Product Manager Case Study: AI Product Vision & Feasibility Assessment

Scenario:

SQE is exploring new opportunities in the AI product space to enhance its market position and deliver innovative solutions to its clients. As a Senior Product Manager candidate, you are tasked with evaluating the potential of two distinct AI product concepts. Your assessment will help SQE decide which concept to pursue for further development.

Part 1: AI Product Concept Evaluation & Recommendation

For each of the two AI product concepts provided below, you are required to perform a comprehensive evaluation. Based on your analysis, you will then recommend one project for SQE to pursue and justify your choice.

Hypothetical AI Product Concepts:

1. **AI-Powered Market Insights & Demand Prediction Platform**: This platform leverages advanced AI to analyze vast amounts of market data (e.g., social media trends, news articles, competitor activities, economic indicators, search queries, historical sales data) to provide businesses with actionable insights into market dynamics, predict future demand for products/services, identify emerging trends, and uncover new market opportunities.
2. **AI Monitoring for Operational Process & Regulation Alignment**: This AI solution continuously monitors and analyzes operational processes within an organization to ensure strict adherence to Standard Operating Procedures (SOPs), internal policies, and external regulatory requirements. It identifies deviations, anomalies, and potential compliance risks in real-time, providing alerts and actionable insights to maintain operational integrity and mitigate compliance-related fines.

1.1 Project Selection & Justification (Strategic & Feasibility Analysis)

a. Justify your choice based on market opportunity, competitive landscape, technical feasibility, potential business impact
b. Clearly state your chosen project
c. For selected product, delve into the following:
   - **Market Opportunity & Problem Solved:** What specific market need or business problem does this AI product address, Quantify the potential market size and target customer segments
   - **Competitive Landscape**: Who are the direct and indirect competitors in this space?, their strengths and weaknesses & identify potential strategic advantages SQE could leverage

- **Feasibility Assessment (High-Level)**:
  - **Data Availability & Quality**: Is the necessary data readily available internally/externally, and what challenges might exist in terms of data quality, privacy, or ethical considerations for AI training?
  - **AI Model Complexity**: What types of AI capabilities would be at the core? What is the estimated complexity of developing and maintaining these models?
  - **Computational Needs & Infrastructure**: What kind of computing resources and infrastructure might be required
  - **Integration Challenges**: What are the high-level challenges in integrating this AI solution with existing systems or workflows?
- **Hypothesis valuation**:
  - How would you systematically validate the initial hypotheses regarding the market opportunity and the existing competitive landscape for your chosen AI product concept?

Part 2: High-Level Project Plan & Simple PRD (for the Chosen Project)

For the single AI project you've chosen as most feasible, provide the following:

2.1 Project Plan Approach (High-Level):

a. **Strategic Alignment**: Briefly explain how this project aligns with SQE's broader strategic goals for digital transformation or market leadership.
b. **Key Milestones & Timeline (High-Level)**: Outline the major phases of product development from ideation to launch and estimate a high-level timeline.
c. **Key Internal/External Stakeholders & Engagement**: Identify the key internal stakeholders and any external stakeholders and describe how you would engage them throughout the product lifecycle.
d. **Metrics of Success**: How would you measure the success of this AI product, both in terms of the AI's performance and its impact on SQE's business

2.2 Product Requirement Document (PRD) Snippet:

a. Provide a detailed PRD for your chosen project. Focus on one core AI-powered feature within the project.
b. The PRD should consist of (at least):
   - **List of Key Feature, Purpose, and Acceptance Criteria**: Clearly specify the feature's purpose and the user problem it addresses. Define acceptance criteria that determine when the feature is considered successful.
   - **Key AI-Driven Functionality**: Describe how the AI works to deliver the feature from the user's perspective.
   - **High-Level AI Technical Considerations**: Briefly mention the types of data feeds and core AI approaches you envision
   - **Negative Cases (AI Failure Modes) & Mitigation**: Identify one or two ways this AI feature could fail or provide suboptimal results, and how you would mitigate these risks
   - **Quality Measurement**: Define how you will measure the quality and effectiveness of the AI feature. This might include accuracy, precision, recall, user satisfaction metrics, response times, or error rates to ensure continuous improvement.
   - **Non-Functional Requirements (AI-specific)**: Examples include risk, compliance, regulatory aspects, explainability, auditability, latency, data security for the AI component.

Submission Instructions:

Most candidates choose to submit using one or more of the following formats: Long-form essay, presentation slides, or a spreadsheet. If there's another tool or format you feel would appropriately communicate how you'd handle this assignment, feel free to use it. A mock-up or prototype will be a plus such as using Figma.

Your submission will be evaluated on each of the following criteria:

- **Clarity**: Are your responses clear, concise, and easy to understand?
- **Strategic Thinking**: Do you demonstrate an understanding of market dynamics, competitive landscapes, and strategic alignment?
- **Product Acumen**: Do you exhibit strong product sense, ability to identify user needs, and define compelling value propositions?
- **Technical Understanding**: Do you grasp the high-level technical considerations of AI products without getting bogged down in unnecessary detail?
- **Risk Mitigation**: Do you proactively identify potential failure modes and propose effective mitigation strategies?
- **Communication**: Is your chosen format effective in conveying your ideas, and is your language professional and persuasive?