6

CREATING VALUE: PRODUCTS AND SERVICES

Learning Outcomes

In this chapter, we'll learn the answers to the following questions:

1. What is a product and what product levels create value for customers?
2. How and why are products classified? How are services different from goods?
3. What is product portfolio management?
4. What is the process by which new product innovations are developed? How does design-to-value facilitate new product development?
5. How does the product life cycle inform marketing decisions?
6. How does product design influence the adoption of new products?

INTRODUCTION

When buyers think about how to meet their needs – how to get the job done – they typically think of the products that will provide a solution and offer the benefits they need. As marketers, we tend to do the same. We think about what product we want to bring to market and how to differentiate our products from those of competitors. **Product** reigns supreme, even though the value proposition is delivered through the offer – including all elements of the chosen marketing mix. Product decisions can be risky. It's a long-understood fact that most new products fail. But if we fail to innovate, we risk being stuck in the sustaining strategy mode – with only marginal advantages to offer customers. Advances in technology offer a seemingly infinite number of possibilities. For this reason, some suggest that marketers are facing **digital Darwinism** (Ingledew, 2017). Only those organizations that can integrate technology to add real value for customers and the organization's value chain will survive and thrive.

Industry 4.0 technologies can transform product design, resulting in new business models, new products, and product improvements. The process of product design and development can also be enhanced in speed and quality with rapid prototyping and testing made possible with IoT sensors, machine learning, additive manufacturing and digital twins, robotics, and analytics. Connected products can also provide added customer benefits, such as personalization, interactivity, predictive service and maintenance, and trust certification of ingredients. For the organization, they provide data that can be used to improve processes and/or be monetized as an asset to sell to business partners.

Digital technology is driving innovation in the products available in the market and in the design and development of products.

Case Study 6.1

Purina PetCare: Product Innovation in Pet Care with Petivity

Purina PetCare, a division of Nestlé, has been a leader in pet nutrition and care for over 90 years. Committed to enhancing the lives of pets and their owners, Purina has consistently pushed the boundaries of product innovation in the pet care industry. The company's extensive product portfolio includes well-known brands such as Purina ONE, Fancy Feast, Pro Plan, and Friskies.

Purina benefits from Nestlé's robust research and development infrastructure, with over 500 scientists globally dedicated to advancing pet health and nutrition (Purina PetCare, n.d.). Purina's approach to product development is rooted in scientific research and consumer insights. The company's innovation team, comprising veterinarians, nutritionists, animal behaviorists, and other specialists, continuously explores new ways to improve pet health and well-being. This multi-disciplinary approach allows Purina to respond effectively to changing pet and consumer needs and maintain a competitive advantage.

The product development process at Purina typically involves five key steps:

1 *Market Research and Consumer Insights*: Purina closely monitors pet care trends and gathers feedback from pet owners to identify unmet needs and opportunities for innovation.
2 *Scientific Research*: Purina's team of scientists conducts extensive studies in various areas of pet health and nutrition, often leading to new discoveries.
3 *Product Concept Development*: Based on research findings and consumer insights, Purina develops new product concepts that address specific pet care needs.
4 *Prototype Testing*: Prototypes are rigorously tested for palatability, digestibility, and effectiveness in controlled studies with cats and dogs.
5 *Market Launch and Continuous Improvement*: New products are introduced to the market, with ongoing monitoring and refinement based on consumer feedback and performance data.

The Petivity Innovation: A Case Study in Connected Pet Care

The development of Purina's new AI-powered Petivity Smart Litter Box Monitoring System represents a significant leap in its innovation journey. It marks the company's entry into the connected pet care space (Cambridge Consultants, n.d.) and exemplifies Purina's commitment to leveraging cutting-edge technology to enhance pet health and owner experience.

Purina recognized a growing trend of pet humanization, where pet owners view themselves as "pet parents" rather than simply caretakers. Purina recognized that pet parents desire deeper insights into their pets' health and well-being, mirroring the level of care and attention they would give to human family members. For cat owners, in particular, monitoring litter box habits can provide crucial insights into a cat's well-being. The Petivity system caters to this need by providing detailed, actionable data about a cat's litter box habits and weight, allowing pet parents to take a more proactive and informed approach to their feline companions' health.

Petivity's Product Development Process

The Petivity system required a complex integration of hardware, software, and AI capabilities. Purina's team faced several challenges in creating a non-invasive monitoring system that could accurately track individual cats' behaviors without compromising privacy or altering the cats' routines. Purina partnered with AI and IoT experts to develop sophisticated algorithms that are capable of learning and distinguishing between multiple cats based on their unique litter box usage patterns. The team collected and analyzed over 300,000 litter box events to train the AI models, ensuring high accuracy and reliability.

Throughout the development process, Purina prioritized both feline and human user experiences. The physical device was designed to be unobtrusive, sitting beneath the existing litter box to avoid disrupting cats' habits. For pet owners, the team created an intuitive mobile app that translates complex data into actionable insights and personalized recommendations. Purina employed an iterative approach to refining the system. This involved continuous testing and improvement of the AI algorithms

(Continued)

to eliminate false positives and negatives, ensuring that the system provides accurate and meaningful data to pet owners.

Purina successfully launched Petivity in under two years, demonstrating the company's agility in bringing innovative products to market. The system has been well received by consumers, with users praising its ability to detect health issues early and even crediting it with saving their cats' lives.

The development and success of Petivity represent a significant milestone in Purina's innovation journey, demonstrating the company's ability to:

- Leverage emerging technologies to create value-added products.
- Expand beyond traditional pet food into the realm of pet health monitoring.
- Establish direct connections with consumers through digital platforms.
- Open new sales channels and revenue models.

Looking ahead, Purina is poised to continue its innovation trajectory. The company had plans to launch over 100 new products in 2024, focusing on science-based premium brands and expanding into new market segments (Tyler, 2024). Purina's ambitious product development strategy underscores its commitment to maintaining its position as a leader in the pet care industry.

Think Critically

- How does Purina's development of Petivity reflect the evolving role of "product" in the marketing mix, particularly in the context of digital transformation?
- What are the potential risks and challenges associated with developing innovative products like Petivity, and how can companies mitigate these risks in their new product development processes?
- How might the success of Petivity influence Purina's future product development strategy, and what implications does this have for the broader pet care industry?

PRODUCTS, PRODUCT LEVELS, AND VALUE

At its most basic level, a product is something that is *produced* and offered for sale in the market. We learned in Chapter 1 that products include goods and services (and hybrids with elements of goods and services), ideas, experiences, destinations, people, and so on. Essentially, anything that can be offered for exchange and can satisfy buyer needs is a product. A pure good is tangible, whereas a pure service is intangible. Intangible means that the product has no physical existence but exists in the synchronous moments of production and consumption. Both goods and services are products.

There is really no such thing as a pure physical good or a pure service (Hill, 1986). Many products exist along a good–service continuum (Shostack, 1982) and increasingly are hybrids that are neither a pure tangible good nor a pure service. Rather, most products include both tangible and intangible elements. A connected car, for example, is a tangible good but also includes benefits of connected entertainment, navigation, safety, maintenance, and so on. In other words, products are bundles of features and attributes that promise to provide benefits that will meet customer needs.

Digital Technologies Lead to New Product Models

Digital technologies have made new forms of products possible. Examples include “products as a service”, “software as a service”, and product sharing. These examples mark a shift from ownership to usership. In each variation, buyers pay to use the product but don’t assume ownership of the product. **Software as a service (SaaS)** was an early iteration of this phenomenon, with wide acceptance. Customers can pay to use software by usage rental or subscribe. It’s likely you’ve used SaaS services – Google apps, Dropbox, and Zoom are all examples. Products as a service function in much the same way, except that the customer rents use of the product (Koers et al., 2024). For example, customers may pay for usage with washing machines rather than owning the appliance. Rolls Royce offers a model where airlines pay for the power generated by aircraft engines rather than purchasing them outright. Volvo On Demand enables temporary access to its vehicles.

In B2C markets, the sharing economy has created a product variation. Businesses provide apps and/or platforms to facilitate peer-to-peer sharing. You may rent an apartment for a holiday and/or rent yours using Airbnb. Uber and Lyft can connect you with a driver for a ride. These sharing platforms provide services to both parties, collecting fees to facilitate the match.

Product Levels as Layers of Value

Products are bundles of features and attributes that can be best understood by viewing products as layers of value. As Figure 6.1 illustrates, we can distinguish three product layers, each of which includes elements of value for target buyers: (1) core product, (2) actual product, and (3) augmented product. When we design product offers for a target market, we can use these layers to develop a product with a strong value proposition that differentiates the product from the competition and fits the brand’s positioning strategy.

The **core product** refers to the utility the customer is buying. Jobs-To-Be-Done theory is a useful lens with which to identify the core product. It approaches marketing from the perspective of understanding what job the customer needs to do and the role a product can play in that. The value of a product does not directly come from the product’s attributes themselves, but through the perceived benefits that the product provides to consumers. Think of any product you’ve purchased recently. What were you really after when you made the purchase?

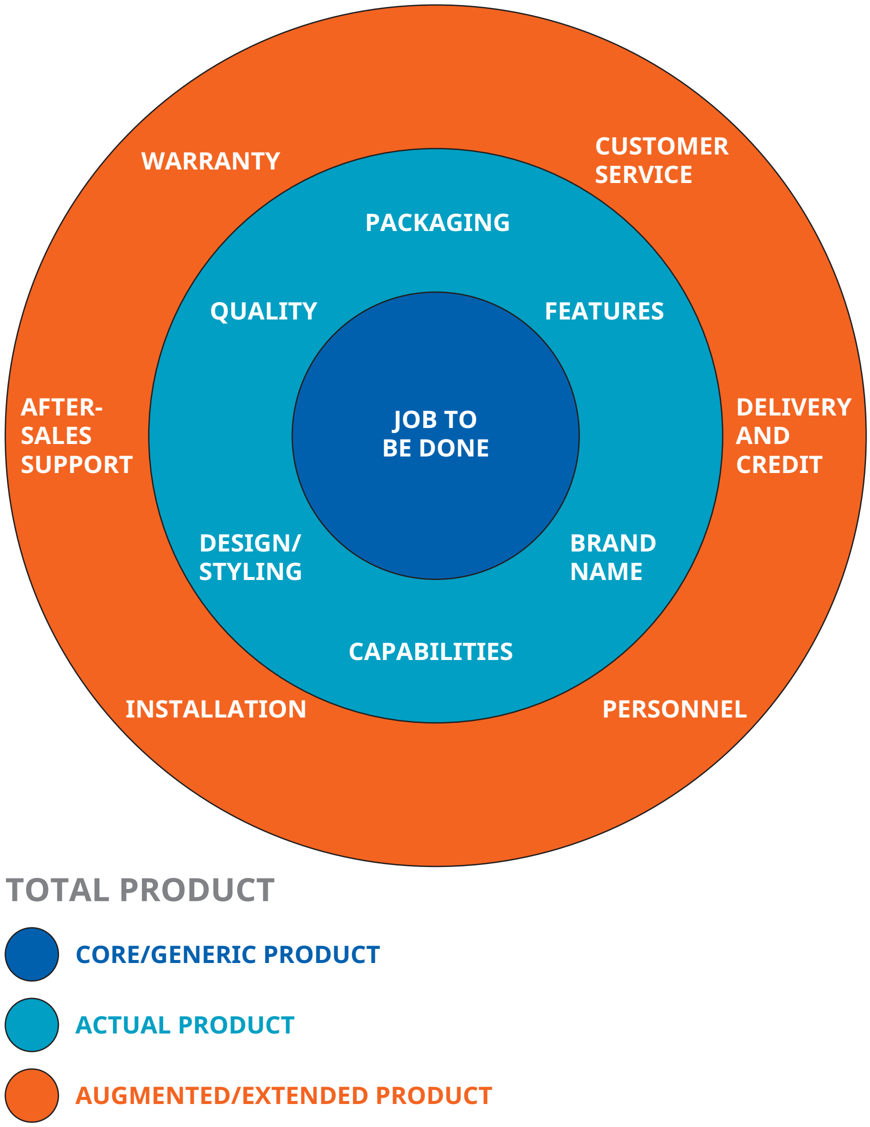

Figure 6.1 Product Levels and Layers of Value

The **actual product** is the physical good or service process that supplies the benefit sought. Brands distinguish their actual products through branding, product quality, packaging, design features, and product capabilities. The **augmented product** consists of the added value created by features beyond the basics. For goods, augmentations may include support services like installation, delivery, financing, maintenance and repair, and so on. Volvo's connected car systems are a type of product augmentation.

The actual and augmented product should be designed in such a way as to provide the values desired by the target market. Marketers study target market needs and wants, drawing on buyer behavior insights and the target market persona. Drawing on Maslow's Hierarchy of Needs (discussed in Chapter 1), met needs can be viewed as customer-received value. These product levels relate directly to the tactical decisions marketers make when designing the product element of the marketing mix. The core product is the primary benefit to provide. The actual product includes product attribute decisions, such as product quality, features and capabilities, style and design, packaging, labeling, and branding. The augmented product includes support services, such as installation, delivery, maintenance, and report, and "value-add" elements, such as mobile apps, loyalty programs, service quality, warranties and guarantees, and customer experiences. Generally, you can think of the actual product as providing functional value (in that it operationalizes the core product) and the augmented product as providing psychological, financial, temporal, and experiential value.

Bain, a consulting company, identified 30 elements of value relevant for end consumers and 40 elements affecting B2B buyers. The elements suggest opportunities for marketers to improve actual and augmented product offerings in ways that will provide competitive advantage. The B2C Elements of Value model is organized in four categories:

1 Social impact – what value to society does the product provide?
2 Life-changing elements – how does the product change my life?
3 Emotional elements – how does this product make me feel?
4 Functional elements – what problem does the product solve and what costs does it prevent?

The B2B Elements of Value model includes five categories:

1 Inspiration – does the brand contribute to purpose and social responsibility?
2 Individual impact – does the brand contribute to the buyer's personal career growth?
3 Business value – does the brand enhance productivity, access to resources and/or markets, and build relationships?
4 Functional elements – what outcomes, such as performance, cost savings, and innovation benefit, are derived from the brand?
5 Table stakes – to what extent does the brand meet mandatory requirements for product specifications and regulatory, ethical, and quality compliance?

To test the model, Bain surveyed more than 10,000 consumers in the US as to their value perceptions of 50 brands (Almquist, Senior, & Bloch, 2016). The results showed that brands whose products provided eight or more value elements performed significantly better than brands with fewer than eight value elements.

Some of the values identified are tied to operational standards and even brand purpose, more so than product design. But other value elements can be offered by adding to the number of product features. This is a common approach when brands follow an incremental new product development strategy or sustaining strategy. You can see this in the smartphones available on the market today. Each new iteration touts a new feature – facial recognition, infinity screen, low-light camera, and so on. Despite Bain's advice, adding features to a product isn't always a good idea. Experts warn against "feature fatigue" (Keane & Stamm, 2005). Technological advances make it possible to load on added features, often at little additional cost to produce. Customers may purchase feature-laden products because of expected utility, but ultimately suffer lower experience utility. Why? Customers may not actually use many of the features. Think about it. How many features of your smartphone do you use? How many functions is the smartphone actually capable of doing? Customers who experience lower levels of utility due to feature fatigue are less likely to buy the same brand in the future. In other words, the brand won the customer in the short term, but lost out on customer retention and loyalty. Feature fatigue is alive and well in today's competitive environment.

A product, therefore, is more than a simple set of tangible features. Consumers see products as complex bundles of benefits that satisfy their needs. Most important is how the customer perceives the product. Factors like aesthetics and styling, durability, brand image, packaging, service and warranty, and experience help to improve the value proposition and set the brand apart from the competition. As you consider product design in the marketing mix, pay special attention to customer experience. We emphasized customer experience management across the customer journey and during the moments of truth and micro-moments in Chapter 2. Increasingly, customer experience is a product attribute. Chris Janiszewski, former president of the Association of Consumer Research, captured this well, saying: "Benefits are not in the products. Benefits are in the consumer experience" (Janiszewski, 2009).

Product Classifications

Products can be classified in many ways, such as for consumer or business use, durability, location along the good–service continuum (covered in Chapter 10), and involvement.

Durability

Marketers classify consumer goods as durable or nondurable depending on how long the product lasts. A car will last many years but a tube of mascara will last only a few months. **Durables** are products that provide benefits over an extended period, while **nondurables** (sometimes called **disposables**) provide short-term benefits. Durables tend to be more expensive than nondurables and consequently tend to be high-involvement purchases. However, this isn't always the case. For instance, the benefit of a concert ticket is primarily limited to the time spent experiencing the concert, but the ticket may still be relatively expensive. For shared products, durability matters. Citybike Vienna, a public bike-rental system, found that its bikes needed heavy-duty frames and high-quality tires.

Image 6.1 Citybike Vienna

Source: Herzi Pinki/Wikimedia Commons (CC BY-SA 3.0)

Involvement

Consumer products are sometimes categorized as convenience, shopping, specialty, or unsought products. **Convenience products** are nondurable, low-involvement products that are purchased frequently. Consumer-packaged goods (CPG) like soft drinks, snacks, and toilet paper are convenience goods. Typically, convenience products are inexpensive and widely available. Convenience products include staples, impulse buys, and emergency purchases. Staple products, such as toilet paper, milk, and gasoline, are necessary items that are available almost everywhere. Impulse products are unplanned purchases. Emergency products are purchases tied to a situation or crisis occasion, such as if you find yourself in a rainstorm without your umbrella. Marketers are sometimes criticized for earning a profit during emergency situations, but emergencies also provide an opportunity for brands to build brand equity and goodwill.

Shopping products are those that inspire the buyer to gather information and make comparisons among competing brands. Thus, while convenience products have an abbreviated decision journey, the journey is extended for shopping products. The micro-moments and zero moments of truth (ZMOT) we discussed in Chapter 2 are relevant.

Specialty products are typically high-involvement purchases with an extended customer journey. These products may be expensive and may have limited distribution. Like the journey for shopping products, the moments of truth may play a role. But if a brand has earned loyalty, the "loyalty loop" in the journey may result in an abbreviated purchase process. That's a definite benefit to brands and a key reason why brands focus on customer satisfaction.

Unsought products are those for which prospective buyers lack awareness of the product and its benefits, and therefore do not actively move through the purchase process.

Products can be substitutable or non-substitutable. A product is substitutable if an alternative can be found that meets the buyer's needs equally well and the cost to switch is low. Generally, convenience and shopping products are considered substitutable while specialty products are not. Brands also try to create ecosystems to increase buyer commitment and the perceived cost of switching. The most successful businesses create a cluster of products and services that complement each other and work symbiotically (Marketing Science Institute, 2012).

Use

Products used by businesses for operations and/or manufacturing include raw materials, component parts, materials for maintenance, repair, and operations, equipment, installations, and business services. Like consumer products, raw materials, component parts, and materials are frequently purchased, whereas installations and business services are higher involvement decisions. SaaS and "products as a service" products have also grown in business markets. In fact, many MarTech vendors provide the marketing software solutions we discussed in Chapter 1, such as marketing automation, content marketing, programmatic advertising, and customer relationship management, using the SaaS product model.

B2B products are commonly classified by use. Specifically, B2B products can be thought of as entering products, foundation products, and facilitating products (Claessens, 2016). **Entering products** are raw materials and component parts for other products. For example, integrated circuits become a part of electronic products. **Foundation products** are those used in the manufacturing of other products, except that foundation products do not become a part of the end product. Installations are an example. **Facilitating products** are those utilized as assistance and support, such as market research services, or business supplies, such as copiers.

In principle, shared use products can be anything to which access is enabled. Products available thus far can be categorized by the brand role and other parties involved in the exchange. The product categories are (1) product as a service (company-provided service), (2) mutualization enabled by a digital product platform (peer-to-peer service supported by company platform), and (3) redistribution markets (company platforms enabling peer-to-peer reownership of products). Product as a service may include selling the use of a product rather than ownership, or providing services by rental or subscription, such as marketing automation or equipment maintenance (Maltzer, Veider, & Kathan, 2015; Koers et al., 2024).

PRODUCT PORTFOLIO MANAGEMENT

Companies frequently manage a portfolio of products. Doing so allows companies to leverage the strength of their brands through brand extensions and to target multiple market segments with different offers. There are common terms that you may find mentioned when discussing product portfolios.

- **Product portfolio**, also called a **product mix**, is the number of product lines offered by a company.
- **Product line** is any one type of product in the product mix.
- **Product line length** is the number of products in a product line.
- **Product line width** is the number of product lines in a product mix.
- **Product line depth** is the number of sub-products in a line.
- **Product line consistency** is the degree of variation between the products within the product line.

Companies may need to expand, reduce, or invest in their product portfolios depending on the chosen marketing strategy and the environmental situation. Knorr and Arm & Hammer both followed a product development strategy based on brand extensions. Both companies were successful with their flagship products and saw an opportunity to extend their brands. Knorr started with bouillon cubes but now offers side dishes and spice packets for specific recipes. Arm & Hammer began with its original baking soda but extended into a $1 billion mega-brand in a dozen categories, including toothpaste, kitty litter, and laundry detergent.

Product development can also be valuable when market trends change. We see this in the pet care industry as companies respond to opportunities created by new technologies like AI and the spending patterns of avid pet parents. For instance, Ogmen Robotics developed ORo, an AI-powered autonomous robot pet companion. The robot enables two-way audio and interactive video for pet–parent communications and it can also dispense treats! The robot's AI can learn a dog's behavior and respond when dogs demonstrate signs of distress (Combs, 2024). Invoxia's Smart Dog Collar tracks a dog's real-time movements, and much like wearables for humans, also tracks well-being, sleep, heart rate, and appetite. Data can be shared with the dog's vet and groomer (Combs, 2024).

Product development may also be necessary to adjust to local tastes. For example, Colgate has more than 65% penetration around the world because it has customized products and flavors for local markets. In India, Colgate's toothpaste line includes Active Salt Neem, Clove, and Cibaca Vedshakti, a herb used in Ayurvedic medicine.

Not all companies invest in their own research and development or even manufacture their own products. Rather, they partner with manufacturers or buy products from third-party providers. They can accomplish their goals using white labeling. A **white label** is something that is produced by one company and then repackaged and sold by other companies under their brand name.

Increasingly, brands are developing product ecosystems. A **product ecosystem**, defined as "interconnected sets of services through which users can fulfill a variety of cross-sectoral needs in one integrated experience" (Joshi, Khan, & Rab, 2021), can be thought of as a suite of complementary products. By developing an ecosystem, the products are synergistic. As customers develop brand loyalty, they adopt more of the ecosystem. The ecosystem also supports partner organizations, providing the organization with more power in the micro-environment.

Image 6.2 Colgate Vedshakti for sale in a supermarket in New Delhi, India

Source: PradeepGaurs/Shutterstock.com

Apple is an ecosystem brand. Apple's hardware products (iPhone, iPad, Mac, and Apple TV) drive consumption of its software, retail business, and partner products. The iPod device drove adoption of Apple's iTunes music and video store. The iPhone continues to do so and has also driven more than $100 billion annually in mobile app purchases. It's no coincidence that GAFA (Google, Amazon, Facebook, and Apple) all market product ecosystems. By creating ecosystems, they made their brands indispensable in the lives of customers, thus driving customer retention and customer lifetime value. Just like other product development, ecosystems may be built through partnerships, white labeling, or in-house innovation development.

INNOVATIONS AND NEW PRODUCT DEVELOPMENT

From a marketing standpoint, an innovation is anything that customers perceive as new. The degree of innovation may be incremental or radical (Clark & Henderson, 1990). Radical innovations introduce a truly new design that displaces a previous design. Discontinuous innovations are "new to the world" products. These innovations may take some time to reach the marketplace. For instance, companies like Neuralink are developing direct neural interfaces that allow direct communication between the human brain and external devices. This technology can radically change how we interact with computers and potentially treat neurological disorders. Memphis Meats and Mosa Meat are developing lab-grown meat products that can disrupt the traditional livestock industry. Just think of some of the aspects of daily life that we take for granted but once upon a time were radical innovations – electricity, air travel, radio, television, computers, the Internet. Radical innovations may also be *disruptive*. The Netflix case we discussed in Chapter 5 followed a disruptive strategy. But how can we clarify what makes an innovation discontinuous versus what makes it disruptive?

As discussed in Chapter 5, a disruptive innovation occurs when a new entrant in a market offers a functional alternative to the underserved, often at a lower price. Over time, the main market adopts the new product, completing the disruption (Christensen, Raynor, & McDonald, 2015). The new competitor is pursuing the disruptive strategy in the Jobs-To-Be-Done Growth Strategy Matrix, defined as a worse product for a lower price. The disruptive innovation model explains that the disruption is in part predicated on the use of a sustaining strategy by the competing incumbents (Christensen et al., 2015). Because the incumbents focus on incremental innovations with only minor advantages, they leave an opening for new entrants to gain market share. Over time, the new entrant improves product performance and gains market share, ultimately changing the marketscape (Christensen et al., 2015). For example, when the gaming market was only focused on hardcore gamers and dominated by Sony and Microsoft, Nintendo introduced Wii for casual gamers, with an inferior technology, and soon took over the market. Uber and Lyft disrupted the taxi service. Airbnb disrupted the hotel industry. Google disrupted the advertising industry. Do you notice a theme? Disruptive innovation is often driven by new technologies that make process innovation as well as product innovation possible.

Though it's exciting to think about discontinuous innovations, most new products are **continuous innovations**. In other words, the innovation is an incremental change in product design, product components, and/or related processes. We're accustomed to seeing "new and improved" touted on product packaging. For instance, mobile phones experienced several incremental innovations as new features were incorporated. What once was truly and simply a mobile phone, over time, became a camera, organizer, calendar, and connected device for email, social networking, and web surfing and searching. These improvements occurred gradually and new features continue to be developed and added. Some incremental changes are small adaptations to address socio-cultural trends. For instance, Nestlé plans to reduce sugar in its chocolate bars by 40% to address global concerns about obesity.

Many innovations are co-created. That's one of the reasons we say that marketing is now in the era of marketing convergence. Consumers sometimes contribute to product ideas, funding, and creation. For instance, consumers proposed an idea for dress yoga pants – yoga pants designed to look like dress pants. Funding for the design and manufacturing was crowdsourced on Betabrand and now dress yoga pants are one of the company's most popular products!

When innovation is co-created by stakeholders for the long-term benefit of society, it is called social innovation (Voorberg, Bekkers, & Tummers, 2014). **Social innovation** is defined as new solutions for social issues that are more efficient, effective, and sustainable than the existing ones. Solar Water Solutions, a Finnish company specializing in solar-powered water purification, has significantly impacted various regions, particularly in Africa, Asia, Europe, and South America. Its decentralized reverse osmosis desalination units, powered entirely by solar energy, have been instrumental in providing clean drinking water to remote and underserved communities. The innovation has not only improved water security in these areas but also contributed to reducing CO2 emissions and hazardous waste, thereby supporting broader environmental and social goals. There are two main phases required for social innovation to occur: (1) bricolage and (2) contagion. Bricolage is the ideation and design of the social innovation. Contagion is the process of adoption and diffusion (Yang & Sung, 2016).

New Product Development Process

When it comes down to it, the new product development process is much like that required for social innovation. There must be a viable idea and its success is determined by whether it is adopted by the market. Figure 6.2 illustrates the major steps in the new product development process.

What happens in each step in the process?

- Ideation or idea generation is the stage during which the organization comes up with new product ideas. Companies like Lego rely heavily on customer input during this stage. After all, sometimes customers know what they want! Design consultancies like IDEO provide ideation and market research services for new product development. Historically, product innovations have come from new technological knowledge or new market knowledge about the needs and wants of prospective customers and/or competitive offers (Nerkar, 2003).
- In the second phase, the idea's viability must be assessed. Is the concept technically feasible? Does it already exist? Is the total available market sufficiently large to make it attractive? How costly will the concept be, generally speaking, to bring to life?
- Assuming that the concept is viable, the third phase is the development of the concept into a prototype that can be further tested and assessed. If there are similar products offered by competitors, a "competitive teardown" may provide insight into competitive design, quality, and materials. If the concept is a service, process mapping (blueprinting, discussed further in Chapter 10) will be conducted. If the concept is good, drawings will be rendered and eventually a physical prototype will be created.

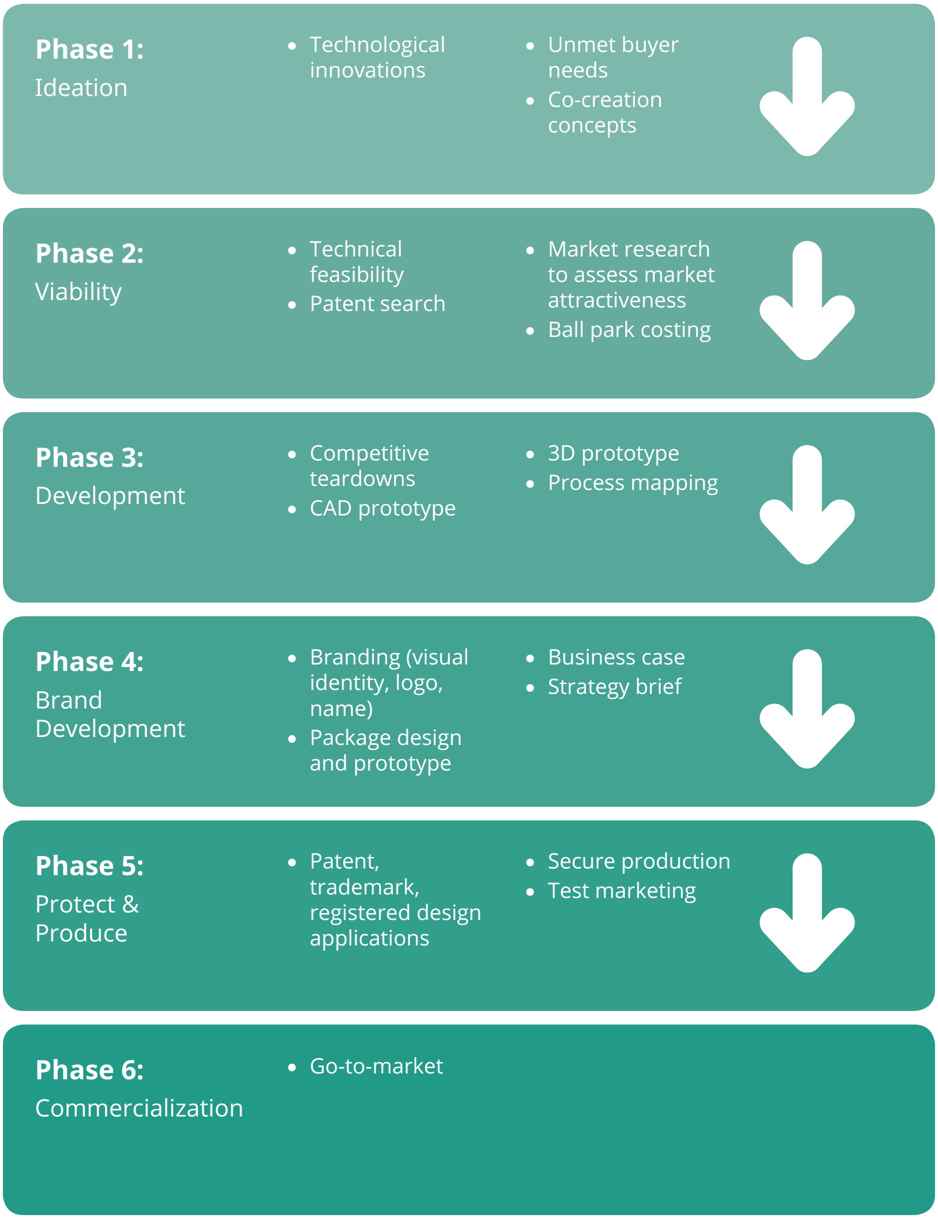

Figure 6.2 New Product Development Process

- Once the prototype is developed and tested, branding decisions, including brand name, logo, and visual identity decisions, will be made. Part of this process will include checking registered trademarks to ensure the preferred brand name and logo are available and protectable. The package will be designed, including labeling decisions, and a package prototype created. If funding and approvals are sought (whether from investors, partners, or crowdsourcing), a business case and/or video proposal will be developed at this stage. The marketing strategy and tactics are planned.

- In the fifth phase, the concept and related materials must be protected and produced. Applications for patents, trademarks, and registered designs will be filed. Test marketing, if planned, will be implemented to guide commercialization decisions. Production will begin. Companies may manufacture the new product themselves or may partner with manufacturers or other businesses to secure the new product in its portfolio.
- The final phase is commercialization. In this phase, the marketing strategy and tactical plan are implemented and the product is available in the market.

Typically, the "development" in research and development (R&D) follows a linear process known as the **waterfall** model. It progresses through *stage gates* from concept to design, building, testing, bug fixing, and finally, launching. This approach requires teams to follow initial requirements and scope, focusing on delivering a complete product to market (Berteletti, Frank, Haazen, Rocha, & Wu, 2023). Other approaches to the new product development process include agile methods and/or design-to-value methods. **Agile innovation**, described by Ernst & Young as "the art of making hard things easy and creating new viable business offerings faster" (EY, 2014), is a valued approach to new product development. The agile approach is based on the *agile manifesto*, a philosophical statement on agile innovation which includes four values and 12 principles (Manifesto for Agile Software Development, 2001). It follows a continuous method of design and test over short sprints of time, creating an ongoing feedback loop. It is typically faster than traditional waterfall methods, but the speed can lead to a lack of documentation (Sarangee, Schmidt, Srinath, & Wallace, 2022). Agile innovation relies on a method called **scrum**, which emphasizes creative and adaptive teamwork in solving complex problems, lean development, and *Kanban* (reducing lead times and the amount of work in process). The fundamentals of scrum are relatively simple (Rigby, Sutherland, & Takeuchi, 2016). To tackle an opportunity, the organization forms and empowers a small, cross-functional, self-managing team with all the skills necessary to complete its tasks.

Design-To-Value

Design-to-value (DTV), an integrated approach to product development that considers what customers want, what competitors offer, and what it costs to manufacture and distribute an end product, may also be used in new product development. The concept of designing for value is key. There are many ways to add value even when designing incremental improvements to existing products. For instance, value can be tied to sustainability contributions, product safety, cost of ownership, or augmented services. Figure 6.3 highlights the information used in DTV.

Figure 6.3 Sources of Insight for DTV

Source: Exhibit from Henrich, J., Kothari, A., & Makarova, E. (2012). Design to Value: a smart asset for smart products. McKinsey & Company. https://www.mckinsey.com/~/media/mckinsey/dotcom/client_service/consumer%20packaged%20goods/pdfs/20120301_dtv_in_cpg

The DTV process uses data from customer research, competitive intelligence, and cost analysis to ensure objectivity in design decisions. The customer research focuses on developing a deep understanding of customer value drivers and quantifying their worth. In other words, it considers not just what customers want, but how much they are willing to pay for specific product features. Journey mapping and other customer research approaches, such as ethnography, focus groups, and empathy mapping, are useful. **Competitive teardowns** refer to the disassembling of competing products to document technical and functional differences, and identify strategies for reducing costs or optimizing features with a differential advantage. Teardowns are often part of a teardown workshop because seeing the competitors' products side by side can produce transformational design ideas. **Clean sheet** modeling involves determining what products should cost given different parameters, such as design choices, raw material, and component quality. Clean sheet analysis is critically important for assessing opportunities for the product design to facilitate sustainability initiatives like those identified in the United Nation's Sustainable Development Goals. For instance, the costs of reducing packaging, utilizing renewable materials, and the energy use tied to production, shipping, and so on can be assessed and compared. The result of DTV is a list of specific and pragmatic ideas that companies can implement to increase customer value and improve competitive advantage, while reducing product costs (Henrich, Kothari, & Makarova, 2012).

Design-to-value is most commonly part of product development teams, but it's worth noting that the concept can be applied to the design of the entire marketing mix. For example, Bain's elements of value model points to several functional values, such as saving money (pricing implications), simplifying and reducing hassles (channel and process implications), sensory appeal and design aesthetics (presence implications), affiliation (people implications), and motivation and meaning (promotional implications).

Further, companies that embrace design-to-value may do so as part of a strategic product value management initiative. **Strategic product value management** uses design-to-value and design-to-cost procedures to determine the ideal portfolio of products, develop detailed cost models for those products, and reduce costs throughout the value chain (Moebius & Staack, 2015). The design-to-value component ensures that the company's product portfolio meets customer needs and each product in the portfolio can offer a meaningful and deliverable value proposition. The design-to-cost component ensures that margins and profitability are not threatened by unnecessary expenses.

Industry 4.0 and New Product Development

Industry 4.0 is revolutionizing product design by shifting from isolated to holistic approaches. Previously, products were designed without considering their integration into the manufacturing process. Now, designs focus on interactions with other machines and systems, leading to more innovative and efficient products. For example, IoT sensors can be used to collect data from a variety of sources, including machines, products, and processes (Rosário & Dias, 2023). This data can then be used to monitor and improve the performance of manufacturing systems. Sensors can also be used to create new products and services, such as predictive maintenance and remote monitoring.

Digital twins, virtual replicas of products or systems, enhance product development by enabling virtual simulations and testing (Argolini, Bonalumi, Deichmann, & Pellegrinelli, 2023). This reduces risk, improves validation, provides deeper insights, and integrates real-world data. Key benefits of using digital twins in new product design include:

- Reduced development times and costs by 20% to 50%.
- Improved testing and validation in various lifelike scenarios.
- Deeper insights into product behavior through continuous monitoring.
- Real-world data informing product improvements via simulations.

Imagine a company like Nike developing a new running shoe. Instead of creating multiple physical prototypes, they can create a digital twin of the shoe to simulate how it will perform under different conditions, such as wet surfaces or different temperature ranges. This virtual testing can reduce the time and cost needed for product development by 20% to 50%, as they don't need to create and test as many physical versions. Nike can use these digital twins to see how the shoe behaves over time, and then use that data to make adjustments before manufacturing even starts. This approach not only speeds up product development but also ensures a higher quality end product that meets customer needs more precisely.

Likewise, generative AI is useful for ideation and concept validation. Industrial designers use iterative prompts to ideate, refine concepts, and estimate manufacturability and market viability (Booth, Donohew, Wlezien, & Wu, 2024). Think about generative AI being used by companies like IKEA to create new furniture designs. Designers can input prompts, such as the desired size, color, and aesthetic of a chair, and generative AI can create hundreds of variations that meet these specifications. This helps IKEA quickly test different concepts and refine them based on manufacturability and potential market interest, providing both inspiration and efficiency.

PRODUCT LIFE CYCLE MANAGEMENT

Managing the product life cycle is a critical component of product strategy.

The Product Life Cycle

The life of a product from start to finish is described by the product life cycle. Most new products fail and consequently may experience an abbreviated life cycle. For successful products, the product life cycle can be useful for planning marketing strategy and tactics, because it suggests typical shifts in the marketing mix for each stage of the cycle. Importantly, the life cycle describes the life of the product, not the life of a brand's product offer. Each stage is marked by specific characteristics. Figure 6.4 illustrates the product life cycle.

When new products launch, they enter the introduction phase. Because the product is new, the focus must be on **primary demand**, which is demand for a product category. To drive primary demand, the market must be made aware of the product and educated on its value. There is little if any competition at this stage. Pricing is critical. The organization may price low to penetrate the market or price high to skim the market. We'll discuss pricing strategy further in Chapter 7.

If the product enters the growth stage, sales will increase and competition may decide to enter the market with an imitative product. During the growth stage, sales are increasing sufficiently to support multiple competitors. Brands will strive to differentiate their offers from those of competitors.

In the maturity stage, sales continue to increase but at a declining rate. The products on the market have been augmented and developed to enhance their value, but this also means that customers have choices. If the brands fail to differentiate themselves, the product may be perceived as a commodity. This puts downward pressure on prices. Some brands will innovate

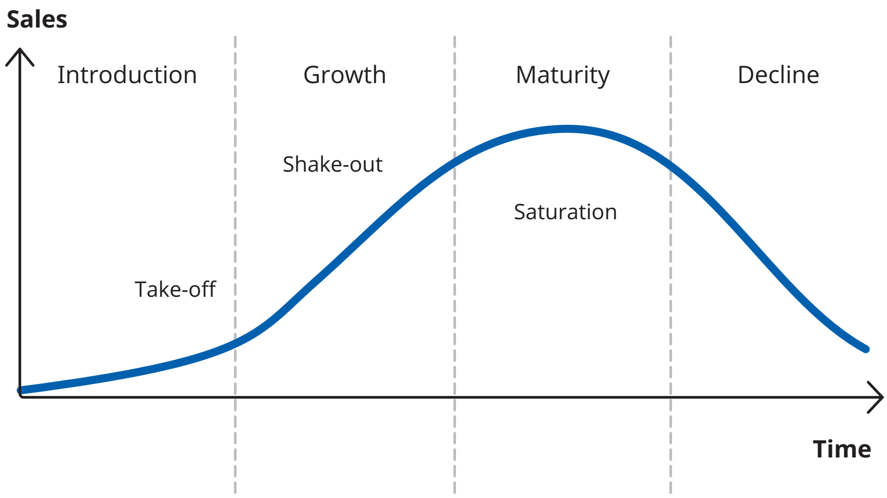

Figure 6.4 The Product Life Cycle

Source: Adapted from Claessens (2017), printed with the permission of Marketing Insider.

and/or reposition to reverse the life cycle progress (Moon, 2005). To reposition in the maturity stage, brands can use reverse positioning, breakaway positioning, or stealth positioning. **Reverse positioning** removes some product attributes while adding new ones. IKEA stores are completely unlike traditional furniture stores, for instance. In some ways, the entire smartphone market has used reverse positioning by focusing on features like cameras but not on the ability to make phone calls. **Breakaway positioning** associates the product with a different category. Swatch Watches treated its watches more like fashion jewelry that should be changed with different outfits. **Stealth positioning** disguises the product's true nature as it attracts new customers. An example of stealth positioning is Nintendo's Wii console. When it launched, the Wii was positioned differently compared to traditional gaming consoles like the Xbox or PlayStation. Instead of emphasizing high-end graphics or hardcore gaming, Nintendo disguised the Wii's true nature as a gaming console by marketing it as a family-friendly, health-oriented entertainment device. With its motion-sensing controllers and emphasis on fitness and group activities, the Wii attracted a broader audience, including families, seniors, and casual gamers – groups that had not previously been a significant target for video game consoles. This approach allowed the Wii to break into new customer segments and expand the gaming market, ultimately making it a massive success.

Some products remain in the maturity stage for decades. For instance, the market for televisions is mostly saturated. Households may add televisions in different rooms or replace televisions from time to time. Televisions continue to evolve, though, and people may choose to upgrade to the latest technology, such as curved screens and smart televisions.

If a product is no longer needed, it will enter the final stage of the product life cycle, decline. Decline may be triggered by an innovation or a change in the environment. For instance, the ability to use Google Maps on our smartphones drove the decline of portable GPS units. In fact, the evolution of smartphones has brought many products into decline – physical maps, mp3 players, cameras, pagers, and planners.

THE INNOVATION ADOPTION CURVE

The product life cycle shows how sales vary over time, but another view of the life of an innovation can be seen through the innovation adoption model. The **innovation adoption model** illustrates the diffusion of the innovation by the relative percentage of customers who adopt it at each stage. Product **adoption** is the process by which a consumer or business customer begins to buy and use a new good, service, or idea. **Diffusion** describes how the use of a product spreads throughout a population (Muller, Peres, & Mahajan, 2009). As Figure 6.5 illustrates, there are five categories of adopters. A small group of *innovators* (approximately 2.5% of the population) and *early adopters* (13.5%) give an innovation its start. Once the innovation begins to be adopted by the *early majority* (34%), sales increase rapidly and the *late majority* (34%) adopt. The most risk-averse, called *laggards* (16%), adopt last (KPMG, 2016). By the time laggards adopt a product, it may already be in the decline stage of the product life cycle.

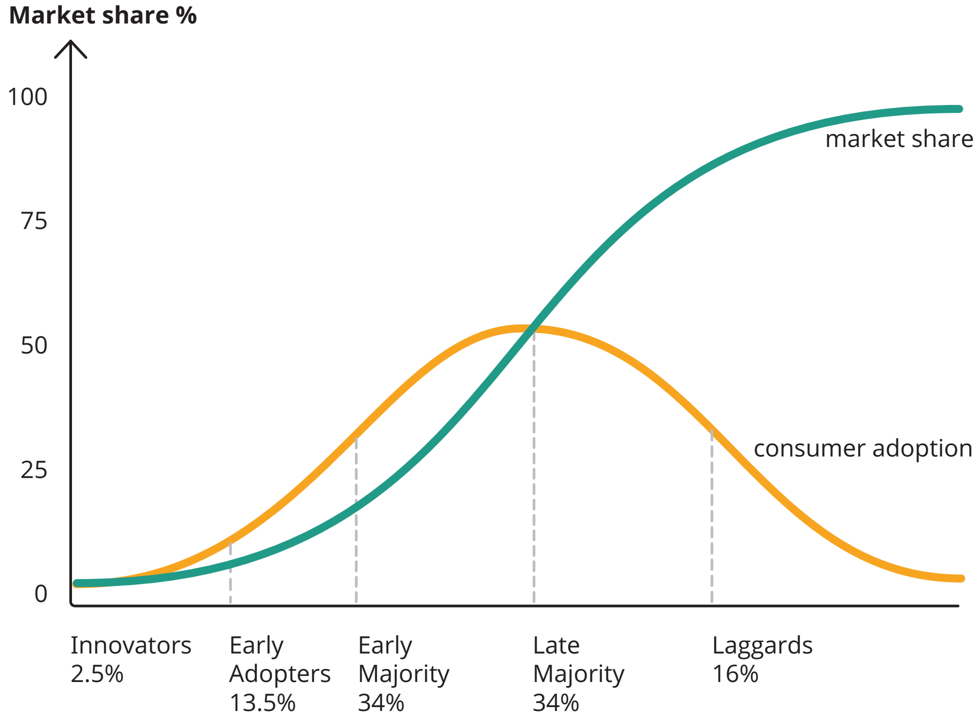

Figure 6.5 Innovation Adoption Curve

Source: Figure courtesy of Rogers, Everett, 2012. Accessed via wikicommons.

The point between early adopters and early majority is called the "**chasm**" (Moore, 1991). This is a critical point, sometimes called the **tipping point**, because a product is unlikely to succeed if it cannot cross the chasm to reach the early majority. Innovators and early adopters are interested in new technologies and prone to try innovations. But the early majority will not adopt until the product is perceived as reliable and advantageous. They may also wait until prices drop.

Marketers strive to increase the rate of adoption to facilitate a product's success. There are five factors thought to drive adoption: (1) relative advantage, (2) compatibility, (3) simplicity, (4) observability, and (5) trialability. **Relative advantage** is the degree to which the innovation is perceived as better than the incumbent product (non-existent if no product met the need). The greater the relative advantage, the faster the adoption. **Compatibility** is the degree to which the product is compatible with any existing equipment and/or buyer values. The greater the compatibility, the faster the adoption. **Simplicity** is the degree to which the product is easy to understand and use. The simpler the product is, the faster the adoption. **Observability** is the degree to which prospects are exposed to the product and can see others using the product. The more observable it is, the faster the adoption. **Trialability** is the degree to which the product can be used prior to making a commitment. The ability to try a product without risk and experience the product's benefits before purchase can increase the rate of adoption.

Maloney's 16% rule explains that marketers must speak differently to innovators and early adopters (the first 16% of people who will adopt an innovation) than they do to early majority and late majority (Maloney, 2010). Specifically, Maloney's 16% rule suggests that the first 16% to adopt are motivated to adopt by product scarcity (Maloney, 2010). Because the innovation is new and scarce, innovators and early adopters are motivated to be among the first to acquire the innovation. The remaining adopters, though, are persuaded by social proof. In other words, observing that others have adopted the innovation, they too follow suit.

The Hype Cycle

Another model for understanding the diffusion of innovation is the hype cycle (Gartner, n.d.; Dawson, Bishop, & Medeiros, 2024). Importantly, the hype cycle shows that organizations should not invest in new technologies just because they are hearing hype about the technologies. Introduced by Gartner, a consulting firm, the hype cycle illustrates the typical progression of an emerging technology from optimism and enthusiasm, through a period of disillusionment, to an eventual understanding of the technology's relevance and role in a market. As illustrated in Figure 6.6, the initial stage of the hype curve is driven by buzz, primarily from media speculating on the technology's prospects. Later the curve is driven by performance improvements and adoption.

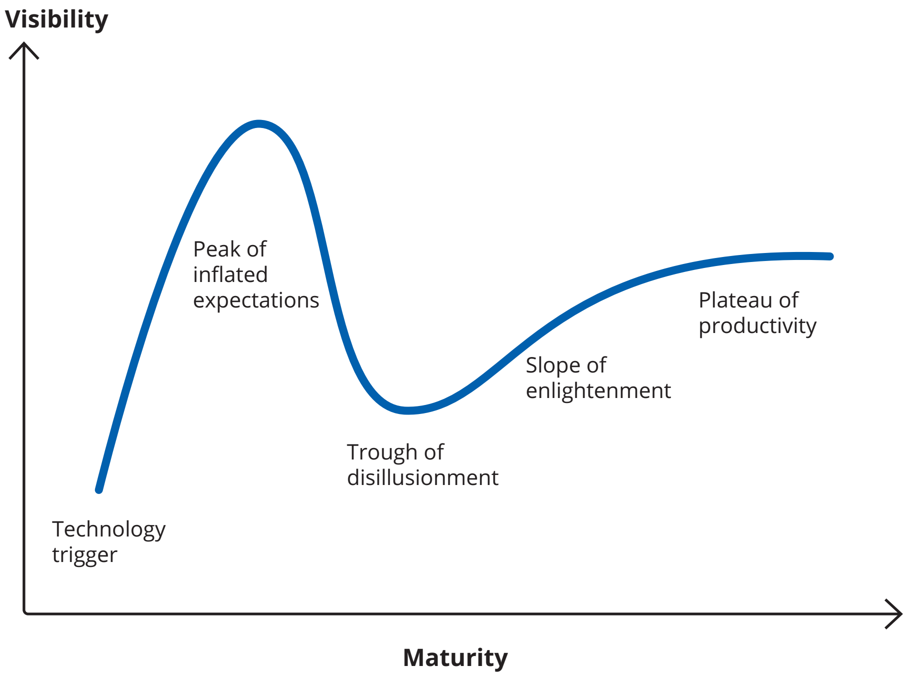

Figure 6.6 The Hype Cycle

Source: Figure courtesy of Kemp, Jeremy, 2007. Accessed via wikicommons.

The hype cycle shows five phases of a technology's life cycle. Just as there is value in overlaying the product life cycle and the innovation adoption curve, it can be valuable to view the hype cycle in the context of adoption and sales. Doing so makes it clear that for new products inspired by technology, the technology may have experienced its own life cycle challenges.

- In the first phase, a research breakthrough serves as a *technology trigger*.
- In the second phase, the *peak of inflated expectations*, there is a lot of buzz about the technology but the technology is unproven.
- The third phase is the *trough of disillusionment*, during which first-to-market products are introduced but many fail. Businesses want first-mover advantages but being first also comes with risk.
- The fourth stage is the *slope of enlightenment*, at which point practical benefits of the technology emerge.
- The fifth stage is the *plateau of productivity*, when the market is ready to adopt products with the new technology and mass adoption is feasible. This is when mass adoption really beds in and it's much easier for customers to commit to the new technology.

New products based on the technology will not be introduced until the technology reaches the third stage of the hype cycle, and even then, the introduction is risky. Only if the technology reaches the fourth stage are products based on it likely to succeed in the market. Both the innovation adoption curve and the hype cycle illustrate that market success is dependent on a small band of people who are willing to take the risk on an unknown. Though the cycle is valuable for understanding the precursors to the product life cycle, not all technology gets hyped. Some technologies stay in stealth mode until they emerge in the mass market. Smartphones are an example. In contrast, virtual reality and wearables were overhyped (Desjardins, 2017). Virtual reality has been the next big thing for years but still has a relatively small consumer footprint. When Google Glass came out, people thought wearables would take off. But despite many wearable categories, most consumers have stuck with fitness wearables like Fitbit. What does that mean for marketers trying to make decisions about new product development? Professor Mark Kennedy of Imperial College says: "Think of your business's innovations as a portfolio to be traded. … Start to identify which are seeing changes in momentum and the highest potential impact – and therefore deserve capital investment" (KPMG, 2016). Apple is a good example of a company that has chosen not to pursue first-mover advantages in favor of lesser risk. Despite being perceived as an innovative company, Apple is almost never first to a market. Instead, Apple waits for demand to support a product and then develops incremental innovation on an existing product to produce an offer with a differential advantage.

Case Study 6.2

Product Development in the Smart Home Industry – Amazon's Smart Home Ecosystem

Smart home products include a wide range of categories – from voice-activated speakers, to thermostats that change the temperature when users are home or away, to refrigerators with touchscreens that let people watch TV and see their groceries from a mobile app, to security cameras that recognize familiar faces! The products are part of the aspiration of a truly smart home. Smart homes promise to anticipate and respond to their occupants' needs, intuitively and automatically, based on learned lifestyle patterns, and to empower people with better control of the home environment to increase comfort, awareness, convenience, and cost and energy savings.

Marketers are developing new connected products for the smart home market and increasing consumer adoption of available products. The smart home market includes several product categories: (1) AI/voice assistants, (2) audiovisual entertainment, (3) security, (4) energy, (5) kitchen appliances, and (6) personal care and health.

The market is growing. By 2026, global shipments of smart home devices will near 1.25 billion, with video entertainment and home security devices making up nearly 49% of the total (Cahalan, 2024). The most popular devices are smart entertainment systems, thermostats, doorbells, and security cameras.

Amazon is the market leader, with roughly 24% of smart home product sales (Zavialova, 2024). Its product development strategy is to establish a branded smart home ecosystem. Some of Amazon's recent product offerings include a new and improved Echo Show, Echo Frames and Carrera Smart Glasses, AmazonBasics microwave, Amazon Smart Thermostat, and the AlexaGuard security system.

Image 6.3 **Amazon Echo Show**

***Source*: Juan Ci/Shutterstock.com**

Amazon Basics Microwave integrates the virtual voice service, Alexa, into a compact countertop microwave retailing for less than $60. It includes dozens of quick-cook voice presets, so users can cook just by asking Alexa. Amazon Dash is also built in, so you can easily order groceries in case you're running low on microwave popcorn. There's an Echo Wall Clock that connects to Echo via Bluetooth. Alexa Guard is a home security hub that manages lighting, doorbells, and security. For devices not offered by Amazon, customers can simply use the Amazon Smart Plug! For under $25, the Smart Plug lets customers control any device they plug into it. All of these products have two commonalities: (1) they cost less than comparable products and (2) they only work with the Alexa voice assistant. These characteristics suggest that Amazon's product development strategy is meant to disrupt the industry. The product line's lack of compatibility with other AI voice assistants is essential to Amazon's product strategy – to make its product ecosystem a part of everyday life, whether people are listening to music, turning off the lights, or making dinner. Once a customer is invested in

(Continued)

the ecosystem, the perceived cost of switching will decrease the likelihood of buying additional smart home products from a competitor. Amazon augments the product ecosystem with added value services like Music Unlimited for Echo, a streaming music subscription plan priced far below competing music services.

By starting with the end result in mind and focusing on the customer experience, Amazon has been able to develop successful products and services across various industries. Amazon's "Working Backwards" product development process focuses on the following steps (About Amazon, 2021).

1. *Start with a press release*: Write a mock press release announcing the finished product to customers, focusing on the customer benefits and value proposition.
2. *Develop customer FAQs*: Create a list of potential questions customers might ask about the product.
3. *Create internal FAQs*: Address business and technical questions about building the product.
4. *Begin development*: Only start actual product development after finalizing and approving the press release and FAQs.
5. *Iterate and refine*: Use the press release and FAQs as guiding documents throughout the development process, adjusting as needed. Amazon leaves an empty chair in meetings to represent the customer, emphasizing its customer-centric approach

This approach ensures a customer focus, clear vision, and alignment across teams before significant resources are invested in product development.

Think Critically

- Do you have any concerns about data privacy given the data collected via smart home devices?
- How is Amazon using new product development as a marketing strategy?
- What are the benefits offered by Amazon's smart home products in terms of the levels of product value (e.g., core, augmented)?
- How would you describe the Amazon Basics line of products in terms of product portfolio management?
- Where does Amazon Basics and adoption of Alexa fall on the hype cycle?

Sustainability Spotlight

On's Path to Sustainable Product Design

Born in the Swiss Alps, On is not only known for its innovative footwear but also for its strong connection with nature, which influences its vision and practices. The company is on a journey to reshape how products are made, used, and disposed of – all while reducing the burden on the planet. This journey involves tackling environmental, social, and governance (ESG) challenges and aligning with the UN's Sustainable Development Goals (SDGs). Through their commitment, On aims to build a future where everything they create is fossil-free and designed for circularity, while fostering equity and diversity throughout their operations (On, 2022).

On's sustainability strategy focuses on reducing CO2 emissions, using recycled materials, and adopting innovative business models to close the product loop. CleanCloud, a shoe made from carbon emissions, and Cyclon, a subscription-based model offering fully recyclable products, are standout initiatives illustrating On's unique approach. These activities not only reflect On's ESG ambitions, but also connect closely to their approach to product development, marketing, and innovation (On, 2022).

On's mission is to ensure that its products respect both people and the planet, while staying aligned with several of the UN's SDGs. In particular, the company emphasizes Responsible consumption and production (SDG 12), Climate action (SDG 13), and Goal partnerships (SDG 17). The company's Responsible Manufacturing Program, which includes partnering with like-minded innovators and ensuring that all partners adhere to the International Labour Organization standards, highlights its social responsibility alongside environmental actions (On, 2022).

The On *Impact Progress Report* indicates major advancements, such as a 12% reduction in CO2 emissions per unit of value added since 2019, and 85% incorporation of recycled polyester in their products. On is moving away from a linear business model by adopting circularity, meaning its products are designed to be repaired, reused, remade, and recycled as much as possible (On, 2022).

Product Design as a Core Component of Sustainability

The product design phase is critical for embedding sustainability, as decisions made here can account for up to 80% of a product's lifetime environmental impact (Fuchs, Mohr, Orebäck, & Rys , 2022). On takes this responsibility seriously, making sustainability the foundation of its R&D processes. The company's "design for circularity" approach involves using bio-based and recyclable materials and designing products that can easily be disassembled for recycling.

For instance, On's Cyclon program offers products that are 100% recyclable and available only via subscription. This ensures that when a customer finishes using a product, it is returned to On, recycled, and turned into a new product, thus closing the loop and minimizing waste. This model directly supports circularity and reduces the environmental impact compared to the traditional, linear approach to product consumption (On, 2022).

Levels of Product and Product Portfolios

On's product design strategy reflects different levels of a product, including the core product, actual product, and augmented product. The Cyclon shoes, for example, offer high-performance running functionality (core product), are built from bio-based materials that are recyclable (actual product), and come with an innovative subscription model for continuous replacement and recycling (augmented product). This holistic approach ties each product to the customer experience while enhancing value and reducing environmental harm.

(Continued)

At the product portfolio level, On's approach to sustainability is diverse and aligned with principles of both depth and breadth in its offerings. The Cloudneo shoes, Cyclon-T apparel, and CleanCloud prototypes demonstrate the company's broad application of sustainable practices across multiple product lines. Each innovation serves as an example of how On integrates sustainability into different types of footwear and apparel, ensuring that the company's entire portfolio gradually moves toward full circularity.

New Product Development (NPD) Process and Sustainability Integration

Sustainability is woven into every stage of On's new product development (NPD) process. From concept development through prototyping and production, the company consistently considers environmental factors. On leverages R&D insights to reduce reliance on virgin fossil-based materials and replace them with recycled or bio-based alternatives. CleanCloud, an example of an entirely new product category, is the result of a concerted NPD effort to innovate with captured carbon emissions. This aligns the entire product development cycle with sustainable principles, influencing the materials chosen, the way products are manufactured, and even how they reach consumers (Fuchs et al., 2022).

Moreover, On's integration of sustainable product design with an emphasis on life cycle thinking supports its ongoing mission to lead in the creation of environmentally friendly sportswear. The adoption of product life cycle analysis (LCA) as part of its R&D methodology helps ensure that every decision is made with a clear understanding of its impact on sustainability. This data-driven approach allows On to stay focused on achieving its goals, such as a 46% reduction in emissions by 2030 and making all products fossil-free by that year (On, 2022).

On is setting a benchmark in the sportswear industry by demonstrating how sustainability can be deeply integrated into product marketing, design, and portfolio management. From the very beginning of the design process to the end of a product's life cycle, On ensures that each step minimizes environmental harm and maximizes social benefits. Their commitment to ESG, the UN's SDGs, and innovative practices like CleanCloud and Cyclon exemplify a future-facing approach that other brands can look to for inspiration. Ultimately, On's product marketing doesn't just sell products; it also sells a vision for a more sustainable future, turning consumer purchases into meaningful contributions toward positive environmental impact.

Think Critically

- How does On's approach to circular business models, such as the Cyclon program, reflect a shift in consumer value perception, and what challenges might arise in making this shift mainstream?
- In what ways does the emphasis on product design impact On's sustainability initiatives, and why is the design phase seen as the most crucial point for addressing sustainability in product development?
- How does On's product portfolio strategy, which integrates sustainability across different product lines, such as Cloudneo and CleanCloud, provide value both to the environment and to consumers? What are the potential trade-offs involved in this strategy?

CHAPTER SUMMARY

A product is anything offered in the market to satisfy customer needs, including goods, services, and hybrids. Products are understood at three levels: the core product (the essential benefit), the actual product (features and design), and the augmented product (support services like installation and warranties). Together, these levels provide value through tangible attributes and enhanced experiences. Technology has also expanded what constitutes a product, including models like "products as a service" or shared products, adding additional layers of value to the customer experience.

Products are classified based on their use (consumer or industrial), durability (durable vs. nondurable), and involvement level (convenience, shopping, specialty, unsought). Goods are tangible and can be stored, while services are intangible, consumed at the point of production, and vary in delivery. Many products fall along a continuum of goods and services, making them hybrids. This classification helps marketers understand consumer behavior, and the marketing approaches differ for services because of their unique characteristics.

Product portfolio management involves overseeing a company's range of products to align with market demands and company strategy. This involves decisions on expanding, updating, or retiring products to optimize profitability and market positioning. For instance, companies may expand product lines, develop brand extensions, or build ecosystems, as seen with brands like Apple and Purina. Effective portfolio management helps balance risks, foster innovation, and enhance customer satisfaction through a range of diverse offerings.

The new product development process involves ideation, feasibility analysis, prototype development, branding, production, and commercialization. Industry 4.0 technologies like IoT, digital twins, and AI accelerate product design and prototyping, helping enhance both efficiency and product–market fit. Design-to-value (DTV) integrates customer desires, competitor insights, and cost considerations to maximize value and efficiency in product development. Purina's development of Petivity is an example of leveraging digital technology to innovate a product that meets evolving consumer needs for connected care.

The product life cycle (PLC) consists of four stages: introduction, growth, maturity, and decline. Each stage necessitates different marketing strategies. In the introduction phase, the focus is on creating awareness, while the growth phase requires differentiation. In maturity, efforts are geared toward maintaining relevance, often through repositioning or incremental innovation. In decline, marketers must decide whether to phase out or reinvent the product. Understanding the PLC helps marketers align product, pricing, promotion, and distribution strategies with the product's stage to optimize its success.

Product design significantly impacts how quickly customers adopt an innovation. Five factors influence adoption: relative advantage, compatibility, simplicity, observability, and trialability. A well-designed product should meet user needs, fit into existing lifestyles, and be easy to use – features that enhance its likelihood of crossing the "chasm" from early adopters to the early majority. Innovations like Purina's Petivity and Volvo's connected cars demonstrate how advanced product design, incorporating personalization and usability, fosters higher adoption rates among target customers.

REVIEW QUESTIONS

1. What is a product?
2. What are the levels of a product and why are they relevant in developing a value proposition?
3. What is the difference between secondary demand and primary demand?
4. How are products and services different?
5. What is the new product development process?
6. What are the tenets of the design-to-value approach to innovation?
7. What is meant by the term "agile innovation"?
8. What are the stages in the diffusion-of-innovations process? What factors influence the rate of adoption of new products?
9. How does the product life cycle influence marketing strategy decisions?
10. What are the stages in the product life cycle?
11. What is the hype cycle?

KEY TERMS

1. **Actual product** – the physical good or service process that supplies the benefit sought.
2. **Adoption** – the process by which a consumer or business customer begins to buy and use a new good, service, or idea.
3. **Agile innovation** – enables new product development through collaboration while also remaining responsive to market changes.
4. **Augmented product** – consists of the added value created by features beyond the basics.
5. **Breakaway positioning** – associates the product with a different category.
6. **Chasm** – the point between early adopters and early majority; this is a critical point, sometimes called the **tipping point**.
7. **Clean sheet** – involves determining what products should cost given different parameters, such as design choices, raw material, and component quality.
8. **Compatibility** – the degree to which the product is compatible with any existing equipment and/or buyer values.

9 **Competitive teardown** – the disassembling of competing products to document technical and functional differences and identify strategies for reducing costs or optimizing features with a differential advantage.
10 **Continuous innovation** – incremental change in product design, product components, and/or related processes.
11 **Convenience products** – nondurable, low-involvement products that are purchased frequently.
12 **Core product** – the utility the customer is buying.
13 **Design-to-value (DTV)** – an integrated approach to product development that considers what customers want, what competitors offer, and what it costs to manufacture and distribute an end product; DVT may also be used in new product development.
14 **Diffusion** – describes how the use of a product spreads throughout a population.
15 **Digital Darwinism** – the concept that only those organizations that can integrate technology to add real value for customers and the organization's value chain will survive and thrive.
16 **Durables** – products that provide benefits over an extended period of time.
17 **Entering products** - raw materials and component parts for other products. For example, integrated circuits become a part of electronic products.
18 **Facilitating products** - products utilized as assistance and support, such as market research services, or business supplies, such as copiers.
19 **Foundation products** - products used in the manufacturing of other products, except that foundation products do not become a part of the end product.
20 **Innovation adoption model** – illustrates the diffusion of the innovation by the relative percentage of customers who adopt it at each stage.
21 **Maloney's 16% rule** – explains that marketers must speak differently to innovators and early adopters (the first 16% of people who will adopt an innovation) than they do to early majority and late majority.
22 **Nondurables** (sometimes called **disposables**) – provide short-term benefits.
23 **Observability** – the degree to which prospects are exposed to the product and can see others using the product.
24 **Primary demand** – demand for a product category.
25 **Product** – something that is produced and offered for sale in the market.
26 **Product ecosystem** – a suite of complementary products.
27 **Product line** – any one type of product in the product mix.
28 **Product line consistency** – the degree of variation between the products within the product line.
29 **Product line depth** – the number of sub-products in a line.
30 **Product line length** – the number of products in a product line.
31 **Product line width** – the number of product lines in a product mix.
32 **Product portfolio** (also called a **product mix**) – the number of product lines being offered by a company.

33 **Relative advantage** – the degree to which the innovation is perceived as better than the incumbent product.
34 **Reverse positioning** – removes some product attributes while adding new ones.
35 **Scrum** – emphasizes creative and adaptive teamwork in solving complex problems, lean development, and *Kanban* (reducing lead times and the amount of work in process).
36 **Shopping products** – products that inspire the buyer to gather information and make comparisons among competing brands.
37 **Simplicity** – the degree to which the product is easy to understand and use.
38 **Social innovation** – when innovation is co-created by stakeholders for the long-term benefit of society.
39 **Software as a service (SaaS)** – customers can pay to use software by usage rental or subscribe.
40 **Specialty products** – typically high-involvement purchases with an extended customer journey.
41 **Stealth positioning** – disguises the product's true nature as it attracts new customers.
42 **Strategic product value management** – a comprehensive method using design-to-value and design-to-cost procedures to determine the ideal portfolio of products, develop detailed cost models for those products, and reduce costs throughout the value chain.
43 **Trialability** – the degree to which the product can be used prior to making a commitment.
44 **Unsought products** – those for which prospective buyers lack awareness of the product and its benefits and therefore do not actively move through the purchase process.
45 **Waterfall model** – a linear approach to product development that progresses through a series of sequential phases, including concept, design, building, testing, bug fixing, and launching. Each stage serves as a prerequisite for the next, focusing on delivering a complete product to market based on initial requirements and scope.
46 **White label** – something that is produced by one company and then repackaged and sold by other companies under their brand name.