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Product Enhancements in the Age of Nuclear Verdicts

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Introduction

The legal landscape governing product liability has entered a potentially volatile and unpredictable era, with rapid technological advancements on one hand and rapid technological advancement on the other. Many times, product enhancements offer fodder for plaintiff attorneys, generating questions as to the omission of when an optional safety feature or an emerging technology elevates a product's design from reasonably safe to defective and unreasonably dangerous.

Foundational precedent establishes that, generally, manufacturers have a duty to sell their products in a reasonably safe condition.ⁱ While manufacturers are responsible for minimizing foreseeable harm,ⁱⁱ meeting industry customs may not automatically satisfy a legal standard of care.ⁱⁱⁱ Furthermore, where manufacturers provide optional product enhancements to customers, modern courts remain divided on liability when their absence causes harm.

The Restatement (Second) of Torts utilizes a “consumer expectations” test to determine whether a product is unreasonably dangerous to its user by assessing whether it functions according to how an ordinary consumer would expect. For liability to attach,

“[t]he article sold must be dangerous to an extent beyond that which would be contemplated by the ordinary consumer who purchases it, with the ordinary knowledge common to the community as to its characteristics.”^{iv}

Furthermore, some courts have held that a supplier is liable for harm caused by his product if he “has no reason to believe that those for whose use the chattel is supplied will realize its dangerous condition.”^v

Under the Restatement (Third) of Torts, the consumer expectations test plays a reduced role in assessing whether a product is unreasonably dangerous, deferring to the risk-utility test, which incorporates consumer expectations within several non-exclusive factors that evaluate whether a product is defectively designed. Under this framework, a product:

“is defective in design when the foreseeable risks of harm posed by the product could have been reduced or avoided by the adoption of a **reasonable alternative design** by the seller or other distributor, or a predecessor in the commercial chain of distribution, **and the omission of the alternative design renders the product not reasonably safe...**”^{vi}

Under this analysis, plaintiffs proceeding under a theory of defective design have the burden of showing the product at issue had a feasible alternative design that could have reduced or prevented their injury entirely. These alternative designs must be technologically feasible and implementable while maintaining the product's utility. Thus, product enhancements offered by manufacturers often play a key role in defective design claims.

What is a Product Enhancement?

Outside of the litigation context, product enhancements are universally celebrated as drivers of commercial success and consumer satisfaction. Whether a manufacturer is rolling out advanced safety features or non-safety related upgrades, these modifications generally improve the user experience, lower entry-level consumer costs, and can sharply differentiate a brand from its competitors.

In a products liability context, however, these iterative improvements may be a double-edged sword. For plaintiff's attorneys, a product enhancement is rarely viewed as a voluntary breakthrough. Rather, it is often weaponized as a "reasonable alternative design" that should have been implemented much sooner, applied more universally, or both. By looking at how courts evaluate both safety-critical modifications and purely functional or technological upgrades, yesterday's cutting-edge enhancement can easily become tomorrow's evidence of a defective design.

Some common examples of product enhancements, in the safety and non-safety context, include:

Safety devices (meant to improve safety)	Non-safety devices (not necessarily meant to improve safety)
Tractor (rollover protection structure)	Automobile (Apple CarPlay)
Gas Cans (flame arrestor)	Automobile (Passenger infotainment screens)
(Tempered or shatter-resistant films) Windows	(hi-beams and powerful LEDs) Automobile
Automobile (back up alarm)	Automobile ("track mode" or "launch controls")
Saw (safety kill switch)	Automobile (self-driving features)
Jet Skis (electronic stability control)	Powertools (brushless motors)
Conveyor Belt (fall-out safety protection)	Saws (high tooth-count carbide-tipped blades)
Commercial Trucks (operator drowsiness detection)	Motorcycles (electronic cruise-control)
Kitchen Appliance (range/cooktop senses cookware)	Smartphones (lithium-ion batteries)
Motorcycle (crash bar)	Soccer/football cleats (low-profile / configuration alterations)

Whether it is offering the option of heat sensors on a kitchen stovetop or a selection of different digital displays in automobiles, manufacturers sometimes find themselves having done the plaintiff's work for them when it comes to proving a reasonable alternative design could have mitigated an injury. However, merely proving such a design was feasible – or even that it pre-existed – is insufficient to meet the burden of proof for a design defect claim.

The Law in Action

"...a bicycle is more safe if equipped with lights and a bell, but the fact that one is not so equipped does not create the inference that the bicycle is defective and unreasonably dangerous."

– *Marchant v. Mitchell Distribg. Co.*, 240 S.E.2d 511, 513 (S.C. 1977).

Under the Restatement (Third) approach, a feasible alternative design is only one component of the plaintiff's road to victory. A design defect plaintiff must also prove that without the alternative design, the product was rendered "not reasonably safe." The question of what constitutes "reasonably safe" creates fertile ground for argument and may be an evolving concept.

Factors courts typically consider include:

- the magnitude and probability of the foreseeable risks of harm,
- the instructions and warnings accompanying the product,
- the nature and strength of consumer expectations regarding the product, including expectations arising from product portrayal and marketing, and
- the relative advantages and disadvantages of the product as designed.^{vii}

This "reasonableness" inquiry forms a critical part of a defective design claim. Thus, even if a plaintiff uses a manufacturer's optional product enhancement against him to prove a safer alternative design existed, this alone does not prove that the product was defective.

For instance, recently in *Borowsky v. U-Haul*, New Jersey's intermediate appellate court found that the mere existence of an alternative design proffered by a plaintiff was not dispositive in a design defect case. In that case, the plaintiff was injured when he slipped from the back of a U-Haul truck and asserted that it was defective because it lacked slip-resistant features. His expert provided several alternative designs that would be simple and cost-effective, without impacting the truck's utility. However, this alone was insufficient for Plaintiff to win on summary judgment. The court held that in addition to a reasonable alternative design, the plaintiff must also show that the product was rendered "not reasonably safe" without the presence of any such an alternative design. As such, the lower court's denial of plaintiff's motion for summary judgment was appropriate.^{viii}

When All Your Friends Are Jumping Off the Bridge

When arguing against a defective design claim, manufacturers will often appeal to industry standards in order to show that a proposed reasonable design was unfeasible or impractical to implement. Additionally, industry custom may also be used to determine whether a product was reasonably safe.^{ix} However, relying on custom alone within a particular trade will not always succeed, especially in cases of new and emerging technology. For example, in 1932, Judge Learned Hand delivered his famous opinion, *T.J. Hooper*, which remains a foundational text on why relying entirely on industry custom can be a fatal mistake in a negligence or product liability lawsuit.^x

Although not a product liability case itself, the facts of the case provide a perfect historical parallel to modern technology integration. A towing company's tugboats sank during a severe storm, resulting in the total loss of their cargo. At the time, radio receivers were an emerging, available technology, but it was not the industry custom or standard practice for tugboats to carry them. However, a few proactive captains had equipped their boats with radios; they heard the incoming storm warnings and stayed safely in port. The defendant's tugs had no radios, set sail blindly into the storm, and were eventually lost at sea, along with everything they carried.

The central legal question was simple: Could a company be held liable for failing to adopt an emerging safety technology if the rest of the industry wasn't yet using it either? Judge Learned Hand answered with a definitive yes, ruling that adherence to an industry custom does not automatically immunize a company from liability:

"[I]n most cases reasonable prudence is in fact common prudence; but strictly it is never its measure; a whole calling may have unduly lagged in the adoption of new and available devices. It never may set its own tests, however persuasive be its usages. Courts must in the end say what is required; there are precautions so imperative that even their universal disregard will not excuse their omission."^{xi}

Ultimately, the court held that because radio technology was readily available and its cost was heavily outweighed by the catastrophic risk of cargo loss, the failure to equip the tugs was a breach of the standard of care. For today's manufacturers, *T.J. Hooper* serves as an enduring cautionary tale. It proves that courts, not industry habits, customs, or even standards, will likely have the final say on safety—meaning that a company can be found liable for “unduly lagging” behind the curve of available product enhancements.^{xii}

The Best Position: Free Markets and Public Safety

The interplay between the Restatement (Second)'s consumer expectation test and the Restatement (Third)'s risk-utility test is demonstrated in *Scarangella v. Thomas Built Buses, Inc.*, in which the New York Court of Appeals balanced the risks created by the subject product's design by first assessing the buyer's

knowledge regarding the product.^{xiii} The Court stated that a manufacturer is only strictly liable where it is in the best position to know the dangers inherent in its product.^{xiv} Accordingly, a product manufactured without safety devices is not defective as a matter of law if:

1. The purchaser is thoroughly knowledgeable about the product and its use;
2. The purchaser is aware of the availability of the safety device;
3. In some normal uses, the product is not unreasonably dangerous without the safety device; and
4. The purchaser can balance the benefits and risks of not having the safety device for the purchaser's intended use.^{xv}

In the following decades, the framework articulated in *Scarangella* would become the prevailing approach in design defect cases.^{xvi} Later, the Eighth Circuit in *Parks v. Ariens* highlighted when the optional equipment doctrine is applicable: "[A] manufacturer is, under certain circumstances, not negligent if a purchaser fails to buy optional safety equipment that would have prevented the accident."^{xvii}

In *Parks*, the Plaintiff received fatal injuries when his riding lawn mower rolled over him while he was operating it on a steep incline. The Plaintiff, pointing to an optional rollover protection structure (ROPS), claimed that the lawn mower without the ROPS was unreasonably dangerous. The Eighth Circuit held that in situations when a device can have multiple uses, the buyer is in a better position to determine when they are operating it in a safe manner. In other words, the buyer is "in a position to balance the benefits and the risks of not having a ROPS for purposes of his planned use."^{xviii}

The purchaser, not the manufacturer, knew when the optional safety enhancements were necessary. The manufacturer therefore had "fulfilled its duty to the buyer" because it had informed the buyer "that an optional feature is available and necessary in order to make the product reasonably safe for certain uses."^{xix}

Chaos in Action: The *Marchant* Saga

The volatility and unpredictability of liability surrounding product enhancements is well illustrated by a pair of contrasting opinions issued by the same court just two years apart: *Marchant v. Mitchell Distributing Co.* (1977) (*Marchant I*) and *Marchant v. Lorain Div. of Koehring* (1979 *Marchant II*).

Marchant I involved a crane accident where an optional safety device was available but not installed. In 1977, the South Carolina Supreme Court issued a unanimous opinion affirming summary judgment for the distributor. The court declared that "the fact the crane was without the optional safety device, does not tend to prove that it was defective," noting that "most any product can be made more safe".^{xx} Under a Restatement (Second) of Torts § 402A analysis, the plaintiff's fatal error was failing to provide competent

evidence showing that the crane was rendered "unreasonably dangerous" beyond the contemplation of an ordinary user simply because it lacked the optional upgrade.

Just two years later, the same court reached the exact opposite outcome in *Marchant II* under a separate appeal in a case against the manufacturer arising from the same incident. Rationalizing these disparate holdings reveals a crucial lesson for legal practitioners: the foundational importance of expert testimony. In *Marchant II*, the court explicitly distinguished the prior *Marchant I* decision noting that the previous record was entirely "barren of any competent evidence" regarding the crane's inherent danger.^{xxi} In *Marchant II*, the plaintiff successfully overcame summary judgment by providing testimony from a design engineer. This expert testimony transformed an apparent question of law into a question of fact, establishing a triable jury issue regarding whether the absence of the safety device rendered the crane unreasonably dangerous—proving that product enhancement litigation can rise and fall depending on an expert's testimony.

Liability in the New Age

In a world of rapidly evolving technology accessible to the average consumer, ordinary goods found on the market are increasingly integrated with advancements like artificial intelligence, product automation, and interconnected "smart" ecosystems. Despite the convenience these new technologies provide, they also create uncertainty within the legal landscape when harm is attributed to the design of such technology. With seemingly new technology being introduced into the market every day, the law has struggled to keep up.

An emerging issue that courts are confronting is whether software applications and digital programs constitute "products" under traditional notions of product liability. The Restatement (Third) of Torts defines the products as "tangible personal property distributed for use or consumption."^{xxii} Is software "tangible" property? Services provided on a commercial basis are explicitly excluded from this definition.^{xxiii} Thus, some courts have not recognized software as a product, and in such cases strict product liability does not apply to designers of defective digital programs, while there have been exceptions.^{xxiv}

A Drifting Burden

The nature of introducing new and unfamiliar technology into the market could render the consumer expectations test inapplicable. In *Maywald v. Toyota Motor Corporation*, the court held that lane departure warning (LDW) systems in vehicles are not sufficiently "familiar and ubiquitous to the driving public that the ordinary driver would expect [their] inclusion as necessary to the safe performance of the vehicle."^{xxv} Under the consumer expectations test, this type of finding may be dispositive. Even if a technology is familiar and ubiquitous to the public, this does not automatically render the public capable of forming "coherent expectations related to the nuances of the technology's design..."^{xxvi} In this way,

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familiar yet complex technology differs from simplistic product designs – which have existed longer and possess a single safety-related function.^{xxvii}

As new technology continues to hit the market, the consumer-safety minded approach articulated in *Scarangella* and *Parks* may skew courts towards liability for hardware manufacturers and software developers. *An ever-increasing list of optional safety and non-safety devices on vehicles (e.g. full self-driving) further blurs auto manufacturers' potential liability under the consumer expectations test.*

Few ordinary buyers are equipped to understand the intricacies of accessible yet opaque products and services, such as GenAI. Because of this, courts may find that the engineers and designers behind such software are in the best position to ensure the user's safety going forward.

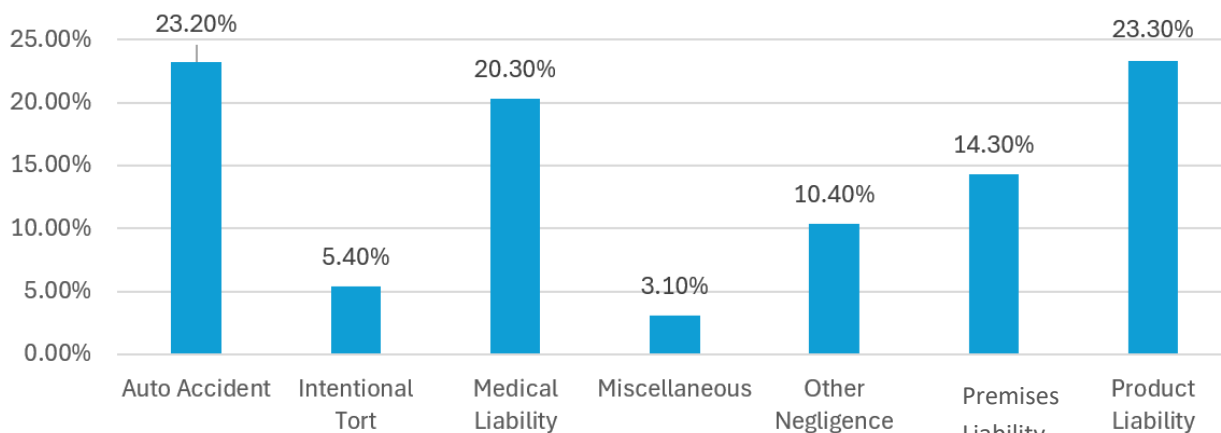
Experts Matter

Under the Restatement (Third)'s framework, plaintiffs are required to make a *prima facie* showing that a feasible alternative design could have prevented the injury. Bald evidence that a design could have been incorporated and theoretically made the product safer is insufficient. A plaintiff must proffer evidence as to the alternative design's cost, its effect on the product's utility, or how such factors would balance against seriousness of potential harm.^{xxviii}

Moreover, experts are expected to know and testify as to the design features of the product in question. This is especially so in cases of new and complex technologies, which may be little understood by consumers, users, or jurors.^{xxix} Proving reasonable alternative designs is necessarily more convoluted in specialized and rapidly-changing fields like software development, where it may not always be clear what is technologically feasible at a given moment in time.

The Phenomenon of Nuclear Verdicts

The median nuclear verdict in product liability cases peaked at \$36,000,000 in 2022—a 50% rise in a decade.^{xxx}



Product Enhancements in the Age of Nuclear Verdicts

Product liability encompasses the largest percentage share of nuclear verdicts, making it one of the most volatile risk sectors in litigation. For manufacturers and distributors, the rise in inflated jury awards shifts the field from traditional risk management to an arena of high-stakes exposure. Plaintiffs' attorneys have increasingly leveraged reptile theory tactics to frame product enhancements as overdue safety corrections, rather than voluntary improvements or specifications left to the discretion of a particular manufacturer. This trend further underscores the need to be sensitive to the import of available – but absent – product enhancements, not just statutory compliance and strict adherence to industry-specific regulations.

Conclusion

In an era where the median nuclear verdict in product liability cases has soared to \$36 million, product enhancements can be a double-edged sword for manufacturers—offering improved and exciting features that may differentiate a company from its competitors, while also opening them up to liability. Additionally, this area of the law is evolving; some jurisdictions protect manufacturers who offer optional features to sophisticated buyers, while other jurisdictions demonstrate that product enhancements may be used as evidence to show a safer, alternative design should have been used. That being said, recent cases show that product enhancement litigation rarely turns on a static question of law. It instead rises and falls on expert testimony regarding feasible alternative designs. In this landscape, a company's survival may depend on carefully measuring the impact of optional product enhancements.

With the rapid rise of AI and emerging software technologies, the burden is shifting safety back onto developers and engineers. It remains imperative that companies do their best to adequately educate and warn consumers about the risks associated with their product enhancements.

ⁱ See *MacPherson v. Buick Motor Co.*, 217 N.Y. 382, 389-90, 111 N.E. 1050, 1053 (N.Y. 1916); see also *Bexiga v. Havir Mfg. Corp.*, 60 N.J. 402, 410, 290 A.2d 281, 285 (N.J. 1972) (finding that there is a compelling public interest in ensuring that safety devices are installed, which “demands more from the manufacturer than to permit him” to trust that the installer or purchaser of the equipment will implement sufficient safety measures).

ⁱⁱ *Larsen v. Gen. Motors Corp.*, 391F.2d 495, 503 (8th Cir. 1968).

ⁱⁱⁱ See *The T.J. Hooper*, 60 F.2d 737 (2d Cir. 1932).

^{iv} Restatement (Second) of Torts § 402A, cmt. i (1965).

^v Restatement (Second) of Torts § 388 (1965).

^{vi} Restatement (Third) of Torts: Prod. Liab. § 2(b) (1998) (emphasis added).

^{vii} Restatement (Third) of Torts: Prod. Liab. § 2, cmt. f (1998) (“A plaintiff is not necessarily required to introduce proof on all of [the factors that may be considered in determining whether an alternative design is reasonable and whether its omission renders a product not reasonably safe]; their relevance, and the relevance of other factors, will vary from case to case.”)

^{viii} *Borowsky v. U-Haul*, No. A-2148-24, 2026 WL 1781926 (N.J. Super. App. Div. June 22, 2026).

^{ix} Restatement (Third) of Torts: Prod. Liab. § 2, cmt. d (1998).

^x *The T.J. Hooper*, 60 F.2d 737 (2d Cir. 1932).

^{xi} *Id.* at 740.

^{xii} See also Restatement (Third) of Torts: Prod. Liab. § 2(d) (1998) (“If the plaintiff introduces expert testimony to establish that a reasonable alternative design could practically have been adopted, a trier of fact may conclude that the product was defective notwithstanding that such a design was not adopted by any manufacturer, or even considered for commercial use, at the time of sale.”).

^{xiii} Scarangella v. Thomas Built Buses, Inc., 93 N.Y.2d 655, 661, 717 N.E.2d 679, 683 (1999).

^{xiv} *Id.* at 659, 717 N.E.2d at 681.

^{xv} *Id.* at 661, 717 N.E.2d at 683.

^{xvi} See e.g., Biss v. Tenneco, Inc., 64 A.D.2d 204, 207-08, 409 N.Y.S.2d 874, 876-77 (1978); Austin v. Clark Equipment Co., 48 F.3d 833, 837 (4th Cir. 1995); Morrison v. Kubota Tractor Corp., 891 S.W.2d 422, 428-29 (Mo. Ct. App. 1994); Anderson v. P.A. Radocy & Sons, Inc., 865 F.Supp. 522, 531 (N.D. Ind. 1994); Parks v. Ariens Co., 829 F.3d 655, 657-58 (8th Cir. 2016).

^{xvii} Parks 829 F.3d at 657-58

^{xviii} *Id.* at 661.

^{xix} *Id.* at 658-59.

^{xx} Marchant v. Mitchell Distribg. Co., 270 S.C. 29, 35, 240 S.E.2d 511, 513 (S.C. 1977).

^{xxi} Marchant v. Lorain Div. of Koehring, 272 S.C. 243, 247, 251 S.E.2d 189, 191 (1979).

^{xxii} Restatement (Third) of Torts: Prod. Liab. § 19(a) (1998).

^{xxiii} Restatement (Third) of Torts: Prod. Liab. § 19(b) (1998).

^{xxiv} Michael Daniels, Emerging Technology and Its Application to Products Liability, 33 Products Liab. Litig. 11 (2022); *but see* Holbrook v. Prodomax Automation Ltd., No. 1:17-CV-219, 2021 WL 4582161 (W.D. Mich. Oct. 6, 2021) (holding that software was a product under the Michigan Product Liability Statute because it was an essential part of a computer-automated assembly line); *In re Ft. Totten Metrorail Cases Arising Out of Events of June 22, 2009*, 895 F. Supp. 2d 48 (D.D.C. 2012) (permitting a design defect claim against Washington's Transit Authority to proceed when two of its trains collided allegedly due to a defect in its data management system).

^{xxv} Maywald v. Toyota Motor Corp., No. 1 CA-CV 23-0723, 2024 WL 5165445 at *2 (Ariz. App. 1st Div. Dec. 19, 2024).

^{xxvi} Jauregui v. Daimler Truck N.A. LLC, No. CV-23-00729-PHX-JJT, 2025 WL 908739 at *5 (D. Ariz. Mar. 25, 2025), *aff'd sub nom.* Jauregui v. PACCAR, Inc., No. 25-2654, 2026 WL 1625350 (9th Cir. June 5, 2026).

^{xxvii} *Id.* at *6.

^{xxviii} See *Lease by Lease v. Intl. Harvester Co.*, 174 Ill. App. 3d 897, 529 N.E.2d 57 (Ill. App. 4th Dist. 1988).

^{xxix} See Jauregui v. Daimler Truck N.A. LLC at *7.

^{xxx} Cary Silverman & Christopher E. Appel, NUCLEAR VERDICTS: AN UPDATE ON TRENDS, CAUSES, AND SOLUTIONS, U.S. Chamber of Commerce Institute for Legal Reform at 4 (May 2024).