anti-Aging/Aging-Well, Skin Health, Convenience -
12	NA	Juice & Juice Drinks	01/01/2001	WE3	West Europe	100% Not from Concentrate, No Added Sugar, Vitamin/Mineral Fortified
13	NA	Juice & Juice Drinks	01/01/2001	WE3	West Europe	Nectars (25-99% juice), Energy/Alertness, Vitamin/Mineral Fortified

Positioning Category Mapping Dataset.csv

Positioning Group	Positioning Subcategory
Age	Children (5-12 years)
Age	Seniors (55+)
Others	Economy
Choice	Halal
Choice	Kosher
Choice	Vegetarian
Co-Branding	Co-Branding
Supplements	Anti-Cancer
Supplements	Blood Pressure
Supplements	Bone Health (Supplements)
Supplements	Brain-Mood Health
Supplements	Children
Supplements	Diabetes
Supplements	Digestive/Liver Health
Supplements	Energy and Stamina
Supplements	Eye Health (Supplements)
Supplements	Health/Wellness

Prepared by
Ravi Chandrika B

Data Cleaning and Dataset Creation Approach in Python:

➢ **Filtering data for north-america region:**

The scope of this exercise involves analysis for North American region only. Hence I have filtered the data for North America region before performing any necessary data manipulations to create our analytical datasets, to reduce our computational inputs and outputs.

➢ **Creating a product flavor group:**

- Explode the "Flavor" column in product data, which has multiple flavors seperated by ; into individual rows, with one flavor per row.
- Convert "Flavor" column in product data to lower case and strip any extra whitespace
- Convert "Flavor" column in flavor data to lower case and strip any extra whitespace

➢ **Dataset Export:**

- Saved the cleaned dataset for further analysis, ensuring it's ready for Power BI.

	Product id	Market Subcategory	Launch Date	Country	Flavor	Flavor_Group
0	7	Drink Concentrates & Mixes	01/01/2001	NA1	fruit, not specified	Fruit
1	9	Bottled Water - Flavoured	01/01/2001	NA1	cherry, not specified	Fruit
2	9	Bottled Water - Flavoured	01/01/2001	NA1	vanilla, not specified	Vanilla
3	10	Juice & Juice Drinks	01/01/2001	NA1	orange, not specified	Fruit
4	11	Carbonates	01/01/2001	NA1	superfruit, pomegranate	Fruit
5	11	Carbonates	01/01/2001	NA1	berry, blackberry	Fruit
6	15	Juice & Juice Drinks	01/01/2001	NA2	superfruit, acai	Fruit
7	15	Juice & Juice Drinks	01/01/2001	NA2	herbs, not specified	Herbs
8	47	Carbonates	01/01/2001	NA1	mandarin	Fruit
9	47	Carbonates	01/01/2001	NA1	mint, not specified	Mint & Menthol
10	48	Iced Tea	01/01/2001	NA1	lemon	Fruit
11	49	Juice & Juice Drinks	01/01/2001	NA1	wildberry	Fruit
12	50	Juice & Juice Drinks	01/01/2001	NA1	grapefruit, red	Fruit
13	51	Energy Drinks	01/01/2001	NA1	grapefruit, not specified	Fruit
14	101	Energy Drinks	01/01/2001	NA1	berry, mixed	Fruit
15	102	Carbonates	01/01/2001	NA1	spices, not specified	Spices & Seeds
16	102	Carbonates	01/01/2001	NA1	cola	Brown Flavors
17	103	Bottled Water - Unflavoured	01/01/2001	NA1	unflavored	Unflavored
18	105	Bottled Water - Unflavoured	01/01/2001	NA1	unflavored	Unflavored
19	106	Sports Others	01/01/2001	NA1	vanilla, not specified	Vanilla
20	107	Sports Drinks RTD	01/01/2001	NA1	orange, not specified	Fruit

Prepared by
Ravi Chandrika B

Assumptions for the Project:

- ***Role of Flavor:***

Assumption: The popularity of a flavor is directly correlated with its sales performance.
Rationale: The consumers' preferences and purchasing decisions are driven by the flavors of F&B products.

- ***Country assumption:***

Assumption: NA region comprises countries as the USA (NA1), Canada (NA2), and Mexico (NA3).

- ***Sales Data Proxy:***

Assumption: The number of distinct products launched is a proxy for sales data.
Rationale: Assuming that the addition of new products signifies successful flavors and potential sales growth.

- ***Launch Date Impact:***

Assumption: Recent product launches are more reflective of current market trends.
Rationale: Giving more weight to products launched in the last 5 years to identify emerging flavors.

- ***Product Launch Frequency:***

Assumption: Higher product launch frequency indicates a dynamic market.
Rationale: Frequent launches may indicate a competitive market where innovation and variety are crucial.

- ***Brand Loyalty:***

Assumption: Existing SKUs may have established brand loyalty.
Rationale: Recognizing that retaining existing products might be beneficial if they have a loyal customer base.

- ***Market Saturation:***

Assumption: Market saturation may lead to SKU removal decisions.
Rationale: Evaluating whether the market is saturated with similar products and if removing certain SKUs could streamline the product line.

These assumptions provide a foundation for interpreting the data and making informed decisions regarding product launches and SKU management. They guide the analysis of F&B flavors in the North America region and aid in the decision-making process for a Brand Manager in the CPG - Foods business.

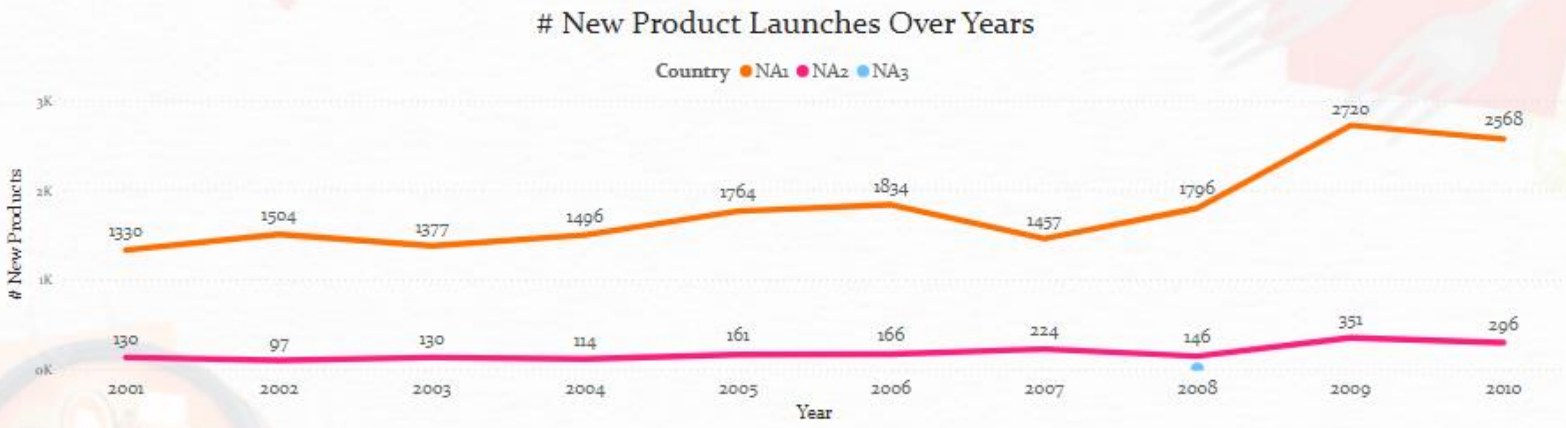
Prepared by
Ravi Chandrika B

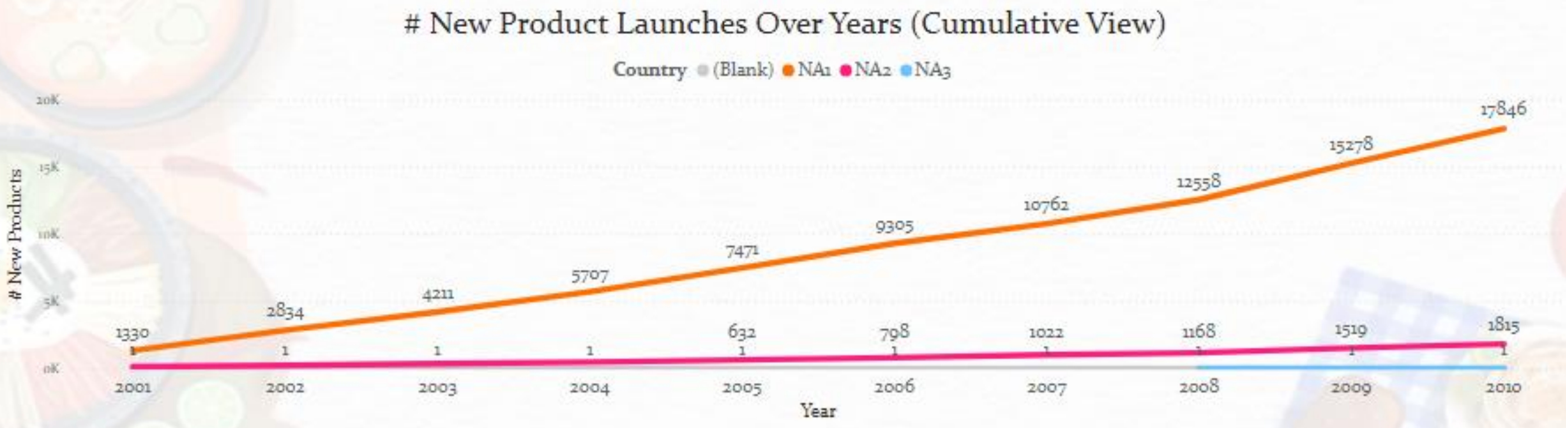
Overview of New Product Launches Over Years

2001 2010

Products

19.66K





- The introduction of new products has displayed a consistent upward trend over the years.
- Notably, there was a lower influx of new products in 2007, while a substantial surge occurred in 2009 over the last 5 years.
- The primary market focus has been on the USA, with minimal product launches observed in Canada.
- A noteworthy exception is the significant increase in product additions to the Canadian market in 2007 and again in 2009.
- The inaugural product launch in Mexico took place in 2008, marking the initiation of product entries into the Mexican market.

Prepared by
Ravi Chandrika B

Prepared by
Ravi Chandrika B

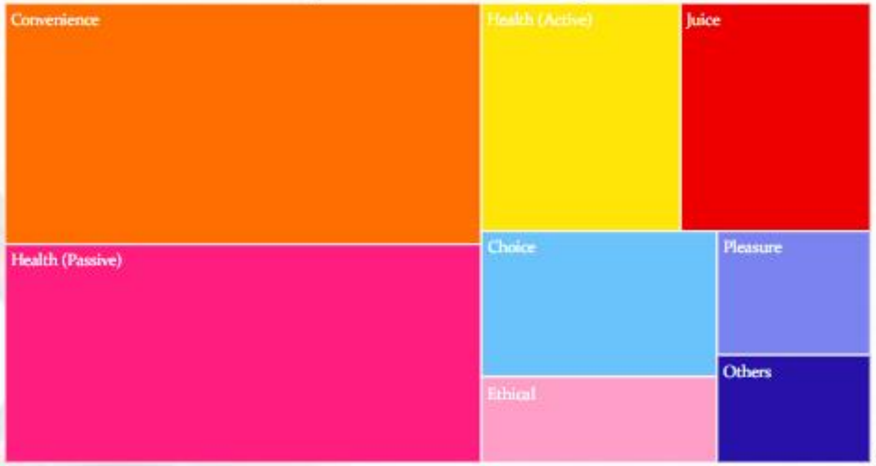
Understanding on Positioning Subcategory & Groups

# Countries	# Market Subcategory	# Positioning Subcategory	# Positioning Groups
3	13	91	15

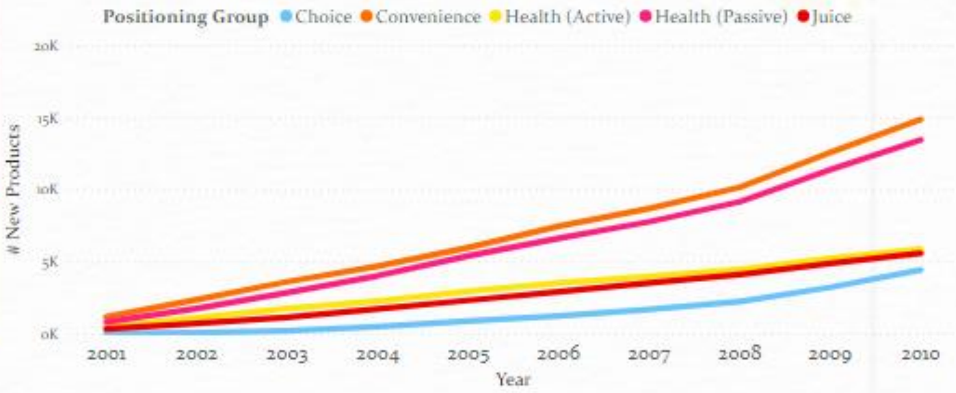
2001 2010

Understanding of Market-Subcategory

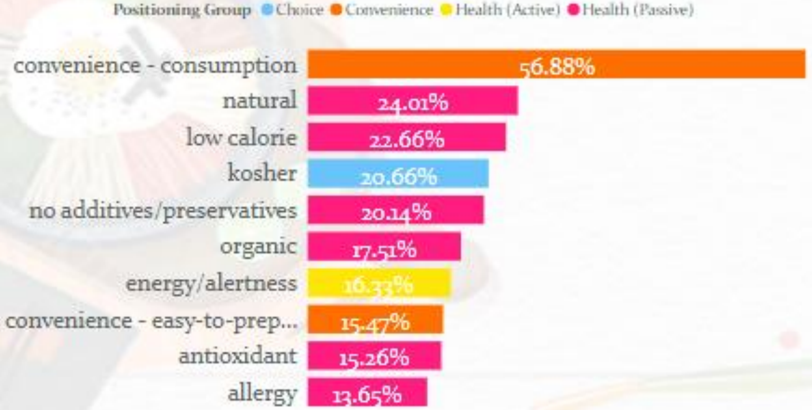
Popular Position Groups



New Product Launches Over Years (Cumulative View)



Popular Position Subcategories



- The ongoing evolution of dynamic lifestyles has led consumers to prioritize heightened convenience while retaining a commitment to nutrition. In their quest for easy-to-prepare options, consumers are reluctant to compromise on health objectives.
- This demand for convenience transcends home meal preparation, significantly influencing the choices of on-the-go food and beverages, particularly among those leading hectic lifestyles.
- A notable trend over the years is the increasing demand for sophisticated beverages, functional teas, coffees, and drink concentrates infused with ingredients designed to provide an additional boost of energy.
- Consumers are showing a preference for beverages that are natural, organic, and free from additives or preservatives.
- With a growing emphasis on enhancing passive health, whether through energy boosters, improvements in gut health, immunity support, cognitive function enhancement, or hydration, consumers actively seek products that incorporate specific functional ingredients with discernible health benefits.
- Consumers' commitment to ethical food choices is prompting them to seek out options that are labeled as "regenerative," "upcycled," and packaged sustainably.

Prepared by
Ravi Chandrika B

Prepared by
Ravi Chandrika B

Understanding of Flavors and Flavor Groups

2006 2010

# Products	# Flavors	# Flavor Groups	# Popular Flavor Group
11.56K	435	22	Fruit (130 flavors)

Flavor | Flavor Group

Flavors-1 Product
85

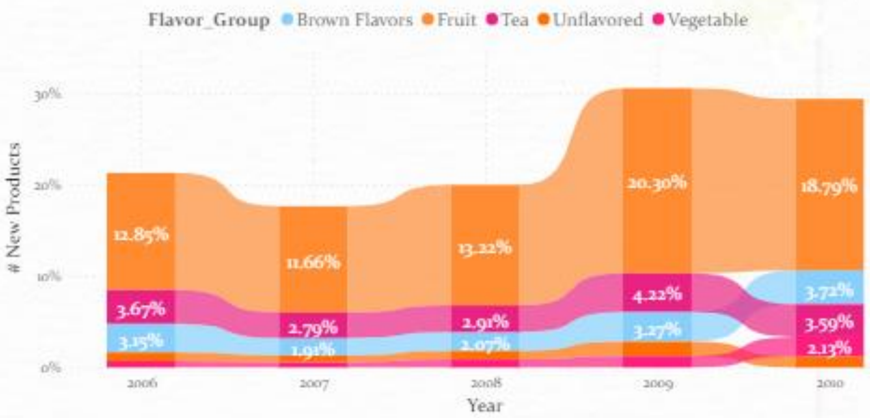
Flavors <=5 Products
201

Flavors >=100 Products
63

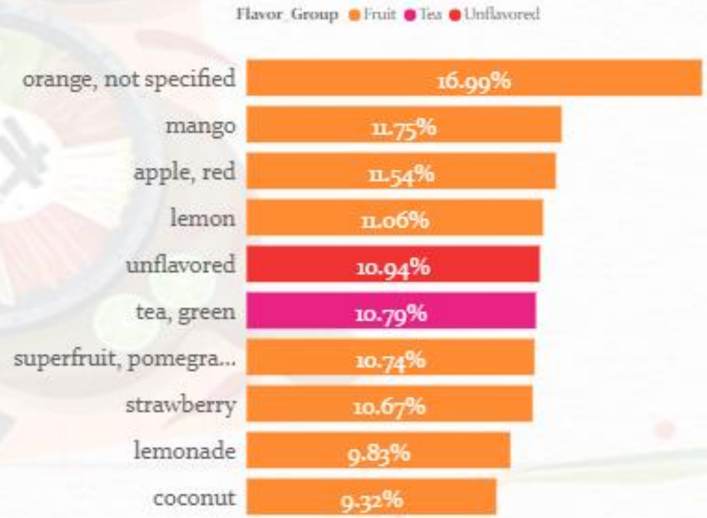
Click to go to New Product Launched per Flavors

Popular Flavor Groups

Performance of Flavor Groups over years



Emerging Flavors



- Preference for plant-based ingredients: Consumers favor plant-based options such as fruits, vegetables, pulses, seeds, and nuts as a nutritionally dense alternative to meat.
- Increasing demand for natural and sustainable flavors: Growing awareness of the health and environmental impact of synthetic ingredients is driving a rising demand for flavors that are natural and sustainable.
- Growth of fruit and botanical flavors: Consumers are leaning towards beverages that offer low calorie content, minimal to no added sugar or salt, devoid of synthetic ingredients, and feature tropical flavors, along with herbs and botanicals sourced from various corners of the world.
- Consumers are open to exploring novel culinary experiences, with a noticeable surge in the popularity of Italian, Chinese, and Japanese foods observed after 2006, especially evident in the widespread appeal of Asian packaged products across diverse consumer demographics.

Prepared by
Ravi Chandrika B

Prepared by
Ravi Chandrika B

Understanding of Flavors and Flavor Groups

2006 | 2010

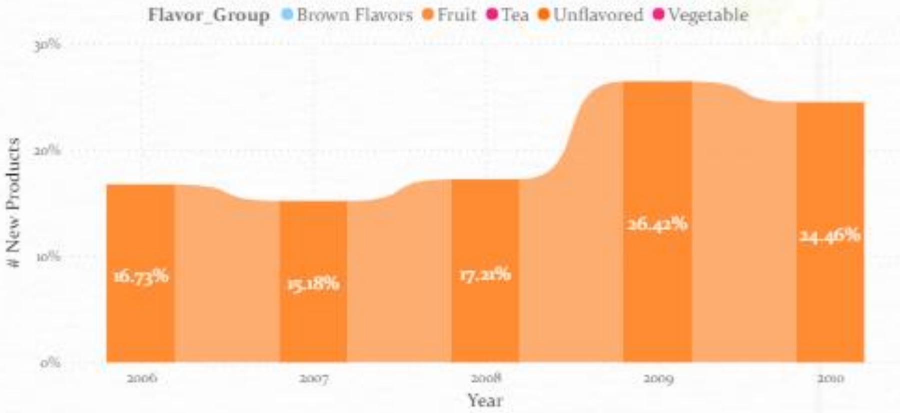
# Products	# Flavors	# Flavor Groups	# Popular Flavor Group
8630	130	1	Fruit (130 flavors)

Flavor | Flavor Group

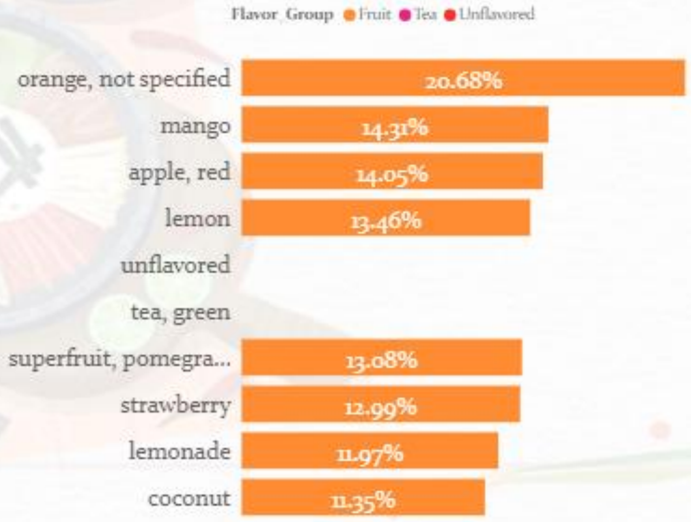
# Flavors-1 Product	# Flavors <=5 Products	# Flavors >=100 Products
14	36	39

Popular Flavor Groups

Performance of Flavor Groups over years



Emerging Flavors



Click to go to New Product Launched per Flavors

- Preference for plant-based ingredients: Consumers favor plant-based options such as fruits, vegetables, pulses, seeds, and nuts as a nutritionally dense alternative to meat.
- Increasing demand for natural and sustainable flavors: Growing awareness of the health and environmental impact of synthetic ingredients is driving a rising demand for flavors that are natural and sustainable.
- Growth of fruit and botanical flavors: Consumers are leaning towards beverages that offer low calorie content, minimal to no added sugar or salt, devoid of synthetic ingredients, and feature tropical flavors, along with herbs and botanicals sourced from various corners of the world.
- Consumers are open to exploring novel culinary experiences, with a noticeable surge in the popularity of Italian, Chinese, and Japanese foods observed after 2006, especially evident in the widespread appeal of Asian packaged products across diverse consumer demographics.

Prepared by
Ravi Chandrika B

Prepared by
Ravi Chandrika B

Flavor

All

Flavor_Group

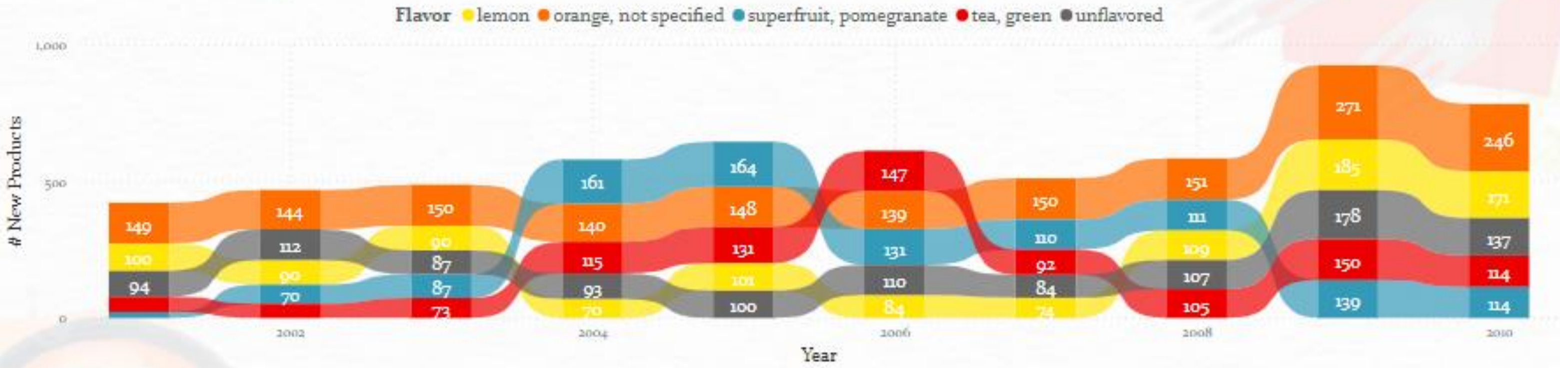
All

2001 2010

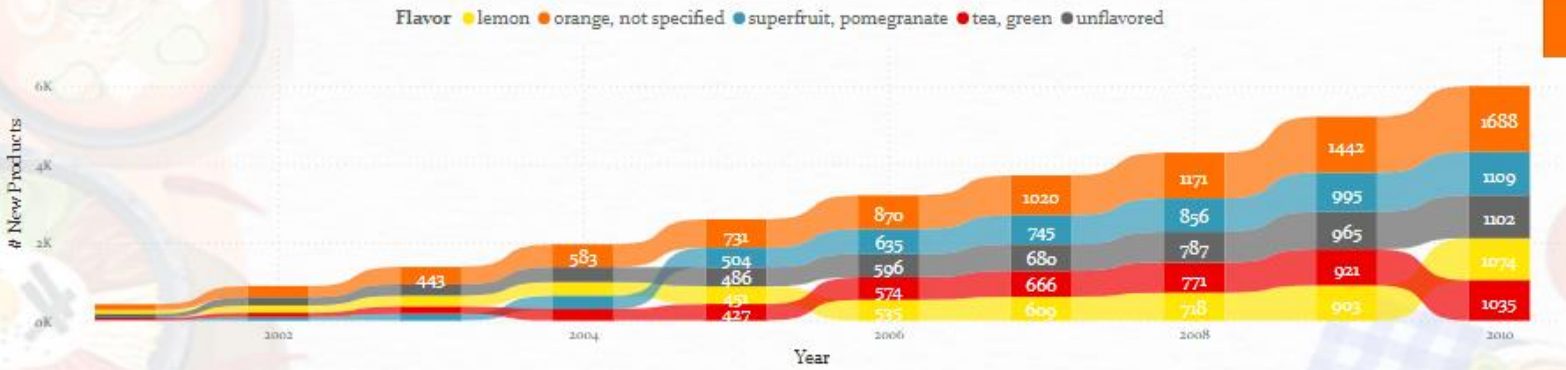
Products

19.66K

#New Product Launched Per Top 10 Flavors



#New Product Launched Per Top 10 Flavors (Cumulative View)



- Throughout the years, there has been a consistent increase in the launch of products featuring Orange and Pomegranate flavors.
- Up until 2005-2006, a substantial number of products were introduced with Pomegranate flavor. However, after 2006, there has been a noticeable decline in the introduction of products with this flavor.
- In 2009, there was a notable surge in product launches featuring Orange, Lemon, and Apple flavors.
- The fruit flavor group stands out as particularly popular, encompassing approximately 130 different flavors.
- Between the years 2006 and 2010, there were 118 flavors represented by only one product each, while 245 flavors were associated with no more than 5 products during that same period.
- Ginger, cinnamon, cardamom, and lemongrass have maintained popularity as spices over the years.
- In the last five years, wasabi has witnessed a surge in popularity and Turmeric has been gaining popularity since 2008.

Prepared by
Ravi Chandrika B

Prepared by
Ravi Chandrika B

Understanding of Market-Subcategory

2001 2010

Flavor_Group: All

Market Subcategory: Juice & Juice Drinks

Understanding of Flavors and SKU Optimization

Understanding on Positioning Subcategory & Groups

Market Share
34.17

Flavors-1 Product
81

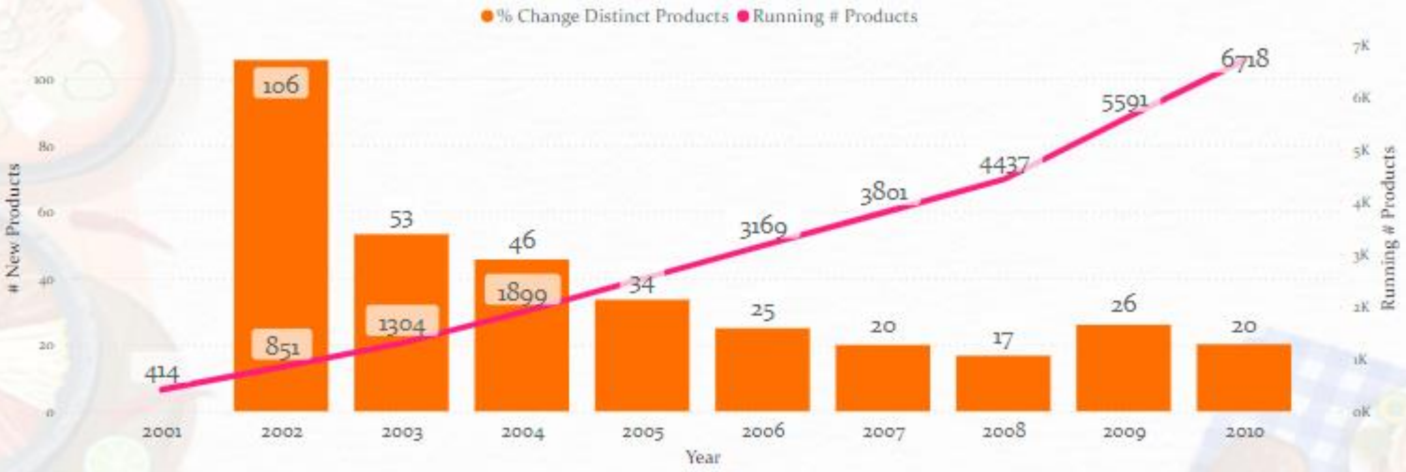
Products
6718

Market Subcategories
1

Total Products Overall
19662

Flavor	2001	2003	2004	2005	2006	2007	2008	2009	2010
acacia								1	
avocado									1
barley						1			

New Product Launches Over Years (Cumulative View)



- New product introductions comprised 25% from 2005 to 2006, witnessed a decline to 17% from 2006 to 2007, followed by an increase from 16% to 22% in 2009, only to return to 17% in 2010.
- Juice and juice drinks command a 36.18% share, followed by drink concentrates and mixes at 18.4%, and Iced tea at 10.41%.
- Carbonates, bottled water, and energy drinks collectively account for 25% of the market share.
- In the Juice and Juice Drinks Market subcategory, between 2001-2005, there are 15 flavors, including bilberry, eucalyptus, and rose, each associated with only one product.
- Between 2006-2010, there are 66 flavors within the Juice and Juice Drinks Market subcategory, each linked to only one product.

Prepared by
Ravi Chandrika B

Prepared by
Ravi Chandrika B

Understanding of Market-Subcategory

2001 2005

Flavor_Group: All

Market Subcategory: Juice & Juice Drinks

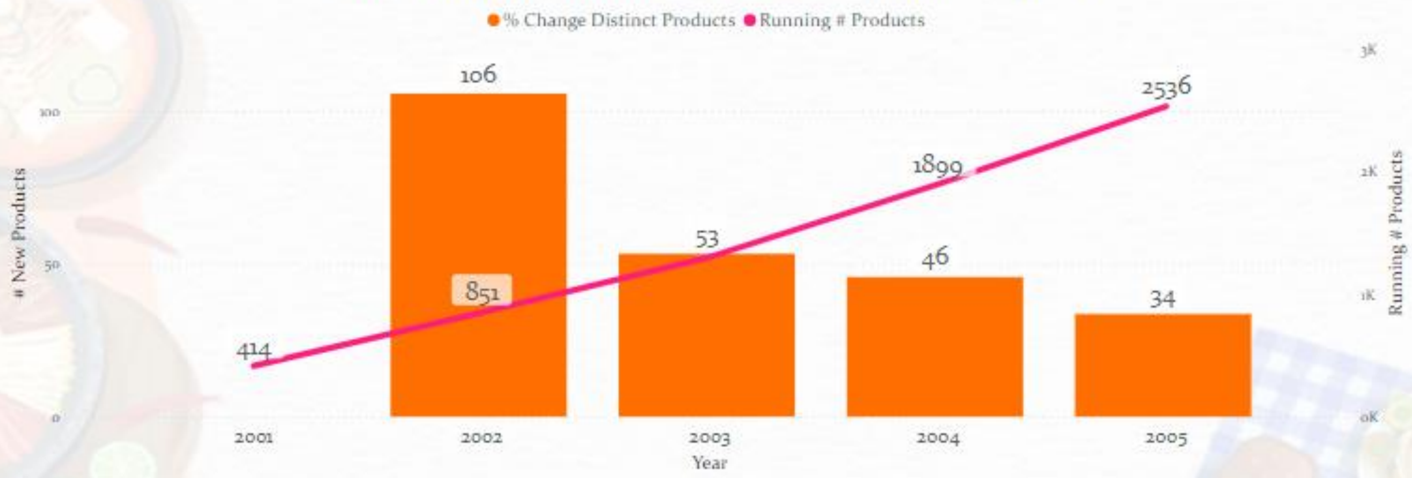
Understanding of Flavors and SKU Optimization

Understanding on Positioning Subcategory & Groups

# Market Share	# Flavors-1 Product	# Products	# Market Subcategories	# Total Products Overall
31.30	15	2536	1	8103

Flavor	2001	2003	2004	2005
bilberry				1
eucalyptus				1
grains, not specified		1		

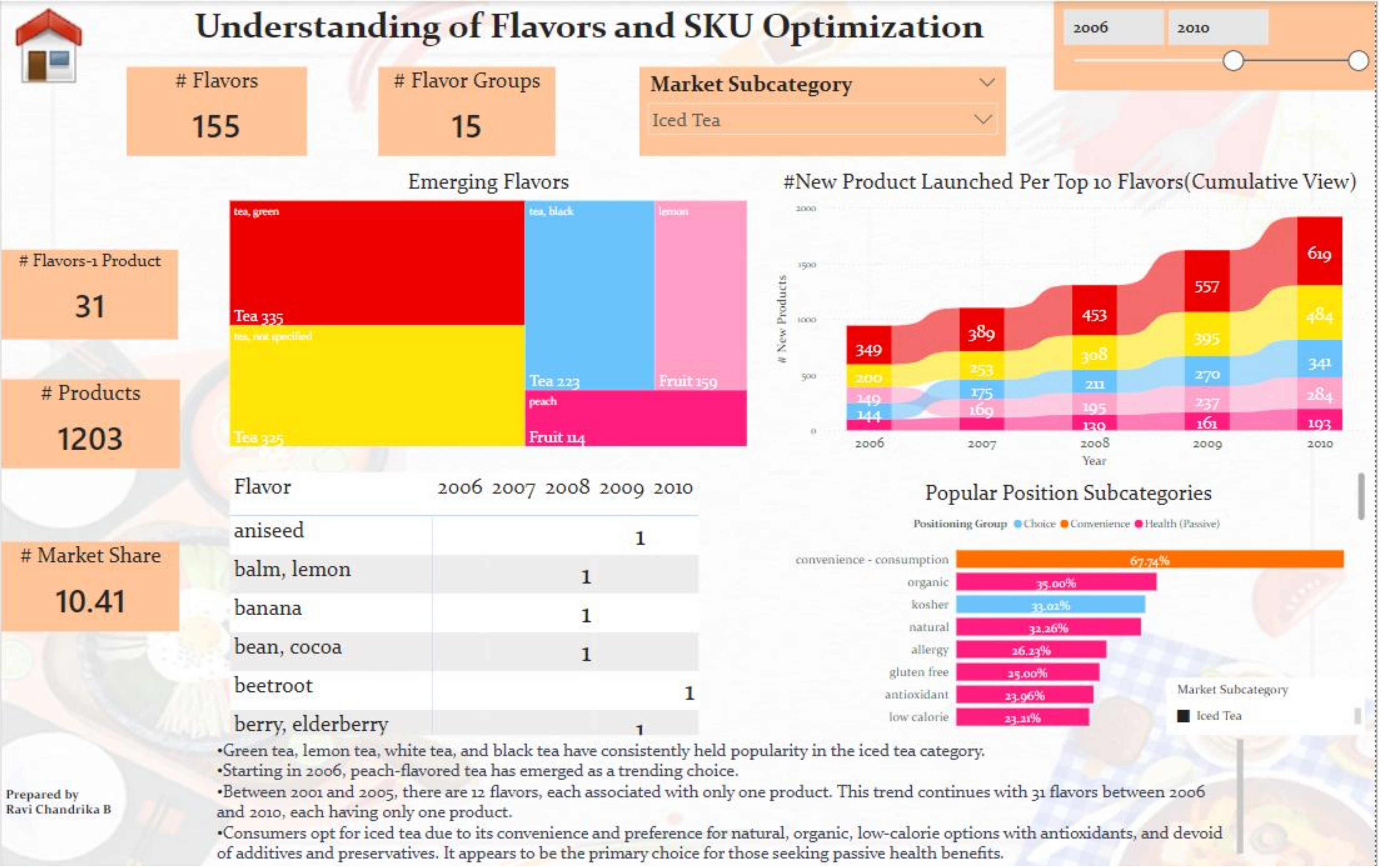
New Product Launches Over Years (Cumulative View)



- New product introductions comprised 25% from 2005 to 2006, witnessed a decline to 17% from 2006 to 2007, followed by an increase from 16% to 22% in 2009, only to return to 17% in 2010.
- Juice and juice drinks command a 36.18% share, followed by drink concentrates and mixes at 18.4%, and Iced tea at 10.41%.
- Carbonates, bottled water, and energy drinks collectively account for 25% of the market share.
- In the Juice and Juice Drinks Market subcategory, between 2001-2005, there are 15 flavors, including bilberry, eucalyptus, and rose, each associated with only one product.
- Between 2006-2010, there are 66 flavors within the Juice and Juice Drinks Market subcategory, each linked to only one product.

Prepared by
Ravi Chandrika B

Prepared by
Ravi Chandrika B



- From 2001 to 2010, the iced tea category boasts a diverse array of 175 flavors grouped into 17 distinct flavor categories, contributing to a product count of approximately 2137.
- Between 2006 and 2010, Iced tea captures a 10.41% market share, securing the 3rd position in the market landscape.

Prepared by
Ravi Chandrika B

Key Takeaway

1. **Trend in New Product Introductions:**
   New product launches have consistently increased over the years, with a notable surge in 2009 and a slight dip in 2007.

2. **Market Focus and Expansion:**
   The primary market focus has been on the USA, with limited launches in Canada. However, there was a significant increase in product additions to the Canadian market in 2007 and 2009.

3. **Global Expansion:**
   Mexico entered the market in 2008, showcasing the expansion of product entries into new regions.

4. **Consumer Preferences and Health Trends:**
   Consumers prioritize convenience and natural, organic, low-calorie options with antioxidants, and no additives or preservatives. This trend aligns with a growing emphasis on passive health benefits.

5. **Flavor Diversity and Trends:**
   There is a diverse range of flavors, with a notable preference for plant-based options. Fruit and botanical flavors, including Orange and Pomegranate, have gained popularity.

6. **Market Share and Category Insights:**
   Juice and juice drinks dominate the market share at 36.18%, followed by drink concentrates and mixes at 18.4%, and Iced tea at 10.41%. Carbonates, bottled water, and energy drinks collectively account for 25% of the market.

7. **Iced Tea Category Trends:**
   Green tea, lemon tea, white tea, and black tea remain popular in the iced tea category. Peach-flavored tea gained traction from 2006 onwards.

Key Takeaway

8. **Flavor Variation and Market Position:**
   Between 2001-2010, there are flavors associated with only one product, indicating diversity. Iced tea holds a significant market position with a 10.41% share.

9. **Spice and Flavor Popularity:**
   Traditional spices like ginger, cinnamon, cardamom, and lemongrass maintain popularity. Wasabi has surged in the last five years, and turmeric has gained traction since 2008.

10. **Trend in New Product Introductions Over Time:**
    The percentage of new product introductions has varied over the years, experiencing peaks and troughs. This reflects the dynamic nature of the market and consumer preferences.

Business ideas and SKUs

1. **Immunity Boost Iced Tea (SKU):**
   Infuse iced tea with natural ingredients known for immune support with a hit of vitamin C. Capitalize on the growing consumer mood towards health-conscious beverages.

2. **Global Fusion Flavors Pack (SKU):**
   Introduce a variety pack of iced teas featuring unique global flavors inspired by Italian, Chinese, and Japanese culinary influences. We can offer flavors like Italian Lemon Twist, Chinese Green Jasmine, Japanese Cherry Blossom and Masala Chai.

3. **Eco-Friendly and Sustainable packaging:**
   Launch an eco-friendly line of iced teas packaged in sustainable materials with regenerative and upcycled labelling. Appeal to environmentally conscious consumers seeking ethically sourced beverages.

4. **Exotic Spice Infusion Iced Tea (SKU):**
   Create a line of iced teas infused with exotic spices like ginger, cinnamon, cardamom, and lemongrass. Offer a unique and flavourful experience for consumers looking for a departure from traditional tea options.

5. **Tropical Paradise Hydration Pack (SKU):**
   Develop a iced tea line featuring tropical flavors, herbs, and botanicals sourced from different parts of the world. Cater to consumers seeking low-calorie, natural, and refreshing fruity options.

6. **Customizable DIY Iced Tea Kits (SKU):**
   Offering Do-It-Yourself (DIY) iced tea kits. Provide a range of base teas and flavor enhancers, allowing customers to create their personalized iced tea blends at home.

Prepared by
Ravi Chandrika B

Thankyou

Case Study Analysis
by
Ravi Chandrika