



Cognizance'24 IITR

# INNOQUEST

QUANTISTICO SCIENTIA

---

**Agam Pandey | Hardik Chawla | Keshav Nand Goyal | Krish Sharma**  
Civil Engineering IIT Roorkee

# IDFC, LEADING INDIAN FOOD PRODUCT MANUFACTURING COMPANY, AIMING TO INTEGRATE AI TO OPTIMIZE ITS BUSINESS

Food Manufacturing  
Business- IDFC

Snack Products



Sweets



Ready-to-eat



Condiments



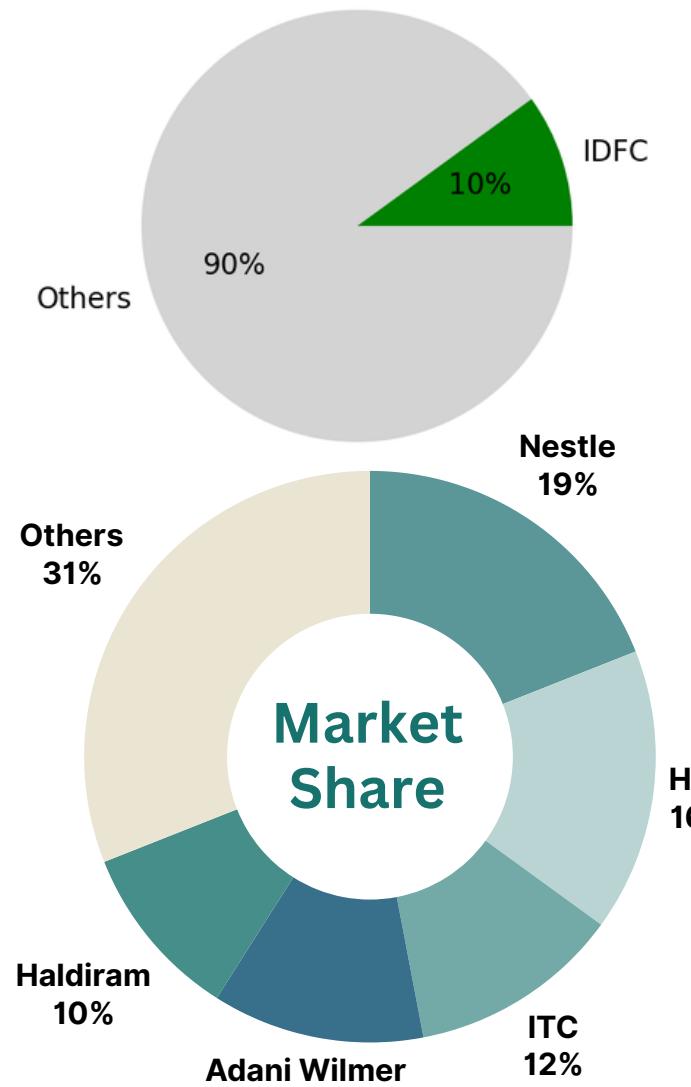
\*\*IMAGES ABOVE ARE SHOWN FOR REPRESENTATION PURPOSE ONLY, AND ARE NOT CLAIMED TO BE AS REAL IDFC PRODUCTS

# INDIAN PACKAGED FOOD MARKET SUMMARY (INDIA)

## PESTEL ANALYSIS



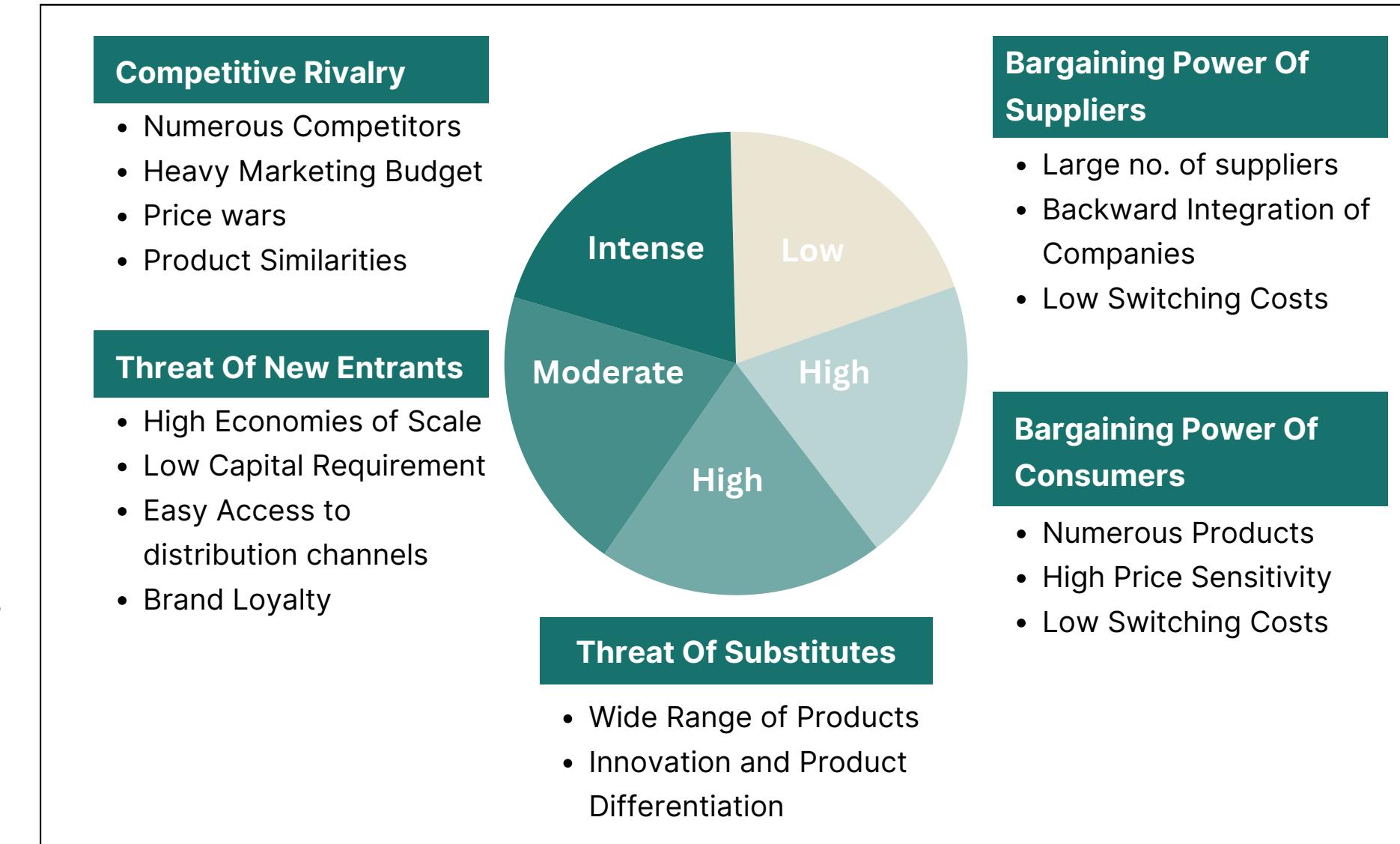
Market share distribution in Indian FMCG sector



Trends observed

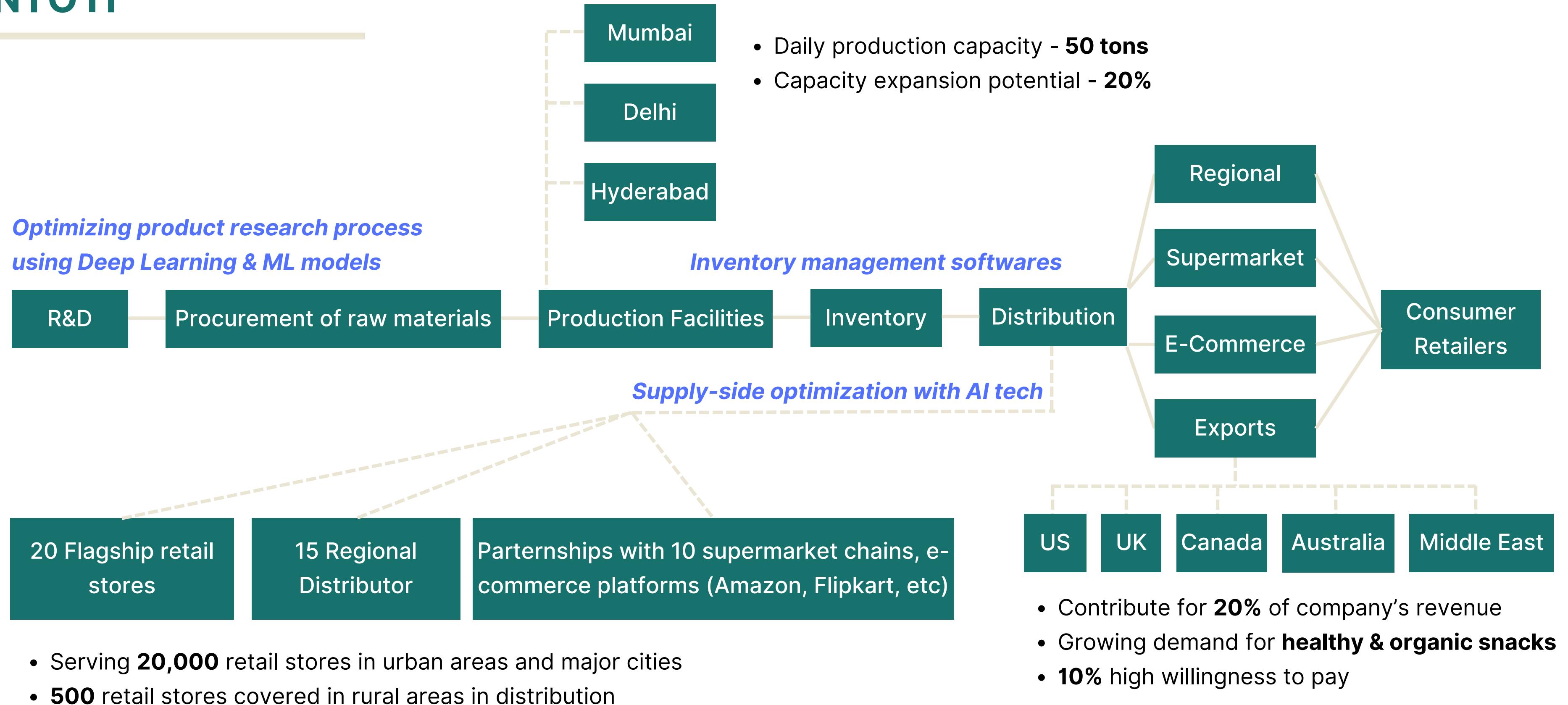
- Rapid urbanization** ---> ready-to-eat and packaged food demand has increased
- Healthier and organic** snacks (increased demand for millet-based products)
- Sustainable packaging & **clean labels**
- AI Automation**

## PORTER'S FIVE FORCES ANALYSIS



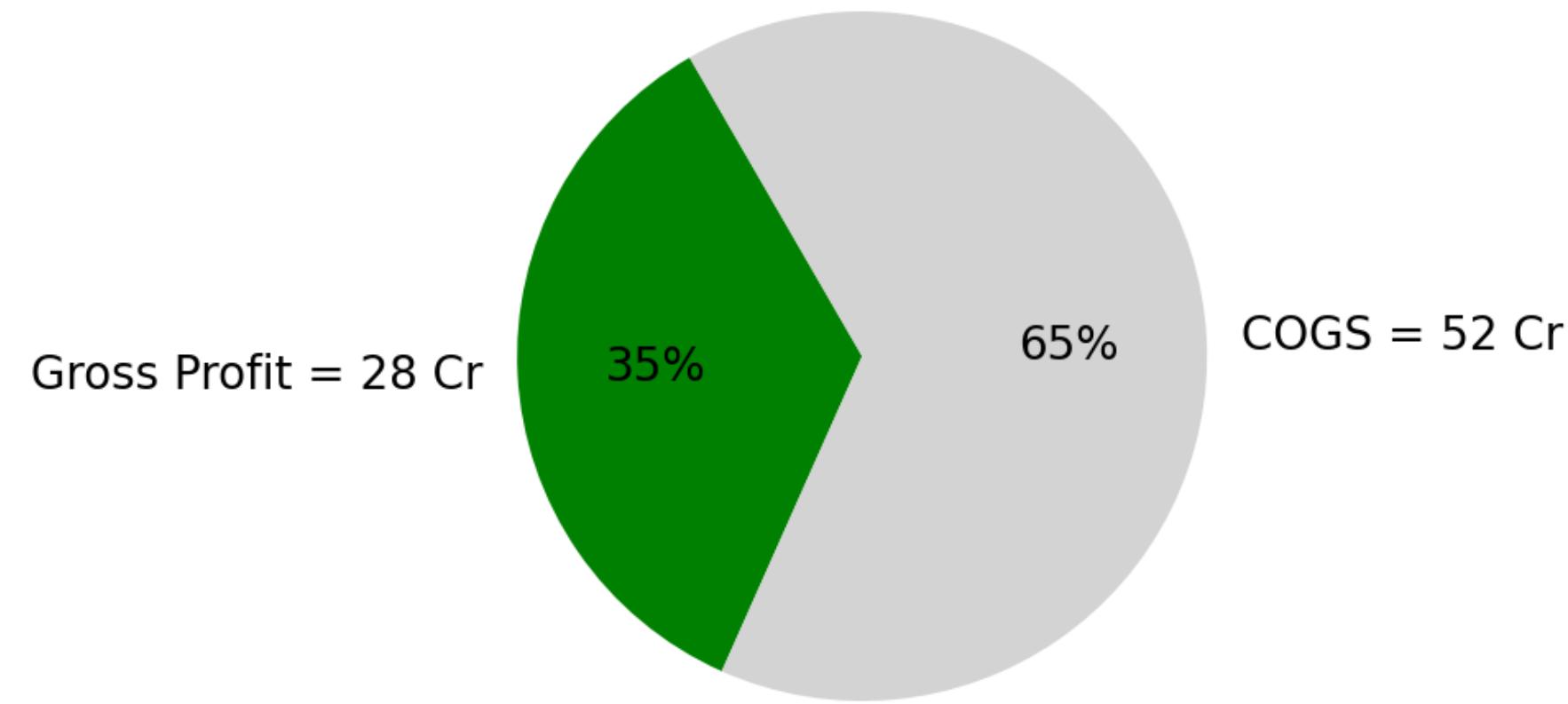
Source: Statista, Frost & Sullivan Analysis.

# OPTIMIZING EACH VALUE CHAIN SEGMENT BY EFFICIENTLY INTEGRATING AI INTO IT



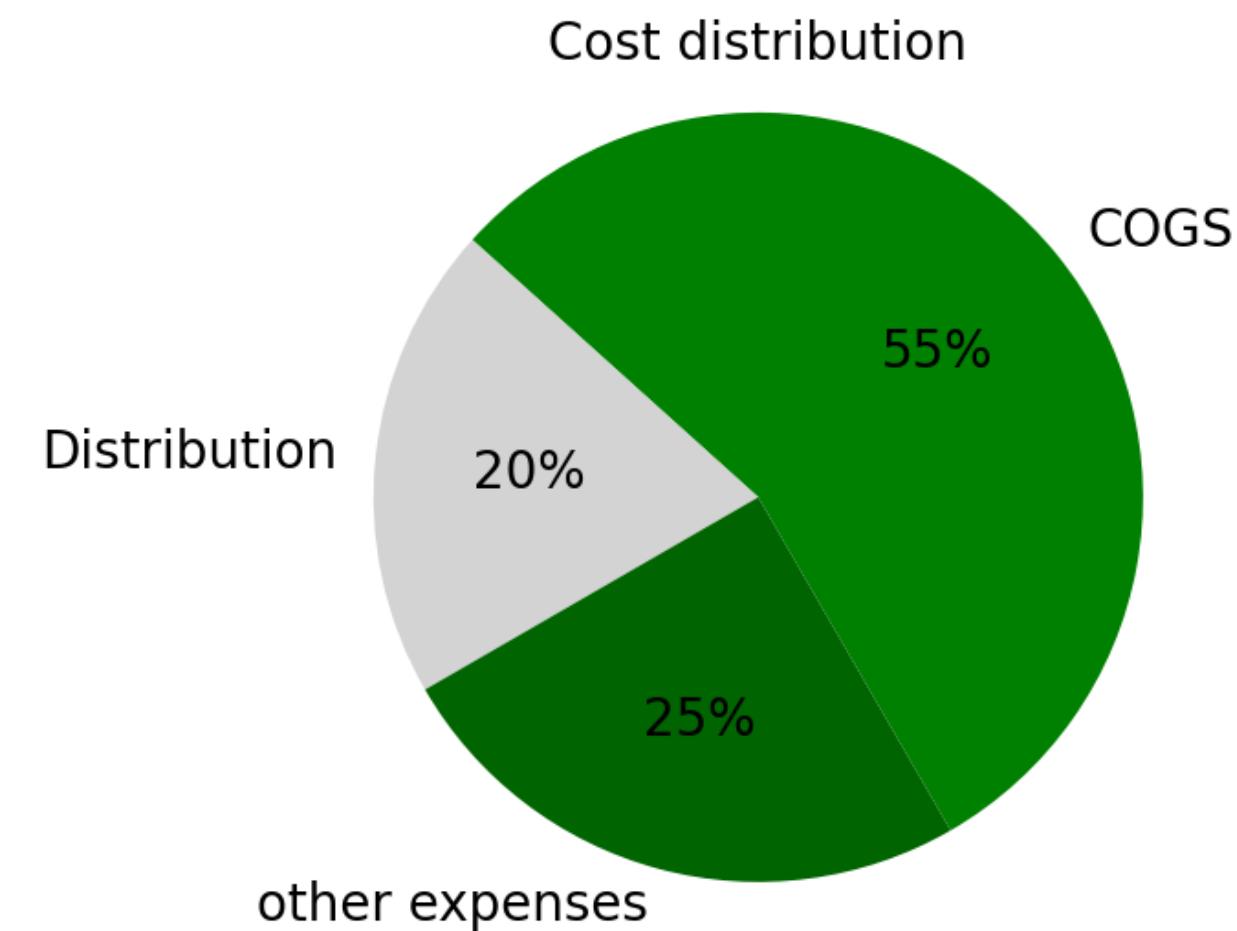
# FINANCIAL BREAKDOWN OF THE COMPANY

Annual revenue = 80 Cr | GPM = 35%



COGS = 52 Cr

Gross Profit = 28 Cr



Cost distribution

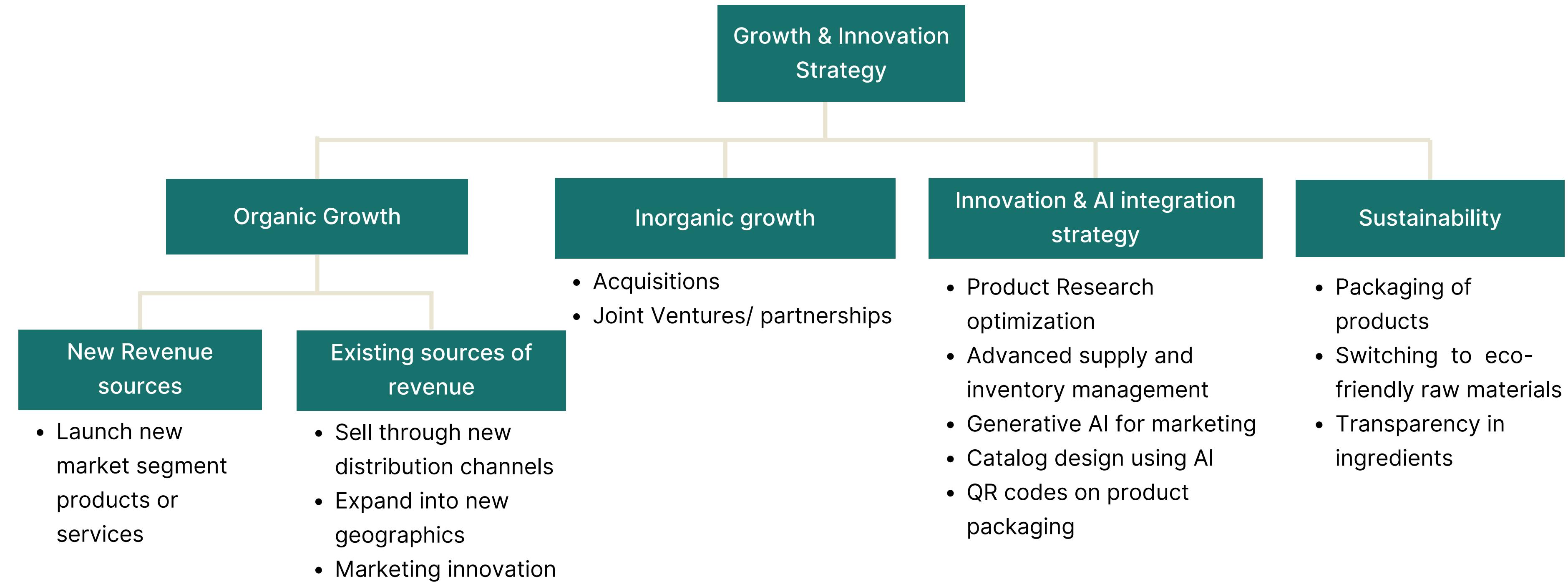
Distribution

- Gross Profit will be accounted for operating expenses, interests & taxes, depreciation & amortization as well.
- Net margin will be much lower than 35%

- IDFC employs 600 people across its manufacturing and distribution centers

**As of now, IDFC collects data through customer orders, inventory levels, and production processes, but not yet effectively utilized for decision-making ---> 5 % allocation of the budget for AI initiatives**

# CONCEPTUALIZING AN EXPANSION STRATEGY FRAMEWORK FOR IDFC , FOCUSING ON MARKET EXPANSION, SUPPLY-SIDE STRENGTHENING USING AI AND SUSTAINABILITY



# NEW PRODUCT VARIANTS FOR THE DOMESTIC MARKET AND EXPANSION INTO NEW GEOGRAPHIES

## Organic Growth

### New Revenue sources

### Existing sources of revenue

#### Domestic

- **3 new potential product lines** to grasp market share while holding the company's brand and core values

#### Regional foods/ flavors



#### Mid-healthy foods as "Better-for-you"



#### Healthy Food & Drinks



#### International

- Expanding to different geographies with increasing demand for Indian packaged foods, in Asia-pacific countries like **Singapore, Japan, Malaysia, and Korea**

*The rising number of Indian **immigrants** relocating to various parts of the globe has led to a growing demand for locally prepared ready-to-eat products (at relatively **higher price points**)*

# PRODUCT RESEARCH OPTIMIZATION

R&D

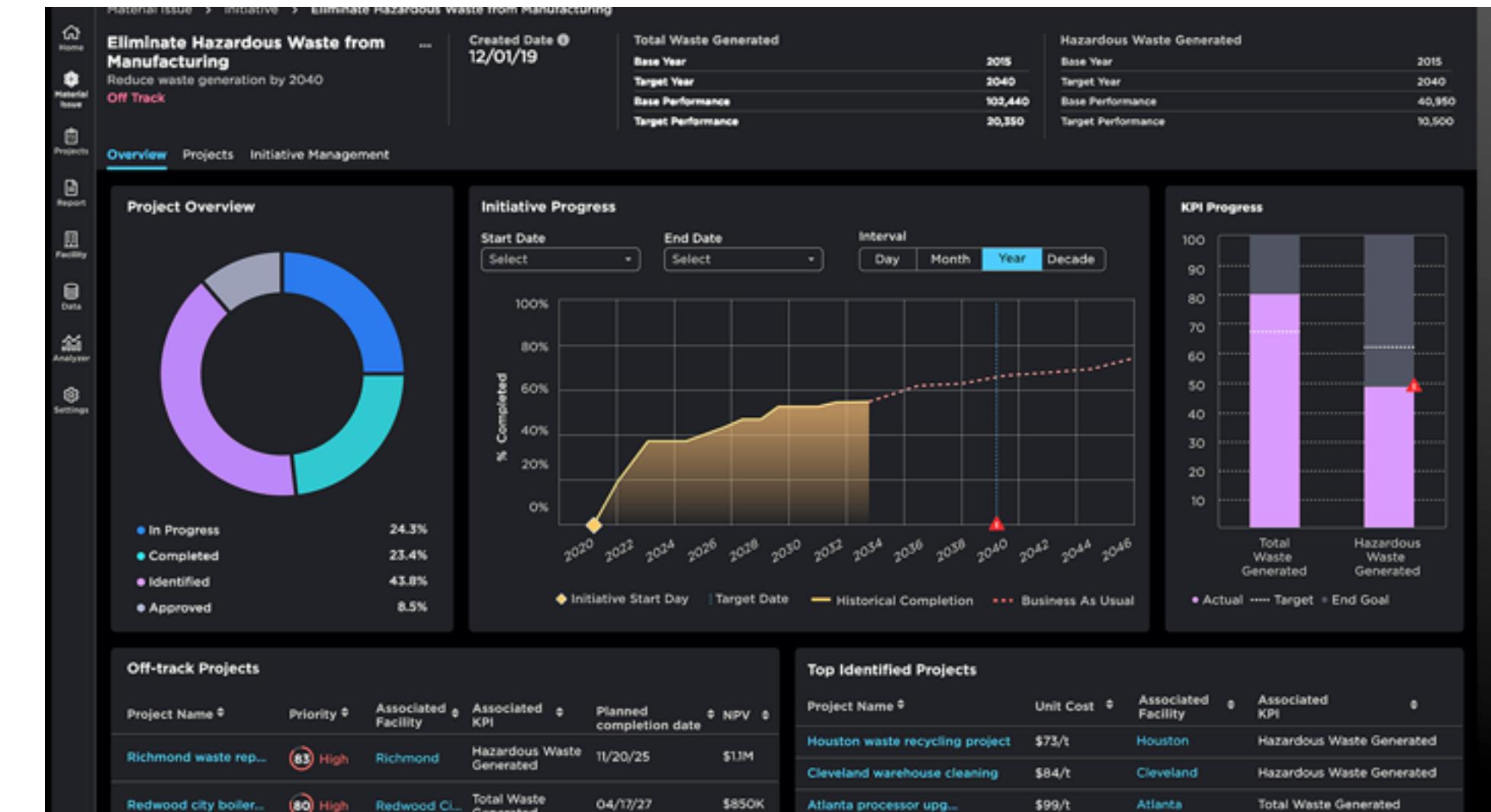
Procurement of raw materials

- Deep Trend Analysis-** Which Indian city/ state likes what kind of products? What are the least performing products?
- Forecasting Future Preferences:** Each product demand can be estimated before based on the consumer trends from retail shops/distributors.
- Quick Adaptation to changing trends:** Manually changing demand supply of products in a MNC FMCG company takes time, with AI automation IDFC can make the process faster and efficient.
- IDFC can try out unlimited numbers of flavors/combination of ingredients and predicted demands-** Saves hours of trials and testing using focus groups.

retail pulse

AI Palette

samya.ai  
a fractal company



## Cost

- Initial costs of software acquisition/ subscription charges
- Employee training

## Benefit

- Reduced time to market new product launches
- Enhanced competitiveness in the market

# ADVANCED SUPPLY AND INVENTORY MANAGEMENT

Production Facilities

Inventory

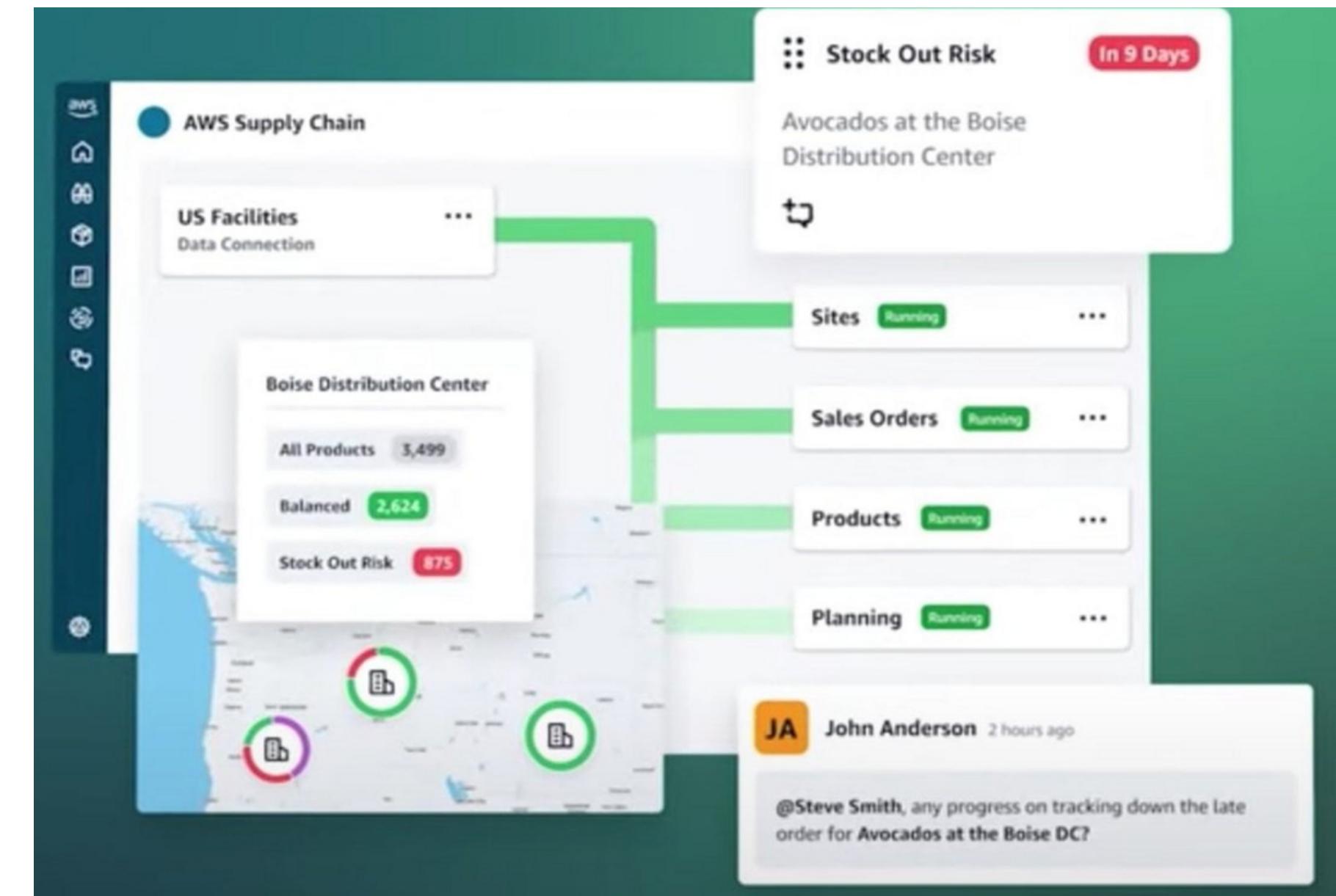
Distribution

- Provided IDFC's multi-location production facilities and distribution network, can be used to enhance **inventory visibility, forecast accurately, optimize stock levels** across its distribution channels
- Efficient inventory turnover, **minimizing stockouts**, and **reduced carrying costs**
- IoT sensors and devices can track and monitor **temperature & humidity conditions, product quality**, and even **vehicle performance**
- **Invoicing software to streamline billing process with suppliers & distributors:** Automated generation and tracking of invoices, reducing manual errors and delays
- **Tax management software:** Automating tax calculations, reporting, and filing processes, minimizing the risk of penalties or fines.

Inspectorio

clear

IBM



Cost	Benefit
<ul style="list-style-type: none"><li>• Subscription fees</li><li>• Employee training</li></ul>	<ul style="list-style-type: none"><li>• Reduced waste</li><li>• Improved profit margins</li></ul>

# GENERATIVE AI FOR MARKETING

- Generative AI models, automating **content creation process, social media campaigns, and product promotions**
- **Drive consumer engagement** while reducing costs associated with usual marketing methods

Cost	Benefit
<ul style="list-style-type: none"><li>• Subscription fees</li></ul>	<ul style="list-style-type: none"><li>• Reduced marketing expenses (model fees, photoshoots, etc.)</li><li>• Quicker campaign turnaround</li></ul>



Modelverse



**AD CONCEPT,  
CREATED USING  
IMAGES GENERATED  
USING THE DALLE-2  
PLATFORM**

# CATALOG DESIGN USING AI

- When **designing new products**, multiple iterations are often necessary to refine the final product design ---> involves creating 2D designs followed by detailed enhancement in 3D

Cost	Benefit
• Access charges	<ul style="list-style-type: none"><li>• Reduced design time</li><li>• Automated repetitive manual tasks</li></ul>



## QR CODES ON PRODUCT PACKAGING

- **Customer experience enhancement** ---> share important details (ingredients, certifications, source, video, etc.) about the products with the consumers
  - Can be leveraged for **analytics-based data collection, gaining reviews**, etc.
  - Offer **incentives** to consumers for scanning the codes
- Benefits**
- Valuable data on **consumer behavior, buying pattern, preferences, and demographics**



# SUSTAINABILITY- ENVIRONMENTAL RESPONSIBILITY AND SOCIAL IMPACT

## Creating a circular economy

### Eco-friendly production

- Switch to **eco-friendly materials** (in procurement and processing)
- Automated production process, reducing waste generation
- Design products for reusability, recyclability, and repurposability

### Green Packaging

- **Composting packaging**
- Lightweight design



### Transparency and consumer engagement

- **QR Codes** on product packaging -  
--> information regarding ingredients, licenses

### Trend adjustment

- Government policies are incentivizing **millet** production as it is considered a better alternative to wheat and rice.
- Top FMCG companies like Britannia, HUL, etc. have recently accelerated their millet-based offering

# THANK YOU

---

AGAM PANDEY  
HARDIK CHAWLA  
KESHAV NAND GOYAL  
KRISH SHARMA

[LINKEDIN](#)  
[LINKEDIN](#)  
[LINKEDIN](#)  
[LINKEDIN](#)