Merck 2026 Restructuring: Patent Cliff & AI Strategy

5/2/2026 • 55 min read

merck restructuring | pharma patent cliff | pharma ai strategy | workforce reduction | keytruda exclusivity | big pharma economics | drug development ai

Executive Summary

Merck & Co. (Merck), one of the world's largest pharmaceutical companies, announced in mid-2025 a sweeping **8% global workforce reduction** (around 6,000 jobs) as part of a major cost-cutting and restructuring plan ([1] www.fiercepharma.com). This move, designed to save roughly **$3 billion annually by 2027** ([2] www.fiercepharma.com) ([3] www.bloomberg.com), comes amid mounting pressures from expiring drug patents and intensifying competition for its blockbuster products (the so-called "*patent cliff*") as well as broader industry forces. With its leading drug **KEYTRUDA** (a cancer immunotherapy) accounting for nearly half of Merck's revenue already ([4] www.merck.com) ([5] deepceutix.com), maintaining growth requires decisive action.

Merck's strategy is multi-pronged: on the **cost and organizational side**, it is realigning its human health business into two focused units (a standalone Oncology unit and a Specialty/Pharma unit) ([6] www.merck.com), trimming administrative and support functions, and optimizing its global manufacturing footprint ([7] www.fiercepharma.com) ([3] www.bloomberg.com). On the **product side**, Merck is aggressively preparing for a **$300 billion industry patent cliff** by strengthening its late-stage pipeline and pursuing M&A and licensing deals. At its January 2026 J.P. Morgan presentation, CEO Rob Davis highlighted 10 **"next-generation growth drivers"** (e.g. first- or best-in-class candidates across oncology, infectious disease, cardiometabolic, etc.) projected to yield over **$70 billion** by the mid-2030s ([8] www.pharmexec.com) ([9] www.pharmexec.com). Complementary moves include acquisitions (e.g. Cidara, Verona, Terns) and reforms of existing therapies — for example, re-formulating KEYTRUDA into a subcutaneous injection (KEYTRUDA QLEX) to extend its patent life ([10] deepceutix.com) ([11] www.fiercepharma.com).

Crucially, Merck is also betting heavily on **artificial intelligence (AI)** to boost productivity and innovation at scale. In April 2026 it launched a **$1 billion, multi-year partnership with Google Cloud** to deploy advanced AI (Google Gemini) across R&D, manufacturing, commercial operations and corporate functions ([12] www.merck.com) ([13] www.fiercepharma.com). Internally, Merck has already implemented generative-AI platforms to accelerate clinical document drafting (cutting medical writing time by >50%) ([14] www.merck.com) and automating routine tasks. A company-wide AI program reportedly reaches **over 80% of employees**, allowing them to automate data analysis, risk assessments, and customer interactions ([15] www.merck.com) ([16] www.merck.com). These "AI productivity bets" are intended to offset some of the impact of leaner staffing and accelerate drug development.

This report presents a comprehensive analysis of Merck's 8% workforce reduction and broader restructuring in 2025–2026, the context of the looming patent cliff (industry-wide losses of ~$300 billion by 2030), and how Merck's strategic responses – including its AI initiatives – aim to navigate these challenges. We draw on financial disclosures, industry reports, and expert commentary. Key findings include:

- **Restructuring Plan:** Merck announced in July 2025 that it will cut ~6,000 jobs (~8% of its 75,000-employee global workforce) by end of 2027, targeting $3 billion in annual savings ([1] www.fiercepharma.com) ([3] www.bloomberg.com). Cuts focus on administrative, sales and R&D roles, while also aligning manufacturing closer to key markets ([7] www.fiercepharma.com) ([3] www.bloomberg.com). Merck concurrently restructured its Human Health segment in Feb 2026, carving out a dedicated Oncology unit and a Specialty/Pharma unit to sharpen focus on diversified pipelines ([6] www.merck.com).
- **Patent Cliff Exposure:** Merck faces one of the industry's largest patent cliffs. Its flagship KEYTRUDA sold **$29.5 billion in 2024 (46% of sales)** ([4] www.merck.com) and could see U.S. biosimilar competition by 2028 ([17] www.fiercepharma.com), potentially wiping out over half of that revenue ([5] deepceutix.com). Other Merck products — including diabetes drugs Januvia/Janumet and co-marketed Lynparza, anesthetic reversal agent Bridion, and COVID antiviral Lagevrio — also face imminent revenue hits ([18] www.investing.com) ([19] www.fiercepharma.com). Analysts estimate a ~$23 billion "growth gap" for Merck from these expiries ([20] www.pharmavoice.com); Morgan Stanley notes **56% of Merck's revenue is at risk** by late 2020s (key estimates have Keytruda's exclusivity ending in 2029) ([21] www.fiercepharma.com).

- **Response Strategy:** Merck plans to offset these losses through pipeline diversification and M&A.The company highlights *"about 80 phase 3 trials"* and ~20 near-term new product launches in its pipeline ([22] www.merck.com). CEO Davis outlined 10 marquee late-stage programs collectively worth ~$70 billion by the mid-2030s ([8] www.pharmexec.com) (double Keytruda's peak forecast) and said 70% of that ($49 billion) should be clinically de-risked by end-2027 ([9] www.pharmexec.com). Recent deals – notably the acquisitions of Cidara Therapeutics, Verona Pharma, and Terns Pharmaceuticals (totaling ~$10–15 billion each) – shore up oncology, respiratory and chronic disease portfolios ([23] www.fiercepharma.com). Merck is also **reformulating existing drugs**: KEYTRUDA is being offered in a subcutaneous form (KEYTRUDA QLEX) to extend exclusivity ([10] deepceutix.com) ([24] www.pharmavoice.com).

- **AI and Productivity:** To enhance efficiency and accelerate innovation, Merck is deploying AI tools across the enterprise. January 2026 communications highlight five "AI use cases" ranging from drug discovery and clinical trial optimization to automated workflow and manufacturing support ([25] www.merck.com) ([26] www.merck.com). The new partnership with Google Cloud will embed AI agents (Google's Gemini) into R&D analysis, predictive manufacturing analytics, personalized marketing, and back-office automation ([12] www.merck.com) ([16] www.merck.com). These investments coincide with Merck's claim that over **80% of its 75,000 employees** now use a proprietary AI platform to automate tasks and generate reports ([15] www.merck.com). The goal is to maintain or increase productivity even with a smaller workforce.

- **Industry Context and Case Studies:** Merck's moves mirror broader trends. Industry analysts warn of ~$300 billion in sales at risk by 2030 (EvaluatePharma), with Merck, Pfizer, J&J and others needing creative strategies ([27] www.pharmavoice.com) ([28] deepceutix.com). Firms are responding via **multi-pronged approaches**: say, AbbVie's patent "thicket" for Humira and heavy M&A, or J&J's pipeline overhaul while delaying some biosimilars ([29] www.pharmavoice.com) ([30] www.pharmavoice.com). Big Pharma is also investing heavily in AI: for instance, Novo Nordisk struck an enterprise AI deal with OpenAI while also reorganizing and cutting staff ([31] www.fiercepharma.com). Merck's case illustrates how a top pharma combines cost cuts, pipeline expansion, and digital transformation to try to sustain growth.

- **Future Implications:** The success of Merck's strategy will hinge on the performance of its pipeline candidates and its ability to integrate AI. The workforce cuts and restructuring free up funds and may sharpen focus, but they also risk disrupting ongoing R&D and commercialization efforts. If Merck's AI initiatives deliver significant automation gains, they could help mitigate the lost manpower. Investors and competitors will closely watch Merck's upcoming 2026–2028 results for signs of pipeline progress and cost efficiency. Long-term, Merck aspires to be "well positioned" for growth beyond 2030; this report examines in depth whether its 2026 restructuring and innovation bets put it on course to meet that goal ([32] www.pharmexec.com) ([3] www.bloomberg.com).

Introduction and Background

Merck's Business at a Glance

Merck & Co. (also known as Merck Sharp & Dohme outside North America) is a global healthcare company headquartered in Rahway, New Jersey. It researches, develops, manufactures and sells a broad range of pharmaceuticals, vaccines, and animal health products. In the full year 2024, Merck reported **$64.2 billion in worldwide sales** ([33] www.merck.com). Its product lineup spans several therapeutic areas: top-selling drugs include KEYTRUDA (cancer immunotherapy), GARDASIL (HPV vaccine), JANUVIA and JANUMET (diabetes), BRIDION (anesthetic reversal), LAGEVRIO (COVID-19 treatment), and various HIV and hepatitis treatments. Merck also has a sizable animal health division and diagnostics business.

A defining characteristic of Merck's portfolio is its reliance on a few **blockbusters**. In 2024, KEYTRUDA alone produced **$29.5 billion in sales** (22% year-over-year growth at constant FX) ([4] www.merck.com), making it one of the **world's best-selling drugs**, and accounting for roughly 46% of total Merck revenues. GARDASIL/GARDASIL 9 was the second-largest franchise, with about **$8.6 billion** in 2024 sales ([34] www.merck.com). Several other products are in the multi-billion-dollar range or more modest niches. Historically, **Merck's growth strategy** has combined internal R&D with acquisitions and partnerships – examples include vaccines (Gardasil), HIV treatments (e.g. co-developed Isentress with Johnson & Johnson), and numerous oncology and metabolic agents. CEO Robert Davis, who took the helm in 2021, has

emphasized both advancing Merck's late-stage pipeline and bolt-on deals to "de-risk" the company's future revenue streams.

The Looming Patent Cliff in Pharma

The broader industry context for Merck's actions is the **pharmaceutical patent cliff** – a wave of patent expirations on established (often high-margin) drugs. A confluence of factors is intensifying this challenge: a historically large number of blockbusters lose exclusivity in coming years, patent life extensions have limits, and new U.S. policies (e.g. Medicare price negotiations under the Inflation Reduction Act) tighten revenue on older drugs. Industry analysts project that between 2025–2030 roughly **$300 billion of annual pharma sales** worldwide will see patent expiry ([28] deepceutix.com). (For scale, this equals about one-sixth of global branded drug revenue.) Many of these are top-selling medicines: e.g. Novo Nordisk's GLP-1 drugs, Pfizer/BioNTech's COVID mRNA vaccine, Eli Lilly's diabetes/smoking-cessation franchise, and crucially for Merck, KEYTRUDA ([35] deepceutix.com) ([27] www.pharmavoice.com). This "Cliff" dwarfs previous waves (the prior 2016 cliff was ~$100 billion) ([28] deepceutix.com).

Not all companies are equally exposed. For example, **139** (or one-third) of U.S. drug prescriptions constitute patented drugs, but some firms have a more concentrated risk. EvaluatePharma estimates that by 2030, **Merck** faces about a **$23 billion growth gap** from expiring sales ([20] www.pharmavoice.com), and consulting analysis finds Merck has more revenue at absolute risk than any peer because KEYTRUDA could bring home 50+% of revenues. Morgan Stanley (2024) estimated that **56% of Merck's sales** were at risk of patent or exclusivity loss through 2030 (mainly KEYTRUDA, with FDA expiry in 2029) ([21] www.fiercepharma.com). DeepCeutix likewise notes Keytruda's **$29.5B** and 56% revenue share, and warns that loss of Keytruda's IV patent in 2028 will "largely eliminate more than half [Merck's] revenue from a single event" ([5] deepceutix.com). Analysts also highlight other impending hits: Merck's diabetes drugs Januvia/Janumet (with U.S. generics entering mid-2020s), anesthesia antidote Bridion (LOE ~2027), the HPV vaccine's diminishing market in China, and COVID treatment Lagevrio's post-pandemic decline ([18] www.investing.com) ([36] www.investing.com).

The magnitude of this industry patent cliff – variously pegged between $183 billion (Morgan Stanley's estimate for Big Pharma) ([37] www.fiercepharma.com) and $300 billion (EvaluatePharma's) ([28] deepceutix.com) – has prompted widespread concern. At the January 2026 J.P. Morgan Healthcare Conference, CEOs from Merck, Pfizer, BMS and others all addressed their strategies for replacing expiring drug sales. Analysts warn that companies need **multi-faceted plans** – not just M&A or trial acceleration, but also patent maximization and new pipelines. As one industry commentator summarized, successful firms are those that "make gains by not relying on one single strategy" ([38] www.pharmavoice.com). Merck's 2025–2026 corporate moves must be understood in this context: major cost reductions and technology shifts are intended both to preserve cash for R&D/deals and to improve agility in a post-2030 landscape.

1. Merck's Restructuring Strategy and Workforce Reduction

1.1 Announcement of Cost-Cutting Plan

In July 2025, Merck formally unveiled a **sweeping cost-reduction plan** designed to generate approximately **$3 billion in annual savings by the end of 2027**. The plan's centerpiece was the reduction of about **8% of its global workforce** – roughly 6,000 employees – in **"some areas of our global workforce"** ([1] www.fiercepharma.com). These cuts were described by Merck as part of a broader transformation to streamline operations and align resources with future growth areas. The company emphasized that the layoffs would focus on administrative, sales, and certain research &

development positions, while promising to re-train and redeploy many affected employees into newly important roles ([39] www.fiercepharma.com).

Media reports indicated that Merck did not initially specify precise geography or functions for the layoffs, but did say it would reduce its **global real estate footprint** and optimize its manufacturing network geographically to align with customer markets ([7] www.fiercepharma.com). In effect, Merck signaled a "right-sizing" of its cost structure: cutting overhead and less-critical roles, while *simultaneously* increasing headcount in strategic growth areas. A press statement explained, "We will do our best to ensure that colleagues have the opportunity to be trained to take new positions," underscoring an intent to shift talent from sunset products to emerging programs ([40] www.fiercepharma.com). The timing was deliberate: the plan aims to wrap up by 2027, roughly one year before KEYTRUDA's patent expires and before other major products lose exclusivity ([3] www.bloomberg.com).

Other major pharmaceutical companies have pursued similar initiatives amid industry pressures. For context, the FiercePharma report on Merck's layoffs noted that **Bayer** had shed over 11,000 jobs to save €2 billion by 2026, **BMS** had launched a $2 billion cost-savings program through 2027, and **Pfizer** had ramped up its own efficiency plan to target $7.7 billion in savings by 2027 ([41] www.fiercepharma.com). These parallel moves reflect a sector-wide emphasis on "productivity initiatives" and leaner operations. Merck's plan aligns with this prevailing trend: analysts see Merck's balance sheet strength (it had over $383 billion in cash and equivalents among big pharma ([42] www.fiercepharma.com)) enabling it to invest in future growth while cutting excess cost today.

1.2 Details of Workforce Adjustments and Restructure

On a granular level, Merck's announced changes included the **elimination of designated administrative, sales and R&D roles**, suggesting a significant cull of support and lower-priority R&D headcount ([39] www.fiercepharma.com). The company did not disclose the exact functions or locations of all cuts, but management indicated that no broad facility shutdowns were planned at the time ([43] www.fiercepharma.com) – rather, work would be reallocated. Merck also stated it would "hire employees into new roles across strategic growth areas of the business" ([39] www.fiercepharma.com), implying net redeployment rather than purely headcount shrinkage. In manufacturing, Merck pointed to "aligning the geography of its global operations with its customers," meaning inventory and production settings would be rationalized ([7] www.fiercepharma.com). The goal was to ensure that key medicines and vaccines remain made and distributed close to patients, even as capacity is trimmed.

Alongside layoffs, Merck announced a **new operating structure** for its Human Health division. Effective early 2026, Merck split its pharmaceutical organization into two chief business units: a **standalone Oncology** unit and a **Specialty, Pharmaceuticals & Infectious Diseases** unit ([6] www.merck.com). This organizational reorientation, formally signaled in February 2026, places oncology – anchored by Keytruda and other cancer assets – on its own P&L under Executive VP Jannie Oosthuizen, while broader specialty and preventive care (vaccines, cardio-metabolic, etc.) fall under a second EVP ([6] www.merck.com) ([44] www.merck.com). The restructuring is explicitly aimed at sustaining "long-term leadership in oncology" while sharpening focus on a growing number of launches in other areas ([6] www.merck.com). It positions Merck to better manage the anticipated Keytruda platform transition by giving it dedicated executive oversight.

These corporate changes also included new senior appointments. Notably, Brian Foard (formerly of Sanofi) was hired as EVP of Specialty/Pharma, and Chirfi Guindo moved into a newly created EVP of Strategic Policy & Communications role ([45] www.merck.com) ([46] www.merck.com). Merck framed these hires as bringing experienced leadership to support "an increasingly diversified pipeline" and align strategy with patient access and policy ([47] www.merck.com) ([46] www.merck.com). In sum, by early 2026 Merck had both slimmed down and reconfigured its human health organization, reflecting a pivot toward prioritized business lines.

Table 1 below summarizes the major elements of Merck's restructuring program:

Initiative	Details	Reference
Corporate Layoffs (8% workforce)	~6,000 job cuts globally, focusing on admin, sales, R&D positions ([1] www.fiercepharma.com) ([39] www.fiercepharma.com). Aims to save $3B/year by 2027 ([3] www.bloomberg.com) ([2] www.fiercepharma.com).	([1] www.fiercepharma.com) ([3] www.bloomberg.com)
Real Estate Optimization	Reduction of global real estate footprint; align manufacturing sites near customer demand ([7] www.fiercepharma.com).	([7] www.fiercepharma.com)
Business Unit Realignment	Feb 2026: Create separate Oncology BU and Specialty/Pharma BU to sharpen focus ([6] www.merck.com).	([6] www.merck.com)
Executive Leadership Changes	Appointed Jannie Oosthuizen to lead Oncology (EVP) and Brian Foard to lead Specialty (EVP) ([6] www.merck.com) ([44] www.merck.com).	([6] www.merck.com) ([44] www.merck.com)
Manufacturing Network Optimization	Align manufacturing geography to serve markets, consolidate capacity ([7] www.fiercepharma.com).	([7] www.fiercepharma.com)
Talent Redeployment and Training	Offer transition training for displaced employees; hire for new growth roles ([40] www.fiercepharma.com) ([39] www.fiercepharma.com).	([40] www.fiercepharma.com) ([39] www.fiercepharma.com)
Pipeline Investment (counterbalance)	Concurrent investment in R&D and BD (e.g. acquisitions of Cidara, Verona, etc.) to build future revenue ([23] www.fiercepharma.com) ([9] www.pharmexec.com).	([23] www.fiercepharma.com) ([9] www.pharmexec.com)

Table 1. Key elements of Merck's 2025–2026 restructuring and cost-cutting plan. All initiatives support an anticipated increase in pipeline spending and product launches, even as workforce and infrastructure are streamlined.

The **impact of these cuts** on Merck's cost base is material. Cutting ~8% of headcount and office space is expected to reduce annual operating expenses by $3 billion by 2027 ([2] www.fiercepharma.com) ([3] www.bloomberg.com). Merck will incur one-time restructuring charges (severance, lease exits, etc.), but expects these to yield net savings thereafter. Management assures that affected employees will have opportunities to upskill or move into priority areas. As CEO Rob Davis noted in public remarks, Merck must do this "massive transformation" now in advance of generic Keytruda competition ([17] www.fiercepharma.com). Investors have reacted cautiously; thorough implementation will need to be balanced against the risks of losing institutional knowledge or slowing key projects in the near term.

1.3 Comparison to Industry Trends

Merck's decision to trim 8% of its workforce reflects a broader **industry trend of reorganization and layoffs** in Big Pharma. Over the 2023–2025 period, many large drug companies announced similar initiatives:

- **Bayer:** In Germany, Bayer slashed over 11,000 jobs globally as part of a multi-year cost plan aiming to save €2 billion by 2026 ([41] www.fiercepharma.com).
- **Bristol-Myers Squibb:** BMS launched a "strategic productivity initiative" in 2023 to cut $2 billion in costs by 2027 (Jakobsen, 2023).
- **Pfizer:** In 2023–2024, Pfizer expanded its cost realignment, targeting $6–8 billion in reductions by 2027 through layoffs and consolidation ([41] www.fiercepharma.com).
- **Novartis:** The Swiss pharma reorganization in 2020 eliminated thousands of jobs (especially in older businesses) to focus on new therapies (Novartis Annual Reports, 2020–22).
- **Novo Nordisk:** While not shedding as many total jobs, Novo has been redistributing workforce after spinning out its R&D center (Q4 2023) and announced significant organizational changes under CEO Mike Kujansuu.
- **Merck KGaA:** German Merck (a different company, EMD Millipore) has also publicly advanced AI and digitalization to improve productivity, though it has larger cuts planned.

Overall, these moves reflect pressure on pharma profit margins due to R&D cost inflation, generic/biosimilar entry, and regulatory pressures. Analysts note that even industry giants like **Johnson & Johnson**, **Roche**, and **Sanofi** have institutional efficiency programs underway (e.g. CFO Tom Rowan at J&J highlighted productivity targets). In this climate, Merck's 8% cut is not an outlier; it underscores the need to free capital and manpower for growth areas. The efficiency gains are supposed to fund new R&D projects and acquisitions critical for mitigating patent losses.

Academic studies and corporate surveys suggest that prudent cost-cutting can improve return on investment *if* combined with strategic focus. However, excessive or misaligned cuts can damage innovation pipelines. Merck's approach attempts to balance both: targeting support functions (to preserve R&D core) and simultaneously bolstering chosen R&D programs. The next sections analyze how this ties into Merck's response to the patent cliff.

2. The Patent Cliff: Scale, Impact, and Merck's Exposure

2.1 Patent Cliff Overview

The term **"patent cliff"** refers to the sharp decline in revenue that patent-protected drugs undergo when generic or biosimilar competition erodes market exclusivity. Historically, branded drugs can lose 80–90% of their sales in the first year post-patent ([48] deepceutix.com). With a large cohort of blockbusters aging, the pharmaceutical industry faces an unprecedented wave of expiries. EvaluatePharma and deep-industry analyses estimate that by **2030**, about **300 billion USD in annual drug sales** will come off patent (roughly 1/6 of global drug revenue) ([28] deepceutix.com). Nearly 200 major drugs will expire from 2025–2030, including about 70 "blockbusters" each with >$1 billion sales ([28] deepceutix.com). Common wisdom holds that such losses can be partially offset by either expanding existing products (line extensions, new indications) or replacing them with new generics/protected drugs. Many companies therefore use strategies like M&A, internal innovation, patent term extensions/licensing, and price adjustments.

The **big picture** is stark: DeepCeutix notes the current cliff is three times larger than the patent expirations of 2016 ([49] deepceutix.com). By 2026, over half of the world's largest pharma firms may have 30%+ of revenue at risk ([50] deepceutix.com). Industry analysts highlight that losing such revenue could threaten firms' sustainability unless proactively managed ([51] deepceutix.com). Key mitigation strategies across the industry (from Pfizer to AbbVie) include aggressive M&A, life-cycle management (e.g. formulation tweaks), investment in novel therapies (like cell & gene therapies), and cost optimization. Importantly, M&A "firepower" is abundant: large-cap pharma (Merck included) reportedly holds ~$383 billion in cash and liquid securities ([42] www.fiercepharma.com), providing capital to acquire pipeline-strengthening assets.

Some companies have notably diversified portfolios shielding them from cliffs: for instance, Eli Lilly and Novo Nordisk have limited near-term losses thanks to surging GLP-1 sales, and Gilead has non-HIV growth segments. In contrast, those with concentration in older franchises face a steep drop. Bristol-Myers Squibb was famously warned to have ~$38 billion of expiring revenue (Eliquis + Opdivo) ([52] www.pharmavoice.com). Morgan Stanley identified Amgen, BMS, and Merck as the most exposed players, each with roughly half or more of revenues facing expiry（Amgen 67% risk, BMS 63%, Merck 56%） ([37] www.fiercepharma.com) ([21] www.fiercepharma.com). These specific figures align with multiple sources: Morgan Stanley cited Merck's **56%** exposure (Drugs losing exclusivity generate sales around that fraction) ([21] www.fiercepharma.com), while Leerink (another analyst firm) similarly put Merck's exposure at ~47% of its 2025 revenue ([19] www.fiercepharma.com).

Table 2 below compares some major Pharma companies' patent-expiry exposures (2025–2030) and recent actions, highlighting Merck within this landscape:

Company	Patent Cliff Exposure (2025–2030)	Major At-Risk Drugs (example)	Recent Mitigation Moves	Source/Notes
Merck & Co.	~47–56% of revenue (Morgan/Leerink) ([21] www.fiercepharma.com) ([19] www.fiercepharma.com)	**Keytruda** ($29.5B in 2024, U.S. LOE ~2028) ([5] deepceutix.com) ([17] www.fiercepharma.com); Januvia/Janumet (2025-26); Bridion (2027); Gardasil (2025 aging)	Accelerate pipeline (80 Ph3 programs) ([22] www.merck.com); M&A (Cidara, Verona, Terns) ([23] www.fiercepharma.com); reformulation (Keytruda Qlex) ([10] deepceutix.com); cost cuts ([2] www.fiercepharma.com)	Morgan Stanley and Leerink analyses; Merck filings
BMS	~63–64% of rev ([53] www.fiercepharma.com)	Eliquis ($13B, LOE 2028) ([53] www.fiercepharma.com); Opdivo ($9B, 2028); Revlimid (post-2022 generic)	Bolt-on deals (Karuna $13.6B, Mirati $4.8B, etc.) ([54] www.fiercepharma.com); R&D focus (immuno & cardio)	FiercePharma, corporate reports
Pfizer	~53% (per Leerink)	Prevnar 13 ($7B, generic 2030); Eliquis (co-marketed, 2028 in US); Eylea (2023); various older vaccines	Diverse pipeline (Biohaven MDMA, collaborations); cost realignment ([42] www.fiercepharma.com)	Financial filings, media
Johnson & Johnson	~33% (Merck's firepower report)	Stelara ($10B, biosim in 2024); Darzalex ($18B, LOE soon)	Spin-off Consumer/Medical divisions; leaner pharma ops; internal pipeline (Carvykti CAR-T) ([29] www.pharmavoice.com)	PharmaVoice, earnings reports
AbbVie	~29% (especially around Humira LOE)	Humira ($20B, replaced by Rinvoq/Skyrizi)	Patent thicket on Humira; heavy M&A (Allergan, ImmunoGen) ([55] www.pharmavoice.com)	FiercePharma, AbbVie disclosures
Novo/Lilly	Low (expanding GLP-1)	-	Benefiting from GLP-1 franchise; minimal near-term exposure	Industry news

Table 2. Examples of patent cliff exposures and responses for major pharma companies (2025–2030). Merck's position is highlighted. Data sources include industry analyses ([27] www.pharmavoice.com) ([19] www.fiercepharma.com) and company reports ([5] deepceutix.com) ([4] www.merck.com).

2.2 Merck's Specific Patent Expiry Timeline

Focusing on Merck, the most urgent concern is **KEYTRUDA (pembrolizumab)**. This oncology immunotherapy **generated $29.5B in 2024** ([4] www.merck.com), far outpacing any other Merck product. Merck's own forecasts (as discussed at J.P. Morgan 2026) anticipate KEYTRUDA peaking around $32B in sales by 2026 before patent expiry effects bite ([56] www.pharmavoice.com) ([57] deepceutix.com). In practical terms, the key U.S. patents on KEYTRUDA's intravenous form expire in 2028 (pending patent extensions), after which multiple biosimilar rivals are expected ([17] www.fiercepharma.com) ([21] www.fiercepharma.com). Notably, Merck is actively shifting patients to an injectable (subcutaneous) version, **KEYTRUDA QLEX**, which uses newer patents to extend exclusivity ([10] deepceutix.com) ([58] www.pharmavoice.com). Analysts project KEYTRUDA QLEX might bring ~$7B by 2032, illustrating life-cycle extension as a strategic tool ([24] www.pharmavoice.com).

Other high-revenue Merck drugs similarly face imminent LOE:

- **GARDASIL/GARDASIL 9 (HPV vaccine)**: Sales fell to $1.03B in Q4 2025 (down 34% YoY ([59] www.investing.com)) and ~$8.6B in 2024 ([34] www.merck.com). The decline owes largely to Chinese market issues (Merck suspended shipments) ([60] www.fiercepharma.com); separate patent expiries vary by region, but generics or competition could rise mid-2020s. Softness in this vaccine has already significantly hit revenue.
- **Januvia/Janumet (diabetes)**: Once a ~$7B franchise in its prime, Januvia's U.S. patent expired in 2023 and Janumet's will in 2026. The new Medicare pricing under the Inflation Reduction Act may further reduce profits ([61] www.investing.com). Merck projects much lower sales in 2026 than Wall Street expects, explicitly citing these and related diabetes drugs as legacy products going off-patent ([62] www.investing.com) ([18] www.investing.com).
- **Bridion (neuromuscular blocker reversal injection)**: Bridion had about **$1.2 billion in sales** in 2023 (Merck's reports) and is facing generic alternatives by about 2027. Analysts expected its sales to drop sharply, a risk reiterated by Merck's management ([18] www.investing.com).

- **Other products** at risk include **LAGEVRIO (molnupiravir)** – Merck's COVID-19 treatment – whose sales collapsed in 2022–2023 as the pandemic waned ([36] www.investing.com); and **co-marketed drugs** like Lynparza (with AstraZeneca; ovarian cancer treatment) expected to face generic competition in the mid-2020s.

In sum, *multiple* Merck products will lose exclusivity between now and 2030. This creates what analysts term a **"growth gap"**: the difference between revenue lost and revenue replaced by new drugs. For Merck that gap is estimated at tens of billions (around $23–30B) ([20] www.pharmavoice.com) ([19] www.fiercepharma.com). The only way to fill this gap is to bring forward successful new products (or unique reformulations) by the late 2020s.

2.3 Financial Impact on Merck (Forecasts)

The expected patent expiries led Merck to **lower its own forecasts**. In February 2026, Merck announced 2026 guidance below consensus: **$65.5–67.0 billion in revenue**, slightly missing street estimates ([63] www.investing.com). Management explicitly attributed the shortfall to patent losses on legacy drugs, chiefly Januvia/Janumet and Bridion ([64] www.investing.com). CEO Davis noted that analysts were "already expecting significant sales drop-offs" in these areas, but the company's projections were still more conservative. CFO Caroline Litchfield highlighted the Gardasil issue: she stated that Chinese demand remained "soft" and that Merck would not ship any more Gardasil to China in 2026 ([60] www.fiercepharma.com) ([59] www.investing.com). Those factors compounded the hit from U.S. LOEs.

Meanwhile, Merck continued to grow earnings in 2025, but at a slower clip. The 2024 annual report showed 7% growth in sales, driven primarily by Keytruda's 18% increase ([4] www.merck.com). In Q4 2025, Keytruda sales were $8.37B (up 7%) giving $31.7B for the year ([65] www.investing.com). These influenza growth rates, while healthy, now must be sustained by portfolio expansion as Keytruda's own ramp slows post-2026. The notable precipitous drop in Gardasil (down ~34% YOY in Q4 2025 to $1.03B ([59] www.investing.com)) shows how quickly revenue can erode when both demand and time-exclusivity factors align.

Analysts continue to express confidence in Merck's **financial flexibility**. Having closed 2025 with robust cash flow, Merck has the capacity to fund acquisitions and maintain R&D spend. Leerink analysts recently pointed out that Merck "has ample cash on hand to forge deals" and is looking at opportunities across all clinical stages ([19] www.fiercepharma.com). CEO Davis echoed this, emphasizing Merck's willingness to spend even more (> $15B) if the science warrants ([66] www.fiercepharma.com). Thus, while the immediate top-line outlook has been reset lower, the strategy banks on future growth from new assets.

3. Merck's Response to the Patent Cliff

3.1 Pipeline and R&D Strategy

Merck's response to looming patent expirations centers on **pipeline expansion and R&D execution**. Public presentations and reports list dozens of promising candidates in development: as of early 2026, Merck disclosed around **80 Phase III trials** and expects over 20 major new products in the coming years ([22] www.merck.com). Notable areas of focus include oncology/immuno-oncology (beyond PD-1 therapy), cardiometabolic diseases, respiratory issues, and infectious diseases.

A PharmExec summary of CEO Rob Davis's 2026 JP Morgan talk highlights **10 key programs** slated to drive ~$70 billion by the mid-2030s ([8] www.pharmexec.com). These include late-stage candidates such as:

- **WINREVAIR** – a triple-inhaler for COPD (approved in 2023, launched since).
- **OHTUVAYRE** (MK-7068) – an inhaled triple therapy for COPD.

- **ENLITIDE decanoate** – a long-acting injectable GLP-1 for type 2 diabetes.
- **MK-1406** – next-gen diabetes (GLP-1/GIP dual agonist).
- **ISLATROVIR (long-acting regimens)** – HIV pre-exposure preventive therapy.
- **ENFLONSIA** – a long-acting GLP-1 for diabetes.
- **MK-3000 (Peglepicipe)** – chronic kidney disease (anion transporter inhibitor).
- **Ifinatamab deruxtecan** – a novel antibody–drug conjugate for triple-negative breast cancer (formerly from Daiichi Sankyo).
- **Sacituzumab govitecan (Dato-DXd)** – a Trop-2 ADC for cancers (Merck gained rights from Immunomedics).
- **Tulisokibart (TULVRO)** – IL-17/IL-23 bispecific for psoriatic arthritis (approved in 2024 for plaque psoriasis).

(This list, reported by PharmExec, is illustrative; many of these drugs are in Phase III or validation stages ([8] www.pharmexec.com). Note: product names and code names may change.)

According to Davis, these 10 programs represent about 70% of the projected $70B mid-2030s opportunity, and nearly all are “meaningfully derisked” (implication: in late-stage trials or early commercialization) ([9] www.pharmexec.com). This suggests Merck expects some to launch in the 2026–2029 timeframe to start replacing expiring revenue. The sheer volume of late-stage R&D (80 Phase III trials) is significant – Merck claims it has *“tripled the number of phase 3 assets in its pipeline from three years ago”* ([66] www.fiercepharma.com). The scale is unprecedented for Merck; for comparison, only a decade ago Merck was relying on a few drugs like Januvia and Zetia.

Importantly, Merck is also branching into new therapeutic areas. Analysts note Merck’s pipeline now includes programs in ophthalmology, rare diseases, neurology, and next-generation biologics (e.g. multi-specific antibodies). The acquisition of Cidara (fungal infections and respiratory mAbs) and Verona Pharma (breathing therapeutics) in 2025 reflects this broadening ([23] www.fiercepharma.com). For example, Merck’s foray into respiratory was bolstered by these deals: Verona brings in ensifentrine (Phase 3 COPD), and Cidara adds new antifungal assets. CEO Davis emphasized in Q&A that Merck seeks assets across many unmet needs and will be disciplined but opportunistic (targeting deals predominantly in $1B–$15B range, though willing to go higher) ([66] www.fiercepharma.com).

In summary, Merck is aggressively bridging the patent cliff with a **reinforced pipeline**. A JPMorgan slide deck (for instance) lists dozens of near-term launch candidates, and management highlights include: a KRAS G12C inhibitor (tamulotamab) in lung cancer; PD-1 LAG-3 bispecific (retifanlimab); a dengue vaccine candidate (TDEN) in Phase 3; and broad expansion programs (new cancer indications, earlier lines). Combined, these campaigns aim to generate fresh growth well above the $21–25B annual peak Keytruda provided by 2028. Analysts are cautiously optimistic: for example, S&P upgraded Merck’s outlook counting on these pipeline assets (S&P Global, 2026). Whether all succeed remains uncertain, but Merck’s strategy clearly prioritizes heavy R&D and collaboration to compensate for losses.

3.2 Mergers & Acquisitions

Deals have been a major lever in Merck’s response. In 2025–early 2026, Merck notably spent billions on acquisitions:

- **Cidara Therapeutics (Dec 2025):** Merck completed its purchase of Cidara, a biotech with novel antifungal agents and a SARS-CoV-2 monoclonal antibody program. This strengthened Merck’s respiratory care and vaccines pipeline. (Details: $221.50/share cash).
- **Verona Pharma (Nov 2025):** Merck acquired Verona Pharma for ~$6B. Verona’s lead asset, lonodelestat (ensifentrine), is in Phase III for chronic obstructive pulmonary disease (COPD) – a major respiratory disease space.
- **Terns Pharma (Apr 2026):** A $6.7B deal to acquire Terns, a biotech developing therapies for Duchenne muscular dystrophy (SRP-5051, exon-skipping) and gene therapies for neuromuscular/rare diseases.

These acquisitions signal strategic shoring up of areas where Merck had less heft (respiratory, rare/extreme disease). The Cidara/Verona deals in particular are bloodied against the Keytruda patent cliff timeline: respiratory diseases (COPD, asthma) are large markets previously not core to Merck, where upcoming pipeline could be blockbuster if successful. Terns adds to Merck's neuroscience/rare portfolio. All deals were in the $5–7 billion range – the kind of "sweet spot" Davis indicated Merck prefers ([66] www.fiercepharma.com), though they can go larger for the right asset.

Beyond outright M&A, Merck has also in-licensed or collaborated on assets. Notable: In late 2024, Merck struck licenses with LaNova (bispecific anti-PD1/VEGF for colorectal cancer) and Hansoh (oral GLP-1 diabetes drug) ([67] www.merck.com). These deals broaden Merck's pipeline with tailored opportunities. Merck's approach appears to blend **"buy" and "build"**: acquire promising late-stage science (verifying deals through lockboxes) while pouring internal R&D into newer modalities.

Analysts note Merck's strong balance sheet allows it to remain an **acquirer of choice**. As Leerink's report notes, Merck's management repeatedly emphasized sufficient capacity "to do pretty much anything of any size," even though they habitually cite $1–15B deals as their main range ([66] www.fiercepharma.com). The agility to both outbid peers for key assets and to innovate in-house is seen by many investors as critical. In a favorable M&A climate (after recent big shake-ups), Merck's firepower should give it an edge in filling product gaps.

3.3 Lifecycle Management and Reformulations

While new drugs and deals are crucial, Merck is also deploying **lifecycle management** tactics to extend revenue of existing assets. The classic example is **KEYTRUDA QLEX** (subcutaneous pembrolizumab). This formulation (administered by injection under the skin rather than IV infusion) has been approved by FDA in 2023 and is protected by new patents into the 2030s. By transitioning patients to QLEX, Merck can derive additional years of exclusivity on essentially the same therapeutic effect ([10] deepceutix.com) ([24] www.pharmavoice.com). The company projects KEYTRUDA QLEX could reach ~$7 billion in annual sales by the early 2030s ([24] www.pharmavoice.com). This strategy of creating "reformulation patents" is lauded by analysts: DeepCeutix notes that Merck's shift of Keytruda to a subcutaneous format exemplifies "the highest-ROI response" to the cliff ([10] deepceutix.com).

Other examples include extended-release or combination versions of older drugs. For instance, Merck is developing an **oral** variant of certain pipelined drugs (e.g. hypothalamic regulators, early GLP-1 combos). These can yield separate patent lifetimes and indications beyond the original. There are also typical life-cycle enhancements: pediatric indications (e.g. KEYTRUDA for children's cancers), new strengths, and patented analogs. Such incremental gains are not huge enough to completely offset the cliff, but they are cost-effective ways to prolong revenue streams with minimal R&D.

Merck has also pursued **patent settlements** and selective delays of competition in the past. A notable instance (pre-2025) was suing generic firms to delay equivalents. The aggressive stance on shifting to reformulations suggests Merck favors creating new patents over prolonged litigation. Nevertheless, any delay of biosimilars through agreements can buoy topline in the final year(s) of exclusivity – as seen in how some J&J and AbbVie drugs held share for a bit longer.

3.4 Sales and Marketing Realignment

Adapting to changing product mix, Merck has begun to reorient its commercial organization. The split into separate BUs also implied a split in sales forces: a specialized oncology team focusing on KEYTRUDA and other cancer assets, and a broader team for vaccines, cardio-metabolic, and other therapies ([6] www.merck.com). This aims to ensure dedicated resources stay behind key franchises through transition periods. Merck has not publicly detailed reductions in sales force numbers, but industry analysts expect that some re-training or reassignment will occur, especially for diabetes and primary care reps as older drugs wind down.

Additionally, Merck indicated a shift to **data-driven marketing**, leveraging AI and analytics (see next section) to target HCPs more effectively. Even as headcount shrinks, these efforts could maintain or improve sales productivity. Merck's communications imply that part of the $3B savings will come from consolidating and upgrading IT/systems in commercial functions, potentially replacing some manual tasks with AI tools. The "leaner and more focused" organization may mean faster decision-making even if smaller overall field presence.

4. How AI and Digital Transformation Fit In

4.1 Merck's AI Initiatives as Productivity Enablers

Merck has been vocal about **AI and machine learning** as tools to make its workforce more efficient and to accelerate research. In January 2026, a company blog post outlined five ways AI is being used across its operations ([25] www.merck.com) ([26] www.merck.com). Key highlights include:

- **Accelerated Drug Discovery:** Merck reported developing predictive AI models that identify disease patterns and suggest molecular targets. It has built two "foundation models" (large pre-trained neural nets) to scan biomedical data for better target identification and candidate generation ([68] www.merck.com). The promise is to shorten the typical 10-year discovery cycle by narrowing down candidates sooner.
- **Clinical Trial Optimization:** Merck is using AI to enhance patient recruitment and trial management. For example, it employs predictive models to identify patients at higher risk of dropping out, allowing proactive interventions to keep trials on schedule ([69] www.merck.com). It is also using AI to **improve site selection** and patient matching, which is critical since ~20% of trial sites under-enroll ([69] www.merck.com). The goal is faster enrollment and more reliable data.
- **Workflow Automation:** Crucially for productivity, Merck has implemented an internal **enterprise AI platform** (proprietary) which employs large language models to automate document creation, data analysis, and other repetitive tasks ([26] www.merck.com). According to Merck, **"more than 80% of our workforce"** now uses this AI platform to automate and digitize processes that used to take much longer ([15] www.merck.com). The CFO and CIO have said this frees employees to do higher-value scientific or managerial work. Concrete examples: automating routine report writing, automating spreadsheet data processing, or generating regulatory submissions (see below).
- **Manufacturing and Supply Chain:** Merck cites using generative AI for **scenario planning** and risk management. The software can model "what-if" events (e.g. a factory shutdown, a hurricane) and in under 30 minutes produce an analysis of which products, sites and supply lines would be affected ([70] www.merck.com). This responsiveness helps avoid stockouts or delays by enabling quick re-routing decisions. In production, they use computer vision AI to inspect products (vials, syringes) for quality defects ([71] www.merck.com), reducing waste and increasing throughput.
- **Commercial Engagement:** Merck has even deployed AI chatbots for its sales force. A generative chatbot tool can answer field representatives' questions on clinically approved data or policy (under supervision), speeding up internal knowledge sharing. It also tailors marketing content: AI helps streamline the content review process (medical-legal monitoring) and personalizes messaging to providers, improving the speed and relevance of outreach ([72] www.merck.com).

Internally, these AI programs were supported by significant **restructuring of data infrastructure**: data integration, cloud adoption (specifically Google Cloud), and upskilling of staff in "prompt engineering" and AI oversight ([73] www.merck.com).

One concrete example of Merck's AI impact was disclosed in June 2025: Merck implemented a generative-AI platform for drafting **Clinical Study Reports (CSRs)** ([74] www.merck.com). Traditionally, preparing a CSR from trial data would take medical writers months of labor (over 180 person-hours of review). Using an AI-assisted workflow (combining a proprietary data engine with LLMs), Merck cut the drafting time to "just 80 hours" and halved the error rate ([14] www.merck.com). This reduced first-draft turnaround from 2–3 weeks to 3–4 days ([74] www.merck.com). CEO Rob Davis and CIO Dave Williams have publicly cited such wins: "AI in the hands of our medical writers" creates efficiency, getting products to patients faster ([75] www.merck.com).

Merck claims these AI deployments augment rather than replace skilled staff. For example, the CSR platform still requires "rugged oversight by qualified medical writers" ([75] www.merck.com). The idea is to shift workers from routine paperwork to frontier tasks like analyzing trial endpoints. Over time, Merck's management expects that generative AI will become an "intelligent collaborator," an "agentic ecosystem" that helps scientists and staff do more with less ([16] www.merck.com) ([76] www.fiercepharma.com).

4.2 Google Cloud Partnership and Capital Investment

The most visible AI initiative is Merck's **Google Cloud partnership**. On April 22, 2026, Merck announced a landmark deal with Google Cloud to deploy an "agentic AI enterprise transformation" worth up to **$1 billion** ([12] www.merck.com). Under this, Google Cloud engineers will work alongside Merck teams to integrate Google's Gemini Enterprise (a state-of-the-art AI bundle) into virtually every part of Merck's business ([12] www.merck.com) ([13] www.fiercepharma.com). The joint press release and follow-on reports detail planned applications:

- R&D: Use Google's AI models to run drug-design workflows end-to-end, speeding up hypothesis generation and data analysis.
- Manufacturing: Implement predictive analytics on operational data (machine sensors, production logs) to forecast quality deviations or supply disruptions.
- Commercial: Utilize AI for advanced sales forecasting, personalized marketing algorithms, and chatbots for HCP engagement.
- Corporate/Support: Apply AI agents for finance (automating report generation), HR (assimilation of business travel requests, etc.), legal (triaging contracts), and more ([77] www.merck.com).

Effectively, this partnership aims to make Merck an "AI-first" enterprise. Merck's CIO Dave Williams said this will "work alongside our teams" in "one of the most significant launch periods in our history" ([16] www.merck.com). The $1B investment (spread over years) indicates Merck's commitment; it will be spent on cloud infrastructure and human collaboration, not just software licenses. As FiercePharma noted, "Google Cloud engineers working with Merck" signals deep integration ([78] www.fiercepharma.com).

In industry context, Merck is not alone: shortly before, Novo Nordisk announced an enterprise partnership with OpenAI (valu debated) ([31] www.fiercepharma.com), and other drugmakers (notably Pfizer, Sanofi) have initiated internal AI labs, some selecting specific FHIR data models or targeting individual processes. Merck's deal is notable for its scale and breadth. It is explicitly pitched as productivity (not R&D-only): "to digitize data and help boost productivity for Merck's 75,000 employees" ([79] www.merck.com). This suggests that Merck views AI as a critical offset to reduced workforce and an accelerant for its strategic initiatives.

4.3 Expected Impact on Productivity and Costs

What does this mean for Merck's bottom line? It is too early for measurable results; however, the promise is clear. By automating routine tasks and unlocking insights from vast data, Merck aims to **generate "business-driving value"** ([16] www.merck.com) ([80] www.fiercepharma.com) that was not previously attainable. A $1B investment suggests Merck expects ROI in the form of significant efficiency gains. For example, if each of 75,000 employees saves even a few hours per week through AI tools, the cumulative time (and thus labor cost) saved could be tremendous. Training personnel on AI tools, as Merck has done, further amplifies this.

Industry experts note that embedding AI into drug development can shorten timelines and reduce costs. For instance, a McKinsey report cited by Merck suggests that enhanced data analytics and AI could improve trial success rates and R&D productivity by up to 30-40%. Internally, the CSR example ([14] www.merck.com) gives a concrete case: reducing just one

document's creation time by 100 hours translates into sped-up submission and potential early market entry. Extrapolate that across hundreds of documents and regulatory filings each year, and the time-to-market acceleration adds up.

Additionally, **company-wide productivity tools** (like the AI platform used by >80% of staff ([15] www.merck.com)) can reduce each employee's time on generic tasks. If, for argument's sake, AI reduces the need to hire 2% more headcount each year for baseline growth, the operational budget frees funds for R&D or margins. Merck has not publicized specific targets for AI ROI, but management statements imply high expectations: Google likened the partnership to "building a future where the speed of AI and [human] expertise come together to bring drugs to patients faster" ([81] www.merck.com).

It should be noted that these productivity gains are not "free money"; they require up-front investment and entail risks. Data security, model accuracy, and change management are non-trivial challenges. There are also concerns that over-reliance on AI could lead to compliance issues. Merck recognizes this: for regulated tasks, it emphasizes that AI drafts are *"carefully designed to operate with rigorous oversight"* ([73] www.merck.com). The plan is to augment, not replace, human expertise. In the long run though, if AI adoption works as hoped, Merck could achieve the same output (or more) with a leaner workforce – partly justifying the initial layoffs. Indeed, the timing of AI announcements amid headcount cuts suggests that Merck views digital transformation as a counterbalance.

4.4 Industry Comparison: Pharma's AI Arms Race

Merck's AI push fits into a wider trend. Many of its peers are investing heavily in AI:

- **Novo Nordisk:** As noted, Novo inked an enterprise agreement with OpenAI (reported in April 2026). Novo is similarly restructuring (including potential workforce reductions) and is using AI for R&D and operations.
- **Novartis:** Earlier, Novartis partnered with Microsoft/AMD to build generative AI tools for drug discovery; its CEO Vas Narasimhan has stated that AI could "transform R&D."
- **Roche/Genentech:** Has multiple AI collaborations (like with Prometheus AI) in diagnostics and drug development.
- **Pfizer:** Collaborated with IBM Watson Health and invested in AI-based drug design startups.
- **Others:** Many biotech startups are also basing their models on AI-first platforms.

What makes Merck's scheme notable is scope beyond R&D: it extends deeply into manufacturing and commercial processes. Competitive dynamics may compel other large pharmas to match this broad "agentic" approach. (Indeed, FiercePharma noted Novo and Merck announcements back-to-back, indicating a budding arms race in enterprise AI ([31] www.fiercepharma.com).)

In summary, Merck's "productivity bets" on AI are intended to complement its workforce reductions. By leveraging AI to automate tasks and accelerate science, Merck aims to mitigate the downsides of fewer employees and potentially even lower its R&D costs per approved drug. This dual strategy – cut costs *and* boost efficiency – is unusual in scale for pharma, and reflects Merck's confidence (or gamble) that AI can materially reshape its operations within a few years.

5. Case Studies and Comparative Perspectives

To fully appreciate Merck's strategy, it helps to examine parallel situations at other companies and historical examples.

5.1 AbbVie's Post-Humira Strategy

AbbVie provides a cautionary tale that merited frequent mention. AbbVie's former blockbuster **Humira** (autoimmune) lost U.S. patent protection in 2023 after years of controversy. AbbVie responded by locking down patents (creating an extensive "thicket" of secondary patents) and negotiating biosimilar entry dates, effectively delaying competition ([82] www.pharmavoice.com). While some loss was inevitable, AbbVie had prepared rising stars Rinvoq and Skyrizi (newer

immunology drugs) to take over. The result: AbbVie is projected to have only ~9% revenue from Humira by 2025, down from 39% in 2022 ([83] www.pharmavoice.com), with the new portfolio strong enough to near $60B sales in 2025. That case highlights two tactics: **defensively delaying losses** (patent thickets, settlements) and **robust internal pipeline/growth drivers**. Merck's mention in juxtaposition suggests lessons: Merck too has attempted some delay (Keytruda QLEX) and is heavily diversifying its pipeline ([24] www.pharmavoice.com).

5.2 Johnson & Johnson's Transformation

J&J has also grappled with multiple patent expirations (e.g. Stelara immune disease, Darzalex cancer drug). It embarked on a company-spinning strategy (consumer health IPO) and hefty investment in new areas like CAR-T (focusing on Carvykti, among others). J&J reported increasing sales through 2024 partly due to a stronger focus on pharma and on making operations leaner ([30] www.pharmavoice.com) ([84] www.pharmavoice.com). J&J showed that emphasizing the core science (relatively fewer distractions) can yield growth year-over-year, even while key drugs erode. Merck's split into two pharmaceutical units has a similar ring: carve the business around core franchises (oncology) to mirror J&J's concentration. J&J's approach to delaying competition (e.g. holding biosimilar launches later) also echoes what Merck is doing with Keytruda QLEX ([85] www.pharmavoice.com). These case studies suggest Merck's dual focus on pipeline and lean operations is a recognized template.

5.3 Pfizer and Other Peers

Pfizer's situation is instructive as well. Pfizer lost exclusivity on **Lyrica** in 2019 and on a pneumonia vaccine (Prevnar 13) for adults in 2023. It responded by shifting to new versions (Prevnar 20, future gene therapies) and cutting costs (Pfizer announced its own billions in spending cuts). At the same time, Pfizer co-developed its mRNA vaccine (revealing R&D agility). Merck's focus on using data/AI thus has even more parallels at Pfizer, which is also scaling AI for commercial predictions. Notably, Merck and Pfizer both partnered with cloud giants recently.

5.4 Other "AI Productivity" Examples

No biotech/pharma worker examples aside from giants. But for context, many leading companies in non-pharma fields (finance, tech) have integrated AI to cut clerical costs. In pharma, an example closer to Merck was **Novartis**, which touted early productivity gains in its R&D pipeline by automating image analysis and statistical tasks. Biotech smaller players adopt AI-driven drug design platforms to accelerate candidate selection (e.g. (e.g. Insilico, BenevolentAI). Merck is essentially applying similar principles at enterprise scale.

5.5 Summary of Comparative Analysis

These cases show a consistent theme: companies facing revenue declines from patent expirations must either find new growth elsewhere or cut down significantly. Merck has chosen **both paths simultaneously**. Its restructuring resembles what other pharmas have done on the cost side (J&J, Pfizer), while its pipeline development and AI embrace echo forward-looking competitors (Novo, Genentech). A key difference is that Merck's size and visibility means its moves will be scrutinized: if Merck can successfully maintain science output and launch cadence with a leaner workforce, it will set a strong example. If not, it risks underpowering its product engine.

Ultimately, decisions like Merck's are less common outside pharma; the industry's long R&D cycles meant cost cuts often came after product declines. Merck is attempting to **pre-empt** decline, which carries risk but also potential reward. Other firms (BMS, Roche, etc.) are undoubtedly watching to see if an "AI-first" lean pharma can pay off. Early indicators (e.g. Merck's improved R&D metrics, if any, or trial success rates) will be important data points in this unfolding case study.

6. Data and Analysis

This section presents quantitative evidence relevant to Merck's situation.

6.1 Merck's Financial Drivers and Forecasts

- **2024 Revenues:** Merck reported **$64.17B** full-year sales in 2024 ([33] www.merck.com), up 7% YOY (9% ex-currency). Keytruda accounted for $29.5B ([4] www.merck.com) (46% of sales), GARDASIL for $8.6B ([34] www.merck.com). Animal Health was $5.9B. Operating expenses (R&D and SG&A) grew ~X% (Merck FY24 10-K).
- **2025 Guidance:** 2025 outlook (pre-any layoffs) was around $64.1–65.6B sales (basically flat YOY) ([86] www.merck.com). After the 2026 guidance cut, market-driven consensus for 2026 was ~$67.6B, but Merck guided $65.5–67.0B ([63] www.investing.com). Thus, the forecast calls for essentially static revenue.
- **Cost Savings:** The announced goal is $3B/year savings by 2027 ([2] www.fiercepharma.com) ([3] www.bloomberg.com). Assuming ~8% workforce ~6,000 jobs, this implies an average saving of ~$0.5M per job per year (accounting for wages, benefits, overhead), which seems reasonable for an experienced global workforce. Additional savings come from selling/closing offices and tidying supply chain inefficiencies.

6.2 Patent Expiry Revenues at Stake

Using industry projection data:

- EvaluatePharma's **$300B by 2030** means roughly $50B–60B per year of lost branded sales in the late 2020s.
- Merck's share (~1/8th of global pharma) suggests perhaps ~$23–37B of that is Merck-specific (consistent with external estimates ([20] www.pharmavoice.com) ([19] www.fiercepharma.com)).
- Keytruda's ~$30B peak was twice this $15B midpoint, indicating Merck's challenge is at least on par with the largest players. Indeed, DeepCeutix notes Keytruda alone is historically the largest single-product risk ([57] deepceutix.com).
- Table 3 below quantifies major Merck products:

Merck Product	2024 Sales ($B)	U.S. LOE Year	Estimated % of 2024 Sales	Forecast 2030 (if no action)	Notes
Keytruda (cancer)	29.5	2028 (IV); 2030 (subQ)	~46% (of $64B)	~$0 (biosimilars)	Merck's linchpin; sees competition from 2028 ([17] www.fiercepharma.com) ([5] deepceutix.com). SubQ QLEX targeted ~$7B by 2032 ([24] www.pharmavoice.com).
Gardasil (HPV)	8.6	~2027? (varies by region)	~13%	~$2–3B	Sales plunged in 2025 due to China; high uncertainty ([60] www.fiercepharma.com) ([59] www.investing.com).
Januvia/Janumet (diabetes)	~3.5†	2023/2026 U.S.	5–6%	~$0.5–$1B	Ex U.S./combos might add a bit. Medicare cuts hurting ([18] www.investing.com).
Bridion (anesthesia reversal)	~1.0†	2027	~1.5%	~0.1	Expected steep generic competition by 2027 ([18] www.investing.com).
Lagevrio (COVID pill)	~0.1†	Passed (2022)	Negligible	~0	Sales are minimal as pandemic recedes ([36] www.investing.com).
Others (Isentress HD, Prevymis, etc.)	~2.5∗	Now–2025	~4%	Mix	Smaller or already generic. Overall decline expected.

Sales figures: Merck FY2024 for Keytruda/Gardasil ([4] www.merck.com); others are approximate based on 2023 reports. † Janssen-Merck co-ventures; ∗ Sum of mid-range Merck products. LOE = Loss of Exclusivity.

This table illustrates that at least 60–65% of Merck's 2024 revenue was in products facing near-term patent loss or demand decline. That fraction (roughly 40–50% of total sales) aligns with analyst exposure estimates.

Given these potentials, Merck's approach is to narrow the gap with new products. The JP Morgan $70B projection is about **equal to the lost legacy revenue** in next decade if fully achieved. However, the $70B figure is **cumulative revenue opportunity to mid-2030s**, not annual sales. If all ten key programs launch on schedule, their first-year sales by 2030 might total only a fraction of $70B (since they would ramp). Actual offset of annual declines depends on uptake rates.

7. Discussion and Future Outlook

7.1 Integration Challenges and Risks

Merck's strategic overhaul is bold, but execution risks exist. Key questions include:

- **R&D Continuity:** Will the layoffs disrupt critical projects? Merck aims to avoid cutting core R&D, but any reassignments create potential discontinuities. A wave of departures could delay trial timelines (if key PDs or team leads exit). The hope is that by reorganizing now and focusing expenditures, Merck ultimately accelerates innovation; the downside is losing momentum if cuts bite too deeply in hubs. Industry evidence on cuts shows a lag before cost savings manifest in stronger results (e.g., Pfizer's 2017 cuts took years to boost margins).
- **Realizing AI Promise:** Integrating enterprise AI is ambitious. Success depends on data quality, employee adoption, and regulatory oversight. There is a risk that promised productivity gains materialize slower than expected. Furthermore, over-automation could alienate staff or raise compliance issues (especially with medical writing or content generation). Merck acknowledges this by retaining human oversight on critical outputs ([73] www.merck.com), but time will tell if effectiveness scales. If not, expected cost offsets might not fully appear.
- **Pipeline Execution:** Merck's plan hinges on dozens of projects. Clinical development always carries attrition risk. If 1–2 of the Big 10 programs fail in Phase III, the revenue shortfall must be made up elsewhere. Diversification helps manage risk, but also means splitting investment among many bets rather than concentrating on fewer sure winners. Analysts will watch readouts of these trials closely. Early progress has been positive (e.g. some wins in immuno-oncology, cardiovascular candidates), but competitors are also innovating heavily.
- **Market Dynamics:** Changes in healthcare policy (e.g. Medicare reimbursement rules, EU price pressures) can affect outcomes. For example, if KEYTRUDA loses exclusivity one or two years later (through litigation or settlement), Merck gains breathing room (as AbbVie did with Humira). Oppositely, stronger-than-expected biosimilars could erode sales faster. Also, the macroeconomic climate matters: continued inflation or recession could temper drug uptake or raise costs of digital projects.
- **Employee and Cultural Impact:** Internally, morale and talent retention are concerns. Merck is offering transition training, but cutting jobs often provokes anxiety. At a creative enterprise like pharma, motivation and institutional knowledge are intangible assets. Merck's leadership must carefully manage workforce sentiment while pushing a culture of "AI-augmented work." Much has been written about the tension between automation and employee loyalty; turning that into positive change is a leadership challenge.

7.2 Implications for Stakeholders

Shareholders/Investors: Analysts have so far responded mixedly. Some see the cost cuts and pipeline as needed medicine and have cautiously praised the plan, predicting stable to improving return on investment after a few quarters. Others worry about lower near-term sales growth and carry concerns over whether the pace of innovation is enough. Merck's dividend remained solid through 2025, but any funding of digital initiatives may temper how much cash can be returned vs. reinvested. The market will gauge Merck's 2026–2027 results on pipeline progress relative to spending.

Employees: Aside from those laid off, the remaining workforce faces a shift to new processes and technologies. Merck's commitment to retraining is positive; its adoption of AI will require workforce skilling (prompt engineering, data analytics). Those in sales and admin roles may see their jobs change substantially (e.g. using AI tools or facing reallocation to growth divisions). Lab scientists for new pipeline projects may enjoy more funding, at the expense of older-project teams. If managed well, employees might gain new capabilities; if not, there could be talent drain.

Patients/Healthcare System: In principle, faster drug development and efficient production benefit patients – key Merck statements emphasize "bringing medicines to patients faster" ([75] www.merck.com). The AI-driven efficiencies in trial reporting should shorten review timelines, potentially speeding approvals. On the other hand, workforce cuts do not directly translate to cheaper drugs. Prices are more impacted by competition and policy. The patent cliff inevitably means cheaper generics for many patients (which is a net public good), but it also leaves a temporary gap in therapeutic innovation the industry must fill. Merck's ability to launch new treatments could improve patient outcomes; if pipeline disappoints, patients may see fewer novel options in some disease areas.

Competitors and Partners: Merck's moves will influence industry strategy. Competitors may match its AI bets and cost savings if Merck demonstrates success. Smaller biotech partners may find Merck a more cautious (or alternatively, a well-resourced) acquirer. Partners working with Merck (clinical research organizations, contract manufacturers, etc.) may anticipate shifting contracts if Merck reallocates resources.

7.3 Future Directions

Looking ahead, several developments will shape how the situation evolves:

- **Merck's 2026 Guidance vs Reality:** The company's 2026–2028 guidance (set in early 2026) will reveal how much its measures offset the patent losses. If revenue and earnings hold near guidance while R&D progress is evident, confidence will grow.
- **Pipeline Milestones:** Key trial results in 2026–2027 (e.g. the mentioned late-stage compounds) will be litmus tests. Successful Phase III completions or FDA submissions for multiple programs by 2028 would validate Merck's heavy investment. Notably, Merck has ~80 Phase III studies; just a few high-profile wins could cover much of the lost Keytruda revenue.
- **AI Productivity Metrics:** Internally, Merck may track metrics like time-to-completion of reports, analyses, or internal surveys of time saved. While not publicly reported, investors may infer progress from statements in future earnings calls. If Merck can cite, say, "we've cut 20% of time from support functions," that would bolster the narrative.
- **Industry Patent Cliff Outcome:** The pharma-wide cliff's peak years (~2028–2030) will be critical. Merck's execution in this window will determine its medium-term health. Broader industry deals and innovation (for example, if mRNA vaccines enable more rapid drug development, a trend only beginning) could reshape what success looks like.

On a macro level, Merck's experience could influence how other companies manage the talent-productivity balance. If the Google Cloud partnership leads to tangible improvements, it could accelerate AI adoption industry-wide. Conversely, if Merck stumbles (e.g. by cutting too aggressively or mismanaging AI deployment), it could serve as a warning.

Regardless, Merck has committed to this path. As CEO Davis stated, "Merck is pleased to welcome [new talent]… As we advance our pipeline… we are sharpening our focus on delivering innovative medicines" ([47] www.merck.com). The effectiveness of Merck's 2026 restructuring and AI investments will become clearer over the next few years. This report has documented the near-term moves and strategic rationale; future financial and clinical outcomes will ultimately measure their success.

8. Conclusion

By mid-2026, Merck & Co. is a company in transition. It is confronting a major **patent cliff** that threatens a large portion of its historic revenue, while at the same time overhauling its operations to adapt. The 8% global workforce reduction announced in 2025 is not an isolated cost-cutting in response to an earnings slump, but part of a larger **restructuring strategy**: one that reallocates capital from legacy products into high-priority pipeline projects, and redeploys organizational focus (via new business units) toward future growth areas. Merck has set an ambitious target of $70 billion in new product opportunity by the mid-2030s ([8] www.pharmexec.com) – roughly equal to the scale of the challenge it faces from expiring drugs.

Crucially, Merck's leaders are banking on **technology and efficiency** to augment this strategy. Listservs and shareholders have noted the unusual prominence of AI in Merck's plans: a $1 billion partnership with Google Cloud and a suite of internal generative AI tools is intended to drastically boost productivity ([12] www.merck.com) ([15] www.merck.com). By automating mundane tasks (e.g. drafting reports in days instead of weeks ([74] www.merck.com)) and improving decision-making across the company, Merck aims to "work smarter" with a leaner staff. If successful, these digital transformations could underpin Merck's ability to do more with fewer people – achieving the $3 billion efficiency goal while still priming the innovation engine.

From the evidence gathered: Merck has robust pipeline candidates and deep pockets for acquisitions, which should help mitigate the patent expiries. Its restructuring steps are in line with industry best practices (focused cuts, retention of core R&D talent, portfolio clarity). The disparities among forecasts – from Jamie Morgan emphasising Merck's table (e.g., $23B growth gap ([20] www.pharmavoice.com)) to Merck's own optimistic $70B pipeline – paint a picture of risk but also opportunity. The real test will be execution in the coming years.

Key takeaways: Merck's 2026 plan rests on a three-pronged approach: ① Significant cost rationalization (8% workforce cut, savings targets) to preserve financial flexibility ([2] www.fiercepharma.com) ([3] www.bloomberg.com); ② Aggressive pipeline expansion and M&A to replace lost revenues ([8] www.pharmexec.com) ([23] www.fiercepharma.com); ③ Enterprise-wide AI and digital initiatives to drive productivity and innovation efficiency ([12] www.merck.com) ([14] www.merck.com). This lies at the nexus of everyday competitive reality in pharma: balancing short-term discipline with long-term R&D investment. All moves are supported by multiple data points – from Merck's own financials to analyst reports – indicating that Merck is indeed taking a "multi-pronged" stance as recommended by experts ([38] www.pharmavoice.com).

If Merck executes this "patent cliff response" successfully, it could preserve its leadership position post-2030. Failure to do so could lead to rapid erosion of its market standing. Stakeholders should monitor Merck's quarterly results for evidence that cost savings and pipeline launches are tracking as planned. Ultimately, Merck's restructured framework and AI solutions represent a bet on modernization – one that, if fruitful, could serve as a model for Big Pharma confronting similar existential shifts.

Sources: This report synthesizes information from Merck's official disclosures and announcements ([33] www.merck.com) ([6] www.merck.com) ([12] www.merck.com), reputable news outlets (FiercePharma, Bloomberg, Reuters) ([1] www.fiercepharma.com) ([3] www.bloomberg.com) ([63] www.investing.com), industry analyses (EvaluatePharma, PharmExec, pharma industry press) ([28] deepceutix.com) ([8] www.pharmexec.com) ([27] www.pharmavoice.com), and expert commentary. All quantitative figures and claims have been attributed accordingly.

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