Merck's Blockbuster Drug Dependency

Idea In Short

Merck & Co. traces its roots to a Darmstadt, Germany pharmacy founded in 1668, though the American company operating under that name today has been independent from its German namesake, now called Merck KGaA, since World War I. Merck's modern business rests on developing and selling prescription drugs, vaccines and animal health products, sold to hospitals, wholesalers, retailers and government agencies rather than directly to consumers. In 2024 the company generated $64 billion in revenue and more than $17 billion in net income, with Keytruda, its cancer immunotherapy, alone contributing nearly $29.5 billion, or close to half of total sales. This article examines how Merck's revenue concentrates around that single drug, what its broader pharmaceutical and vaccine portfolio looks like and the patent cliff the company faces as Keytruda's exclusivity period runs out later this decade.

From a Darmstadt pharmacy to a split identity

Merck's history begins in 1668, when Friedrich Jacob Merck acquired an apothecary in Darmstadt, Germany, that became known as the Angel Pharmacy. The business shifted from retail pharmacy into manufacturing in 1827 under Heinrich Emanuel Merck, and expanded into the United States when George Merck, Heinrich's grandson, opened a New York branch in 1891 under the name Merck & Co. 1

World War I severed the connection between the German parent and its American subsidiary; the U.S. government seized Merck & Co.'s American assets, and the two companies have operated independently ever since, sharing a name but no ownership. The German company now operates as Merck KGaA, while Merck & Co. remains the U.S.-based pharmaceutical company that is the subject of this article, known outside the United States and Canada as MSD to avoid confusion with its German namesake.

Building a portfolio through vaccines and mergers

Merck & Co. built much of its early pharmaceutical credibility through vaccine development, releasing a commercially used smallpox vaccine in the U.S. in 1898 and later developing measles and mumps vaccines in the 1960s. 2 A pivotal moment came in 1953, when Merck merged with Sharp & Dohme, a Philadelphia pharmaceutical company, creating a combined business that became one of the largest prescription drug manufacturers in the United States at the time.

That merger established the therapeutic breadth Merck still operates today, spanning oncology, vaccines, diabetes care, cardiovascular treatment and hospital acute care. In 2014, Merck sold its consumer healthcare division, covering over-the-counter products, to Bayer, narrowing its focus back toward prescription pharmaceuticals and vaccines rather than the broader consumer product categories some competitors still maintain. 3

One drug carries nearly half the company

Keytruda, Merck's immunotherapy for treating a range of cancers, has become the company's dominant revenue driver by a wide margin. The drug generated approximately $29.5 billion in 2024, an increase of nearly 18% over the prior year, and accounted for close to half of Merck's total sales. 4

> A single drug generating close to half a company's revenue is a concentration few pharmaceutical companies of Merck's size carry today.

Keytruda's growth has been driven by expanding approved uses across cancer types, letting Merck grow the drug's revenue well past its original approval. Analysts have projected Keytruda sales could top $30 billion before the drug loses patent exclusivity toward the end of this decade, a milestone that will mark the beginning of a steep and largely unavoidable revenue decline once lower-cost biosimilar competitors enter the market.

Selling to institutions, not individual consumers

Merck's commercial model runs almost entirely through institutional buyers rather than direct consumer sales. Wholesalers purchase vaccines and pharmaceutical products in bulk and distribute them to retailers, hospitals and pharmacies. Government agencies buy in large quantities for public health distribution, particularly for vaccines, while hospitals and physicians purchase directly to treat and immunize patients under their care.

This business-to-institution structure means Merck's sales cycles, pricing negotiations and reimbursement dynamics differ substantially from a consumer products company. Contracts with large wholesalers and health systems, along with government procurement processes for vaccines, shape much of Merck's revenue predictability, distinct from the marketing-driven demand generation more common in consumer industries.

Vaccines and animal health round out the portfolio

Beyond its pharmaceutical segment, which generates more than 80% of total revenue, Merck maintains a vaccines business selling products including Gardasil, RotaTeq and Pneumovax to physicians and public health systems, and an animal health division producing vaccines and treatments sold to veterinarians for both livestock and companion animals. 5 Vaccine development for Merck typically involves collaboration with publicly funded research universities and government agencies before the company brings a product to commercial scale, reflecting how much of vaccine research depends on shared infrastructure rather than purely private investment.

The animal health segment, while smaller than the human pharmaceutical business, diversifies Merck's revenue base away from the reimbursement and pricing pressures that affect human drug sales, since veterinary purchasing decisions follow a different set of institutional buyers and regulatory frameworks.

Licensing oncology drugs through franchise deals

Merck also generates revenue by licensing some of its oncology drugs to smaller pharmaceutical companies through franchise arrangements, earning fees and wholesale supply revenue rather than selling directly to the end market itself in every case. This structure lets Merck extend the reach of its oncology portfolio into markets or customer relationships that smaller licensee companies are better positioned to serve, while Merck collects revenue without bearing the full distribution cost itself.

This franchise approach reflects a broader pattern in Merck's business: rather than trying to control every point of the distribution chain directly, the company relies on a network of wholesalers, retailers and licensees to extend its reach, concentrating its own resources on research, development and large-scale manufacturing. 6

Key Partners

Merck's key partners include the marketers and distributors who move its products through the supply chain, along with wholesalers and retailers who handle bulk purchasing and end-point sales. Governments serve as both regulators and major purchasers, particularly for vaccines distributed through public health programs. Healthcare organizations, including hospital systems and research universities involved in vaccine development, round out Merck's partner network.

Key Activities

Merck's core activities span research and development, production and distribution of pharmaceuticals, vaccines and animal health products. The company also provides limited direct healthcare-adjacent services tied to its products, such as diagnostic support in oncology. Selling medical products and vaccines to institutional buyers, including wholesalers, government agencies and hospitals, represents a continuous commercial activity alongside its research pipeline.

Key Resources

Merck's approved pharmaceutical and vaccine products, particularly Keytruda, represent its most valuable resource given the revenue concentration tied to that single drug. The company's manufacturing equipment and production plants, built to meet regulatory standards for pharmaceutical-grade output, form a second critical resource. Merck's research and development capabilities and intellectual property portfolio, including patents protecting its key drugs, underpin its ability to sustain revenue before generic competition arrives.

Value Propositions

For wholesalers, Merck offers a consistent supply of products developed to meet high market demand across therapeutic categories. For hospitals, the company provides exclusive drugs that support high-quality patient care. For government agencies, Merck supplies vaccines and pharmaceuticals with reliable expiration timelines suited to public health distribution. For physicians and patients, the company offers treatment options across oncology, vaccines, diabetes and cardiovascular care.

Customer Relationships

Merck maintains customer relationships primarily through direct marketing to physicians and healthcare institutions, alongside customer service functions supporting wholesalers and retailers. Joint ventures and licensing agreements, particularly in oncology, create ongoing commercial relationships with smaller pharmaceutical partners. These relationships tend to be long-term and institutional rather than transactional, reflecting the regulatory and contractual complexity of pharmaceutical distribution.

Channels

Merck reaches its institutional customers primarily through direct sales relationships with wholesalers, hospitals, government agencies and physicians rather than consumer-facing retail channels. The company's website and social media platforms support corporate communication and investor relations rather than direct product sales. Email communication supports ongoing relationships with healthcare professionals and institutional purchasers.

Customer Segments

Merck's customer segments include wholesalers and retailers who purchase and distribute its products, hospitals that buy directly to treat patients, and government agencies that purchase in bulk for public health programs. Physicians and veterinarians represent professional customer segments who prescribe or administer Merck's human and animal health products. Patients form the end-user segment, accessing Merck's products indirectly through these institutional intermediaries.

Cost Structure

Merck's largest costs include production and raw materials for manufacturing pharmaceuticals, vaccines and animal health products at scale. Research and development spending represents a significant recurring cost given the company's dependence on its drug pipeline to offset future patent expirations. Administrative and marketing expenses, along with the costs of maintaining regulatory compliance across global markets, round out its major cost categories.

Revenue Streams

Merck's pharmaceutical segment, dominated by Keytruda, generates more than 80% of total company revenue. Vaccines sold to physicians, veterinarians and government health systems contribute a second major revenue stream. Veterinary products sold to retailers and wholesalers, along with franchise fees and wholesale revenue from licensing oncology drugs to smaller companies, round out Merck's revenue base.

- 1Merck's origins as a German pharmacy dating to 1668
- 2Merck's early vaccine development history
- 3Merck sells consumer care unit to Bayer
- 4Keytruda's 2024 sales and share of Merck's revenue
- 5Merck's vaccine and animal health product lines
- 6Merck's oncology licensing and franchise agreements

Summary

Merck's scale obscures a concentration risk sitting at the center of its business: a single drug generates roughly half of total company revenue, and that drug's patent protection has a defined end point. The company's research pipeline, spanning oncology, vaccines and cardiovascular treatments, exists in large part to build replacement revenue before Keytruda faces generic competition. Merck's history of surviving major transitions, from its 1953 merger with Sharp & Dohme to the 2014 sale of its consumer health business to Bayer, suggests the company has managed structural change before. Whether its next generation of oncology and vaccine candidates can offset the scale of Keytruda's eventual decline will shape Merck's financial position through the following decade.