



INNOVATION FADS: PRODUCTS THAT HAD EXPLOSIVE GROWTH, CULTURAL DOMINANCE, AND THEN DECLINED (OR BECAME NICHE)

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Abstract

Many products (goods and services) experience rapid adoption followed by decline, transformation, or absorption into broader technological and cultural systems. These phenomena, often described as innovation fads, provide valuable insight into the cultural mechanisms that shape the lifecycle of innovations. This article analyzes sixty-six cases of products (goods and services) that experienced explosive growth between the late 1990s and the mid-2020s across multiple sectors, including consumer electronics, media formats, communication technologies, lifestyle products, and digital platforms. The study applies the Cultural Innovation Construct Process Model that classify innovations according to four cultural drivers: Neowel (technology-driven), Beutel (aesthetic-driven), Moral (rule-driven), and Gnosil (knowledge-driven). Using comparative historical analysis and cross-sector case examination, the research identifies recurring patterns in how innovations emerge, diffuse, and decline. The findings suggest that aesthetic-driven innovations tend to generate rapid but short-lived diffusion, while technology-driven innovations frequently become absorbed by new technological platforms. Norm-driven innovations display greater stability when supported by institutional frameworks. The most durable cultural transformations, however, appear to be associated with knowledge-driven innovation, where new scientific or systemic understanding reshapes behavior and decision-making. The study proposes a strategic framework indicating that innovations integrating knowledge transformation, institutional alignment, technological enablement, and cultural symbolism are more likely to evolve from temporary fads into sustained cultural practices.

Keywords

Cultural Innovation, Cultural Value, Product Lifecycle, Consumer Behavior

1. Introduction

Over the past three decades, numerous products (goods and services) have experienced rapid market adoption followed by sharp decline, transformation, or absorption into broader technological ecosystems. From media formats and consumer electronics to digital platforms and lifestyle products, these phenomena - often described as innovation fads - illustrate the dynamic nature of technological and cultural change. While traditional innovation research has focused primarily on technological diffusion, market competition, or product lifecycle management, less attention has been given to the cultural mechanisms that influence why some innovations disappear while others evolve into long-lasting practices embedded in everyday life.

Understanding the rise and fall of innovations requires examining not only technological capabilities or economic factors but also the values, meanings, and social drivers that shape collective adoption. Innovations do not diffuse in a cultural vacuum; they interact with individual motivations, social identities, institutional norms, and evolving knowledge frameworks. Consequently, the trajectory of a product - from rapid growth to decline or transformation - often reflects deeper cultural dynamics rather than purely technological substitution.

This article seeks to analyze these dynamics by applying two complementary conceptual frameworks: the Holistic Value Construct Model (Fernandes, 2012) and the Cultural Innovation Process Model (Fernandes, 2014). The Holistic Value Construct Model provides a structure for understanding how individual and collective values interact in shaping human behavior and decision-making. Building on Schwartz's (1996) theory of basic human values, the model conceptualizes value interactions across individual and collective dimensions, allowing a more integrated analysis of how motivations and cultural orientations influence innovation adoption.

The Cultural Innovation Process Model extends this perspective by identifying four archetypal drivers of cultural innovation: Neowel, driven by new technologies that generate new habits and social practices; Beutel, driven by aesthetic or symbolic transformations that reshape cultural expression and identity; Moral, driven by new rules, norms, and institutional frameworks that regulate collective behavior; and Gnosil, driven by new knowledge or scientific understanding that inspires new lifestyles and decision patterns. Together, these archetypes provide a framework for interpreting how different forms of innovation interact with cultural values and societal structures.

The main objective of this research is to apply these theoretical constructs to the analysis of products (goods and services) that have experienced explosive growth followed by decline or transformation. By examining sixty-six examples across multiple sectors - including communication technologies, media formats, consumer electronics, digital platforms, fashion items, and lifestyle trends - this study explores the cultural drivers underlying their diffusion and eventual decline. Rather than treating these cases merely as examples of technological obsolescence, the analysis interprets them as manifestations of broader cultural innovation processes.

Through comparative historical analysis, the study identifies recurring patterns linking innovation lifecycles to the dominant cultural drivers behind their adoption. These patterns allow the development of a conceptual framework explaining why certain innovations remain temporary fads while others generate durable cultural transformation. In particular, the research highlights the varying degrees of stability associated with different cultural drivers, suggesting that knowledge-based innovations tend to produce more enduring change than those driven primarily by aesthetics or technological novelty.

Beyond its descriptive contribution, the article also proposes a theoretical concept aimed at strategic management. By integrating insights from the Holistic Value Construct Model and the Cultural Innovation Process Model, the study develops a framework that can assist organizations in designing innovations with greater cultural durability. Understanding the cultural foundations of innovation diffusion can help managers anticipate lifecycle dynamics, identify risks of fad-driven adoption, and align innovation strategies with deeper societal transformations.

In this sense, the article contributes to the intersection of innovation studies, cultural theory, and strategic management by offering a conceptual lens through which organizations can better understand the cultural forces shaping the rise, transformation, and decline of products (goods and services). The findings suggest that innovations capable of aligning technological development with evolving knowledge frameworks, institutional norms, and cultural values are more likely to transcend short-term market cycles and become embedded in long-term societal change.

2. Review of related literature

According to Cummings (1998), innovation refers to the successful first-time application in the market of a firm's product or process. Abernathy and Clark (1985) similarly associate innovation with the creation of value added through the introduction of new products, services, or production methods capable of generating competitive advantage. From an entrepreneurial perspective, innovation can also be understood as "...a firm's tendency to engage in and support new ideas, experimentation, and creativity for the development of new processes" (Lumpkin and Dess, 1996, p. 142).

Piana (2003) further emphasizes the dynamic nature of innovation, defining it as the complex development of discoveries (e.g., new physical laws) and inventions (e.g., new machinery) introduced into

business and social environments, which ideally leads to diffusion through adoption by new users. In this sense, innovation is not limited to invention itself but includes the social and economic processes through which new ideas become embedded in markets and society.

Despite these different perspectives, it is important to distinguish between innovations primarily oriented toward business outcomes and those that generate broader social transformations. Hämäläinen and Heiskala (2007) propose five ideal types of innovation. Technological innovation introduces new and more efficient ways to transform material reality, while economic innovation applies technological advances to the production of surplus value. Together, these two categories form the sphere of techno-economic innovation.

In contrast, social innovation includes three additional forms: regulative innovations, which transform explicit regulations and the mechanisms through which they are sanctioned; normative innovations, which challenge established value commitments and reshape legitimate social norms; and cultural innovations, which transform the established ways of interpreting reality by altering mental paradigms, cognitive frameworks, and habits of interpretation (Hämäläinen & Heiskala, 2007, p. 59). While techno-economic innovations are often associated with business dynamics, normative and cultural innovations tend to generate deeper social transformations that extend beyond the marketplace.

2.1 Technological Innovation and Its Limits

Technological innovation is traditionally defined as the recombination or expansion of functional capabilities (Dosi, 1982). In Schumpeterian terms, innovation disrupts economic equilibrium by introducing new production possibilities that transform industries and competitive structures (Schumpeter, 1934).

Tornatzky and Fleischer (1990) describe technological innovation as both the process of introducing new technological tools into a social environment and the tools themselves. The innovation process is influenced by two key elements: technological knowledge derived from scientific research and technological development that integrates physical artifacts with social contexts and practices.

Innovation strongly influences customer preferences and market competition. King and Tucci (2002) and Marvel and Lumpkin (2007) demonstrate how new technologies reshape consumer choice and competitive dynamics by enabling new products (goods and services). Technological innovation can also extend the lifecycle of existing products through updates or improvements, delaying decline and prolonging relevance in the market (Berenson & Mohr-Jackson, 1994).

Fernandes (2014) argues that technological innovation concerns the application of knowledge to produce tangible outcomes. The Technological Innovation Construct Model maps this domain through two axes: the Creation Process, ranging from procedural to loose, and the Value Curve Outcome, ranging from modified value curves to entirely new ones. This framework generates four archetypes:

Planned/Structured Innovation - This type of innovation emerges from formal research and development processes that follow structured procedures to achieve predictable results. Hybrid vehicles, communication satellites, early drones, computer systems, and programming languages illustrate this archetype. Such innovations typically support Upgrading Innovation strategies, which focus on incremental technological improvement.

Targeted/Objective-Driven Innovation - These innovations respond to clearly defined market needs and often emphasize design and user experience. Cirque du Soleil provides an example by redefining the traditional circus format through theatrical sophistication and artistic design. Similarly, design furniture, specialized equipment, jewelry, and artistic artifacts represent innovations that combine aesthetic and functional elements to address specific market segments. These innovations often support Value-Added Innovation strategies, which enhance intangible value.

Adopted/Adapted Innovation - This archetype is based on imitation or adaptation of existing knowledge, frequently leading to incremental improvements or cost reductions. Modified household appliances, updated sports equipment, and redesigned utilitarian furniture exemplify everyday forms of this innovation. Such innovations often underpin Turnaround Innovation strategies, which rely on commoditization and adaptation.

Serendipitous/Stochastic Innovation - This form of innovation emerges from unexpected discoveries within experimental environments. Famous examples include penicillin, Velcro, the microwave oven, and Post-it Notes. These innovations often generate entirely new value curves and may serve as the foundation for Breakthrough Innovation strategies.

The Technological Innovation Construct Model demonstrates that technological innovations can influence markets and consumer behavior in multiple ways. However, technological innovation alone rarely guarantees cultural transformation. Sociotechnical transition research indicates that technological systems become transformative only when embedded within changing social practices, institutional frameworks, and cultural meanings (Geels, 2002). Technology therefore operates within broader systems of interpretation and social practice rather than determining cultural change by itself.

2.2 Value as Socially Constructed

Contemporary innovation theory increasingly recognizes that value is not solely embedded in physical products (goods). Service-dominant logic reframes value as co-created through interactions between firms, consumers, and institutions (Vargo & Lusch, 2008). In this perspective, value emerges in use and is phenomenologically determined by the experiences of users within specific contexts.

Consumer Culture Theory further emphasizes that marketplace resources contribute to identity formation and symbolic negotiation (Arnould & Thompson, 2005). Products therefore function not only as functional tools but also as cultural resources through which individuals construct meaning, express identity, and participate in social narratives.

From this perspective, innovation must be evaluated not only through functional performance but also through its ability to reshape systems of value recognition.

Before understanding cultural innovation, it is therefore necessary to revisit the concept of value itself. Value can be defined as the relationship between benefits and sacrifice. When individuals seek to obtain a product (good or service) in order to derive benefits, some form of sacrifice - such as money, time, or effort - is required to obtain it.

Products generate multiple forms of value. Jensen (2005) identifies several dimensions, including use value (utility), economic value (exchange value), cultural value (symbolic meaning), and perceived value (experience).

To operationalize this multifaceted understanding of value, Fernandes (2012) proposes the Holistic Value Construct Model, a visual and integrative framework that maps the value creation journey from abstract concepts to culturally meaningful products. The model is structured along two axes:

Vertical Axis – Value Materialization - This axis ranges from simple processes (distribution and consumption) to complex processes (research, development, and conceptualization).

Horizontal Axis – Value Form - This axis ranges from tangible value (utility and price) to intangible value (ideas, symbolism, and meaning).

These axes create four interconnected quadrants:

Complex-Intangible (R&D / Conceptualization). This domain represents the genesis of value, where scientific discoveries, abstract ideas, and creative concepts originate.

Complex-Tangible (Technology / Production). In this quadrant, intangible concepts are transformed into functional products through engineering, scientific knowledge, and manufacturing.

Simple-Intangible (Culture / Construction). Here, products acquire symbolic meaning through branding, storytelling, and social adoption, influencing attitudes and cultural identity.

Simple-Tangible (Distribution / Utilization). This domain represents the commercial sphere where exchange occurs and use value is realized by consumers.

The model can be illustrated through contrasting examples. A coffee machine typically follows the technological path: an idea originating in the conceptual quadrant becomes engineered and manufactured before being distributed and used. Shakespeare's *Romeo and Juliet*, by contrast, follows the cultural path: a creative concept generates symbolic meaning through performance and interpretation, with its greatest value residing in cultural significance rather than physical form.

While the Holistic Value Construct Model maps the static domains of value creation, innovation acts as the dynamic force that moves ideas across these domains. Innovation can therefore follow two fundamental trajectories: technological production and cultural construction.

2.3 Cultural Innovation

Practice theory suggests that social life is organized through routinized configurations of meaning, competence, and material arrangements (Shove, Pantzar & Watson, 2012). Innovations become socially significant when they reorganize these configurations and stabilize new practices. Cultural transformation therefore requires the institutionalization and repetition of new practices until they become normalized.

Verganti (2009) distinguishes between innovation driven by technological advancement and innovation driven by the reinterpretation of meaning. Radical shifts in meaning may occur independently of technological complexity, demonstrating that cultural change can be as transformative as technological invention.

Building on this insight, cultural innovation can be conceptualized as the transformation of meaning that becomes stabilized through social practices and legitimized through institutions.

Fernandes (2014) proposes that innovation possesses a strong cultural vector capable of reshaping human behavior. Cultural innovation involves the creation or transformation of collective behaviors and shared meanings. Drawing on Schwartz's (1996) theory of basic human values, Fernandes develops the Cultural Innovation Construct Process Model, which maps cultural innovation across two axes:

- Cultural Collective Values: Conservation ↔ Openness to Change
- Cultural Individual Values: Self-Enhancement ↔ Self-Transcendence

The interaction of these dimensions produces four archetypes of cultural innovation.

Neowel – Technology-Driven Cultural Innovation. Neowel innovations occur when new technologies generate new habits, practices, and social norms. Smartphones and social media platforms provide clear examples. These technologies transformed communication patterns, attention structures, and everyday routines, illustrating how technological artifacts can reshape social behavior.

Beutel – Aesthetic-Driven Cultural Innovation. Beutel innovations emerge from aesthetic transformation. Artistic movements, fashion revolutions, and design innovations reshape symbolic expression and cultural identity. Examples include the societal impact of the miniskirt in the 1960s or the emergence of new music genres such as jazz or hip-hop. These innovations redefine how individuals express identity and participate in cultural communities.

Moral – Norm-Driven Cultural Innovation. Moral innovations originate from new codes, regulations, and social norms that redefine acceptable behavior. Public policies such as anti-drunk-driving campaigns, smoking restrictions, and vaccination mandates demonstrate how institutional frameworks can reshape collective practices and moral expectations.

Gnosil – Knowledge-Driven Cultural Innovation. Gnosil innovations emerge from new knowledge that transforms lifestyles and everyday practices. Scientific insights into health, nutrition, or environmental sustainability often generate such changes. The rise of jogging as a mass activity, the diffusion of digital self-tracking technologies, and the adoption of health-based diets illustrate how new knowledge frameworks inspire behavioral change.

These four archetypes demonstrate that cultural innovation can arise from multiple triggers: technology, aesthetics, institutional norms, or knowledge. Each pathway influences consumer behavior and social practices in different ways.

Understanding the interplay between technological and cultural innovation is essential for strategic management. While technological innovation introduces new capabilities, cultural innovation determines how those capabilities become embedded in everyday life. The Cultural Innovation Construct Process Model therefore provides a conceptual foundation for analyzing how products move beyond functional utility to become part of broader cultural systems.

The concept of cultural innovation will serve as the foundation for developing a multi-level framework capable of explaining the rise and fall of products, as well as their transformation into enduring cultural practices.

3. Research Methodology

The methodology combined exploratory literature review, historical market analysis, and cross-sector case comparison. First, innovation domains (technology, consumer products (goods and services), media formats, lifestyle trends, and industrial equipment) were mapped using academic literature, industry reports, and historical archives from business press publications. This initial mapping allowed the identification of sectors where innovation cycles typically exhibit rapid adoption followed by decline or transformation.

Second, a dataset of innovation cases was constructed. Products (goods and services) were selected according to three criteria: (i) rapid adoption or explosive market growth, (ii) strong cultural visibility or behavioral impact, and (iii) significant decline, transformation, or absorption into other technologies or platforms within approximately two to three decades. Sources used included technology

history publications, market research reports, consumer behavior studies, and digital archives of newspapers and magazines.

Third, each case was documented using multiple indicators of diffusion and decline. These included sales trajectories, product lifecycle data, media attention cycles, technology adoption patterns, and evidence of substitution by new products (goods or services). The aim was not to conduct statistical modeling but rather to construct a comparative cultural analysis of innovation trajectories.

Finally, the identified cases were classified using the Cultural Innovation Construct Process Model (Fernandes, 2014). Each example was analyzed to determine the dominant cultural driver behind its adoption: technological enablement (Neowel), aesthetic symbolism (Beutel), normative regulation (Moral), or knowledge-driven lifestyle change (Gnosil). This classification allowed the comparison of innovation lifecycles and the identification of patterns explaining why certain innovations become temporary fads while others generate durable cultural change.

4. Research Data

4.1 Researched products **Entertainment & Toys**

1. Tamagotchi (1990s)

Virtual pet craze. Massive global boom → sharp drop → periodic nostalgic revivals.

The Tamagotchi is an iconic virtual pet, created by Bandai in 1996, that requires constant care such as feeding, hygiene, and attention to evolve and survive. It faded rapidly due to intense, high-maintenance care requirements that made them disruptive in schools, causing widespread bans. The inability to pause the, often fatal, virtual pet experience led to boredom, frustration, and overproduction that resulted in significant losses for Bandai (Kline, 2003; Sato, 2025).

2. Fidget Spinners (2017)

Viral global trend within months. Collapsed just as quickly.

The fidget spinner craze of 2017 was one of the fastest and most intense consumer phenomena of the digital age, transforming an old therapeutic accessory into a must-have accessory worldwide before almost completely disappearing (Bloom, 2018; Duhigg, 2017).

3. Beanie Babies (1990s)

Collectible toy bubble driven by speculation. Secondary market crashed.

The Beanie Bubble (2023) is an Apple TV+ comedy-drama based on the 1990s Beanie Baby craze, highlighting the women behind Ty Warner's (Zach Galifianakis) success. The film focuses on how three women (played by Elizabeth Banks, Sarah Snook, and Geraldine Viswanathan) helped turn the plush toys into a cultural phenomenon (Aziz, 2015; Macaulay, 2022; Bissonnette, 2016).

4. Guitar Hero / Rock Band (2005–2010)

Rhythm game phenomenon. Oversaturation + fatigue led to steep decline.

Guitar Hero (2005–2010) was a meteoric, billion-dollar cultural phenomenon that transformed living rooms into virtual concerts using plastic guitar controllers. Developed initially by Harmonix, it rose rapidly on the back of iconic rock, but Activision's aggressive, oversaturated release schedule—multiple titles per year—and high-cost hardware bundles caused rapid consumer fatigue and a swift downfall by the early 2010s (Oreate, 2026; Snider, 2008).

Media & Storage Formats

5. 3D Televisions (early 2010s)

Marketed as the “next big thing.” Poor adoption → discontinued by most manufacturers.

3D television has officially failed as a mainstream technology, with major manufacturers LG and Sony—the last holdouts—phasing out 3D support in their 2017 lineups to focus on 4K and HDR. The decline was driven by lack of consumer interest, high costs, inconvenient glasses, and a shortage of content, effectively killing the home 3D market (Biggs, 2017; Cowley, 2022).

6. VHS Tapes

Dominated home video → replaced by DVD → replaced by streaming.

The end of VHS's reign began with the introduction of DVD in the late 1990s, which offered superior picture quality, interactive menus, and didn't require rewinding. DVDs and later streaming services like Netflix replaced bulky tapes, leading to the final manufacturing of VCRs in 2016, though VHS maintains a nostalgic cult following (Cusumano et al, 1992; Onotone, 2024).

7. MiniDisc (Sony)

Innovative hybrid between CD and digital → failed due to MP3 revolution.

Launched by Sony in 1992, the MiniDisc (MD) aimed to replace cassette tapes with a durable, recordable, and high-quality portable digital format. While it gained a cult following and strong popularity in Japan for its, MD failed to achieve mainstream global dominance due to high initial costs, competition from cheaper CD-Rs, and the eventual rise of MP3 players (Pohlmann, 1997; Baxman, 2025).

8. HD DVD

Lost format war to Blu-ray.

The HD DVD vs. Blu-ray "format war" (2006–2008) was a battle for the high-definition successor to DVD, won by Sony-backed Blu-ray. While HD DVD (backed by Toshiba) was cheaper to produce, Blu-ray offered superior capacity (50GB vs. 30GB) and gained critical studio/retailer support (notably Warner Bros, Walmart) plus the PlayStation 3's built-in player (Koo et al., 2011; McIntyre 2009).

9. iPod (Dedicated MP3 players)

Revolutionary product → absorbed into smartphones.

The iPod was a series of portable media players and multi-purpose mobile devices that were designed and marketed by Apple from 2001 to 2022. Apple officially discontinued the iPod line in May 2022, ending over 20 years of production for the iconic music player. The "fall" was not due to failure, but rather obsolescence, as the iPhone—which combined music, internet, and phone functionality—rendered dedicated MP3 players unnecessary. The rise of streaming services also shifted consumer habits from downloading music to cloud-based listening (Levy, 2007; Forde, 2021).

10. Floppy Disks

Once essential → completely obsolete.

The fall of the floppy disk (primarily the 3.5-inch diskette) was driven by its tiny 1.44 MB capacity, slow speed, and fragility, which could not keep up with growing data needs, culminating in its decline in the late 1990s and cessation of manufacturing by Sony in 2011. It was replaced by higher-capacity, more durable alternatives like CDs, USB flash drives, and eventually cloud storage (Ceruzzi, 2003; Holwerda, 2024).

Technology & Gadgets

11. BlackBerry Phones

Corporate communication king → crushed by iPhone/Android ecosystem.

BlackBerry's rapid fall from market leader to irrelevance stemmed from its failure to adapt to the touchscreen, app-driven, consumer-focused smartphone era initiated by the iPhone. Sticking to physical keyboards and prioritizing security over multimedia, they underestimated the shift toward entertainment and lost to Apple and Android's robust ecosystems (Spintzeal, 2025; McNish and Silcoff, 2016).

12. Palm Pilot / PDAs

Pre-smartphone productivity tools → merged into smartphones.

The fall of Palm Pilot and Personal Digital Assistants (PDAs) was driven by the rise of multifunctional smartphones (iPhone, BlackBerry) in the late 2000s, which combined computing with cellular connectivity, making separate, non-connected organizers obsolete. Despite initial market dominance, Palm failed to adapt quickly, struggled with hardware, and was acquired by HP in 2010 (Langweiler, 2025; Butter and Pogue, 2002).

13. Google Glass (Consumer version)

Hyped wearable tech → privacy backlash → niche enterprise use.

Google Glass failed as a consumer product (good) due to severe privacy concerns, a high price point, and limited, unproven functionality, causing it to be widely mocked as "geeky" and intrusive. Despite a later pivot to enterprise use, the device was finally discontinued in March 2023 (Reynold, 2015; Bentley University, 2018).

14. Netbooks (2008–2012)

Cheap mini laptops → replaced by tablets and ultrabooks.

Netbooks rapidly declined between 2011 and 2013 due to the 2010 introduction of the iPad, which offered superior portability and usability for the same market. Underpowered hardware, slow performance with Windows 7, cramped keyboards, and low manufacturer profit margins, combined with the rise of cheaper, better-performing laptops (Ultrabooks), made netbooks obsolete within six years (Arthur, 2012; O'Brien, 2013).

15. Dedicated GPS Devices (TomTom, Garmin for cars)

Dominant in 2000s → largely replaced by smartphone navigation.

The market for dedicated, standalone GPS devices (e.g., TomTom, Garmin) has collapsed, effectively rendered obsolete for general driving by free, real-time smartphone apps like Google Maps and Apple Maps. Slow, outdated user interfaces and the convenience of all-in-one smartphones drove this decline. While consumer PNDs (Personal Navigation Devices) fell, high-end, niche, and built-in automotive units have persisted (Paul, 2015; Lavrinc, 2018).

Games & Fads

16. Pogs (1990s)

Schoolyard phenomenon → disappeared quickly.

Pogs, the massive 1990s playground craze, rapidly declined by 1996–1997 due to market oversaturation, school bans over gambling ("for keeps" rules), and a shift toward digital entertainment like Game Boy Color. The fad died fast when rare, holographic, and official World Pog Federation sets became ubiquitous, destroying the thrill of trading (Davis, 2026; Holmes, 2025).

17. Yo-Yo Boom (late 1990s revival)

Massive short-term resurgence → faded again.

The fall of the yo-yo boom refers to the rapid decline in popularity that invariably follows the peak of a "yo-yo craze," a phenomenon that has occurred multiple times in history (notably in the 1960s, 1990s, and sporadically since). These busts are generally caused by market saturation, the fading of novelty, and the transition of the toy from a popular, accessible fad into a niche, skill-intensive hobby (Crosby, 2002; Viswaveda, 2025).

18. Pokémon

Initial hype-driven demand → normalized niche use.

The perceived "fall" of Pokémon stems from a decline in game quality, specifically with buggy, unpolished releases like Scarlet and Violet. Despite being the highest-grossing media franchise, the games often feel rushed, prioritizing merchandise and a fast, three-year development cycle over deep, innovative gameplay (Tobin, 2004; Parra, 2023).

Digital Platforms & Services

19. MySpace

Leading social network → overtaken by Facebook.

The fall of MySpace was one of the fastest and most dramatic collapses in the history of technology, going from a valuation of \$12 billion in 2007 to being sold for just \$35 million in 2011. Although it was the pioneer that defined the era of social networking, a combination of corporate mismanagement, technological stagnation, and the rise of Facebook sealed its fate (Stewart, 2025; Ishrat, 2024).

20. MSN Messenger

Dominant messaging platform → replaced by WhatsApp, Messenger, etc.

MSN Messenger (later Windows Live Messenger) was a dominant instant messaging client launched by Microsoft in 1999 that fell from grace due to the rise of social media, smartphones, and a failed transition to mobile, culminating in its closure in 2013. At its peak in 2009, it boasted over 330 million monthly active users, but could not compete with emerging, more integrated platforms like Facebook and WhatsApp (Pardo, 2024; EduBirdie, 2022).

21. Vine

Huge cultural impact → shut down → replaced by TikTok-style short video platforms.

Vine, the pioneering 6-second, looping video app founded in 2012 and bought by Twitter, shut down in January 2017 due to intense competition from Instagram and Snapchat, a failure to monetize, and a lack of support for creators. Its inability to adapt to longer video formats, poor internal management, and the departure of top talent to other platforms led to its quick demise (Lateef, 2022; Dew, 2024).

Household & Consumer Products

22. Fax Machines (home use)

Once essential → now largely obsolete outside specific sectors.

Fax machines, which reached peak popularity in the 1980s and 1990s, have largely fallen from grace due to the rise of email, cloud computing, and high-speed internet. While they are considered largely obsolete in most businesses, they remain in use in specific industries like healthcare, law, and government due to their perceived, albeit often mistaken, security, regulatory compliance (such as HIPAA), and for sending legally binding documents (Solymar, 2020; Coopersmith, 2015).

23. Segway (original personal transporter)

Massive hype → niche adoption.

The Segway, launched in 2001 with massive hype as a revolutionary transportation device, failed due to a high price, impracticality (too heavy/large), safety concerns, and an "uncool" image. Sales reached only 1% of projections by 2007, leading to its acquisition by Ninebot in 2015 and final production stop in 2020 (Clark et al., 2019; Sloane, 2012).

24. Polaroid Instant Cameras (original era)

Declined with digital cameras → revived later as retro product.

The fall of the original Polaroid Corporation (1937–2008) was a slow-motion corporate tragedy caused by a refusal to adapt to the digital age, a fatal reliance on high-margin film sales, and a series of poor strategic decisions. While the company reached its financial peak in 1991 with \$3 billion in revenue, it filed for bankruptcy just ten years later in 2001, finally ceasing analog film production in 2008 (Bonanos, 2012; Dudic, 2021).

Transportation & Mobility

25. PT Cruisers / Certain iconic car models

Huge cultural appeal → short lifecycle popularity.

The Chrysler PT Cruiser (2001–2010) is a quintessential example of a "retro" automotive trend that experienced a rapid rise followed by a steep decline, ultimately becoming a cultural punchline. The PT Cruiser's decline in the market is attributed to a lack of significant updates and investment from Chrysler, leading to decreased consumer interest. Once popular for its unique design, it became common and less desirable, ultimately contributing to its reduced sales and production (Serban, 2021; Evans, 2025).

26. Hoverboards (2015 craze)

Exploded in popularity → safety issues → demand faded.

Hoverboards, a massive 2015 holiday trend, quickly faded due to severe safety hazards, including lithium-ion batteries that posed fire risks and caused numerous injuries. The market was oversaturated with cheap, unbranded, and unregulated products, leading to major retailers like Amazon banning them and airlines restricting travel (Cendrowski, 2016; Wangfred, 2026).

Software & Internet Trends

27. Adobe Flash

Core of early web interactivity → completely phased out.

Adobe Flash was officially discontinued on December 31, 2020, due to severe security vulnerabilities, poor performance on mobile devices, and the rise of open standards like HTML5. Apple (Steve Jobs) and major browser developers (Google, Mozilla) phased out support, leading to its death (Root, 2017; Nallawalla, 2025).

28. Clubhouse (audio social app)

Pandemic-era boom → rapid user decline.

Clubhouse's rapid ascent as a pandemic-era audio app (peaking at ~17M+ users in 2021) collapsed due to the return of in-person life, poor moderation, waning content quality, and competition from platforms like Twitter Spaces. The app lost roughly 80% of its user base by late 2021, forcing major staff cuts and shifting it from a mainstream sensation to a niche platform (Ivelina, 2024; Leroux, 2025).

Food & Beverage

29. Low-Fat / Fat-Free Processed Foods (1990s–2000s)

Marketed as the healthy future → later criticized for added sugars → replaced by whole-food and low-carb trends.

The fall of low-fat/fat-free processed foods is driven by a shift toward whole, nutrient-dense foods and away from ultra-processed items, which are increasingly linked to obesity, diabetes, and cardiovascular issues. Consumers now prioritize gut health and satiety, favoring full-fat dairy over products often masked with sugar and additives to compensate for flavor (Ludwig et al., 2022; Dicken, 2025).

30. Margarine (Industrial Trans-Fat Era)

Widely promoted as healthier than butter → health concerns over trans fats → reformulated or declined.

The fall of margarine, once hailed as a healthy, low-cholesterol alternative to butter, was driven by scientific evidence in the 1990s linking partially hydrogenated oils (PHOs)—the primary source of industrial trans fat—to severe cardiovascular disease. This revelation transformed margarine from a "health food" into a "foodie villain," causing consumption to plummet as consumers returned to butter (Munekata et al., 2021; Silva et al., 2021).

31. Meal-in-a-Bottle (e.g., Soylent early hype)

Positioned as future of food → remains niche rather than mainstream replacement.

The "fall" or decline of Soylent from its peak, early 2010s Silicon Valley hype was not a total failure, but rather a shift from being hailed as "the end of food" to becoming a niche lifestyle product. The brand faced significant challenges due to health-related product recalls, public relations issues surrounding its name (reminiscent of the dystopian Soylent Green), and the realization that consumers still preferred the social and sensory experience of eating (Widdicombe, 2014; Mahdawi, 2018).

32. Frozen Yogurt Boom (early 2010s)

Explosive franchise growth → oversaturation → market contraction.

The frozen yogurt boom (roughly 2009–2014) collapsed due to extreme market oversaturation, changing consumer health perceptions, and the rise of dairy-free alternatives. As chains like Pinkberry Wikipedia and Orange Leaf dirtamericana.com expanded rapidly, the "self-serve" model became too common, leading to, oversaturation, high overhead costs, and declining demand (Gulino, 2022; Bennet, 2016).

Medical & Health

33. Standalone MP3-Based Fitness Trackers (e.g., Nike+iPod Kit)

Early wearable fitness tracking → absorbed into smartwatches.

The fall of standalone, MP3-based fitness trackers like the Nike+iPod Sport Kit (released 2006) was driven by the rapid convergence of technology, which rendered single-purpose devices obsolete in favor of all-in-

one smartphones and, eventually, specialized smartwatches. The Nike+iPod system was phased out around 2014, and services were officially retired by Nike in 2018 (Nike, 2006; Stein, 2014).

34. Dedicated Home Blood Pressure Kiosks (Pharmacy-based)

Common before smart home monitors → replaced by affordable digital home devices.

The use of dedicated, public-use blood pressure kiosks in retail locations has faced a decline in favor of more personalized, convenient, and accurate methods, driven by advancements in consumer technology and shifts in healthcare, particularly accelerated by the COVID-19 pandemic. While kiosks are still utilized, they are considered less acceptable and less effective than home monitoring (Chung et al., 2016; Wall et al., 2022; Green et al., 2022).

35. Pagers in Hospitals (Widespread until 2010s)

Reliable communication tool → replaced by secure smartphone messaging systems.

Pagers, which were widely used in hospitals from the 1980s until the early 2010s, have experienced a slow decline rather than a sudden disappearance, with many institutions still using them for critical, time-sensitive communication, even as they are phased out for general messaging. While smartphones and secure messaging apps are replacing them, the "fall" of the hospital pager is marked by a transition towards more efficient, two-way communication tools (NHS, 2019; Olinqua, 2023).

36. Standalone Digital Thermometers (Basic models)

Replaced by smart thermometers integrated with mobile health apps.

The decline in standalone digital thermometers (basic models) is largely due to the transition to smart, connected devices that offer more advanced functionalities than simply reading the temperature. While basic digital models are still widely used in price-sensitive markets, they are losing relevance in environments where speed, data integration, and hygiene are priorities (Knake, 2011; Delitala, 2014).

Transportation

37. Car CD Changers (Multi-disc in trunk)

Luxury innovation → eliminated by MP3 and streaming.

The era of the in-car CD changer has officially ended, with major manufacturers removing CD players from new models in favor of connected, streaming-based digital infotainment systems. This shift, which marks the end of a 40-year staple in automotive entertainment, is driven by the ubiquity of smartphones, streaming services like Spotify and Apple Music, and a shift toward cleaner, minimalist dashboard designs (Snapes, 2024; Martin, 2020).

38. Ride-Sharing Carpool Boards (Pre-App era)

Physical or web bulletin systems → absorbed by Uber, Lyft, BlaBlaCar apps.

The era of widespread, low-cost app-based carpooling—such as Uber Pool and Lyft Line—has effectively ended, driven by the COVID-19 pandemic, poor profitability, and low consumer demand for shared, potentially inconvenient trips. While some services have been rebranded as "Share" or "X Share," the model has fundamentally shifted away from the, at times, heavily discounted, mass-market adoption of the 2010s (Tripathi, 2023; Jagannatham, 2025).

39. Diesel Passenger Car Boom (Europe 2000–2015)

Dominant for fuel efficiency → decline after emissions scandals + EV shift.

The European diesel passenger car market is in a sustained, rapid decline, with its market share falling to just a small percentage of new car sales in the European Union in 2025. This downward trend is driven by stricter emissions regulations, the aftermath of the "Dieselgate" scandal, and a rapid shift toward electrified vehicles (EVs and hybrids), which have begun to outsell traditional diesel models (Butler, 2018; Rosal, 2022).

40. Portable Car DVD Players

Essential for long trips → replaced by tablets and streaming.

The era of the portable car DVD player has largely come to an end,

replaced by the ubiquity of tablets and high-speed mobile data. While once a staple for long family road trips, these devices are now a niche product as the industry shifts toward digital-first entertainment (Bowe, 2020; Thomson, 2023).

Fashion & Wearables

41. Livestrong Silicone Bracelets (Mid-2000s)

Symbolic trend item → rapid saturation → disappeared.

The iconic yellow Livestrong silicone bracelets, which sold over 100 million units, saw their rapid decline following Lance Armstrong's 2013 confession to using performance-enhancing drugs. Nike severed ties with the foundation that year, ending production of the bracelets, causing them to fade from a fashion staple to a largely forgotten 2000s trend (McCullar, 2024; Simpson, 2013).

42. Google Glass (Consumer fashion attempt)

Wearable tech hype → privacy/social resistance → niche enterprise use.

Google officially ended sales of the Google Glass Enterprise Edition on March 15, 2023, effectively closing the chapter on its decade-long augmented reality endeavor. Support for the wearable device continued until September 15, 2023. Despite pivoting from a failed consumer product in 2013 to a targeted, industrial, enterprise tool in 2017, the product ultimately failed to gain widespread adoption (Leswing, 2023; James and Perez, 2025).

43. Fast Fashion "Micro-Trend" Brands (Certain early 2010s online brands)

Exploded via social media → replaced by new ultra-fast digital-native competitors.

The early 2010s "micro-trend" fast fashion era, characterized by rapid, short-lived, influencer-driven styles (e.g., scene, swag, and early Instagram-driven aesthetics), is undergoing a significant decline, with many defining brands fading or failing to maintain their market dominance. Driven by consumer burnout, environmental awareness, and the sheer pace of the trend cycle, this shift marks a move toward a more "vibe-based" or sustainable, long-term fashion philosophy (Francombe, 2025; Suriarachchi, 2021).

44. Heelys (Shoes with Wheels)

Massive youth trend → faded into niche novelty.

The Heelys brand didn't disappear, but its cultural dominance "died" around 2009 due to a combination of safety bans, market saturation, and financial instability. Although the shoes continue to be manufactured and sold today, the company has gone through several bankruptcies and ownership changes that have drastically reduced its market value (Holly, 2025; Skates.co.uk, 2025).

Industrial & Business Equipment

45. Overhead Projectors

Standard in classrooms/offices → replaced by digital projectors and screens.

Overhead projectors (OHPs), staples of classrooms and boardrooms from the 1960s to 1990s, faded away in the 2000s due to the rise of digital alternatives. They were replaced by document cameras, smartboards, and laptop-driven projectors (like PowerPoint) that offered better image quality, multimedia integration, and reduced maintenance (Cuban, 2001; Abela, 2025).

46. Dedicated Fax Servers (On-Premise)

Corporate infrastructure → replaced by email + cloud document systems.

The era of dedicated on-premise fax servers is ending, driven by the shift to cloud-based, software-as-a-service (SaaS) models, the phasing out of analog phone lines (POTS), and the need for greater security and mobility. While fax technology itself remains active, particularly in regulated industries like healthcare and finance, organizations are rapidly replacing physical hardware, fax boards, and maintenance-heavy servers with digital, internet-based alternatives (Miner, 2022; Popp, 2016).

47. Physical Time Clocks with Punch Cards

Replaced by biometric and app-based attendance systems.

Cloud-based software has replaced physical time clocks in many workplaces. Employees can clock in from their phones, tablets, or computers. Biometric readers prevent buddy punching. GPS tracking confirms that remote workers are where they say they are (Panos, 2026; Siegel, 2018).

48. Standalone Point-of-Sale Terminals (Non-connected)

Replaced by cloud-based, tablet-driven POS systems.

The era of standalone, non-connected, and "clunky" countertop point-of-sale (POS) terminals is rapidly ending, driven by the demand for faster, integrated, and more flexible payment solutions. Traditional, isolated terminals are being replaced by smart, cloud-connected, and mobile systems (SoftPOS) that offer improved efficiency, better user experience, and real-time data analytics (Kumar, 2024; Rolfe, 2025).

Communication

49. Landline Home Phones (Mass-market use)

Core household utility → replaced by mobile phones.

The era of traditional landline telephones (PSTN - Public Switched Telephone Network) is coming to an end, driven by technological obsolescence, high maintenance costs, and the massive shift to mobile and digital solutions (Giles, 2024; Fortney, 2025).

50. Prepaid Phone Cards (International calls)

Huge business in 1990s–2000s → replaced by VoIP and WhatsApp calls.

Prepaid international phone cards are rapidly declining due to the rise of VoIP apps (WhatsApp, Skype), affordable international mobile plans, and eSIM technology, which offer better rates and convenience. While still available, they are largely considered obsolete, replaced by digital, real-time connectivity options (Allen, 2012; Tessler, 2008).

51. SMS-Based Ringtones & Wallpapers Services

Major telecom revenue stream → replaced by smartphones and app stores.

The era of SMS-based ringtone and wallpaper services, which peaked in the mid-2000s with companies like Jamster and its "Crazy Frog" character, largely ended due to the rise of smartphones, app stores, and, most importantly, the ability to download full songs directly over the internet. These services, which often relied on confusing subscription models, declined as mobile technology allowed users to easily create their own ringtones or download them for free, rendering the \$5-per-text model obsolete (White, 2026; DJBooth, 2015).

52. Walkie-Talkie Push-to-Talk Phone Plans (e.g., Nextel)

Business communication tool → absorbed into smartphone apps.

The era of dedicated walkie-talkie push-to-talk (PTT) phone plans, headlined by Nextel and its Integrated Digital Enhanced Network (iDEN) technology, effectively ended by **2013**, when Sprint officially shut down the network to re-purpose the spectrum for 4G LTE. While the specific "chirp" and, instant, low-latency 2G technology of Nextel are gone, the PTT concept survived by evolving into app-based services (Push-to-Talk over Cellular, or PoC) on modern smartphones (Moraga, 2026; Oswald, 2012).

Computing & Digital Life

53. Digital Cameras (Compact Point-and-Shoot)

Mass-market electronics → absorbed into smartphones.

The era of mass-market compact digital (point-and-shoot) cameras has effectively ended, with the market suffering a collapse of over 97% since its peak in 2008. However, the category has not disappeared completely, transforming into a niche market focused on premium models and a recent wave of "vintage" nostalgia (Cooke, 2025; Reichmann, 2009).

54. Standalone GPS Running Watches (Basic models)

Absorbed into smartwatches.

The market for basic GPS running watches (entry-level models without advanced "smart" functions) is coming to an end due to technological convergence: features that were once exclusive to dedicated devices are now integrated into cheaper and more versatile smartwatches and fitness trackers (Mandaue, 2023; Williams, 2016).

55. USB Flash MP3 Players (Non-smart)

Obsolete due to streaming + smartphones.

USB flash MP3 players, popular in the 2000s, declined rapidly due to the rise of smartphones, which consolidated music storage, internet streaming, and apps into one device. Improved battery life, larger storage capacities in phones, and the convenience of cloud services like Spotify made carrying a separate, often low-capacity USB player redundant (Scott, 2023; McCarthy, 2025).

56. CD/DVD Burning Software Suites (Mass consumer use)

Core PC feature → irrelevant in cloud-storage era.

CD/DVD burning software suites for mass consumers declined primarily due to the shift toward digital, cloud-based, and streaming technologies, which offer faster, cheaper, and more convenient alternatives for data storage and media consumption. Physical media, such as blank discs, became largely irrelevant for daily computing, while high-speed internet and portable devices replaced the need to burn physical discs for music or movies (Posch, 2025; Kleina, 2026).

Finance & Payments**57. Physical Bank Branch Expansion Model (2000s growth)**

Aggressive expansion → reversed by digital banking.

The physical bank branch expansion model, which peaked mainly after the turn of the millennium, is failing due to a fundamental shift from physical to digital banking, high operational costs, and post-2008 financial restructuring. While branches once served as the primary, essential point of interaction, they have become an inefficient, high-cost, and low-traffic model in an era where consumers prefer 24/7 access via mobile apps (Keil and Ongena, 2024; Campbell, 2024).

58. Dedicated Token Devices for Online Banking (Basic RSA tokens)

Replaced by smartphone authentication apps.

Dedicated token devices for online banking are falling in usage because banks are replacing them with more convenient, secure, and cost-effective digital alternatives, such as in-app biometric authentication and mobile-based soft tokens. While they were once the standard for two-factor authentication (2FA), they are now considered outdated due to high logistical costs, user inconvenience, and vulnerability to phishing (Belfer, 2015; Tham, 2025).

59. Travel Agencies (Mass consumer booking)

Disrupted by online booking platforms (though luxury niche survives).

Traditional travel agencies, particularly those focused on mass-market, one-size-fits-all, pre-packaged, or manual booking, are experiencing a massive decline, with many facing challenges due to the rise of Online Travel Agencies (OTAs), direct-to-consumer booking, and AI-driven personalization. While many of agents report reduced bookings, the industry has shifted, with many survivors transitioning to personalized, luxury, or niche travel, rather than traditional, high-volume consumer, travel (Buhalis and Law, 2008; Alderson, 2025).

Media & Entertainment Services**60. DVD Rental Stores (Blockbuster model)**

Dominant retail service → destroyed by streaming.

The fall of DVD rental stores, epitomized by Blockbuster's 2010 bankruptcy, resulted from failing to adapt to digital disruption, relying on a flawed, late-fee-dependent business model, and ignoring consumer demand for convenience. Competitors like Netflix (via mail-order/streaming) and

Redbox offered superior, on-demand alternatives, causing the physical, store-based model to become obsolete (Mishra, 2022; Olito and Bitter, 2023).

61. Cable TV Premium Packages (Mass-market dominance)

Declining due to streaming platforms.

The decline of cable TV premium packages (mass-market dominance) is driven by a structural shift toward on-demand streaming, high costs, and a fundamental change in viewing habits. Traditional pay-TV subscriptions in the U.S. start dropping in 2023, and is projected that streaming will soon overtake cable in total TV consumption (Gagnon, 2025; Brock, 2023).

62. Standalone MP4 Portable Video Players

Short-lived innovation → replaced by smartphones.

The decline in standalone MP4 video players was driven by technological convergence, where the functionalities of various devices were absorbed by the smartphone. In the late 2000s, these devices peaked, but quickly became redundant as cell phones began to offer high-resolution screens, greater storage capacity, and constant connectivity (Fortune, 2026; Rana, 2013).

Education

63. CD-ROM Educational Encyclopedias (e.g., Encarta)

Revolutionary in 1990s → replaced by Wikipedia and online search.

The fall of educational CD-ROM encyclopedias, such as Microsoft Encarta, marked the end of a transitional era between printed knowledge and Web 2.0. Although they revolutionized access to information in the 1990s by defeating giants like the paper-based Encyclopædia Britannica, these tools eventually succumbed to the speed and free access of the internet (Cohen, 2009; Alderman, 2009).

64. Physical Language Learning CDs (Pre-app era)

Absorbed by Duolingo-style apps.

The decline of physical language learning CDs and similar pre-app audio resources is driven by the shift toward convenient, interactive, and on-demand digital solutions. Mobile apps and streaming services (e.g., Duolingo, Babbel, YouTube) offer immediate, on-the-go access, replacing the need to carry physical discs or use dedicated CD players. Physical media was often expensive, while app-based learning offers free or lower-cost, on-demand content, reducing the barriers to entry for learners (Lesley, 2025; Loewn et al., 2020).

Personal Care & Lifestyle

65. Standalone Electric Toothbrush Timers (Basic models)

Replaced by app-connected smart brushes.

Standalone electric toothbrush timers and basic electric toothbrush models have seen a decline in popularity and availability due to a shift towards higher-end, “smart” devices with built-in, integrated features. While they were once a popular, affordable entry point, they are being phased out in favor of feature-rich models like the Oral-B iO series (Price, 2026; Carter and Thorogood, 2013).

66. Tanning Beds (Mass consumer boom)

Health concerns → major decline.

The tanning bed industry, which saw a mass consumer boom in the 1980s and 1990s as an accessible, everyday beauty luxury, has experienced a significant decline due to health concerns, strict regulations, and changing beauty standards. However, this “fall” is not total, with recent, concerning trends showing a resurgence among younger demographics, partly driven by social media (The International Agency for Research on Cancer, 2026; Creed, 2025).

4.2 Insights from the research.

There is a clear pattern across the last 20–30 Years. Most products (goods and services) fall into one of these structural shifts:

- a) Absorbed into Smartphones (Camera, GPS, MP3, banking token, fitness tracker);
- b) Digitized & Cloud-Replaced (Fax, POS, encyclopedias, rental stores);
- c) Hype / Trend Saturation (Fidget spinners, bracelets, hoverboards);
- d) Health / Regulation Impact (Diesel cars, tanning beds, trans fats);
- e) Platform Disruption (Travel agencies, DVD rentals, prepaid calling cards).

An important observation has to be made - many modern products are hybrid archetypes, but one driver tends to dominate their emergence, as in Table 1.

Table 1 – Primary archetype drivers and decline trigger

| <i>Archetype</i> | <i>Primary Driver</i> | <i>Typical Decline Trigger</i> |
|------------------|-----------------------|--------------------------------|
| Neowel | Technology | Absorption by superior tech |
| Beutel | Aesthetics | Style fatigue / identity shift |
| Moral | Rules & norms | Regulatory change |
| Gnosil | Knowledge | Scientific/economic reframing |

Deeper Insight: Most 2020–2026 at-risk products fall into Neowel. That suggests something important. We are currently in a technology-acceleration cultural phase, where most innovations are platform-driven — and therefore highly vulnerable to platform absorption.

By contrast, Beutel-driven innovations tend to cycle (revivals possible), Moral-driven innovations are hardest to reverse, and Gnosil-driven innovations evolve gradually rather than collapse suddenly.

5. Cultural Innovation Fit

5.1 Distributions by Cultural Innovation Archetype.

For a better understanding, we apply the Cultural Innovation Construct Process Model (Fernandes, 2014) systematically to the original 1–66 historical examples. To avoid repetition, we group them by archetype. Some cases are hybrid, but we classify them by primary cultural driver at emergence:

Neowel (Technology-driven cultural innovation — new technologies create new habits and norms). These emerged mainly because new technology enabled new behaviors.

Fitting products: VHS; MiniDisc; HD DVD; iPod; Floppy disks; BlackBerry; Palm Pilot; Google Glass; Netbooks; Dedicated GPS devices; Fax machines (home use); Adobe Flash; Nike+iPod fitness kit; Pharmacy BP kiosks; Smart thermometers (basic digital wave); Car CD changers; Portable car DVD players; Overhead projectors; Fax servers; Punch-card time clocks; Standalone POS terminals; Landline home phones; Prepaid phone cards; Push-to-talk phone plans; Compact digital cameras; Standalone GPS running watches; USB MP3 players; CD/DVD burning software; Banking RSA tokens; MP4 portable video players; CD-ROM encyclopedias; Language-learning CDs; Basic electric toothbrush timers; MySpace; MSN Messenger; Vine; Clubhouse.

Pattern: Rise through technological novelty → decline through technological replacement or absorption.

Beutel (Aesthetic-driven cultural innovation — style, symbolic meaning, identity expression). These spread primarily through cultural style adoption and symbolic value.

Fitting products: Tamagotchi; Fidget Spinners; Beanie Babies; Guitar Hero / Rock Band; Pogs; Yo-Yo revival; Pokémon Go accessories; Segway (symbolic futurism); PT Cruiser & iconic car models; Hoverboards; Livestrong bracelets; Heelys; Soylent (early “future food” aesthetic wave); Frozen Yogurt boom.

Pattern: Identity-driven, trend-amplified → decline through aesthetic fatigue or oversaturation.

Moral (Code-driven cultural innovation — laws, rules, institutional norms reshape behavior). These rose or declined mainly because of regulation, policy, or normative codes.

Fitting products: Diesel passenger car boom (collapse post-emissions scandal); Physical bank branch expansion model; DVD rental stores (copyright, distribution regulation context); Cable TV premium packages (broadcast regulation shift context); Tanning beds (health regulation + moral health framing); Margarine (trans-fat regulatory backlash).

Pattern: Strong institutional push or restriction shapes adoption and decline.

Gnosil (Knowledge-driven cultural innovation — science, health, or information reshapes lifestyle). This gained traction happens because new knowledge reframes behavior.

Fitting products: Low-fat processed foods; Margarine (also Moral later); Soy lent (nutrition science framing); Fitness tracking culture; Hospital pagers (decline via workflow knowledge evolution); Ride-sharing boards (knowledge of efficiency networks); Google Glass (knowledge-worker augmentation vision); Fast-fashion micro-trend brands (social media knowledge diffusion); Travel agencies (consumer empowerment via online information).

Pattern: Rise through informational paradigm shift → decline when knowledge evolves or contradicts earlier assumptions.

Considering the previous distributions among the four types of cultural innovation, we can summarize it as in Table 2.

Table 2. Archetype Distribution Summary (1–66)

| <i>Archetype</i> | <i>Approx. Share</i> | <i>Nature of Decline</i> |
|------------------|----------------------|--------------------------|
| Neowel | ~55% (Majority) | Technological absorption |
| Beutel | ~25% | Trend exhaustion |
| Moral | ~10% | Regulatory shift |
| Gnosil | ~10% | Knowledge evolution |

5.2 Fitting meaning.

Across 30 years, technological (Neowel) innovation dominates cultural rise-and-fall cycles.

However, Beutel innovations decline faster (high volatility), Moral innovations decline abruptly (policy shocks), and Gnosil innovations decline gradually (paradigm drift).

Neowel products are most common — but also most vulnerable to integration into larger systems.

The most sustainable long-term cultural change is typically produced by Gnosil, followed closely by Moral. Neowel is powerful but unstable. Beutel is the least durable. Now let's examine why:

Gnosil — Most Sustainable.

Driver: Adoption of new knowledge (scientific, health, cognitive reframing)

Why It Lasts:

- Alters mental models, not just behavior (the shift from treating heart disease only with medication to emphasizing lifestyle prevention through diet and exercise, influenced by cardiovascular research and public health campaigns).
- Internalized voluntarily (individuals adopting intermittent fasting or Mediterranean diets after exposure to nutritional science and health research).
- Anchored in perceived truth or evidence (widespread adoption of sunscreen use after dermatological evidence linking UV exposure to skin cancer).
- Reinforced by education systems and institutions (climate change education incorporated into school curricula and sustainability programs in universities).
- Evolves rather than collapses (digital literacy evolving from basic computer skills in the 1990s to contemporary competencies such as cybersecurity awareness and AI literacy).

Some historical durability examples are known, such as anti-smoking norms; environmental awareness; nutrition awareness (even though specific trends change); exercise as lifestyle; and digital literacy. Even when practices change (e.g., low-fat → low-carb), the knowledge-seeking behavior remains. Structural Strength - Gnosil innovations modify “What people believe is true.” Beliefs outlast tools and aesthetics.

Moral — Highly Durable (But Dependent on Institutions)

Driver: Rules, laws, and normative codes

Why It Lasts:

- Institutional enforcement (mandatory helmet laws for motorcycle riders enforced by traffic authorities).
- Embedded in legal systems (GDPR data protection regulations shaping how companies handle personal data across the European Union).
- Creates social sanctions (public condemnation and legal penalties for workplace harassment after the #MeToo movement).

- Becomes normalized across generations (child car seats becoming standard practice in families following safety legislation and awareness campaigns).
Other general examples are well known, such as seatbelt usage; drink-and-drive stigma; workplace safety standards; and recycling mandates.

Weakness - If institutional backing weakens, norms can erode. Moral change is strong, but it depends on sustained authority.

Neowel — Powerful but Structurally Fragile

Driver: Technology

Why It Spreads Fast:

- Convenience (ride-hailing services such as Uber and Bolt replacing traditional taxi ordering through smartphone apps).
- Network effects (WhatsApp becoming dominant because communication value increases as more users join the platform).
- Platform economics (Apple's App Store ecosystem enabling thousands of third-party services built on the iPhone platform).
- Behavioral reinforcement (TikTok's algorithmic video feed encouraging repeated engagement and habitual use).

Why It Often Fades:

- Technology evolves quickly (TikTok's algorithmic video feed encouraging repeated engagement and habitual use).
- Easily replaced or absorbed (standalone GPS navigation devices replaced by smartphone navigation apps such as Google Maps and Waze).
- Dependent on infrastructure (early smart home systems requiring proprietary hubs becoming obsolete with standardized IoT protocols such as Matter).
- Platform-controlled (the shutdown of Vine after Twitter changed its platform strategy).

Other example well known is that smartphones changed culture deeply — but individual apps rise and fall rapidly, and devices get absorbed.

Neowel produces rapid, large-scale change, but specific expressions are unstable.

Beutel — Least Durable

Driver: Aesthetic / symbolic meaning

Why It's Volatile:

- Trend-driven (fidget spinners becoming a global toy craze in 2017 before disappearing rapidly).
- Identity-dependent (Livestrong silicone bracelets used as a symbol of social awareness and identity in the mid-2000s).
- Saturation-sensitive (frozen yogurt chains rapidly expanding during the early 2010s before many outlets closed due to market oversaturation).
- Media amplification dependent (TikTok fashion micro-trends such as "VSCO girl" or "cottagecore" aesthetics spreading rapidly through social media).

Some general examples are fashion waves; toy crazes; and social media aesthetic phases.

Beutel cycles are short because style requires novelty to survive.

5.3 Product (goods and services) Sustainability Ranking

We may question how these products (goods and services) will last in time. It seems that due to different drivers, they have potential different durability, as shown in Table 3.

Table 3. Innovation durability and stability drivers.

| Rank | Archetype | Durability | Stability Driver |
|------|-----------|------------|---------------------------|
| 1 | Gnosil | Very High | Internalized knowledge |
| 2 | Moral | High | Institutional enforcement |
| 3 | Neowel | Medium | Technology lifecycle |
| 4 | Beutel | Low | Aesthetic novelty |

Products (goods and services) sustainability correlate with depth of value internalization, such as:

- Surface layer: Aesthetic (Beutel) – Aesthetic-driven innovations create value primarily through symbolic meaning, style, or identity expression. Consumers adopt these products because they

represent a trend, cultural signal, or fashionable identity, rather than because they transform behavior or knowledge. As trends change quickly, these innovations tend to have shorter lifecycles.

- Behavior layer: Technology (Neowel) – Technology-driven innovations change how people perform everyday activities by introducing new tools or capabilities. They influence routines such as communication, mobility, or entertainment. However, because technologies evolve rapidly and are often integrated into larger systems, specific products can be replaced or absorbed by newer technological solutions.
- Norm layer: Rules (Moral) – Norm-driven innovations reshape collective behavior through formal regulations, institutional frameworks, or socially enforced norms. Laws, policies, and social expectations encourage or oblige individuals to adopt new practices, making these changes relatively stable as long as institutional support remains.
- Cognitive layer: Knowledge (Gnosil) – Knowledge-driven innovations transform how individuals interpret reality by introducing new scientific understanding, information, or cognitive frameworks. When people internalize new knowledge, their behaviors and choices change voluntarily and persistently, making these innovations more durable over time.

The deeper the layer touched, the more durable the change.

The most powerful long-term cultural transformations often combine archetypes.

We can identify some examples of environmental sustainability shift, such as:

- Gnosil → Climate science awareness – Scientific research on climate change has transformed public understanding of environmental risks, influencing how individuals and organizations perceive energy use, consumption patterns, and ecological responsibility.
- Moral → Carbon regulations – Governments and international institutions introduce environmental policies—such as carbon taxes, emission limits, and climate agreements—that formalize sustainable practices and create regulatory incentives for change.
- Neowel → Renewable technologies – Technological innovations such as solar panels, wind turbines, electric vehicles, and energy storage systems provide practical tools that enable societies to transition toward lower-carbon energy systems.
- Beutel → Sustainable lifestyle identity – Sustainability also becomes a cultural identity expressed through consumer choices such as eco-friendly products, zero-waste lifestyles, plant-based diets, and environmentally conscious fashion.

When archetypes align, change becomes systemic.

If we must choose one, Gnosil produces the most sustainable long-term cultural change because it reshapes how reality is interpreted. Technology changes behavior. Rules enforce behavior. Aesthetics express behavior. But knowledge changes belief, and belief is the hardest layer to reverse.

6. How to use these new insights

Gnosil innovation seem to be the most desirable innovation to be applied to a product. To understand what needs to be done, we developed a following concept.

We'll structure it in three layers: (i) how to intentionally design Gnosil innovation; (ii) which last trends are becoming durable Gnosil shifts; and (iii) a Strategic Innovation Durability Framework

6.1 Designing Innovation for the Gnosil Quadrant

Core Principle: Gnosil innovation is not about launching a product. It is about reshaping how people interpret reality. You are not changing what people *do*. You are changing what they believe is *true*.
The Gnosil Design Model (5 Stages)

1. Identify a Knowledge Tension

Find an area where:

- Scientific knowledge is emerging - new research findings, technological discoveries, or scientific insights are developing that challenge previous assumptions and open new ways of understanding a problem or phenomenon.
- Public understanding lags behind - most people are not yet aware of the new knowledge, or the implications of the research have not been widely communicated or understood in society.

- Current behavior contradicts evidence - existing habits, consumption patterns, or social practices continue even though scientific evidence suggests they may be inefficient, harmful, or outdated.
- Cognitive dissonance exists - individuals experience tension between what they believe or practice and what emerging knowledge suggests, creating a psychological space where behavioral change becomes possible

Examples: ultra-processed food vs metabolic health; screen time vs cognitive development; and microplastics vs environmental exposure.

The opportunity is in the gap between reality and perception.

2. Translate Knowledge into Identity-Compatible Meaning

Data alone does not shift culture.

You must:

- Simplify scientific knowledge - translate complex research findings into clear, accessible concepts that non-experts can easily understand and apply in everyday decisions.
- Make it emotionally resonant - connect the information to feelings such as concern, hope, wellbeing, or responsibility so that individuals perceive the issue as personally meaningful.
- Connect it to self-identity - frame the knowledge in ways that allow individuals to see the behavior as part of who they are—for example, as responsible citizens, healthy individuals, or environmentally conscious consumers.
- Provide cognitive clarity - present coherent explanations that help individuals understand cause-and-effect relationships and the practical implications of adopting the new knowledge.

Example: don't "reduce insulin spikes," but "stabilize your energy all day."

3. Enable Self-Discovery, Not Imposition

Gnosil adoption spreads when people feel:

- They discovered it - individuals believe they arrived at the insight through their own exploration or learning rather than being forced or instructed to adopt it.
- They understand the logic - the reasoning behind the knowledge is transparent and understandable, allowing individuals to perceive it as rational and credible.
- They are informed, not manipulated - people perceive the information as trustworthy and educational rather than as marketing persuasion or coercive messaging.

Tools: educational content ecosystems; transparent data dashboards; interactive simulations; and personal metrics.

4. Embed Reinforcement Loops

Durable Gnosil shifts require:

- Feedback systems - mechanisms that allow individuals to observe the consequences of their actions, reinforcing the connection between knowledge and outcomes.
- Measurable outcomes - quantifiable indicators—such as health metrics, energy consumption data, or productivity measures—that demonstrate the benefits of adopting the knowledge.
- Social proof - visible evidence that others are adopting the same practices, creating legitimacy and encouraging wider acceptance through collective behavior.

Examples: sleep tracking validating knowledge about rest; carbon footprint apps quantifying impact; and continuous glucose monitors proving metabolic response.

When people *see the evidence personally*, belief solidifies.

5. Institutionalize the Knowledge

To scale durability:

- Integrate into education systems - incorporate the knowledge into school curricula, training programs, and educational materials so that new generations learn it as standard understanding.
- Align with professional bodies - encourage professional associations and industry organizations to adopt guidelines, standards, or certifications that reflect the new knowledge.
- Partner with regulators - work with governmental institutions to develop policies, regulations, or incentives that support the adoption of practices based on the knowledge.

- Support academic validation - encourage ongoing scientific research, peer-reviewed publications, and academic debate to reinforce the credibility and legitimacy of the knowledge.
This moves Gnosil closer to Moral reinforcement — increasing resilience.

6.2 Last Trends Becoming Durable Gnosil Transformations

Not all trends are Gnosil. Many are Neowel (AI tools) or Beutel (aesthetic lifestyle). Below are those showing signs of durable cognitive shift.

1. Metabolic Health Awareness

Drivers: CGMs (continuous glucose monitoring); obesity science; and ultra-processed food research.
Why Gnosil: People are learning *how metabolism works*.
Durability Signal: Shift from “dieting” to “metabolic literacy”. Likely long-term transformation.

2. Climate Risk Literacy

Drivers: extreme weather evidence; corporate ESG (environmental, social, and governance) disclosure; and carbon accounting.
Why Gnosil: Understanding systemic environmental risk reshapes investment, consumption, career decisions.
Durability Signal: Climate competence becoming professional requirement.

3. Mental Health Normalization

Drivers: neuroscience; workplace research; and public health data.
Why Gnosil: Reframes stress, burnout, trauma as biological and treatable.
Durability Signal: Embedded into HR, insurance, education systems.

4. AI Literacy (Beyond Tool Usage)

Drivers: generative AI diffusion; automation debates; and policy discourse.
Why Gnosil: Shift from “AI tool” to understanding probabilistic systems, bias, model limitations.
Durability Signal: AI education entering curricula.

5. Longevity & Preventive Health

Drivers: biomarkers; wearables; and aging research.
Why Gnosil: Reframes aging from fate to modifiable process.
Durability Signal: Preventive health economics emerging.

6. Financial Literacy via Fintech Transparency

Drivers: real-time spending analytics; and investing democratization.
Why Gnosil: Understanding compounding, risk, inflation reshapes long-term behavior.
Durability Signal: Retail investors behaving more analytically.

6.3 Strategic Innovation Durability Framework

We now can combine archetypes into a predictive durability model, as in Table 4.

Table 4. The 4-Layer Cultural Depth Model

| Layer | Archetype | Durability | Strategic Focus |
|------------|-----------|------------|---------------------------|
| Surface | Beutel | Low | Trend acceleration |
| Behavioral | Neowel | Medium | Platform scale |
| Normative | Moral | High | Institutional alignment |
| Cognitive | Gnosil | Very High | Knowledge internalization |

To design our innovation choices for maximum durability, we must take in consideration how to maximize longevity:

- Step 1: Start in Gnosil - Ground innovation in knowledge shift.
- Step 2: Reinforce with Moral - Align with policy, professional standards.
- Step 3: Enable via Neowel - Use technology to scale adoption.

Step 4: Express via Beutel - Create aesthetic identity to accelerate spread.

We can illustrate this concept with the following example: Electric Vehicles.

- Gnosil → Climate science literacy.
- Moral → Emission regulation.
- Neowel → Battery technology.
- Beutel → Tesla aesthetic/status.

This multi-archetype layering increases durability dramatically.

Always consider some early warnings of fake Gnosil, being careful of: (i) “science-washed” marketing without real evidence; (ii) data without institutional validation; and (iii) knowledge that is trend-driven (pseudo-knowledge). True Gnosil requires epistemic stability.

Finally, companies can evaluate ideas using five proposed criteria:

1. Does it reshape mental models?
2. Is it evidence-backed and evolving?
3. Can users verify it personally?
4. Can institutions adopt it?
5. Does it survive technology replacement?

If the result is ≥ 4 yes → likely durable.

As a final strategic insight, most companies design for: (i) speed (Neowel); and virality (Beutel). Few design for cognitive transformation (Gnosil). But durable market leadership tends to emerge from those who change how reality is understood, not just how tools are used.

7. Conclusions

The analysis of the sixty-six cases of innovation fads across multiple sectors—including technology, media formats, consumer electronics, communication systems, fashion items, and lifestyle trends - reveals consistent patterns in the rise and decline of products (goods and services) that achieve rapid cultural diffusion. Although many innovations initially appear transformative, their longevity depends largely on the cultural driver sustaining their adoption.

Innovations primarily driven by aesthetic appeal or symbolic identity (Beutel) tend to experience the fastest diffusion but also the most rapid decline. These products often benefit from media amplification, novelty, and social signaling; however, once saturation occurs or new symbolic alternatives emerge, their cultural relevance diminishes quickly.

Technology-driven innovations (Neowel) demonstrate strong adoption when they introduce new capabilities or convenience. Nevertheless, these innovations are frequently absorbed by subsequent technological platforms. Many devices or services that initially reshape user behavior eventually become integrated into multifunction systems, particularly digital ecosystems centered on smartphones and cloud computing.

Normative innovations (Moral), which are driven by rules, laws, or institutional frameworks, tend to display greater durability. When collective behavior is reinforced through regulation or strong social norms - such as safety regulations, environmental standards, or health mandates - the resulting cultural practices persist for longer periods and are less vulnerable to rapid decline.

The most durable form of cultural innovation, however, appears to be knowledge-driven change (Gnosil). When new scientific, health, or systemic knowledge reshapes how individuals interpret reality, the resulting behavioral changes tend to persist even if specific products associated with the trend disappear. Knowledge-based cultural shifts—such as awareness of health risks, environmental sustainability, or data-driven decision making—create enduring frameworks that influence multiple future innovations.

From these findings emerges a conceptual implication for innovation strategy. Products that rely exclusively on technological novelty or aesthetic appeal are more likely to experience fad-like lifecycles. By contrast, innovations that integrate knowledge transformation (Gnosil), institutional alignment (Moral), technological enablement (Neowel), and cultural symbolism (Beutel) have a higher probability of generating durable cultural change.

The Cultural Innovation Construct Process Model therefore provides a useful analytical lens for understanding why certain innovations remain temporary fads while others evolve into long-lasting

cultural practices. Future research could expand this framework by examining additional historical cases and by developing quantitative indicators capable of predicting the cultural durability of emerging innovations.

References

- Abela, P. (2025), “*For overhead projectors, the lights have dimmed*,” The Globe and Mail, August 25. Online: <https://www.theglobeandmail.com/opinion/article-for-overhead-projectors-the-lights-have-dimmed/#:~:text=With%20OHP%20having%20now%20joined%20the%20choir,could%20deliver%20is%20now%20fading%20to%20black>
- Abernathy, W.J. and Clark, K.B. (1985), “Innovation: Mapping the Wind of Creative Destruction,” *Research Policy*, 14(1), 3-22.
- Alderman, N. (2009), “*Encarta's failure is no tragedy*,” The Guardian, April 7. Online: <https://www.theguardian.com/technology/2009/apr/07/wikipedia-encarta>
- Alderson, M. (2025), “*Travel agents took 10 years to collapse. Developers are 3 years in*,” Martin Alderson, December 27. Online: <https://martinalderson.com/posts/travel-agents-developers/>
- Allen, R. (2012), “*BT scraps phonecards after slump*,” The Standard, April 12. Online: <https://www.standard.co.uk/hp/front/bt-scraps-phonecards-after-slump-6303851.html>
- Arnould, E.J. and Thompson, C.J. (2005). “Consumer culture theory (CCT): Twenty years of research”, *Journal of Consumer Research*, 31(4), 868-882.
- Arthur, C. (2012), “*Sayonara, netbooks: Asus (and the rest) won't make any more in 2013*,” The Guardian, December 31. Online: <https://www.theguardian.com/technology/2012/dec/31/netbooks-dead-2013>
- Aziz, J. (2015), “The Great Beanie Baby Bubble,” The Week, January 11. Online: <https://theweek.com/articles/461977/great-beanie-baby-bubble>
- Baxman, M. (2025), “*The Rise and Fall of Minidisc: What Really Happened*,” RetroTechLab, November 13. Online: <https://www.retrotechlab.com/the-rise-and-fall-of-minidisc/>
- Belfer, I. (2015), “*Top 5 reasons hard tokens are hard to manage*,” LoginTC, March 16. Online: <https://www.logintc.com/blog/problem-with-hard-tokens/>
- Bennet, S. (2016), “*A Frozen Yogurt Fail*,” That day I got Hungry, May 10. Online: <https://thatdayigothyungry.com/2016/05/10/a-frozen-yogurt-fail/>
- Bentley University (2018), “*The Case for Google Glass: Finding Success Through Failure*,” Bentley University Newsroom, March 10. Online: <https://www.bentley.edu/news/case-google-glass-finding-success-through-failure>
- Berenson, C. and Mohr-Jackson, I. (1994). “Product rejuvenation: A less risky alternative to product innovation,” *Business Horizons*, 37(6), 51-57.
- Biggs, J. (2017), “*3D TVs are dead*,” TechCrunch, January 25. Online: <https://techcrunch.com/2017/01/25/3d-tvs-are-dead/>
- Bissonnette, Z. (2016), “*The Great Beanie Baby*”, Penguin Putnam Inc, March.
- Bloom, J. (2018), “*The rise and fall of the Fidget Spinner*,” The Business of Business, October 4. Online: <https://www.businessofbusiness.com/articles/the-rise-and-fall-of-the-fidget-spinner/>
- Bonanos, C. (2012), “*The Rise and Fall of Polaroid*,” The Slate, October 5. Online: https://www.slate.com/articles/arts/books/2012/10/great_polaroid_snapshots_the_history_of_polaroid_cameras_.html
- Bowe, T. (2020), “*A Portable DVD Player Was One of the Best Gadgets Ever Owned*,” Gear Patrol, July 28. Online: <https://www.gearpatrol.com/tech/a33394987/panasonic-dvd-la95-love-letter/>
- Brock, T. (2023), “*5 Reasons The Cable TV Industry Is Dying*,” Investopedia, July 28. Online: <https://www.investopedia.com/articles/personal-finance/062315/5-reasons-cable-tv-industry-dying.asp>
- Buhalis, D., & Law, R. (2008), “Progress in information technology and tourism management: 20 years on and 10 years after the Internet,” *Tourism Management*, 29(4), 609–623, <https://doi.org/10.1016/j.tourman.2008.01.005>
- Butler, T. (2018), “*The Diesel Boom and the Climate: Study Lends More Weight to Calls to End Subsidies*,” Research Institute for Sustainability, November 07. Online: <https://www.rifs-potsdam.de/en/news/diesel-boom-and-climate-study-lends-more-weight-calls-end-subsidies>

- Butter, A. and Pogue, D. (2002), “*Piloting Palm: The Inside Story of Palm, Handspring, and the Birth of the Billion-Dollar Handheld Industry*,” John Wiley & Sons, January 1, New York.
- Campbell, J. (2024), “*Physical bank branches declining dramatically*,” *Brokerdaily*, October 17. Online: <https://www.brokerdaily.au/lender/19575-physical-bank-branches-declining-dramatically>
- Carter, S., Green, J. and Thorogood, N. (2013), “The domestication of an everyday health technology: A case study of electric toothbrushes”, *Social Theory and Health*, 11(4), 344–367. <https://doi.org/10.1057/sth.2013.15>
- Cendrowski, S. (2016), “*How the Hoverboard Fad Blew Up*,” *Fortune*, March 4. Online: <https://fortune.com/longform/hoverboard-industry/>
- Ceruzzi, P. E. (2003), “*A History of Modern Computing, second edition (History of Computing)*,” MIT Press, April 8.
- Chung, C. C. et al (2016), “Implementation of a New Kiosk Technology for Blood Pressure Management in a Family Medicine Clinic: from the WWAMI Region Practice and Research Network”, *The Journal of American Board of Family Medicine*, 29(5), 620-629.
- Clark, A.V., Atkinson-Palombo, C. and Garrick, N.W. (2019), “The Rise and Fall of the Segway”, *Transfers*, 9(2), 27-44. DOI: 10.3167/TRANS.2019.090203
- Cohen, N. (2009), “*Microsoft Encarta Dies after Long Battle with Wikipedia*,” *The New York Times*, March 30. Online: <https://archive.nytimes.com/bits.blogs.nytimes.com/2009/03/30/microsoft-encarta-dies-after-long-battle-with-wikipedia/#:~:text=By%20Noam%20Cohen%20March%2030%2C%202009%2010:23,become%20the%20leading%20encyclopedia%20on%20the%20Web>
- Cooke, A. (2025), “*The Rise and Fall of the Point-and-Shoot Camera*,” *FSToppers*, November 4. Online: <https://fstoppers.com/historical/rise-and-fall-point-and-shoot-camera-715387#:~:text=The%20point%2Dand%2Dshoot%20market,consumers%20wouldn't%20buy%20them.>
- Coopersmith, J. (2015), “*Faxed: The Rise and Fall of the Fax Machine*”, Johns Hopkins University Press, February 28.
- Cowley, M. (2022), “*The Rise And Fall Of 3D TVs*,” *Slashgear*, September 18. Online: <https://www.slashgear.com/1013637/the-rise-and-fall-of-3d-tvs/>
- Creed F. (2025), “*The Rise and Fall of The Sunbed in Britain: Tanning Culture from Fad to Fear*” [Internet]. London (UK): Bloomsbury Academic, PMID: 40455910. Online: <https://pubmed.ncbi.nlm.nih.gov/40455910/>
- Crosby, D. F. (2002), “The Yo-Yo: Its Rise and Fall,” *American History*, August. Online: <https://www.yoyomuseum.com/uploads/PDF/Rise.pdf>
- Cuban, L. (2001), “*Oversold and Underused: Computers in the Classroom*,” Harvard University Press. <https://www.hup.harvard.edu/books/9780674011090> .
- Cummings, B.S. (1998). “Innovation Overview and Future Challenges”. *European Journal of Innovation Management*, 1(1), 21-29.
- Cusumano, M. A., Mylonadis, Y., & Rosenbloom, R. S. (1992), “Strategic maneuvering and mass-market dynamics: The triumph of VHS over Beta,” *Business History Review*, 66, 1, 51–94. <https://doi.org/10.2307/3117053>
- Davis, C. (2026), “*Why Did Pogs Disappear And Could They Ever Return As A Nostalgia Trend*,” *Alibaba.com*, February 28. Online: <https://www.alibaba.com/product-insights/why-did-pogs-disappear-and-could-they-ever-return-as-a-nostalgia-trend.html>
- Delitala, A. (2014), “Replacing mechanical thermometers with electronic thermometers in a Mediterranean test station and its impact on climatology”, *Tethys Journal of Weather and Climate of the Western Mediterranean*, 11, 51-61. DOI: 10.3369/tethys.2014.11.05
- Dew, A. (2024), “*The Rise and Fall of Vine*,” *Medium*, January 14. Online: <https://medium.com/@alexys.dew/the-rise-and-fall-of-vine-0dead475573a>
- Dicken, S. (2025), “*Ultraprocessed or minimally processed diets following healthy dietary guidelines on weight and cardiometabolic health: arandomized, crossover trial*,” *Nature Medicine*, February 24. Online: <file:///Users/MTF/Downloads/s41591-025-03842-0.pdf>
- DJBooth (2015), “*You Used To: The Birth & Death of Ringtone Rap*,” *DJBooth*, December 1. Online: <https://djbooth.net/features/2015-12-01-birth-death-ringtone-rap-era/>
- Dosi, G. (1982). “Technological paradigms and technological trajectories”. *Research Policy*, 11(3), 147-162.

- Dudic, D. (2021), “*The story of Polaroid: From empire to bankruptcy and back again*”, Photography, August 26. Online: <https://www.diyphotography.net/the-story-of-polaroid-from-empire-to-bankruptcy-and-back-again/>
- Duhigg, C. (2017), “*The Rise of the Fidget Spinner and the Fall of the Well-Managed Fad*”, The New York Times Magazine August 15. Online: <https://www.nytimes.com/2017/08/15/magazine/the-rise-of-the-fidget-spinner-and-the-fall-of-the-well-managed-fad.html>
- Eastlake, D. (2024), “*Consumers are rejecting fat-free foods and beverages – what does this mean for manufacturers,*” Food Navigator, October 01. Online: <https://www.foodnavigator.com/Article/2024/10/01/decline-in-demand-for-reduced-fat-and-fat-free-products/>
- EduBirdie (2022), “*Case Study: MSN Messenger Discontinuation*”, Edubirdie, October 28. Online: <https://hub.edubirdie.com/examples/case-study-msn-messenger-discontinuation/>
- Evans, N. (2025), “*Chrysler's PT Cruiser: Was It Really That Bad?*,” CarBuzz, August 3. Online: <https://carbuzz.com/was-the-chrysler-pt-cruiser-really-that-bad/>
- Fernandes, M.T. (2012), “*Value Construct towards Innovation,*” *International Journal of Innovation, Management and Technology*, 3(1), 10-19.
- Fernandes, M.T. (2014), “*Innovation: Technological and Cultural Construct Model,*” *International Journal of Economics, Finance and Management*, 3(7), 351-370.
- Forde, E. (2021), “*20 years of the iPod: how it shuffled music and tech into a new era,*” The Guardian, October 23. Online: <https://www.theguardian.com/music/2021/oct/23/20-years-of-the-ipod-how-music-and-tech-new-era-steve-jobs>
- Fortney, V. (2025), “*Last call for the landline: The wired communication world will soon be no more,*” National Post, December 31. Online: <https://nationalpost.com/feature/last-call-telephone-landline>
- Fortune (2026), “*Portable Media Player Market Size, Share & Industry Analysis, By Product Type (Audio Players, Video Players), By Storage Media (Flash-Based Players, Networked Audio Players, Memory Card-Based Audio Players, Others), By Distribution Channel (Offline, Online) And Regional Forecast, 2026-2034,*” Fortune Business Insights, March 4. Online: <https://www.fortunebusinessinsights.com/portable-media-player-market-105004>
- Francombe, A. (2025), “*Micro-Trends Are Dead. Long Live the Vibe,*” Vogue Business, January 28. Online: <https://www.vogue.com/article/micro-trends-are-dead-long-live-the-vibe>
- Gagnon, D. (2025), “*A million Mass. households say goodbye to cable in massive 12-year collapse,*” MassLive News, December 9. Online: <https://www.masslive.com/news/2025/11/a-million-mass-households-say-goodbye-to-cable-in-massive-12-year-collapse.html>
- Giles, M. (2024), “*The landline isn't extinct in America, but it might be by 2030,*” Sherwood, December 18. Online: <https://sherwood.news/business/landline-isnt-extinct-america-but-might-be-by-2030/>
- Green, B.B. et al. (2022), “*Clinic, Home, and Kiosk Blood Pressure Measurements for Diagnosing Hypertension: a Randomized Diagnostic Study,*” *J GEN INTERN MED*, 37, 2948–2956. <https://doi.org/10.1007/s11606-022-07400-z>
- Gulino, E. (2022), “*Where Did All The Froyo Go? A Very Serious Investigation,*” Refinery29, February 24. Online: <https://www.refinery29.com/en-us/2022/02/10880935/why-frozen-yogurt-trend-ended>
- Hallock, B. (2013), “*Rise and fall of trans fat: A history of partially hydrogenated oil,*” Los Angeles Times, November 7. Online: <https://www.latimes.com/food/dailydish/la-dd-rise-and-fall-of-trans-fat-20131107-story.html>
- Hämäläinen, T.J. and Heiscala, R. (2007). “*Social Innovation, Institutional Changes and Economic Performance,*” Edward Elgar, Cheltenham.
- Holly, J. (2025) “*Heelys and AI: How the response to children's safety has changed,*” Medium, December 22. Online: <https://gethip.medium.com/heelys-and-ai-how-the-response-to-childrens-safety-has-changed-a0d71d3c6556>
- Holmes, S. (2025), “*Slammin' Memories: The Rise and Fall of POGs,*” Medium, September 18. Online: <https://medium.com/@spencer486/slammin-memories-the-rise-and-fall-of-pogs-4e6d49764d5b>
- Holwerda, T. (2024), “*The rise and fall of 3M's floppy disk,*” OS News, April 3. Online: <https://www.osnews.com/story/139136/the-rise-and-fall-of-3ms-floppy-disk/>
- Ishrat (2024), “*The rise and fall of MySpace,*” DEV, February 27. Online: <https://dev.to/ishratumar/the-rise-and-fall-of-myspace-18k2>
- Ivelina (2024), “*The rise and fall of Clubhouse, lessons for investors,*” Pin, October 10. Online: <https://www.getpin.xyz/post/clubhouse-lessons-for-investors>

- Jagannatham, S. (2025), "Why Campus Ride-Sharing Remains Broken," Medium, September 9. Online: <https://medium.com/@jagannathamshashank/why-campus-ride-sharing-remains-broken-5f056ee084a6>
- James, M and Perez, Y. (2025), "Why Google Glass Failed: Price, Privacy, and Tech Limitations," Investopedia, October 15. Online <https://www.investopedia.com/articles/investing/052115/how-why-google-glass-failed.asp>
- Jensen, Anker per (2005), "Value Concepts and Value based Collaboration in Building Projects" *Proceedings of the CIBW06 Architectural Management*, Technical University of Denmark, Lyngby, 3-10.
- Keil, J. and Ongena, S. (2024), "The demise of branch banking – Technology, consolidation, bank fragility," *Journal of Banking & Finance*, 158, January, 107038. <https://doi.org/10.1016/j.jbankfin.2023.107038>
- King, A.A. and Tucci, C.L. (2002), "Incumbent entry into new market niches: The role of experience and managerial choice in the creation of dynamic capabilities," *Management Science*, 48(2), 171-186.
- Kleina, N. C. M. (2026), "Que fim levou o Nero, o clássico programa para 'queimar' CDs?," [What has taken Nero, the classic software to burn CDs?], TecMundo, March 7. Online: <https://www.tecmundo.com.br/produto/411081-que-fim-levou-o-nero-o-classico-programa-para-queimar-cds.htm>
- Kline, S. (2003), "Out of the Garden: Toys and Children's Culture in the Age of TV Marketing," Verso.
- Knake, M. (2011), "Let's Get Digital: A Guide to Unraveling the Tangled World of Digital Thermometers," Resource, November. Online: <https://aashtoresource.org/docs/default-source/newsletter/lets-get-digital--a-guide-to-unraveling-the-tangled-world-of-digital-thermometers---printer-friendly.pdf?sfvrsn=5>
- Koo, B., Cozzarin, B. P and Lee, W. (2011), "Sony,s Redemption: The Blue-Ray vs. HD-DVD Standards War". *University of Waterloo*, Ontario, Canada, September 22. DOI: 10.2139/ssrn.1996793
- Kumar K. (2024), "The Rise of Cloud-Based POS Systems: Scalability, Flexibility, and Mobility for Retailers," Wonder, September 25. Online: <https://www.wondersoft.com/blogs/the-rise-of-cloud-based-pos-systems-scalability-flexibility-and-mobility-for-retailers#:~:text=Improved%20Efficiency%20and%20Cost%2DSavings%20Cloud%2Dbased%20POS%20systems,sales%20figures%2C%20inventory%20levels%2C%20and%20customer%20insights>.
- Langweiler, A. (2025), "Palm: The Genius That Forgot Its Own Hands: How the Pioneer of the PDA Revolution Invented the Future—Then Let Everyone Else Steal It," Ailcol Publishing, October 28.
- Lateef, Z. (2022), "The Fall of Vine," Medium, July 19. Online: <https://medium.com/@newmilleniaconsulting/the-fall-of-vine-ef1ac4195a7>.
- Lavrinc, D. (2018), "Apple, Google Just Killed Portable GPS Devices," Wired, June 12. Online: <https://www.wired.com/2012/06/gps-devices-are-dead/>
- Leroux, F. (2025), "Clubhouse app: Why did the social media audio-app die," Android Police, April 19. Online: <https://www.androidpolice.com/why-did-clubhouse-and-other-social-audio-apps-fail/>
- Lesley (2025), "Why Traditional Language Learning Methods Still Hold Value In The Digital Age," English Learning Space, May 11. Online: <https://englishlearningspace.com/why-traditional-language-learning-methods-still-hold-value-in-the-digital-age/>
- Leswing, K. (2023), "Google ends enterprise sales of Google Glass, its augmented reality smartglasses," CNBC, March 15. Online: <https://www.cnbc.com/2023/03/15/google-discontinues-google-glass-enterprise-end-to-early-ar-project.html>
- Levy, S. (2007), "The Perfect Thing: How the iPod Shuffles Commerce, Culture, and Coolness," Simon & Schuster, September 4.
- Loewen, S., Isbell, D. R., & Sporn, Z. (2020), "The effectiveness of app-based language instruction for developing receptive linguistic knowledge and oral communicative ability," *Foreign Language Annals*, 53(2), 209-233. <https://doi.org/10.1111/flan.12454>
- Ludwig, D. S., Willett, W. C., Volek, J. S., & Neuhouser, M. L. (2022), "Low-fat diet redux at the WHO," *The American Journal of Clinical Nutrition*, 116(5), 1195–1197. <https://doi.org/10.1093/ajcn/nqac200>.
- Lumpkin, G.T. and Dess, G.G. (1996), "Clarifying the entrepreneurial orientation construct and linking it to performance," *Academy of Management Review*, 21(1), 135-172.

- Macaulay, J. (2022), “*The Rise and Fall of the Beanie Baby*,” Medium, June 24. Online: <https://medium.com/@jghalymacaulay/the-rise-and-fall-of-the-beanie-baby-df210d7a5798>
- Mahdawi, A. (2018), “*I tried Soylent, Silicon Valley’s favourite foodstuff. It’s everything that’s wrong with modern life*,” The Guardian, September 11. Online: <https://www.theguardian.com/commentisfree/2018/sep/11/i-tried-soylent-silicon-valleys-favourite-foodstuff-its-everything-thats-wrong-with-modern-life>
- Mandaue (2023), “*NYTimes interviews some elite runners who choose not to wear a GPS watch*,” Watchuseek Blog, September 20. Online: <https://www.watchuseek.com/threads/nytimes-interviews-some-elite-runners-who-choose-not-to-wear-a-gps-watch.5520659/>
- Martin, M. (2020), “*In 1986 Sony Introduced the Car CD Changer and Installed it IN BMW 6-Series*,” Autoweek, September 14. Online: <https://www.autoweek.com/car-life/classic-cars/a33943505/in-1986-sony-introduced-the-car-cd-changer-and-installed-it-in-bmw-6-series/>
- Marvel, M.R. and Lumpkin, G.T. (2007), “Technology Entrepreneurs’ Human Capital and Its Effects on Innovation Radicalness,” *Entrepreneurship Theory and Practice*, 3(6), pp. 807-828.
- McCarthy, D. (2025), “*Why are MP3 players making a comeback?*,” Dazed, November 20. Online: <https://www.dazeddigital.com/music/article/69112/1/why-are-mp3-players-making-a-comeback-ipod-music-spotify-algorithms#:~:text=%E2%80%9CGetting%20a%20cheap%20DAP%20was,the%20constant%20barrage%20of%20notifications.>
- McCullar, E. (2024) “*Making the Band: An Oral History of the Livestrong Bracelet*,” Texas Monthly, July. Online: <https://www.texasmonthly.com/style/livestrong-wristband-oral-history-twentieth-anniversary/>
- McIntyre, D. (2009), “*The 10 Biggest Tech Failures of the Last Decade - Failure to Launch HD DVD*,” Time, Wall St. July 24. Online: https://content.time.com/time/specials/packages/article/0,28804,1898610_1898625_1898629,00.html
- McNish, J. and Silcoff, S. (2016), “*Losing the Signal: The Untold Story Behind the Extraordinary Rise and Spectacular Fall of BlackBerry*”, Flatiron Books, May 3.
- Miner, B. (2022), “*Why On-Prem and Hybrid Faxing Can’t Compare to Faxing in the Cloud*,” Consensus, November 22. Online: <https://www.consensus.com/blog/why-on-prem-and-hybrid-faxing-cant-compare-to-faxing-in-the-cloud/>
- Mishra, V. (2022), “*The Riveting Rise and Fall of Blockbuster LLC*,” StreetFins, June 22. Online: <https://streetfins.com/the-riveting-rise-and-fall-of-blockbuster-llc/>
- Moraga, J. (2026), “*What Happened to Nextel? A Look at the Push-to-Talk Network’s Comeback*,” Atlantic Radio, January 18. Online: <https://www.atlanticradiocorp.com/blogs/news/what-happened-to-nextel-push-to-talk-evolution>
- Munekata, P. E. S., Pérez_Álvarez, J. A., Pateiro, M., Viuda-Matos, M., Fernández-López, J. and Lorenzo, J.M. (2021), “Satiety from healthier and functional foods,” *Trends in Food Science & Technology*, 113, July, 397-410, <https://doi.org/10.1016/j.tifs.2021.05.025>.
- Nallawalla, K. (2025), “*The Rise and Fall of Adobe Flash: A Brief History and the Reasons Behind Its Demise*,” Tech Frontier, May 8. Online: <https://techfrontier.com.au/keith/adobe-flash-rise-and-fall/>
- NHS (2019), “*Health and Social Care Secretary bans pagers from the NHS*”, Department of Health and Social Care – Gov.UK, February 23. Online: <https://www.gov.uk/government/news/health-and-social-care-secretary-bans-pagers-from-the-nhs>
- Nike (2006), “*Nike and Apple team up to launch Nike+iPod*,” Nike News / Apple Press Release, May 23. Online: <https://www.apple.com/newsroom/2006/05/23Nike-and-Apple-Team-Up-to-Launch-Nike-iPod/>
- O’Brien, C. (2013), “*Netbooks doomed to oblivion by 2015, report says*,” Los Angeles Times, April 12. Online: <https://www.latimes.com/business/la-xpm-2013-apr-12-la-fi-tn-netbooks-likely-dead-by-2015-report-says-20130412-story.html>
- Olinqua (2023), “*The history and future of pagers: an opinion piece*,” Olinqua – Industry News, March 10. Online: <https://olinqua.com/the-history-and-future-of-pagers-an-opinion-piece/>
- Olito, F. and Bitter, A. (2023), “*Blockbuster: The rise and fall of the movie rental store, and what happened to the brand*,” Business Insider, April 24. Online: <https://www.businessinsider.com/rise-and-fall-of-blockbuster>

- Onotone (2024), “*The Rise and Fall of VHS: A Journey Through Time*,” Onotone Blog, June 6. Online: <https://www.onotone.com/blogs/modern-designs/the-rise-and-fall-of-vhs-a-journey-through-time?srsrtid=AfmBOopFT1IrvhEpfHIWKJlgbZCIdoUuqmd8NnZgSaU5SJISGFFcWJBR>
- Oreate, (2026), “*The Rise and Fall of Guitar Hero: A Cultural Phenomenon's Demise*”, Oreate AI Blog, January, 15. Online: <https://www.oreateai.com/blog/the-rise-and-fall-of-guitar-hero-a-cultural-phenomenons-demise/ca71d84c559f147bae7105508dfed3ca>
- Oswald, E. (2012), “*Sprint to End Nextel Service, But Push-to-Talk Lives On*,” NBC News, May 29. Online: <https://www.nbcnews.com/id/wbna47606594>
- Panos, C. (2026), “*The Time Clock Has Stood the Test of Time*,” Hackaday, January 8. Online: <https://hackaday.com/2026/01/08/the-time-clock-has-stood-the-test-of-time/>
- Pardo, D. (2024), “*What happened with MSN Messenger? Let's find out*,” Pandora Tech Blog, March 8. Online: <https://pandorafms.com/blog/what-happened-with-msn-messenger/>
- Parra, M. (2023), “*Gotta Rehash 'Em All: The Rise and Fall of Pokémon*,” Mark Parra, September 13. Online: <https://marckparra.com/gotta-rehash-em-all-the-rise-and-fall-of-pokemon/>
- Paul, F. (2015), “*Traditional GPS is dead: Long live smartfone GPS*,” Networkworld, October 19. Online: <https://www.networkworld.com/article/944428/gps-devices-tom-tom-garmin-vs-smartphone-google-maps-apple.html>
- Piana, V. (2003). “*Innovation*”. Economics Web Institute, 2003. <https://www.economicswebinstitute.org/glossary/innovate.htm>. on 16-12-2025.
- Pohlmann, K. C. (1997), “*The Fall and Rise (and Fall?) of MiniDisc*”, Minidisc.org, Stereo Review, January. Online: <https://minidisc.org/signals.html>
- Popp, R. K. (2016), “*FAXED: The Rise and Fall of the Fax Machine by Jonathan Coopersmith (review)*,” *Technology and Culture* 57(1), 278-280.
- Posch, M. (2025), “*Why Physical Media Deserved To Die*,” Hackaday, April 22. Online: <https://hackaday.com/2025/04/22/why-physical-media-deserved-to-die/>
- Price, N. (2026), “*Learning about Timer for Teeth Brushing: Grades, Material Standards, and Industrial Applications*,” Alibaba, March 5. Online: <https://www.alibaba.com/product-insights/timer-for-teeth-brushing.html>
- Rana, S. (2013), “*The Rise and Death of Portable Media Players*,” iGyaan Network, July 8. Online: <https://www.igyaan.in/52051/edit-the-rise-and-death-of-portable-media-players/>
- Reichmann, M. (2009), “*The Rise of Digital imaging and the Fall of the Old Camera industry*,” The Luminous Landscape, January 13. Online: <https://luminous-landscape.com/the-rise-of-digital-imaging-and-the-fall-of-the-old-camera-industry/>
- Reynolds, S. (2015), “*Why Google Glass Failed: A Marketing Lesson*,” Forbes, February 05. Online: <https://www.forbes.com/sites/siimonreynolds/2015/02/05/why-google-glass-failed/>
- Rizzo, N. (2017), “*Why I Love to Run Without a GPS Watch*,” Women’s Running, September 13. Online: <https://www.womensrunning.com/health/stopped-wearing-gps-watch/>
- Rolfe, A. (2025), “*POS dead? Point-of-Sale is becoming the heart of SMBs again*,” Payment Industry Intelligence, October 24. Online: <https://paymentsindustryintelligence.com/pos-dead-point-of-sale-is-becoming-the-heart-of-smbs-again/>
- Root, E. (2017), “*The life and Death of Adobe Flash*,” Kaspersky, October 20. Online: <https://www.kaspersky.com/blog/life-and-death-of-adobe-flash/45906/>
- Rosal, I. (2022), “*European dieselization: Policy insights from EU car trade*,” *Transport Policy*, 115, 181-194.
- Sato, A. (2025), “*From Egg to Empire: Tamagotchi's 30-Year Legacy*,” Tokyoweekender, December 16. Online: <https://www.tokyoweekender.com/entertainment/tamagotchi-revival-and-legacy/>
- Schumpeter, J.A. (1934). “*The Theory of Economic Development*,” Harvard University Press.
- Schwartz, S. (1996), Value priorities and behavior: Applying a theory of integrated value systems. In C. Seligman, J. M. Olson, & M. P. Zanna (Eds.), *The psychology of values: The Ontario symposium*, 8, 1–24. Lawrence Erlbaum Associates, Inc.
- Scott, D. (2023), “*MP3 Players were the Pinnacle of Portable Music*,” The Retro Millennial, August 1. Online: <https://retropunk.substack.com/p/mp3-players-were-the-pinnacle-of>
- Serban, T. (2021), “*The Rise and Fall of the Retro-Styled PT Cruiser*,” Autoevolution, November 25. Online: <https://www.autoevolution.com/news/the-rise-and-fall-of-the-retro-styled-pt-cruiser-175064.html>

- Siegel, E. (2018), “*The Physics of Why Timekeeping First Failed in The Americas*,” Forbes, September 21. Online: <https://www.forbes.com/sites/startswithabang/2018/09/21/the-physics-of-why-timekeeping-first-failed-in-the-americas/>
- Silva, T. J., Barrera-Arellano, D. and Ribeiro, A. P. B. (2021), “Margarines: Historical approach, technological aspects, nutritional profile, and global trends,” *Food Research International*, 147, September, 100486.
- Simpson, C. (2013), “*Lance Armstrong Killed the Livestrong Bracelet*,” The Atlantic, May 28. Online: <https://www.theatlantic.com/business/2013/05/nike-livestrong-lance-armstrong/314850/>
- Shove, E., Pantzar, M. and Watson, M. (2012). “*The Dynamics of Social Practice*”. Sage.
- Skates.co.uk (2025), “*The Complete History of Heelys Shoes: From Playground Phenomenon to Gen Z Revival*,” Skates.co.uk, June 10. Online: <https://www.skates.co.uk/pages/the-complete-history-of-heelys-shoes-from-playground-phenomenon-to-gen-z-revival#:~:text=In%202006%2C%20Heelys%20went%20public,2021%2C%20Sequential%20filed%20for%20bankruptcy>
- Sloane, P. (2012), “*A Lesson in Innovation – Why did the Segway Fail?*,” Innovation Management Editorial Desk, May 2. Online: <https://innovationmanagement.se/2012/05/02/a-lesson-in-innovation-why-did-the-segway-fail/>
- Snapes, L. (2024) “*Farewell to the car CD player, source of weirdly deep musical fandoms*,” The Guardian, September 30. Online: <https://www.theguardian.com/music/2024/sep/30/farewell-to-the-car-cd-player-source-of-weirdly-deep-musical-fandoms>.
- Snider, M. (2008), “*Bands’ sales are feeling the ‘Guitar Hero? effect*,” ABC News, February 14. Online: <https://abcnews.com/Technology/story?id=4292090&page=1>
- Solymar, L. (2020), “*The rise and fall of the fax machine*,” The Article, August 02. Online: <https://www.thearticle.com/the-rise-and-fall-of-the-fax-machine>.
- Sprintzeal (2025), “*The Reason For The Fall Of BlackBerry*”, December 8. Online: <https://www.sprintzeal.com/blog/the-fall-of-blackberry>
- Stein, S. (2014), “*The end of fitness bands? Wearable tech feels ready to move forward*,” CNET, April 21. Online: <https://www.cnet.com/tech/mobile/end-of-fitness-bands-future-after-nike-fuelband/>
- Stewart, E. (2025), “*What Happened to Myspace? The Fall of the World’s First Social Media Giant*,” Enterprise Management, February 19. Online: <https://em360tech.com/tech-articles/what-happened-myspace-fall-worlds-first-social-media-giant>
- Suriarachchi, M. (2021), “*Micro-trends and Overconsumption: Fashion Consumerism in the 21st Century*,” Cainz, August 24. Online: <https://cainz.org/10066/>
- Tessler, J. (2008), “*Fraud plagues prepaid calling card market*,” NBC News, October 6. Online: <https://www.nbcnews.com/id/wbna27052474>
- Tham, I. (2025), “*Phishing for trouble: The returning physical bank token is no silver bullet*,” The Straits Times, Nov 6. Online: <https://www.straitstimes.com/opinion/phishing-for-trouble-the-returning-physical-bank-token-is-no-silver-bullet>
- The International Agency for Research on Cancer Working Group on artificial ultraviolet (UV) light and skin cancer (2006), “The association of use of sunbeds with cutaneous malignant melanoma and other skin cancers: A systematic review,” *International Journal of Cancer*, 120(5), 1116–1122, <https://doi.org/10.1002/ijc.22453> .
- Thomson, C. (2023), “*Death of the DVD*,” The Glasgow Guardian, March 28. Online: <https://glasgowguardian.co.uk/2023/03/28/death-of-the-dvd/#:~:text=Yet%2C%20much%20to%20my%20disappointment%2C%20DVDs%20are,films%2C%20and%20the%20launch%20of%20streaming%20services>
- Tobin, J. (2004), “*Pikachu's Global Adventure: The Rise and Fall of Pokémon*,” Duke University Press, February 5.
- Tornatzky, L.G. and Fleischer, M. (1990). “*The Processes of Technological Innovation*”. Lexington Books, Lexington, Massachusetts.
- Tripathi, P. (2023), “*Carpooling- Past, Present and Future*,” Medium, August 2. Online: <https://medium.com/@tripathi.praveen90/carpooling-past-present-and-future-c267668c47de>
- Vargo, S.L. and Lusch, R.F. (2008). “Service-dominant logic: Continuing the evolution,” *Journal of the Academy of Marketing Science*, 36(1), 1-10.
- Verganti, R. (2009). “*Design-Driven Innovation*”, Harvard Business Press.

- Viswaveda, L. (2025), “*The Yoyo effect: Bouncing back with Resilience*,” Medium, October 12. Online: <https://medium.com/@viswaveda.lokk/the-yoyo-effect-bouncing-back-with-resilience-40da3d186299>
- Wall, H. et al (2022), “How Do We Jump-Start Self-measured Blood Pressure Monitoring in the United States? Addressing Barriers Beyond the Published Literature”, *American Journal of Hypertension*, 35(3), 244-255.
- Wangfred (2026), “*Why Hoverboards Failed: The Rise and Fall of a Futuristic Gadget*,” Gyroor, January 15. Online: <https://gyroorboard.com/blogs/learn-with-gyroor/why-hoverboards-failed-the-rise-and-fall-of-a-futuristic-gadget>
- Williams, I. (2016), “*Course accuracy: why your GPS watch isn't infallible*,” The Guardian, April 15. Online: <https://www.theguardian.com/lifeandstyle/the-running-blog/2016/apr/15/course-accuracy-why-your-gps-watch-isnt-infallible>
- White, L. (2026), “*Explained: Sms Music Standards, Composition, and Industrial Use*,” Alibaba.com, March 5. Online: <https://www.alibaba.com/product-insights/sms-music.html>
- Widdicombe, L. (2014), “The End of Food,” The New Yorker, May 5. Online: <https://www.newyorker.com/magazine/2014/05/12/the-end-of-food>