Project : Product Analysis

# Project Definition:-

# The project involves using IBM Cognos to analyze sales data and extract insights about top selling products, peak sales periods, and customer preferences. The objective is to help businesses improve inventory management and marketing strategies by understanding sales trends and customer behavior. This project includes defining analysis objectives, collecting sales data, designing relevant visualizations in IBM Cognos, and deriving actionable insights.

# Design Thinking:-

# 1.Analysis Objectives:

**Understand User Needs and Preferences:** One of the primary objectives of product analysis is to gain a deep understanding of the target audience's needs, preferences, and pain points. This information helps in tailoring the product to meet user expectations.

**Evaluate Product Functionality:** Assess the product's features and functions to ensure they align with the intended purpose. Identify any gaps or areas for improvement in terms of functionality.

**Analyze Market Fit:** Determine how well the product fits within the target market and industry. Assess the competitive landscape and identify opportunities for differentiation.

**Risk Assessment:** Identify potential risks and vulnerabilities associated with the product, including security risks, market risks, and technological risks. Develop risk mitigation strategies.

# 2.Data Collection:-

**Surveys and Questionnaires:** Create surveys or questionnaires to gather feedback from users and customers. You can ask about their experiences, preferences, and suggestions for improvement. Tools like Google Forms, SurveyMonkey, or custom-built survey platforms can be used for this purpose.

**User Interviews:** Conduct one-on-one or group interviews with users and customers. These interviews allow for in-depth discussions and qualitative insights into their experiences with the product.

**Usage Analytics:** Implement tracking and analytics tools within the product to collect data on user behavior, such as which features are most used, where users drop off, and how often they engage with the product. Google Analytics, Mixpanel, and Amplitude are examples of analytics tools.

**User Testing:** Organize usability testing sessions where participants interact with the product while researchers observe and gather feedback. This provides direct insights into the product's usability and user satisfaction.

**A/B Testing:** Conduct A/B tests to compare different versions of your product (e.g., different UI designs, feature variations) and collect data on user preferences and performance metrics.

**Third-party Data Sources:** Depending on your industry, consider using third-party data sources, such as government statistics, industry reports, or economic indicators, to gain broader market insights.

**Social Media Monitoring:** Monitor social media channels for mentions of your product or industry-related discussions. Social listening tools can help automate this process.

# 3.Visualization Strategy:-

**Define Your Audience:** Understand who your audience is, as this will influence the type of visualizations you create. Different stakeholders (e.g., executives, developers, designers) may have varying levels of technical expertise and specific interests, so tailor your visualizations to their needs.

**Clarify Objectives:** Clearly define the objectives of your product analysis and the key questions you want to answer through visualization. This will guide your data selection and visualization choices.

**Select the Right Visualization Types:** Choose the most appropriate visualization types for your data and objectives. Common visualization types for product analysis include:

* **Bar Charts:** Useful for comparing data across categories or time periods.
* **Line Charts:** Show trends and changes over time.
* **Pie Charts:** Display parts of a whole, such as feature usage percentages.
* **Heatmaps:** Visualize user behavior patterns and intensity.
* **Scatter Plots:** Explore relationships between two variables.
* **Tables and Data Grids:** Present detailed data and allow for sorting/filtering.

**Interactive Elements:** For digital reports or dashboards, consider adding interactive elements like tooltips, filters, and drill-down capabilities. This allows users to explore the data on their own.

**Use Visualization Tools:** Leverage data visualization tools like Tableau, Power BI, Google Data Studio, or programming libraries like Matplotlib, ggplot2, or D3.js to create professional and interactive visualizations.

# 4.Actionable Insights:-

**Feature Adoption and Usage Patterns:** "User engagement with Feature X is significantly lower than Feature Y. Consider enhancing Feature X's usability or promoting it more prominently to increase adoption."

**User Onboarding Analysis:** "Users who complete our onboarding tutorial are 30% more likely to retain. Improve the onboarding flow to increase user retention."

**Performance Bottlenecks:** "Loading times for the product page exceed 5 seconds on mobile devices, leading to high bounce rates. Optimize the mobile experience to improve page load times."

**Customer Feedback Analysis:** "Multiple customers have reported difficulty finding the contact support button. Redesign the UI to make support options more accessible."

**Conversion Funnel Analysis:** "Users drop off at the payment page of the conversion funnel. Simplify the payment process and offer multiple payment options to reduce abandonment rates.

**Bug and Error Analysis:** "Reports of crashes on Android devices are increasing. Investigate and prioritize the resolution of Android-related issues to improve user satisfaction."

**Customer Support Insights:** "Customer support tickets related to billing inquiries have doubled. Review and clarify billing information on the website to reduce support requests."

**User Feedback Trends:** "User feedback consistently mentions the need for a mobile app. Begin development on a mobile app to meet user demand."

**Customer Satisfaction Metrics:** "Net Promoter Score (NPS) has dropped by 10 points. Identify pain points and implement improvements to increase customer satisfaction."

**User Segment Profiling:** "High-value users are most active during weekdays. Schedule promotional activities and updates to coincide with their peak usage times."

**User Journey Mapping:** "Mapping user journeys reveals that users who complete a tutorial are more likely to become paying customers. Enhance the tutorial's effectiveness."

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