

THE STARTUP EDGE

E-Cell Ramjas



Industry Report

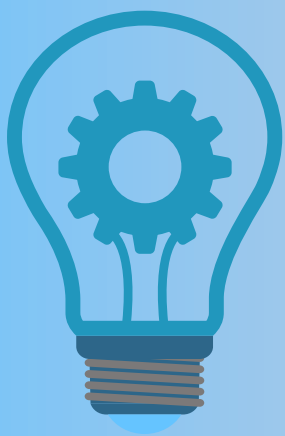
Frozen Dessert Industry

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INTRODUCTION



INTRODUCTION



The ice cream and frozen dessert industry is a vibrant and evolving segment within the global food and beverage market. It spans a diverse product range from traditional dairy-based ice creams and gelatos to frozen yogurts, sorbets, sherbets, and a rapidly growing category of non-dairy alternatives made from plant-based ingredients.

- **Premiumization**– People are **willing to pay more** for low-calorie, functional, or **clean-label options**.
- **Health & Wellness Focus**– Innovations in healthier **formulations**, such as low-sugar, probiotic-rich, are **reshaping traditional product lines**.
- **Sustainability & Ethics**– Growing environmental and ethical concerns are leading to:
 - Use of **plant-based ingredients**
 - Adoption of **eco-friendly packaging**
- **Technological Advancements**– Improved production methods and cold chain logistics are enabling better quality, longer shelf-life, and wider market reach.

KEY INDUSTRY TRENDS



KEY MARKET STATISTICS



- **Daily Servings – June 2024 = 116.8 million servings per day**
- **2024 Market Size (global) \$3.46 billion.**
- **Projected Market Size – 2034 = \$14.0 billion**
- **Projected CAGR (2024–2034) = 15%**

EVOLUTION



200BC

The earliest evidence of a frozen dairy treat, often called "milk ice", dates back to around **200 BC**. The Chinese also developed methods for **freezing liquids by using snow and salt**, and they even created early versions of ice cream machines.



1000 AD

While ice cream's origins are debated **Middle East** played a key role in its development, with the addition of **milk and sugar around 1000 AD**. This innovation spread throughout the region, major cities like Baghdad, Damascus, & Cairo..



**13th
CENTURY**

Many legends suggest that **Marco Polo** brought recipes for **chilled desserts (possibly similar to sorbet or sherbet) from China to Italy in** the late 1200s. These early forms were made with snow, fruit, and honey, more like sorbets or granitas than modern ice cream.



1800's

In **1843, Nancy M. Johnson**, an American woman, patented the **first hand-cranked ice cream freezer**. Her invention revolutionized ice cream making it no longer required hours of manual stirring or exclusive access to expensive equipment



The **1904 St. Louis World's Fair** played a crucial role in popularizing the **ice cream cone**. A simple act of innovation, rolling a waffle into a cone to hold ice cream, turned into a global traditions



1960's

The rise of brands like **Häagen-Dazs** marked a new era in the ice cream industry, one of global reach, **premium quality**, and **brand identity**. Häagen-Dazs transformed ice cream from a simple treat into a **luxury experience**, inspiring a wave of brands & redefining consumer expectations worldwide.



CHANGING CONSUMER PREFERENCES



Pre 2000s



Flavors: Simple and classic like , vanilla, chocolate, strawberry, butterscotch.

Consumption Style: Mostly limited to family outings, birthdays, and summer treats.

Customer Behavior:Focus was on taste and affordability.

2000s – 2010s

Rise of Premium Brands .

Health Awareness Begins: Introduction of frozen yogurt, low-fat and sugar-free variants.

Customer Behavior: Willing to speak d more for better quality. Interest in variety and experimentation began.



2010s –2020s



Health & Wellness Boom: Consumers sought low-calorie, keto, vegan, and dairy-free options.

Customer Behavior: Preference shifted from indulgence to balance taste with health.

Present

Fusion Flavors: Combining global tastes - e.g., gulab jamun ice cream, matcha with mochi, saffron rose.

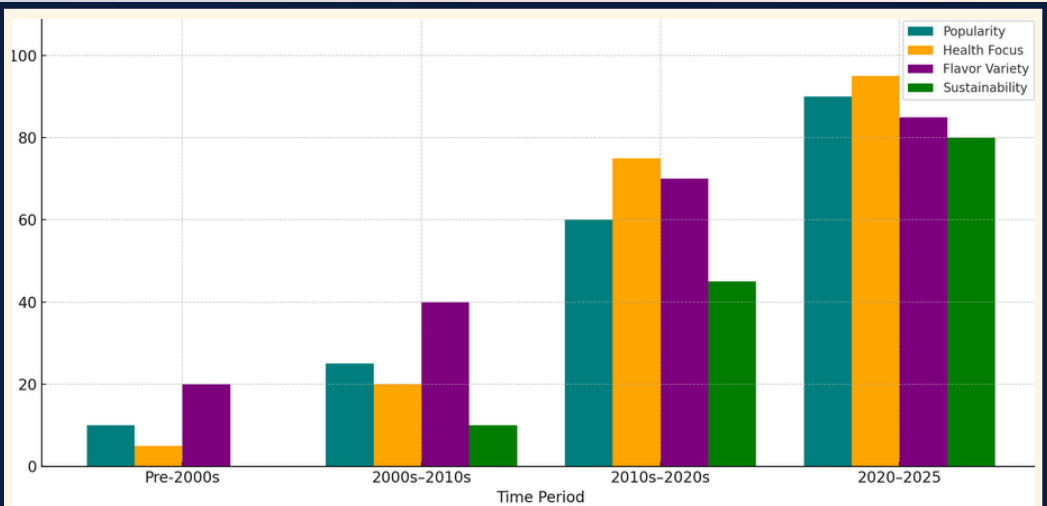
Customer Behavior: Ice cream is part of the lifestyle and personal identity.



CUSTOMER LANDSCAPE

- Key purchase criteria
- Differentiation
- Adoption rates
- Vegan and plant-based rise
- Drivers of price sensitivity
- Adoption Life Cycle
- Personalised ice creams

CHANGING CUSTOMER PREFERENCES



COMPETITIVE LANDSCAPE



Competitor Matrix



LOCAL BRANDS AND D2C STARTUPS



LOCAL AND REGIONAL BRANDS

Local players thrive by **tapping into regional tastes**, offering unique, artisanal flavors with local ingredients. Their deep cultural insight and tourist appeal help build **strong consumer loyalty** and **stand out from global brands**.



COMPETITIVE ADVANTAGES(LOCAL BRANDS)

These brands compete by being agile and **responsive to evolving tastes**. Their use of traditional flavors, artisanal techniques, and premium ingredients helps **build loyalty** and a **distinct brand identity**. They can **quickly introduce new offerings and adapt marketing strategies** without the bureaucracy of large corporations.



DIRECT-TO-CONSUMER STARTUPS

D2C startups are disrupting the traditional retail model by **using e-commerce and direct consumer interaction**. They **cater to rising demand for health-conscious and ethical products**, like plant-based or low-sugar ice cream. These brands offer personalized experiences, customizable options, and **use digital platforms to build communities and gain insights**.



CHALLENGES AND OPPORTUNITIES

While D2C brands benefit from growing online F&B sales and shifting consumer preferences, they face **challenges like logistics, cold chain management, and stiff competition from legacy brands**. Still, the D2C model presents **strong growth opportunities**, particularly through **e-commerce** and **niche market targeting**.

SWOT ANALYSIS



STRENGTH

- \$106B global market (2024)
- Steady, long-term growth ahead
- New flavors & formats keep hype alive
- Strong brand loyalty fuels repeat buys

WEAKNESS



- Sales peak in warmer seasons
- High costs from cold-chain logistics + energy
- Health-conscious shift cutting into classic products
- Saturated market with tough price wars



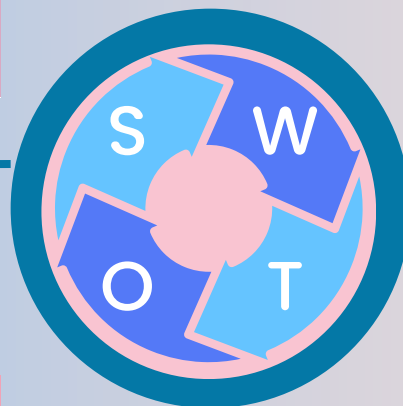
OPPORTUNITY

- Rising demand for healthy alternatives (dairy-free, keto-friendly)
- Eco-friendly packaging + ethical sourcing boost brand image
- D2C, subscriptions, and app-based sales widen access

THREATS



- Recessions cut spending on discretionary treats
- Rising regulations on sugar, labeling, and sourcing
- Cold-chain + dairy supply issues limit availability
- Climate change hitting core ingredients like milk & fruit



CONSUMER BEHAVIOR ANALYSIS



TASTE



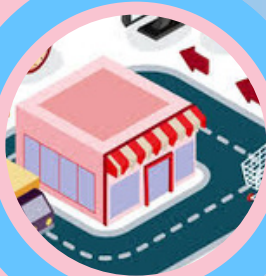
- Consumers seek **bold, adventurous flavors** (e.g., matcha, sea salt caramel) alongside regional favorites like kulfi and red bean.
- **Texture and sensory richness** matter – preference for creamy, mochi-like, or layered textures is growing.

HEALTH



- Strong shift toward **“better-for-you” options** – low-calorie, high-protein, vegan, gluten-free, and dairy-free variants.
- Consumers prioritize **clean-label, transparent ingredients**, avoiding artificial additives and preservatives.

CONVENIENCE



- Growth in **on-the-go and single-serve packs**, driven by busy urban lifestyles and younger consumers.
- **Digital and D2C channels** (food delivery apps, quick commerce, subscriptions) influence impulse buying and discovery.

CHALLENGES IN THE INDUSTRY



SEASONAL DEMAND

Demand in this sector is highly seasonal - **sales peak in summer** but drop sharply during winter. This uneven pattern creates **cash-flow pressures** and complicates production planning.

RIISING HEALTH CONCERNS

The growing consumer interest in low-fat, sugar-free, vegan, and probiotic desserts, etc pressures companies to **adjust traditional recipes**.

SUPPLY CHAIN

The industry depends on **strict temperature control**, requiring continuous freezing to prevent spoilage. This leads to high energy costs for cold storage and transport

MARKET COMPETITION

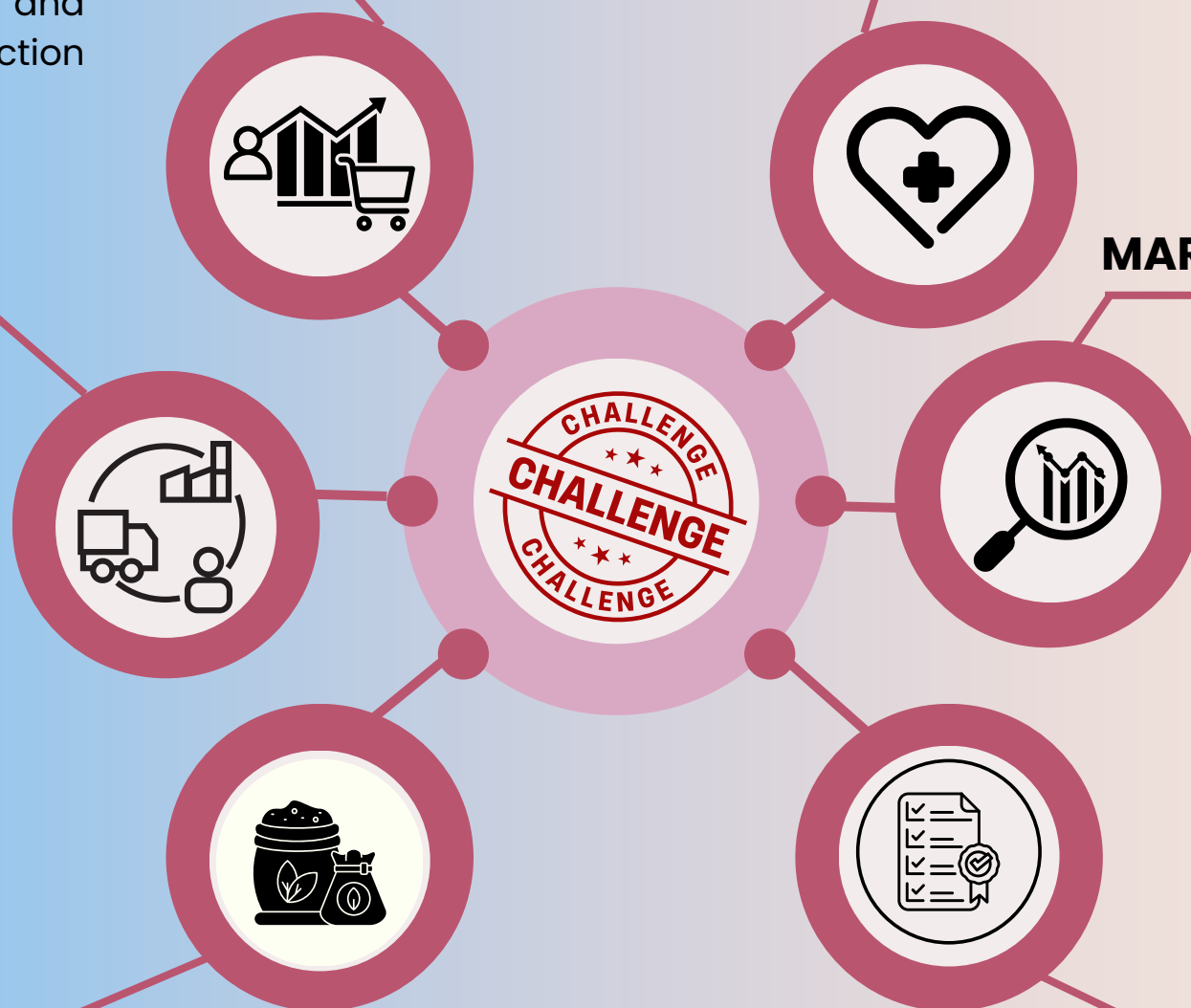
Large players often engage in **price wars**, making it tough for smaller brands to compete. Securing shelf space and building **brand visibility** in modern retail outlets remains costly and highly competitive.

RAW MATERIAL

Key inputs like milk and cream face **frequent price fluctuations**, increasing production costs. Ensuring consistent quality of ingredients such as milk solids, flavors, and emulsifiers adds to **operational difficulty**.

REGULATIONS

Strict labeling and **safety testing rules** increase compliance effort and cost. The classification divide between ice cream and frozen desserts also creates consumer confusion and **regulatory complexity**.



REGULATORY COMPLIANCE



PRODUCT DEFINITIONS (AS PER FSSAI)

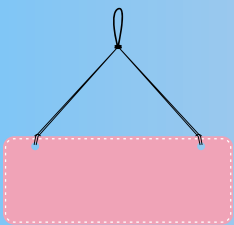
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Ice Cream: Dairy-based; $\geq 10\%$ milk fat, 36% solids, 525g/litre.

Frozen Dessert: May use vegetable fat; $\geq 10\%$ fat, 36% solids.



LABELLING REQUIREMENTS



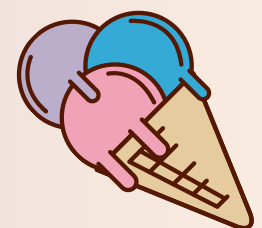
Frozen desserts must state "Contains Vegetable Oil". Must include ingredients, nutrition info, FSSAI logo, license no., and expiry date.

2

ADDITIVES AND FLAVOR REGULATIONS

3

Only approved additives allowed.
Artificial flavors must be declared; others must follow limits.



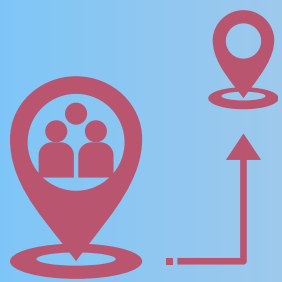
ADVERTISING & CLAIMS REGULATIONS



Health claims need scientific proof.
"Ice cream" can't label products with vegetable fat.
"Natural"/"Real fruit" must meet FSSAI standards.

4

FUTURE GROWTH DRIVERS

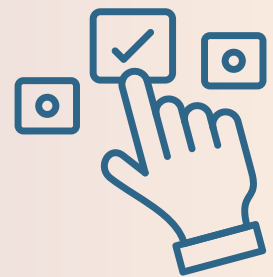


Higher incomes in emerging markets boost spending on ice cream. Urban lifestyles favor convenient dessert options.

Rising Disposable Income and Urbanization

Changing Consumer Preferences

Shift from traditional sweets to frozen desserts
Growing demand for premium, organic, and exotic flavors.

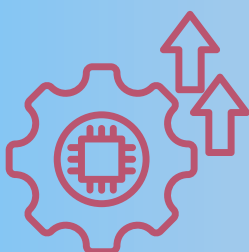


Supermarkets and online platforms increase product accessibility.

Growth of Organized Retail & E-Commerce

Product Innovation & Customization

Rise of vegan, keto, low-sugar, and probiotic options for health-conscious buyers.



AI used for forecasting, inventory, and targeted marketing.
Automation ensures hygiene and production efficiency.

Technological Advancements

MARKET OUTLOOK



2012–2016

- This phase was led by classic flavors and seasonal consumption.
- Innovation was minimal, and health wasn't yet a focus.

2017–2020

- Health-conscious trends gained momentum. Vegan, lactose-free, and low-sugar options emerged, especially in urban markets.
- Big brands began tapping into plant-based innovations.

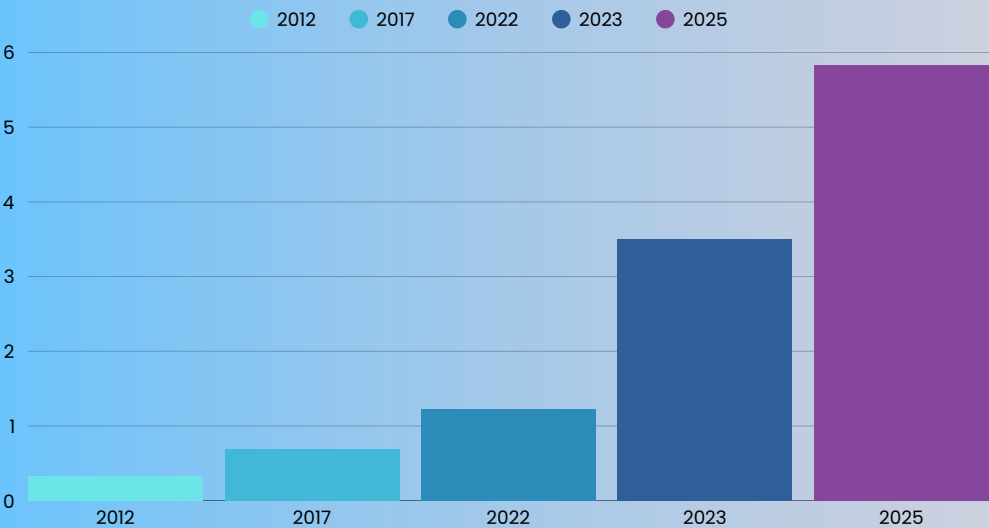
2021–2025

- Consumers shifted toward artisanal and gourmet products with bold flavors and clean labels.
- Organic ingredients and visually rich packaging made premium offerings more appealing.

2025–2035

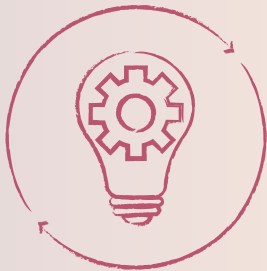
- The market is set to hit USD 113.85B by 2025 and USD 306.42B by 2035, growing at 6.6% CAGR.
- Health, personalization, and e-commerce will drive this phase, especially in emerging regions.

India's ice cream market size



Source: Upstox, E- estimated

Growth | Innovation | Opportunity



IMPACT OF SEASONALITY ON SALES



Global Treat With a Seasonal Twist

Across the world, **climate and seasons** strongly **influence ice cream** and **frozen dessert sales**. Warmer months drive higher demand, while colder seasons lead to reduced consumption and **strategic diversification by brands**.

Climate Extremes = Demand Spikes

USA - Heatwaves in southern states cause **15–20% sales spikes** (e.g., Texas, Florida)

Europe - Warmer summers in Germany and France led to **10% YoY growth** (2024)

Australia - Reverse seasonality sees **peak sales** in **Dec–Feb**

Middle East - High baseline **demand** due to **year-round hot weather**

Brand's Response Strategy

Temperature Spike Detected

Demand Forecast Adjustment

Increased Production & Distribution

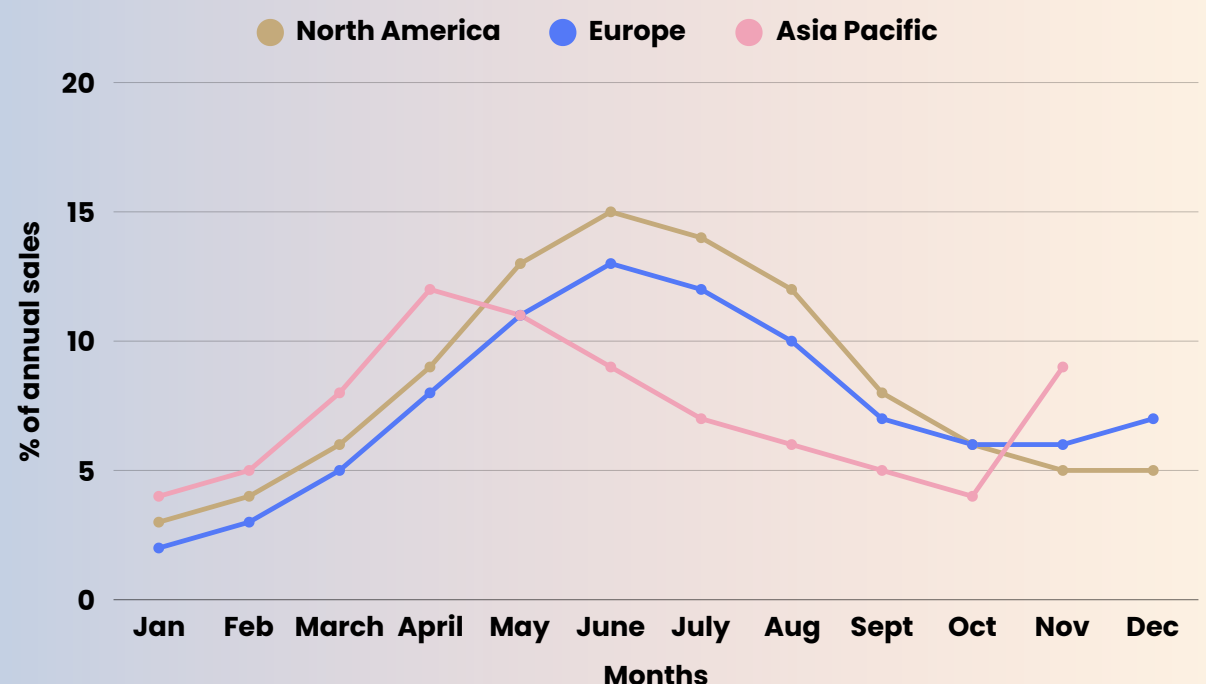
Launch of seasonal flavours

Quick Commerce & Online Boost

Off-Season Adaptation

- Introduce frozen snacks, milkshakes, or cold beverages
- Launch value packs to maintain volumes
- Diversify into adjacent categories (e.g., frozen yogurts, ready-to-eat desserts)

Seasonal Sales Patterns by Region



KEY MARKET TRENDS



HEALTH CONSCIOUSNESS

In recent years, **consumer preferences** have significantly shifted towards **healthier dessert options**, with sugar-free and low-calorie ice creams **gaining popularity**.



PREMIUMIZATION

The **premiumization** trend reflects consumers' **willingness to pay more** for superior quality, artisanal craftsmanship, and unique experiences.



SUSTAINABLE ICE CREAM

Sustainability is becoming a **key factor** in consumer decision-making, even in the frozen desserts segment. Sustainable ice creams **focus on eco-friendly production**.



RISE OF PLANT-BASED AND DAIRY ALTERNATIVES

The plant-based movement continues to grow rapidly, with almond, oat, coconut, and soy milk-based frozen desserts seeing strong demand.



DIGITAL INFLUENCE AND DIRECT-TO-CONSUMER MODELS

Brands are leveraging e-commerce platforms and direct-to-consumer models to reach a wider audience. Social media is playing a key role in brand awareness.



INNOVATIVE FORMATS AND CONVENIENCE

Single-serve portions, portable packaging, and ice cream snacks (like bites, and bars) are increasing in popularity, driven by convenience.

SUPPLY CHAIN & PRODUCTION PROCESS



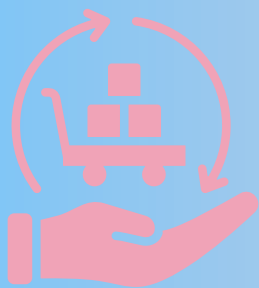
RAW MATERIAL SOURCING

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- **Dairy:** Milk, cream, whey, skim milk powder
- **Sweeteners:** Sugar, corn syrup, stevia, erythritol
- **Flavors/Add-ins:** Vanilla, cocoa, fruits, nuts, cookies
- **Stabilizers/Emulsifiers:** For texture & consistency



SUPPLIER MANAGEMENT



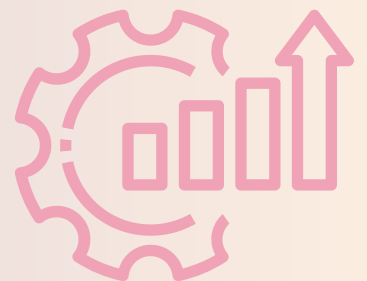
- **Vendor Selection:** Audits, **HACCP/ISO**, sustainability
- **Contracting:** Long-term deals for supply & pricing
- **Inventory:** **JIT** & safety stock to cut waste.

2

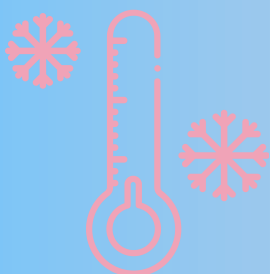
PRODUCTION & MANUFACTURING

3

- **Blending:** Mix ingredients
- **Pasteurization:** Heat to kill pathogens
- **Homogenization:** Ensure smooth texture
- **Aging:** Rest mix for better texture
- **Flavoring:** Add flavors & mix-ins



COLD STORAGE & WAREHOUSING



- Store at **-18°C or lower**
- Maintain cold chain to avoid spoilage
- Use centralized cold storage hubs
- **WMS** tracks inventory and shelf life

4

SUPPLY CHAIN & PRODUCTION PROCESS

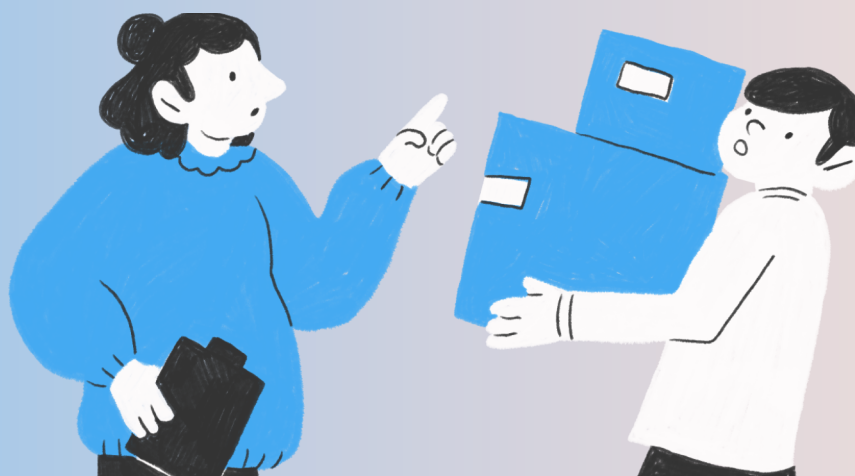


Distribution & Logistics

- Temperature-Controlled Transport: Uses **freezer** trucks or reefer containers.
- Logistics Partners: **3PL** firms handle regional and national distribution.
- Retail & Foodservice Channels: Includes grocery stores, ice cream parlors, restaurants, QSRs, and e-commerce/DTC platforms.
- Unsold expired inventory must be properly disposed of or **repurposed** (e.g., animal feed, biofuel).
- Packaging waste is a major concern; efforts include recycling initiatives and **biodegradable** materials.

Retail & Merchandising

- In-store display freezers must be properly maintained.
- **Seasonal promotions and product placement** (e.g., endcaps, freezers near checkout) impact visibility and sales.
- For digital sales, product imagery and insulated delivery solutions are key.
- **IoT Sensors** for temperature monitoring.
- **AI & Data Analytics** for demand forecasting and inventory optimization.
- Traceability systems ensure the ability to **track ingredients** back to the source in case of recalls



STRATEGIC RECOMMENDATIONS



By **focusing on health-conscious innovations**, expanding plant-based offerings, **leveraging digital channels**, localizing products, adopting **sustainable practices**, and **monitoring emerging markets**, companies can position themselves for success in the rapidly **evolving** ice cream and frozen dessert **industry**.

KEY FACTORS

Strategic
Marketing



Innovation
and Flavor



Technological
Advancements



Health-Conscious
Offerings



Recommendations

- 1

Monitor **Emerging Markets**
- 2

Focus on **Sustainable Practices**
- 3

Localize Products for **Regional Markets**
- 4

Expand **Plant-Based Offerings**
- 5

Leverage **E-Commerce** Channels
- 6

Develop **Health-Conscious** Products

CONCLUSION



The ice cream and frozen dessert industry continues to exhibit resilience and adaptability in a highly competitive and evolving market



KEY CHALLENGES THAT INDUSTRY PLAYERS MUST ADDRESS

- Seasonal demand **fluctuations**.
- **Rising** input costs.
- **Increasing** regulatory scrutiny on health and sustainability.

GROWTH OPPORTUNITIES



E-commerce expansion



Personalized experiences



Digital transformation

SHIFTING CONSUMER PREFERENCES TOWARD



Health-Conscious



Plant-Based



Premium Indulgence

STRATEGIC OPPORTUNITIES

- **Innovation** in flavors, natural ingredients, and packaging
- Adoption of **AI/data-driven personalization**
- Expansion through **e-commerce** and direct-to-consumer (**D2C**) models
- **Growth** in **plant-based** and **functional product lines**



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