SPECIAL APLLICATION OF MARKETING RESEARCH

WEEK 4
NEW PRODUCT RESEARCH

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FALL, 2024

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4.1 Introduction

Welcome to week four lecture! It is my great pleasure to have you in this class. We have now started delving into types of research carried out in prelaunch stage of a research cycle. Last week we focused on concept testing whereby we defined a concept, describe various types of concepts testing as well as well as testing procedure. Once a concept has been approved for further development, it now moves to product testing. In this lesson we will focus on philosophy of a product testing, purpose and types of product testing as well as procedure and benefits/ challenges of new product research.

4.2 Intended Learning Outcomes

At the end of this lecture, you will be able to:

1. Define a new product
2. Discuss the philosophy and significance of product research
3. Examine the procedure of new product research
4. Evaluate challenges and benefits of product research

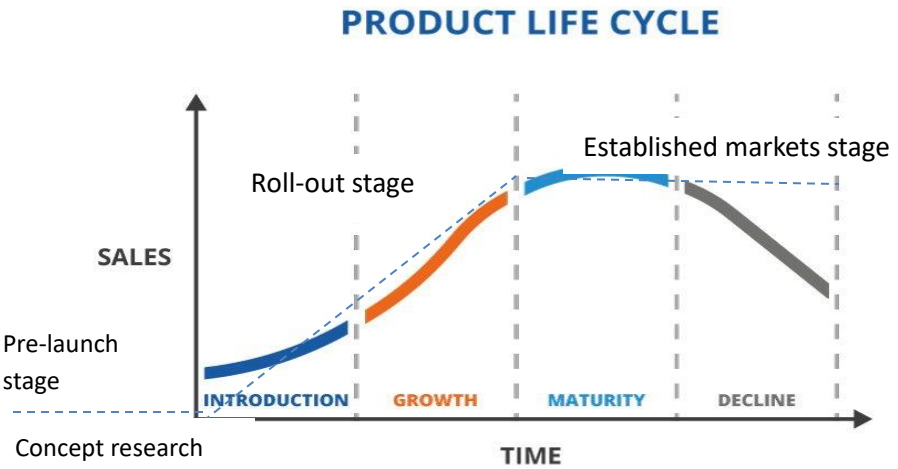
4.3 Quotes on new product research

1. "The secret to successful innovation is to know your customers' problems better than they do." — Clay Christensen
2. "New products are born from understanding unmet needs." — Eric Ries
3. "Great products come from customer insights, not just technological breakthroughs." — Tony Fadell
4. "In research, the best questions lead to the best products." — Steve Blank
5. "A deep understanding of customers is the foundation for creating products they truly want." — Bill Gates
6. "Market research is crucial to innovation because it reveals what people actually want." — Seth Godin
7. "A new product must be more than just different; it must be better." — Philip Kotler
8. "The real breakthrough in innovation comes when you build something customers didn't know they needed but now can't live without." — Tim Cook
9. "New products succeed when they solve a real pain point, not just offer a novelty." — Alex Osterwalder
10. "Success in product development is not about launching faster, but about solving problems better." — Clayton Christensen
11. "Bringing a new product to market isn’t about what you want to sell, it’s about what your customers want to buy." — Steve Blank
12. "New product development requires listening to customers, not just pushing technology." — Eric Ries

13. "You don't need to be a genius to innovate, but you do need to be focused on solving real problems." — Elon Musk
14. "A new product idea is only valuable when it's validated by customer demand." — Ash Maurya
15. "Every successful new product begins with deep customer insights and rigorous testing." — David Ogilvy

We begin this lecture by reviewing the research cycle to show the context in which the new product development takes place. It is normally the second type of research carried out in the prelaunch stage of research cycle.

Figure 4.1 Research cycle



- Concept research
- Product research
- Name research
- Package research
- Test market studies

Source: Kamau, J. N. (2024). The research cycle [Lecture]. Special applications of marketing research Africa Nazarene University

4.4 Definitions of a new product

Various definitions of new product have been advanced. For instance:

1. Kotler, (2015). "A new product is any product which is perceived as new by the target customers, whether it's a completely new innovation, an improved version, or an addition to an existing product line."
2. Perreault, (2016). "A new product is a good, service, or idea that is perceived by some potential customers as new, regardless of whether it is an actual innovation or a variation of an existing product."

3. AMA, (2023)"A new product refers to any item that is either entirely original or significantly improved to meet the needs of a market or a specific user group."
4. Harvard Business Review. (2020). "A new product is an innovation, improvement, or product extension introduced to the market to solve a specific problem or enhance customer experiences."
5. Entrepreneur.com. (2021). "A new product can be defined as a product that a business develops from scratch or enhances significantly to create something unique or superior to competitors' offerings."

From these definitions, we observe that they provide a well-rounded understanding of what constitutes a "new product," emphasizing different facets of product development:

a) Perception of Newness: Both Kotler and Perreault stress that the newness of a product is often defined by the customer's perspective. Even a modified version of an existing product can be considered new if customers perceive it that way.
b) Innovation vs. Improvement: Some definitions, like those from the American Marketing Association and Harvard Business Review, focus on the idea that a new product can be either entirely original or significantly improved. This highlights that innovation isn't only about inventing something brand new, but also about enhancing existing products to meet evolving needs.
c) Market-Oriented: The definitions emphasize the importance of understanding the target market's needs. Whether it's solving a problem or enhancing experiences, a product's success is tied to its ability to meet specific demands, as noted in the Harvard Business Review and Entrepreneur definitions.
d) Strategic Element: Entrepreneur.com highlights the strategic element of product development, suggesting that new products must provide something unique or superior to competitors' offerings.

In summary, these definitions collectively underline that "newness" in products isn't only about radical innovation but also about meeting market demands through improvement and customer perception.

4.5 Significance of new product development to a business

New product development (NPD) plays a critical role in the success and sustainability of businesses in today's fast-paced market. One of its key benefits is that it enables businesses to gain a competitive advantage. By offering unique or improved products that meet customer needs, companies can differentiate themselves from their competitors and maintain a strong market position. In rapidly evolving markets, innovation is essential, as businesses that fail to introduce new products may lose relevance. As Robert G. Cooper (2017) points out, businesses that prioritize NPD are better equipped to adapt to market changes and stay ahead of their rivals.

Another significant advantage of NPD is its potential to drive revenue growth. The introduction of new products can open up new revenue streams, reach untapped customer segments, or allow businesses to expand into new markets. This is especially important when existing products reach maturity or begin to experience a decline in sales. By consistently developing new offerings, businesses can ensure steady growth. As Paul Trott (2017) notes, innovation through product development is a major driver of business expansion and profitability.

In addition to driving growth, NPD plays a crucial role in improving customer retention and satisfaction. By continually responding to customer needs and addressing pain points, companies can enhance customer loyalty and attract new consumers. With customer expectations constantly changing, developing new products helps businesses remain relevant and responsive. According to Kotler and Keller (2016), companies that prioritize understanding their customers through NPD are better positioned to foster long-term loyalty.

Technological advancements also make NPD essential. Rapid innovations in technology offer opportunities for businesses to improve product functionality, efficiency, and appeal. Companies that embrace these advancements through new product development can stay ahead, while those that don't risk falling behind as competitors capitalize on new technologies. As Melissa Schilling (2020) emphasizes, companies that adapt to technological shifts through NPD can better navigate the rapidly changing market landscape.

NPD also serves as a risk management strategy. Relying solely on existing products can expose a business to significant risks, especially if market trends shift or competitors introduce superior offerings. By investing in the development of new products, businesses can diversify their product portfolio, reducing dependence on any single product and mitigating the risk of sales decline. Crawford and Di Benedetto (2019) argue that diversifying through new products helps companies safeguard against unforeseen market changes.

Finally, NPD can enhance a company's brand and solidify its position as a market leader. Successfully launching new products not only drives growth but also reinforces a company's image as an innovator. This bolsters consumer trust, increases market share, and creates long-term value. According to David Aaker (2012), businesses that consistently innovate enhance their brand strength and build enduring customer loyalty. In conclusion, new product development is essential for businesses seeking to thrive in competitive markets. Through innovation, companies can drive revenue growth, improve customer satisfaction, adapt to technological advances, and manage risk. By consistently developing new offerings, businesses enhance their brand and maintain a competitive edge in the marketplace.

4.6 Philosophy of product testing

The philosophy of product testing, as discussed by Dillon (1994) work, emphasizes a systematic and scientific approach to evaluating new products before they are introduced to the market. Dillon outlines that product testing is not merely about identifying defects but about understanding how

the product will perform in the hands of the consumer. He stresses the importance of gathering empirical data through controlled testing environments as well as real-world scenarios.

Dillon's approach revolves around two key principles:

1. Consumer-Centric Testing: Dillon argues that product testing should always focus on the consumer's experience. A product might function perfectly under ideal conditions, but it must also be tested in the various ways that consumers might use it. Dillon emphasizes that businesses should account for real-world variability and consumer behavior, ensuring that the product meets expectations across a broad range of conditions.

2. Iterative Testing and Improvement: Dillon highlights the necessity of using product testing as an iterative process. Products are rarely perfect after the initial round of testing, and the feedback obtained should guide continuous improvement. This iterative cycle of testing, feedback, and refinement helps businesses create products that are more likely to succeed in the marketplace. Dillon's philosophy underscores that product testing is essential not only for ensuring quality but also for aligning products with consumer needs and market expectations.

According to Dillon (1994) Product tests attempt to answer one of the most basic questions relating to the ultimate market acceptance of a product: "how does this product perform when evaluated by the consumer? "Performance can be evaluated in isolation, in a competitive frame, against its advertising or against formula variation. This question can be answered through experience and use of the product under real-life conditions.

Product testing helps to determine what products are most acceptable to consumers. Products testing are particularly important in the consumer-packaged goods industries (food, health and beauty aids, household products etc.) where physical product improvements can quickly change market share in a product category and where product distribution of prototypes is economically feasible.

4.7 Purposes of product testing

Product testing serves multiple essential purposes, each designed to evaluate various aspects of new or existing products. According to Dillon (1994), the four key purposes include:

a) Testing Against Competition: This type of testing is aimed at comparing a new product or formula with its competitors. The goal is to assess which product is more preferred by the target consumers or which performs better in terms of quality, functionality, or other important attributes. Companies use this to identify a product's position in the market and its potential to outshine competitors.
b) Product Improvement Tests: These tests focus on enhancing existing products. By comparing an improved version of a product to its current form, companies can determine if the new version offers superior performance, functionality, or consumer satisfaction. The result of these tests informs whether the improved version should replace the existing one in the market.

c) Cost-Saving Tests: Cost-saving tests are conducted to evaluate whether a less expensive alternative can maintain the quality or performance of a current product. This helps companies determine if they can reduce production costs without negatively affecting customer satisfaction, thereby increasing profitability.
d) Concept-Fit Tests: Concept-fit testing is crucial when a product is still in the development phase. The purpose is to evaluate which of the product variants or prototypes best aligns with the intended product message or marketing concept. This ensures that the final product closely matches the initial idea that was communicated to the consumer, maintaining brand integrity and customer expectations.

Each type of test plays a vital role in the product development lifecycle, helping businesses make informed decisions about market competitiveness, quality improvements, cost efficiency, and product-market fit. In addition to the four primary purposes mentioned by Dillon (1994), product testing can serve several other purposes depending on the business goals and the stage of the product's lifecycle. Some additional purposes include:

e) Regulatory Compliance Testing: This testing ensures that a product meets legal and safety standards set by regulatory bodies (e.g., FDA, CE, ISO). It's crucial in industries like pharmaceuticals and electronics. Regulatory compliance is discussed in depth in works such as Product Safety and Liability Law (Owen, 1995), where companies must verify that products comply with government regulations to avoid legal repercussions and ensure consumer protection.
f) User Experience (UX) Testing: UX testing evaluates how users interact with a product, focusing on usability, ease of navigation, and overall experience. This type of testing has grown significantly in digital industries. Nielsen and Norman (2000) have long emphasized its importance in enhancing customer satisfaction and optimizing design for better engagement.
g) Durability and Stress Testing: Durability testing assesses a product's longevity and performance under stress. This is particularly relevant for consumer electronics, automobiles, and machinery. ASTM (American Society for Testing and Materials) standards often guide these tests to ensure products perform reliably over time (ASTM International, 2021).
h) Safety Testing: Safety testing is essential in identifying potential hazards. Industries like automotive, pharmaceuticals, and toys depend on stringent safety evaluations to avoid product recalls or consumer harm. Sources such as the Consumer Product Safety Act (CPSC, 2008) outline how companies must conduct these tests to comply with safety regulations.
i) Environmental Impact Testing: With growing environmental awareness, many companies test for sustainability and eco-friendliness. This could involve evaluating energy efficiency, carbon footprint, or recyclability. ISO 14040 series (International Organization for Standardization, 2006) provides guidelines for life cycle assessments, helping companies measure and minimize their environmental impact.

j) Market Feasibility Testing: Companies often assess whether a product has potential in the marketplace before committing to mass production. This type of testing is discussed in works such as Kotler's Marketing Management (2012), which highlights how market feasibility testing can forecast consumer demand and assess pricing strategies.

4.8 Types of product tests

According to Dillon (19194) Product testing typically follows two broad approaches: monadic testing and comparison testing. Each has its own methodology and advantages, depending on the goals of the test.

a) Monadic Product Tests: In monadic tests, the consumer is presented with one product and asked to evaluate it without direct comparison to other products. Instead, the test subject rates the product in relation to all similar products they have used in the past, particularly the product they are currently using. This approach simulates the real-world decision-making process, where consumers typically evaluate one product at a time before deciding on a repurchase. Monadic tests are particularly useful for assessing the intrinsic qualities of the product itself, focusing on how well the product performs independently. However, interpreting results can be challenging unless there are established norms (e.g., understanding what it means if 75% of respondents rate the taste as excellent). The sequential monadic test is a variation where a respondent evaluates one product, then evaluates a second one separately before being asked to compare both based on their overall experience.
b) Comparison Product Tests: Comparison tests present the consumer with two or more products, asking them to compare and rate the differences between each product. This approach is useful for highlighting distinctions between competing products, such as differences in taste, quality, or performance. Comparison tests, by design, are highly sensitive to product variations, allowing researchers to gather more detailed insights into how products differ from each other.

However, comparison tests can have limitations. Generalizing results across an entire category of products is often difficult. For example, sensory evaluations like taste tests may not be well-suited to comparison testing, as the use of one product can affect the experience of another (e.g., after testing a cough syrup or antacid). In these cases, monadic tests might be more practical and yield clearer insights.

These two methods of product testing offer flexibility depending on the nature of the product and the type of data companies are looking to collect. Monadic tests focus on the product's individual performance, while comparison tests are more effective in evaluating differences between competing products.

In addition to monadic and comparison product tests, there are several other types of product testing procedures that companies use to assess product performance and consumer preferences.

These methods cater to different aspects of product evaluation and decision-making. Additional types of product tests include:

c) Triangular Test: Respondents are given three samples, two of which are identical, and they must identify the different one. This method is particularly useful in sensory testing, such as flavor or fragrance evaluations. Use case: Frequently used in food, beverage, and perfume sensory tests (Dillon, 1994).
d) Blind Test: In blind tests, brands or product identifiers are hidden to eliminate biases based on brand perception. Consumers evaluate products purely on their performance or attributes. Use case: Especially useful for consumer goods where branding influences perceptions (Dillon, 1994).
e) Home-Use Testing (HUT): Consumers take the product home and use it in their daily life, providing detailed feedback over time. This method offers real-life evaluations in an uncontrolled environment. Use case: Ideal for household and personal care products that require prolonged use to assess effectiveness (Dillon, 1994).
f) Central Location Test (CLT): Respondents test the product in a controlled environment, such as a research facility or mall. Immediate feedback can be gathered, and researchers can observe responses firsthand. Use case: Common in food and cosmetics testing under controlled conditions (Dillon, 1994).
g) Discrimination Testing: This method determines whether consumers can detect differences between products or formulations, such as slight changes in ingredients or recipe. Use case: Often used in food and beverage industries when testing new formulas (Dillon, 1994).

4.9 Procedures of product testing

The product testing procedure is a systematic process designed to evaluate how consumers respond to a product in both controlled and natural environments. It typically involves presenting the product to consumers—either with or without branding—using various methods such as in-home placement or central-location testing. These tests aim to gather feedback on factors like product preference, usability, and overall satisfaction to inform product development, improvements, or marketing strategies. Standardized procedures ensure consistency, minimize bias, and allow for actionable insights that support decision-making (Dillon, 1994). Dillon (1994) and Kotler (2012) outline the following steps for this procedure:

1. Presentation of the Product: The presentation of the product is a key consideration in product testing, as it influences consumer perception and reactions. This may involve

a) Blind Testing: Blind testing removes any preconceptions consumers may have based on the brand's identity, allowing the focus to be entirely on the product itself. This is especially useful when:
- New products are being tested that do not yet have brand recognition, packaging, or advertising.
- Objective comparisons are needed, such as comparing a product's performance against leading competitors without the influence of brand loyalty or image.

Example: A company testing a new line of soup without revealing that it's from the Campbell Soup Company allows consumers to focus solely on taste, not brand expectations.

b) Branded Testing: Branded testing evaluates the influence of the brand or packaging on consumer perceptions. It is typically used when:
   - Understanding how the brand name or image affects consumer reactions is important.
   - The brand's identity is so obvious that conducting a blind test would be unrealistic or redundant.

Example: When Coca-Cola tests new flavors or products, consumers are likely to recognize the brand immediately, making blind testing unnecessary.

2. Four Principles for Preparing the Product: These principles ensure that the product tested is as close as possible to the final product that will reach the market, providing valid and reliable insights.

a) Test product should resemble the final market version: This ensures that consumers experience the product as they would in real life, without artificial differences in quality, packaging, or presentation. Example: A new detergent formula must have the same texture, color, and packaging as it will have once it reaches store shelves.
b) Packaging and branding should be realistic: In branded tests, the packaging, logos, and brand elements should be as close to the final design as possible, so the test mirrors the eventual consumer experience. Example: If a beverage company is introducing a new bottle design, this design should be used during the test to assess the consumer's reaction to the full product experience.
c) Ensure consistency across variables: When testing different versions of a product (e.g., formulas or designs), ensure all other aspects (size, shape, color) are consistent so that results focus on the variable being tested. Example: Testing different flavors of a snack should ensure all packaging and product appearance remain the same to isolate consumer responses to taste.
d) Minimize bias through neutral labeling: To prevent bias, especially in blind tests, avoid labeling products in a way that might influence consumers, such as using sequential letters or numbers. Example: Instead of labeling products as "A" and "B", which could suggest one comes before the other, use non-sequential or random identifiers like "Product 102" and "Product 563".

3. Interviewing Methods and Locations: There are two primary ways to conduct product testing interviews: in-home placement and central-location testing. The choice depends on cost, the type of product, and the desired depth of consumer feedback.

a) In-Home Placement: This method allows respondents to test products in their natural setting, providing realistic feedback on daily use. This may include:

- Door-to-door placement: The interviewer checks whether the respondent qualifies for the test and leaves the product for later testing. Follow-ups are conducted to record their reactions.
- On-the-spot testing: For quick tests (like taste or smell tests), the respondent may test the product immediately during the interview, offering instant feedback.
- Telephone-based placement: The product is delivered after a phone interview, and follow-up interviews are conducted either by phone or in person to gather feedback.
- Mall intercepts: Respondents are recruited at a mall or other high-traffic locations, take the product home, and later provide feedback either in person or via phone.
- Mail panel testing: Products are mailed to pre-recruited respondents, who test them at home and provide feedback via mail or phone.

b) Central-Location Testing: Central-location testing involves bringing respondents to a controlled environment, typically in a shopping mall or a rented space at a supermarket.

Advantages:

- Cost-effective, particularly for low-incidence product categories.
- Researchers can observe immediate reactions to products prepared under controlled conditions, like tasting food prepared by trained kitchen staff.
- Limitations:
- Respondents don't use the product in their home environment, limiting insights into how they might use the product in real life.
- For products where the ease of preparation or application is crucial (e.g., furniture polish or cake mix), in-home testing may provide more meaningful results (Kotler, 2012).

4. Test Duration: The length of time respondents should test a product depends on the nature of the product and how it's typically used.

a) Standard duration: In-home tests generally last at least one week to allow consumers to experience the product in various real-life situations.
b) Extended-use tests: For products used less frequently, extended tests may last weeks or months to observe durability and long-term satisfaction.
c) Novelty product testing: With novelty items, testing includes sale wave extended-use tests, where respondents have opportunities to buy the product over time, mimicking real purchasing cycles. This helps identify initial appeal and whether the novelty effect fades over time (Dillon, 1994).

5. Questions Asked During Testing: The types of questions asked during product testing vary, but they generally cover:

i. Preference: Which product the respondent prefers.
ii. Overall rating: A general score or ranking of the product.
iii. Attribute rating: Ratings on specific product attributes, such as taste, smell, or ease of use.

iv. Likes and dislikes: Detailed feedback on what respondents enjoyed or disliked about the product.
v. Advantages and disadvantages: Perceived benefits or drawbacks of using the product.
vi. Frequency of use: How often the respondent used the product.
vii. Who used the product: If the product was used by others in the household.
viii. When and how the product was used: Context in which the product was tested (e.g., in the morning, as a snack).
ix. Use patterns: Detailed patterns of product usage, including how and when it fits into the respondent's routine.

6. Sampling Practices: Sampling in product testing is typically non-probability-based, meaning respondents are not randomly selected but instead meet predefined criteria like age and gender quotas.

- In-home testing sample size: Generally, between 100 and 200 respondents.
- Central-location sample size: Typically, 100 respondents (Dillon, 1994).
- Quota sampling: Sampling is done based on total category volume contribution to ensure a representative group.

7. Action Standards: These are the criteria by which the product is evaluated, guiding decision-making on whether to proceed with the product or make changes. For the various types of research actions standards include:

a) Tests vs. competition: The product should achieve a statistically significant preference difference at a 90% confidence level among the target group. In claim-support tests (e.g., "better taste"), the product must achieve 95% confidence in superiority claims or 50% parity for parity claims.
b) Product improvement tests: An improved product should replace the current one only if it achieves statistically equivalent preferences among users and a significant preference (90%) among non-users.
c) Cost-saving tests: A cheaper product should only replace the current one if it achieves parity among both users and non-users of the brand.

8. Analysis Approach: in analyzing product test results, the focus is on identifying mean differences or tests of proportions based on key measures like overall preference or specific attribute ratings. **In** Monadic designs: Provide directional ratings, such as whether respondents felt a product's sweetness was "too much" or "just right." **In** Paired comparison designs: Offer insights into which specific attributes drove preference (Dillon, 1994).

9. Ethical Considerations: Ensure that respondents' privacy and data are protected. Make sure that the product is safe for consumer use and properly labeled in case of potential allergens or hazards (Dillon, 1994).

4.10 Benefits and Challenges of Product Testing

Benefits

- Improved Product Quality: Testing helps identify defects, ensuring the final product meets quality standards.
- Customer Satisfaction: Reducing product failures enhances user experience, leading to higher satisfaction and loyalty.
- Risk Mitigation: Early detection of issues prevents costly recalls and brand damage.
- Compliance with Standards: Ensures the product meets regulatory and safety requirements, reducing legal risks.
- Competitive Advantage: High-quality, reliable products stand out in the market, boosting brand reputation.
- Informed Decision-Making: Testing provides data that helps stakeholders make informed decisions about product development, marketing strategies, and resource allocation.
- Enhancing Innovation: Through testing, organizations can explore new ideas and features safely, promoting a culture of innovation.
- Brand Credibility: Consistent product quality bolsters brand credibility, which can lead to increased market share and customer trust.
- Lifecycle Management: Regular testing during a product's lifecycle allows for timely updates and improvements, prolonging the product's relevance in the market.
- Market Readiness: Thorough testing ensures that products are not only compliant but also tailored to meet customer needs and preferences, enhancing overall market fit.

Challenges

- Cost: Extensive testing can be expensive, especially with complex products requiring multiple testing phases.
- Time-Consuming: Thorough testing can delay the product launch, affecting time-to-market.
- Resource Intensive: Testing requires skilled personnel, specialized equipment, and sometimes large-scale field tests.
- Limited Scope: Simulated tests might not fully replicate real-world conditions, leaving some issues undetected.
- Evolving Standards: Constant changes in industry standards require frequent re-evaluation and adaptation of tests.
- Complexity of Testing Environments: Simulating real-world usage can be challenging, especially for products with numerous variables or those used in diverse conditions.
- Subjectivity in Testing: Different testers may interpret results differently, leading to inconsistencies in testing outcomes.
- Integration Issues: Ensuring that all components of a product work together seamlessly can be difficult, particularly in complex systems.

- User Acceptance Testing: Gathering unbiased feedback from actual users can be challenging, and user preferences may vary widely.
- Limited Feedback Loop: After initial testing phases, there may be a lack of mechanisms to incorporate user feedback into product revisions.

4.8 Review Questions

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