PwC’s analytics solutions for the FMCG sector
Overview

Indian consumers are changing at a faster pace than expected. Today, FMCG manufacturers rely on consumers ‘pulling’ products through the supply chain; thus, they require a better understanding of consumer behaviour and choices. Consumers are well-informed about product information—in particular, promotions and price comparisons via the Internet—which makes predicting behaviour very complex. This is where business analytics plays a very important role, as it allows organisations to derive predictive insights to enable competitive fact-based decisions. Armed with deeper insights into consumer behaviour, FMCG manufacturers will be able to direct R&D investment, improve the effectiveness of marketing and maximise supply chain efficiencies.

Let’s look at a few scenarios where analytics plays a crucial role in solving the challenges encountered by FMCG companies.
Business insights using FMCG analytics

Pricing insights
Know what price point will draw customers and increase profitability

Customer insights
Sell what customers want at their preferred point of purchase

Sales insights
Adopt new ways to sell based on how customers are buying

Marketing insights
Deliver personalised promotions and optimised marketing spend

Supply chain insights
Optimise inventory levels with minimal stock-outs

Business success
Drive maximum revenue and profitability through all channels
1: Trade promotion optimisation

Business challenges
• Identify the right price and discount point that maximises sales lift and return on investment (ROI)
• Optimise promotions to improve sales performance of newly launched products

Analytics solution and results
• Build a linear regression model to understand the impact of demand drivers on historical sales volume and calculate base volume
• Calculate total ‘true’ cost of promotions based on the individual components
• Calculate ROI for historical promo events

The results: Improved ROI on trade promotions
• Gained insights into the profitability of promotions across stores, regions and products
• Enhanced ability to benchmark scheme performance

Sample snapshots and reports

1 Baseline volume calculation

![Baseline volume calculation chart]

2 Promotion ROI calculation

![Promotion ROI calculation chart]
2: Marketing mix modelling

Business challenges

• Calculate ROI of advertisement spend across various channels like television, print and web
• Understand consumer behaviour with regard to exposure to advertising

Analytics solution and results

• Develop an analytic model showing impact of various marketing campaigns on sales
• Evaluate media effectiveness, ROI and simulate what-if scenarios

The results: Media channel effectiveness

• Prioritised advertisement and promotion spend in favour of channels that provide better ROI
• Reduced the overall spend on advertising and promotion

Sample snapshots and reports

1 Identify channels, campaigns, causal factors that impact sales

- Historical data
- Market spend data
- Macroeconomic factors

Market mix model
- Parse out seasonality
- Create baseline
- Analyse drivers
- Identify lift from activity

Assumptions and business constraints

Output

2 Develop model-driven scenario analysis to analyse their impact on sales

- TV
- Print
- Paid search
- Display online
- Store demo

Media spending
3: Vendor selection model

**Business challenges**
- Find a vendor evaluation method to facilitate an objective, unbiased selection process
- Identify the key metrics of vendor performance that can help during negotiation with vendors on specific points
- Find a robust framework that can measure vendors’ performance

**Analytics solution and results**
- Analytic hierarchy process (AHP) is a prominent approach in solving multi-criterion decision-making problems.
- The method allows the incorporation of judgements on intangible qualitative criteria alongside tangible quantitative criteria.

**The results: A tool for vendor negotiation**
- Helped avoid conflicts through collaborative decision making
- Generated a repeatable process that saves time
- Measured vendor performance among peers and across time

**Sample snapshots and reports**

1. **Defining and ordering criteria**

2. **Evaluating vendors and selecting the best one**

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Local weights</th>
<th>Sub-criteria</th>
<th>Local weights</th>
<th>Combined weights</th>
<th>Ranks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capability</td>
<td>26.2%</td>
<td>Quantity</td>
<td>33.2%</td>
<td>8.7%</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Standards</td>
<td>38.3%</td>
<td>10.0%</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Delivery network</td>
<td>28.5%</td>
<td>7.5%</td>
<td>8</td>
</tr>
<tr>
<td>Process</td>
<td>21.9%</td>
<td>Management and organisation</td>
<td>30.6%</td>
<td>6.7%</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Automation</td>
<td>39.3%</td>
<td>8.6%</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Delivery lead time</td>
<td>30.2%</td>
<td>6.6%</td>
<td>11</td>
</tr>
<tr>
<td>Packaging</td>
<td>18.5%</td>
<td>SKU packaging</td>
<td>49.3%</td>
<td>9.1%</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Delivery packaging</td>
<td>50.7%</td>
<td>9.4%</td>
<td>2</td>
</tr>
<tr>
<td>Pricing</td>
<td>17.6%</td>
<td>Margin cost</td>
<td>36.7%</td>
<td>6.5%</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Minimum order quantity</td>
<td>38.9%</td>
<td>6.9%</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Credit period</td>
<td>24.4%</td>
<td>4.3%</td>
<td>13</td>
</tr>
<tr>
<td>Quality</td>
<td>15.7%</td>
<td>Product quality</td>
<td>50.0%</td>
<td>7.9%</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hygiene</td>
<td>50.0%</td>
<td>7.9%</td>
<td>6</td>
</tr>
</tbody>
</table>

**Weights allotted to criteria**

- Capability: 7.5%
- Process: 10.0%
- Packaging: 6.7%
- Pricing: 9.4%
- Quality: 4.3%

- Hygiene: 7.9%
- Margin/cost: 6.6%
- Automation: 8.6%
- Management and organisation: 9.1%
- Production quantity: 6.5%
- Delivery network: 7.9%
4: Sales forecasting

Business challenges

• Identify a scientific methodology to accurately predict future sales volumes
• Improve target setting by identifying current market conditions and their impact on customer sales

Analytics solution and results

• Develop a robust sales forecasting model through aggregation and statistical analysis of data
• Develop a structured what-if analysis mechanism to create multiple scenarios

The results: Improved planning

• Predicted sales volumes based on critical demand drivers
• Improved decision making through structured scenario analysis

Sample snapshots and reports

1 Identify the key events, causal factors that impact sales

<table>
<thead>
<tr>
<th>Demand metric</th>
<th>Events</th>
<th>Causal variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trends</td>
<td>Sales promo event</td>
<td>Product prices</td>
</tr>
<tr>
<td>Seasonality</td>
<td>Festival seasons</td>
<td>Advert expense</td>
</tr>
<tr>
<td>Randomness</td>
<td>Competitor activity</td>
<td>Income, GDP, IIP</td>
</tr>
</tbody>
</table>

Forecasted sales

2 Develop model-driven scenario analysis to analyse their impact on future sales
5: Pricing recommendation

Business challenges
• Understand the impact on sales for a given change in price (pricing elasticity) across products and understand the impact on the contribution margin
• Ensure a consistent scientific methodology is being applied to pricing decisions across categories/outlets

Analytics solution and results
• Build a pricing model to enable an effective pricing structure for various product categories
• Optimise pricing to improve margins and bottom-line profitability

The results: Improved planning
• Data-driven pricing suggestions for greater sales and incremental contribution margin

Sample snapshots and reports

1 Establishment of price elasticity across the product portfolio

![Price elasticity by category](image)

- High price elasticity for products usually treated as a discretionary purchase
- Low-price elasticity driven by ‘needs’ purchase; provides ‘bundling’ opportunity when combined with impulse purchases

2 Suggest optimal pricing to drive immediate contribution margin

![Gross margin (%)](image)

- Gross margin (%) and gross margin (in USD) for various products
- Examples of products A to T with different pricing strategies and impacts on margins
6: **Sentiment analysis**

**Business challenges**
- Capture customer feedback across various social media platforms and derive meaningful conclusions, which could be sent to relevant functions within the organisation
- Improve brand strength and engage with customers in a meaningful way

**Analytics solution and results**
- Web crawlers to capture unstructured data across various social media platforms
- A text mining model for parsing conversations into positive, neutral and negative buckets

**The results: Instant customer feedback**
- Sentiment analysis can help to track consumer behaviour in real time across channels, monitor online brand health and also uncover the levers that can have a significant business impact.

**Sample snapshots and reports**

1. **Capture customer conversation on social media platforms**

![Sample snapshots](image_url)

- Company
- Competitors
- Market

2. **Develop sentiment analysis for business insights**

![Sentiment analysis](image_url)
7: Inventory optimisation

**Business challenges**
- Align inventory planning, forecasting and execution capabilities across the organisation
- Obtain insights from vast volumes of data at the SKU location on a weekly/daily level to improve inventory forecasting

**Analytics solution and results**
- Employ statistical modelling techniques to perform inventory stock level vs lost sales scenario analysis
- Develop robust demand forecasts through statistical analysis of data across outlets

**The results: Improved inventory management**
- Suggested order quantity recommendations to reduce out-of-stock frequency
- Optimised balance between inventory stock and lost sales based on the economics and competitive environment of the business

**Sample snapshots and reports**

1. **Perform inventory stock vs lost sales scenario analysis**

   ![Graph showing inventory vs lost sales for different scenarios]

2. **Optimise inventory levels taking into account all supply and demand variables**

<table>
<thead>
<tr>
<th>SKU</th>
<th>Suggested order</th>
<th>Actual order</th>
<th>Suggested order</th>
<th>Actual order</th>
<th>Suggested order</th>
<th>Actual order</th>
</tr>
</thead>
<tbody>
<tr>
<td>AB123</td>
<td>25</td>
<td>28</td>
<td>20</td>
<td>20</td>
<td>25</td>
<td>21</td>
</tr>
<tr>
<td>CD456</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td>EF789</td>
<td>7</td>
<td>7</td>
<td>5</td>
<td>9</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>Total</td>
<td>42</td>
<td>45</td>
<td>35</td>
<td>39</td>
<td>50</td>
<td>46</td>
</tr>
</tbody>
</table>
8: Product launch benchmarking and cannibalisation

Business challenges

- Leverage analytics to identify factors critical to new product success
- Understand how sales and contribution margin of a new product should be benchmarked to assess performance
- Analyse the level of cannibalisation from a newly launched product

Analytics solution and results

- Structure a set of indicators to measure a product launch based on multiple analytical and modelling techniques
- Estimate the impact of the product launch on overall market share through statistical analysis and field analytics

The result: Recommendations to steer early launch execution to ensure greater success or to limit investment on launches likely to fail

Sample snapshots and reports

1. Assess new product comparative launch momentum

   ![New product launch momentum](image)

   Different products have different early launch profiles (function of category, brand power, market demand, etc.)

2. Understand cannibalisation of existing products

   ![Existing product volume](image)

   Forecast vs. actual

3. Develop insights to steer the success of the newly launched product

   ![Incremental portfolio value](image)

   - Keep
   - Refine investment
   - Scale
   - Kill

   Total cost of launch
9: Price and pack analytics

Business challenges
- Define the right brands, packs and prices for the specified channel/customer to meet targeted consumer and shopper needs

Analytics solution and results
- Using modelling, PwC’s price and pack analytics optimises channel performance, package diversity, pricing and other key value drivers.

The result: Increased SKU efficiency
- Increased revenue across the portfolio
- Increased market share and value share
- The right packs and prices by outlet

Sample snapshots and reports

1 Identify SKUs for potential deletion based on a variety of factors, from current contribution margin to time in the market and substitutability

<table>
<thead>
<tr>
<th>SKU volume rank</th>
<th>SKU revenue rank</th>
<th>Gross profit (in thousand USD)</th>
<th>New or old?*</th>
<th>Competitive products exist? (Y/N)</th>
<th>Unique product role? (Y/N)</th>
<th>Component of growth vision? (Y/N)</th>
<th>Keep or delist? (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>244</td>
<td>253</td>
<td>9</td>
<td>Old</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>245</td>
<td>260</td>
<td>1.7</td>
<td>Old</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>246</td>
<td>188</td>
<td>12</td>
<td>New</td>
<td>N</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>247</td>
<td>255</td>
<td>4.8</td>
<td>New</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>

* New products defined as introduced in past six months

2 Understand pricing distribution across brands as a percentage of volume

- Single serve transaction split by price range, by manufacturer

<table>
<thead>
<tr>
<th>% of category volume</th>
<th>Less than 1 USD</th>
<th>1 USD–2 USD</th>
<th>Over 2 USD</th>
</tr>
</thead>
<tbody>
<tr>
<td>50%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>40%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Brand</th>
<th>Less than 1 USD</th>
<th>1 USD–2 USD</th>
<th>Over 2 USD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brand 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brand 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brand 3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brand 4</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
10: Vending machine ROI

**Business challenges**

- Forecast incremental volume and contribution margin associated with new vending opportunities
- Understand ROI of adding cashless swipe to new and existing machines, including both cost and precision pricing

**Analytics solution and results**

- Identify true cost to serve of vending machine network, including both direct and indirect costs
- Develop data-driven fact base for precision price setting, with and without cashless swipe

The result: ROI by vending machine

- Profit drivers quantified (commission, location, cost to serve, etc.)

**Sample snapshots and reports**

1. **Develop a data-driven fact base for precision price setting**

   ![Price-point analysis graph]

   - Price point analysis with incremental volume and margin for different price points.

2. **Calculate incremental contribution margin and ROI of potential vending machine recommendations**

   ![Incrementality analysis]

   - Incremental contribution: 23 USD
   - ROI: 34%
11: Assortment intelligence

**Business challenges**

- Track the competitors’ assortments and their pricing dynamically (real time) to optimise personal product portfolio
- Identify products, brands and categories where one has a unique advantage
- Identify gaps in catalogues so as to take decisions on adding them and overlaps to price them at extremely competitive rates

**Analytics solution and results**

- Real-time price monitoring and analytics using advanced artificial intelligence (AI), semantic analysis, data mining, and image-recognition algorithms
- Trend analysis (trending now, popular) using predictive algorithms in order to sell the right products at the right time and drop products that are cooling in popularity

**The result: Growing bottom line**

- Provided view of competitors’ product assortments, enabling a company to quickly adjust its own product mix and pricing so as to make profitable pricing decisions and drive sales performance

**Sample snapshots and reports**

1. **Analyse the gaps and overlap with competitors’ products**

<table>
<thead>
<tr>
<th>Competitor A</th>
<th>Competitor B</th>
<th>Competitor D</th>
</tr>
</thead>
<tbody>
<tr>
<td>300 items</td>
<td>155 items</td>
<td>260 items</td>
</tr>
<tr>
<td>15% (32 items)</td>
<td>22% (30 items)</td>
<td>35% (55 items)</td>
</tr>
<tr>
<td>Not in my inventory</td>
<td>Not in my inventory</td>
<td>Not in my inventory</td>
</tr>
</tbody>
</table>

2. **Optimise assortment by understanding how the competition managed their catalogues**

   ![Price over product lifetime graph](image_url)

   - Competitor 1
   - Client’s price
   - Competitor 2
12: Multichannel advertising analytics

Business challenges

- Understand which combination of ad exposures interacts to influence the consumer to make a purchase.
- For example: A TV ad can prompt a Google search on a mobile phone, which can lead to a click-through on a display ad and ultimately end in sales.
- Identify whether the company is investing the right amount at the right point in the customer decision journey to purchase a product.

Analytics solution and results

The solution involves three broad activities:

a) Attribution: Quantifying the contribution of each element of advertising
b) Optimisation: Use of predictive analytics tools to run scenarios for business planning
c) Allocation: Real-time redistribution of resources across marketing activities according to optimisation scenarios

The result: Measure how TV, print, radio and online ads each functioned independently to drive sales and then allocate marketing spend based on lift and ROI.

Sample snapshots and reports

1. Understand the relationship of ads across channels

2. Measure cross-media, cross-channel effects on retail traffic
PwC can help you deal with all of these and other challenges through the use of analytics, allowing you to have access to information quickly and accurately and in formats that will enable you to make meaningful business decisions in real time.
Why PwC?

**Strong FMCG sector expertise**
Our consultants have a proven track record of working with leading FMCG players in India and have strong domain knowledge in the consumer space.

**Scalable, flexible and cost-effective offerings**
Our analytics solutions can be customised as per an FMCG player’s specific needs across different areas.

**Cutting-edge technology**
We have expertise in implementing FMCG analytics through leading market tools by aligning them to the client’s technology landscape.
Our Data and Analytics offerings

Data and Analytics key industry-wise services

Cross-industry offerings

18 PwC
About PwC

At PwC, our purpose is to build trust in society and solve important problems. We're a network of firms in 157 countries with more than 223,000 people who are committed to delivering quality in assurance, advisory and tax services. Find out more and tell us what matters to you by visiting us at www.pwc.com.

In India, PwC has offices in these cities: Ahmedabad, Bengaluru, Chennai, Delhi NCR, Hyderabad, Kolkata, Mumbai and Pune. For more information about PwC India's service offerings, visit www.pwc.com/in

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