Procter & Gamble Case Analyzes

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Procter & Gamble's Big Data Project

- Procter & Gamble (P&G) is a multinational consumer goods company that produces over 300 brands and sells a wide range of products, such as Tide, Pampers, Gillette, and Crest, in over 160 countries.
- P& G became aware of two harmful impact business problems in the late 1990s.
- First, the amount of the supply chain rate is $3.8B.
- Second, various number out-of-stock incidents in retail locations as 11% of the top products have been out of stock at no point.

P&G Produce Analytics to Support Business

- Reduce inventory by a million dollars in three years without exacerbating the out-of-stock issue. In two years, the company had a 50% reduced inventory; as soon as they needed to concentrate more, they started searching for new ways.
- Used various forms of data and methods in big data projects to address finding a solution for a complex supply chain problem.

Order Data Form and Methods

- Order Data contains information about the orders placed by customers for P&G's products, like product quantity, price, date, location, and channel.
- Use the order data to analyze sales performance, market share, and customer demand.
- Apply descriptive analysis to track order volume and revenue by product category, region, customer segment, and channel.
- Also apply predictive analyses to predict future order demand and revenue rooted in historical trends, seasonality, promotions, and other factors.

Supply Chain Data Form and Analytics Methods

- Supply Chain data refers to the information about the movement of materials and products from suppliers to distributors to retailers, such as inventory levels, lead times, costs, and quality.
- P&G uses supply chain data to optimize operations, reduce cost, improve service levels, and enhance customer satisfaction.
- Use descriptive analytics to monitor inventory levels and replenishment cycles across the supply chain network.
- Also use prescriptive analytics to recommend the optimal production plan, distribution strategy, and transportation mode for each product and market.

Inventory Data Form and Analytics Methods

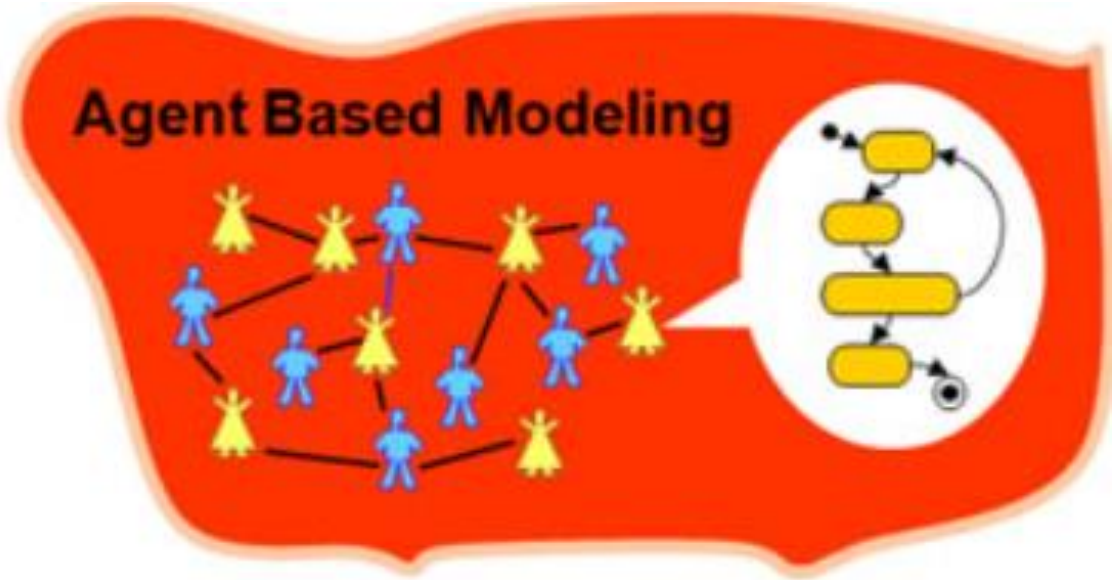
- Inventory data contain information about the quantity and value of the products that P&G has in stock at various locations, like warehouses, distribution centers, and stores.
- Use inventory data to manage inventory levels, avoid stockouts or overstocks, and balance supply and demand.
- Use descriptive analytics to measure inventory turnover ratio, days of supply, and fill rate by category, region, and channel.
- Apply predictive analytics to estimate future inventory needs and replenishment orders based on order data, supply chain data, and other factors.

Real-Time Data Form and Analytics Methods

- Real-time data refers to the information collected by sensors embedded in P&G's products or equipment, such as temperature, humidity, vibration, pressure, and motion.
- P&G uses real-time sensor data to monitor the condition and performance of its products or equipment, detect anomalies or faults, and prevent failures or damages.
- Use descriptive analytics to display the real-time sensor data on Decision Cockpits or Business Spheres for easy visualization and interpretation.
- Apply diagnostic analytics to identify the root causes of any abnormal readings or events from the real-time sensor data.

Agent-Based Modeling

- Agent-based modeling is a simulation technique that models the behavior and interactions of individual agents, such as consumers or competitors, in a complex system like a market or an inventory.
- P&G uses agent-based modeling to understand the dynamics and outcomes of various scenarios or decisions in its complex business environment.
- Use prescriptive analytics to run agent-based models on the Simulation Center to test the effects of new products, packaging, or marketing campaigns on consumer behavior and sales.
- Apply predictive analytics to run agent-based models on the Business Sufficiency program to forecast market share and growth for different scenarios or assumptions.



Data Value

Each data analytics method adds value to P&G's big data project by enabling different levels of analysis and decision support. These are:

- Descriptive analytics provides value by giving P&G a clear picture of its current state, historical performance, and trends and patterns in data.
- Predictive Analytics value helps by giving P&G a forward-looking view of future performance, market dynamics, and the risks and opportunities ahead.
- Prescriptive analytics value by giving P&G a recommendation of what should be done to achieve a desired goal or outcome that helps decision quality and effectiveness to reduce costs and risks.

Conclusion

- ✓ P&G's big data project demonstrates how data analytics can improve decision-making, innovation, and performance in a large and complex organization.
- ✓ P&G uses different types of data analytics methods, descriptive, diagnostics, predictive, and prescriptive, for needs or requirements on the purpose and scope of the analysis.
- ✓ Each type of data analytics method brings value, such as clarity, understanding, anticipation, and recommendation to P&G's big data project by enabling different levels of analysis.

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