

Revenue Diversification Strategy

2024 GILEAD PHARMA CASE COMPETITION

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Disclaimer

This case was prepared by Camille Price, Katharine Ricciardi, and Rebecca Zhang solely as the basis for discussion, with support from several others at Gilead across departments and functions.

The assumptions and simplifications made in the case allow for uniform understanding of the materials across teams. Although this case is based largely on actual procedures and initiatives, the case materials should not be considered a complete summary, endorsement, or projection of any action taken or to be taken by Gilead Sciences. The scenario presented in this case was designed based on research conducted in the public domain and creatively altered to meet the guidelines of this academic competition and learning exercise; it does not reflect any coordination with Gilead Sciences, or proprietary knowledge of its product pipeline. In addition, this case does not represent the official views of the authors.

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Executive Summary

Zile Biosciences CEO Sloane Grant and the company's Board of Directors have initiated a strategic review of the company's portfolio. They are seeking a 10-year growth plan that positions Zile to win in the highly competitive biopharmaceutical space. They have asked you, Zile's Product Portfolio Strategy team, to present a recommendation for the company's strategic vision.

Zile's meteoric growth was driven by its blockbuster drug Kendizo, a small molecule targeted therapy drug comprising 52% of the company's US revenues in 2023. Generic alternatives to Kendizo will launch in 2031, when the drug loses its patent protection. With just seven years of effective exclusivity remaining, Zile needs a plan to sustain growth that does not rely solely on Kendizo. Grant and the Board have challenged your team to think creatively about the future of Zile: They are prepared for a major strategic reset, if your team's analysis suggests significant changes are necessary.

Grant has specified that \$4.5B has been earmarked to implement your proposed strategy. The CEO expects to receive a strategic recommendation that: 1) Articulates the role Kendizo will play in Zile's portfolio going forward, 2) Identifies diversified revenue streams to reduce reliance on Kendizo, and 3) Proposes a timeline for the company's core activities and major investments through 2034. Grant's ask is detailed completely in the *Case Competition: Key Questions and Considerations* section.



Story

About Zile

Zile Biosciences is a mid-sized biopharmaceutical company headquartered in Boston, Massachusetts. The 12th-largest biopharma company globally by revenue, Zile grossed \$29.11B in US markets alone in 2023. The company has been publicly traded since its IPO in 1990 and the United States is its largest market.

Zile was co-founded by Harper Caruso, a biochemistry professor at MIT, and Avery Lang, a venture capitalist focused on early-stage biotechnology companies, in 1984. Originally focused on oncology, Zile was founded in the heyday of research into tumor virology and cancer genetics. Caruso and Lang were inspired by the concept of using oncogenes and proto-oncogenes to identify, target, and eliminate cancer. Its first FDA-approved product Loganar, indicated for non-small cell lung cancer (NSCLC), was made available in 1989.

Zile has since moved beyond its original focus in oncology. Using the funds raised during its IPO, Zile expanded into the immunology space in 1992. Current CEO Sloane Grant led efforts to bring Zile into the metabolic disease space in 2010. Despite these diversification efforts, oncology continues to drive company revenues. Zile's blockbuster drug Kendizo represented over half of the company's US revenues in the past year.

Over the years, Zile has continued to demonstrate a best-in-class corporate culture and competes effectively for talent. The company has maintained a reputation as a dynamic and innovative player despite its size, in part due to prioritized investment in research and development (R&D) relative to competitors.

Zile portfolio overview

Zile has a presence in three main therapeutic areas (TAs): Oncology, immunology, and metabolic disease. The company's US revenue breakdown across therapeutic areas is detailed below:

	2018	2019	2020	2021	2022	2023
<i>Revenue (\$B)</i>	\$21.89	\$22.20	\$24.51	\$26.22	\$27.01	\$29.11
By therapeutic area (\$B):						
<i>Oncology</i>	\$17.26	\$16.99	\$18.21	\$18.92	\$18.92	\$19.80

<i>Immunology</i>	\$3.17	\$3.54	\$4.22	\$4.81	\$5.21	\$5.82
<i>Metabolic disease</i>	\$1.47	\$1.67	\$2.07	\$2.49	\$2.88	\$3.49
By therapeutic area (%)						
<i>Oncology</i>	78.8%	76.5%	74.3%	72.1%	70.0%	68.0%
<i>Immunology</i>	14.5%	15.9%	17.2%	18.4%	19.3%	20.0%
<i>Metabolic disease</i>	6.7%	7.5%	8.5%	9.5%	10.7%	12.0%

Zile has seven approved drugs: four in oncology, two in immunology, and one in metabolic disease. Kendizo is Zile’s “blockbuster” drug, comprising >50% of company revenue. US revenues across the seven commercial products are detailed below for the year 2023 in \$B:

Therapeutic area	\$B, 2023
Oncology	\$19.80
<i>Kendizo</i>	\$15.14
<i>Loganar</i>	\$2.91
<i>Infiltra</i>	\$1.16
<i>Malakist</i>	\$0.58
Immunology	\$5.82
<i>Athera</i>	\$3.79
<i>Smotari</i>	\$2.04
Metabolic disease	\$3.49
<i>Glycazex</i>	\$3.49

Zile’s cancer portfolio centers on targeted therapeutics. Most targeted therapies interrupt the process by which cancer tumors grow and spread.¹ Because they target specific proteins that enable the proliferation of cancer cells, many targeted therapies have been found to treat multiple cancer forms.

Though Loganar was Zile’s first FDA-approved drug, its revenues have been far surpassed by Kendizo, which is currently indicated for four cancer types [see *Kendizo: Development history*]. Zile has two other oncological drugs which are indicated for less-prevalent cancer types [see *Appendix G: Zile drug profiles and possible additional indications*].

Zile’s immunology portfolio contains two drugs, both of which treat a variety of autoimmune conditions. Athera is indicated for rheumatoid arthritis and psoriatic

¹ “Targeted Therapy for Cancer.”

arthritis. Smotari has indications for autoimmune disorders related to the gut and skin, specifically: Crohn's disease, ulcerative colitis, and plaque psoriasis.

Zile's single diabetes drug is a GLP-1 agonist [see *Zile's therapeutic areas*]. GLP-1 agonists were historically only approved for the treatment of diabetes but have become recognized for their weight loss effects, greatly expanding the total addressable market of patients.² In 2023, Glycazex became Zile's second highest-growing drug behind Kendizo. The company's R&D efforts in the metabolic disease space have grown proportionally to revenues from Glycazex, and the Board of Directors has expressed interest in supercharging investment in this area to capitalize on strong market tailwinds in the GLP-1 agonist category.

Glycazex has consistently performed in the top quartile of GLP-1 agonists in terms of average percentage weight loss among patients. Zile could be poised to succeed in this fast-growing therapeutic sub-area, though competitors are flooding to the space.

Kendizo: Development history

Kendizo received FDA approval in 2007 for breast cancer, the most common cancer in the United States with approximately 313.5K new cases each year.³



Subsequent trials have expanded the indications to three other cancer types: prostate cancer, pancreatic cancer, and thyroid cancer. Expansion to additional indications has significantly expanded Kendizo's reach.

Kendizo: Pricing and revenue deep-dive (US-only)

Kendizo has a list price of \$175,000 per annum, and the average course of treatment is approximately 12 months per patient. Roughly 30% of the ~99.7K patients on Kendizo are covered under Medicare, the United States' national health insurance plan for those 65 years of age and older.

To have Zile's products covered by this important federal healthcare program, Medicare, Zile must participate in Medicare Part D program. Zile offers rebates to Part D Plan Sponsors for coverage of Kendizo. The number of patients, gross revenue, rebate percentage offered, and net revenue are detailed below for the year 2023:

	Patients served	Gross revenue (\$B)	Rebate %	Net revenue (\$B)
Private plans	67,300	\$11.78	10%	\$10.60
Medicare	32,448	\$5.68	20%	\$4.54
	99,748	\$17.46		\$15.14

² "Innovators Who Fought to Unlock GLP-1 Drugs for Obesity Awarded Mani L. Bhaumik Breakthrough of the Year Award."

³ "Cancer Statistics Center."

Kendizo was not on the original list of 10 drugs subject to direct “negotiation” released as part of the Inflation Reduction Act. But its 17 total years on the market and its relative high cost to Medicare increases the likelihood that it could be added to the next wave of drugs announced for application of the Maximum Fair Price under Medicare “negotiation” [see *Inflation Reduction Act*].

Kendizo: Loss of exclusivity and likely implications

Kendizo was first made available in intravenous format, requiring patients to come to the hospital weekly to have the drug administered. In 2014, Zile produced Kendizo in pill format, to be taken daily outside of the hospital setting. This created greater convenience to patients and reduced pressure on hospital resources, and the Kendizo pill quickly replaced its intravenous predecessor. This invention also allowed Zile to apply for a new patent protecting the drug. This patent for pill-format Kendizo has been the primary patent preventing competitors from entering the market.

The awarding and protection of patents and exclusivity is complex (see *Regulatory landscape and patents*). As is common in the biopharmaceutical space, Zile reached a settlement agreement in 2019 with two generic competitors challenging Kendizo-related patents. The settlement entailed an agreed-to launch date of 2031 for two generic versions of Kendizo. That year, competitors will be free to launch equivalent products onto the market for the presently approved uses. These generic products will likely be priced lower than Kendizo, prompting a sharp decrease in Kendizo’s revenues.

R&D pipeline

Zile has historically spent ~25-30% of total revenues on research and development efforts. Last year, the company’s \$7.9B R&D budget was allocated across therapeutic areas proportionally to their revenue contribution. These figures are noted below for the year 2023:

Therapeutic area	R&D (US\$Bn)
Oncology	\$5.35
Immunology	\$1.57
Metabolic disease	\$0.94

Early evidence suggests Kendizo could be effective for advanced melanoma and / or kidney cancer. But conducting trials for these indications could be very costly and time-consuming as the FDA tends to require multiple clinical trials for drugs seeking approval for new, closely related indications. Zile’s legal department has filed patent applications to these new uses, but final decision to pursue development of Kendizo’s potential expanded indications has not yet been made. When budgeting for clinical trials, sponsors will typically also include a capital buffer for unforeseen costs or patient enrollment needs. Benchmark data for associated timelines and costs for conducting clinical trials can be found in the supplementary deck.

The company has a series of ongoing clinical trials at varied stages: 10 in Phase I, 6 in Phase II, and 4 in Phase III. Many of its early-stage trials are in the metabolic space, which has been a growing strategic focus [see *Exhibit A: Zile R&D allocation and ongoing trials*].

Market context

Zile's therapeutic areas

A brief overview of each of Zile's therapeutic areas is captured below:

The Centers for Disease Control and Prevention (CDC) has estimated that 129M people in the USA suffer from at least one major chronic illness, like heart disease, cancer, diabetes, obesity, and hypertension.⁷ Each of these areas is experiencing market growth in the United States as the incidence of chronic disease grows in the population.

Oncology: Roughly 2M people in the United States will be diagnosed with cancer this year.⁸ Cancer is projected to cause ~600K deaths in the United States in 2024 alone, making it the second most common cause of death in the country, behind heart disease.⁹

Yet the cancer death rate has declined 1.6% on average annually since 2012, due largely to significant advances in treatment across cancer subtypes.¹⁰ These treatments are costly, and the American Cancer Society has estimated that cancer costs will exceed \$245B in annual spending by 2030, a ~34% increase from 2015.¹¹

Those diagnosed with cancer today have a variety of treatment options. Among them is targeted therapy, where small molecule drugs or monoclonal antibodies are used to identify and target specific types of cancer cells.¹² Choice of drug is aided by biomarker testing, where a patient's tumor cells are screened for features that are leveraged by the targeted therapy to identify and attack cancer cells.

⁷ Benavidez, "Chronic Disease Prevalence in the US."

⁸ "Cancer Facts & Figures 2024."

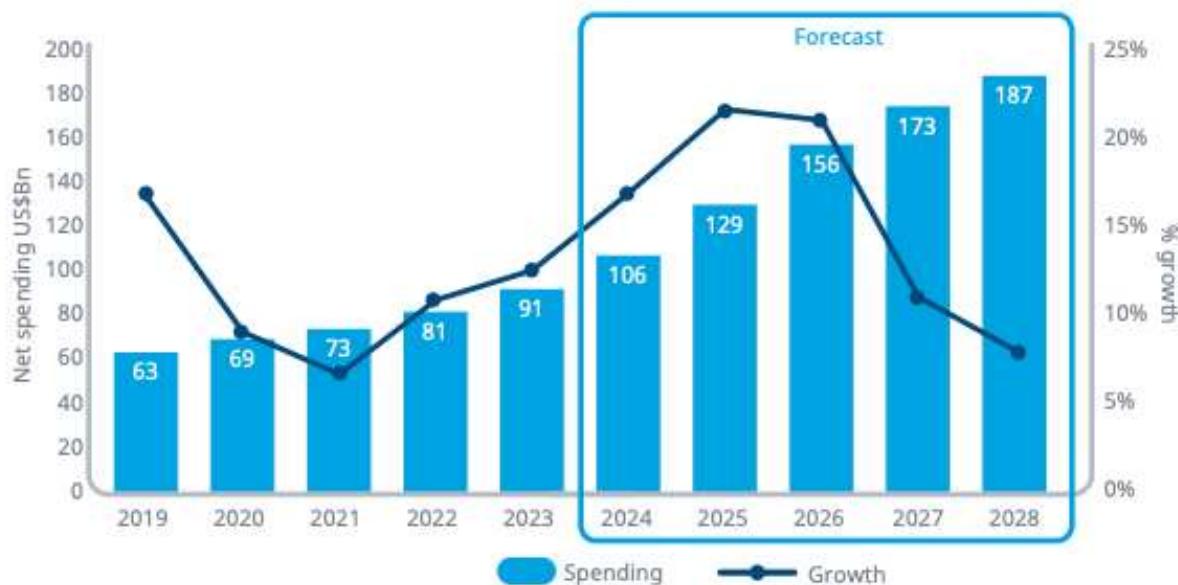
⁹ Collins, "2024--First Year the US Expects More than 2M New Cases of Cancer."

¹⁰ "Cancer Facts & Figures 2024."

¹¹ "The Costs of Cancer."

¹² "Targeted Therapy for Cancer."

US oncology spending at estimated manufacturer net prices, US\$Bn, forecasted to 2028, can be found below:



Source: IQVIA Institute, Mar 2024.

Immunology: The field of immunology focuses on immune system dysfunction, including illnesses like rheumatoid arthritis, atopic dermatitis, ulcerative colitis, plaque psoriasis, and Crohn's disease.

Immunological illnesses impact roughly 50M people in the United States, and their prevalence is growing.¹⁴ Many drugs in the space have seen success treating multiple conditions, creating a higher return-on-investment for originators given the breadth of their total addressable market.¹⁵ Compounding this effect, immunology drugs tend to have a relatively high success rate in clinical trials related to a deepening understanding of the immune system and immune-based diseases.

Between 2019 and 2023, defined daily doses of immunology drugs rose 60%. The two disease areas contributing most to this growth were Crohn's disease and psoriasis.¹⁶

Immunology is a highly lucrative space with strong representation on the list of top-selling drugs. AbbVie's Humira (\$14.4B global sales in 2023) and Sanofi's Dupixent (\$11.6B global sales in 2023) have led in the field in recent years; however, AbbVie's loss of exclusivity has significantly impacted revenues [see *Relevant case study* for Humira deep-dive].¹⁷

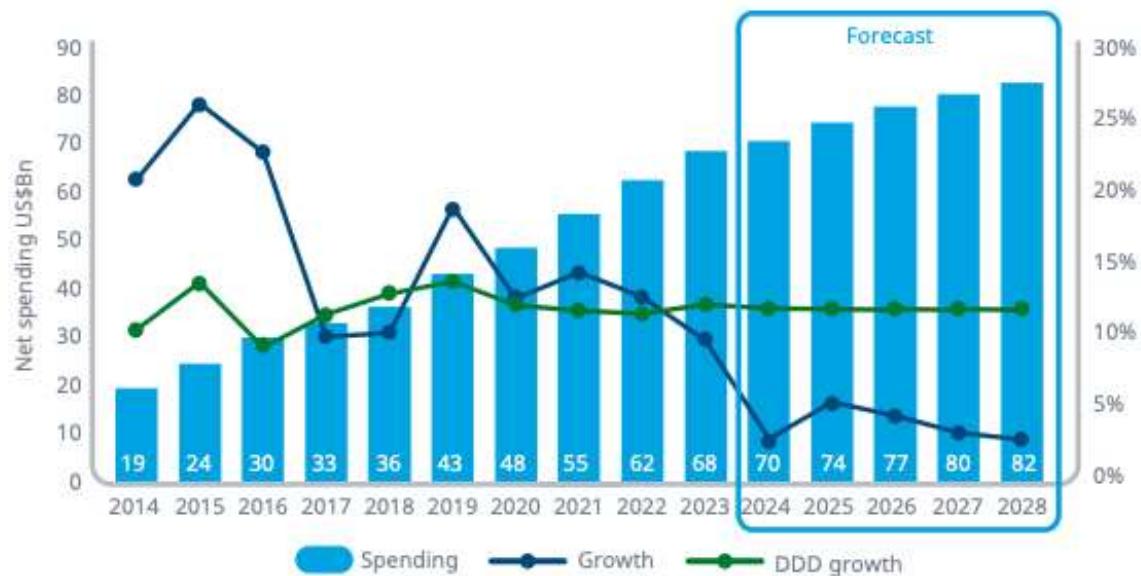
¹⁴ Anderson, "Why Drugmakers and Investors Are Pouring Money into Immunology."

¹⁵ Anderson.

¹⁶ "The Use of Medicines in the U.S. 2024."

¹⁷ Buntz, "Best-Selling Pharmaceuticals of 2023."

US immunology spending at estimated manufacturer net prices, US\$Bn, forecasted to 2028, can be found below:



Source: IQVIA Institute, Mar 2024.

Note: Defined daily doses (DDDs) are based on WHO definitions where each medicine is assigned a volume of medicine per day

Metabolic Disease: Today, 38.4M people in the US, or 11.6% of the population, suffer from diabetes.¹⁸ An incremental ~98M (38.0%) adults in the US are prediabetic. Of adults diagnosed with diabetes, ~90% are also overweight or have obesity.¹⁹ Independent of diabetes status, over 40% of the American population has obesity.²⁰

The prevalence of diabetes and obesity in the United States is related to the growing rates of cardiometabolic diseases. Cardiometabolic diseases are a family of largely preventable chronic diseases impacting the cardiovascular system and the body's process of converting food into energy. They share common risk factors and often coincide due to the pressure each one places on critical physiological processes.²¹

The prevalence of cardiometabolic disease and associated conditions has prompted a proliferation of drugs treating diabetes and obesity. Particularly newsworthy has been the emergence of GLP-1 (Glucagon-Like Peptide-1) agonists, medications that are

¹⁸ "National Diabetes Statistics Report."

¹⁹ "National Diabetes Statistics Report."

²⁰ "Overweight & Obesity Statistics."

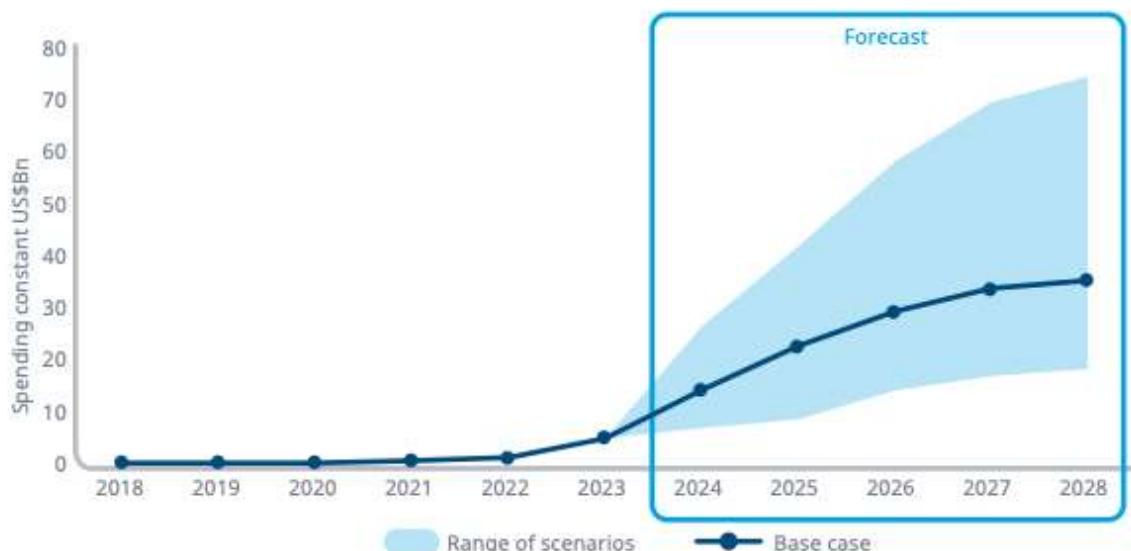
²¹ "Cardiometabolic Diseases."

known to reduce blood sugar levels, suppress appetite, and have weight loss effects for those with obesity and / or Type 2 Diabetes.²²

Strides have been made in the efficacy of GLP-1 agonists recently: Some now result in 15-25% weight loss on average.²³ GLP-1 agonists also have positive downstream effects on obesity-related health markers, including blood pressure, lipid profiles, and glycemic control.²⁴

Between 2020 and 2024, the number of new GLP-1 agonist prescriptions grew 133% for diabetes and 584% for obesity.²⁵ Market experts estimate that ~9% of the US population could be taking these drugs by the early 2030s, with a market size of >\$125B in the country by 2033.²⁶

US obesity spending at estimated manufacturer net prices, US\$Bn, forecasted to 2028 and driven by the uptake of GLP-1 agonists, can be found below:



Source: IQVIA Institute, Mar 2024.

Competitive landscape and market share

Each of Zile's therapeutic areas are highly competitive spaces in the United States, and Zile's market share varies across each. Zile's position is detailed below across each of its

²² "The Increase in Appetite for Obesity Drugs."

²³ "The Increase in Appetite for Obesity Drugs."

²⁴ Adam, "Decoding the Buzz Around Weight-Loss Medications."

²⁵ "The Use of Medicines in the U.S. 2024."

²⁶ "GLP-1 Receptor Agonist Sales Expected to Reach \$125bn by 2033."

three therapeutic areas. Please note that these market shares are based solely on the currently approved indications for Zile's products.

Oncology		
Company	Revenue (US\$Bn)	Market share
1	22.20	23.0%
2	21.20	22.0%
3 (Zile)	19.80	20.5%
4	9.50	9.8%
5	5.90	6.1%
6	4.30	4.5%
7	4.10	4.2%
8	2.20	2.3%
9	1.30	1.3%
All others	6.00	6.2%
TOTAL	96.50	

Immunology		
Company	Revenue (US\$Bn)	Market share
1	9.20	9.5%
2	8.20	8.5%
3	7.10	7.4%
4	6.10	6.3%
5	6.08	6.3%
6	6.00	6.2%
7	5.90	6.1%
8	5.87	6.1%
9 (Zile)	5.82	6.0%
All others	8.00	8.3%
TOTAL	68.27	

Metabolic disease		
Company	Revenue (US\$Bn)	Market share
1	4.28	19.6%
2 (Zile)	3.49	16.0%
3	3.28	15.0%
4	2.82	12.9%
5	2.22	10.2%
6	1.80	8.3%
7	1.20	5.5%
8	0.81	3.7%
9	0.80	3.7%

All others	1.10	5.0%
TOTAL	21.80	

Recent M&A activity

The biopharma space is an active M&A environment as companies seek synergies to bolster their product pipeline with innovative therapies.

In recent years, large players have engaged in smaller, more frequent acquisitions to break into new segments or plug portfolio gaps.²⁷ Established players have targeted early-stage, cash-constrained players with promising early results from ongoing research.²⁸ These emerging biopharma companies initiated roughly two thirds of all clinical trials started in 2023.²⁹ Acquisition of small players with late-stage products is sometimes seen as a de-risked form of investment given the higher likelihood of commercialization once a product has reached Phase II or III trials.

Recently, consolidation has been concentrated in the highly lucrative oncology, rare disease, and immunology disease spaces. In 2024, the combined value of M&A activity in the pharmaceutical space is forecasted to be \$225-275B across subsectors.³⁰

Given the fragmented nature of the immunology market, that space is ripe for M&A activity. Zile's market intelligence team has posited that there will be consolidation in the immunology space in the coming years, though it would be difficult for any top player to acquire another given their relative sizes. A merger, rather than acquisition, among two of the field's largest players would be a more likely outcome.

Generics and biosimilars

After the exclusivity period for a brand-name drug has ended, other manufacturers are permitted to produce functionally identical competitor products. In the case of small molecule drugs, these are called generics. In the case of biologic drugs, they are referred to as biosimilars.

Small molecule drugs are formed through chemical synthesis and have a relatively low molecular weight. Given their size, small molecule drugs enter cells easily, and they make up ~90% of pharmaceutical drugs.³¹ Aspirin®, Lipitor®, and Benadryl® are small molecule drugs used to treat common ailments. But other small molecule drugs are used in cutting-edge precision medicine, like targeted therapies to treat cancer.³²

²⁷ Bernauer et al., "Life Sciences M&A Shows New Signs of Life."

²⁸ "The Twists and Turns in Biopharma Dealmaking."

²⁹ "Global Trends in R&D 2024."

³⁰ "The Twists and Turns in Biopharma Dealmaking."

³¹ Makurvet, "Biologics vs. Small Molecules."

³² "Targeted Therapy for Cancer."

Small molecule drugs can be manufactured consistently across lots, and generics are considered substitutes for the originator's product. Given that the safety and efficacy of the drug has already been proven in clinical trials conducted by the originator, generics and biosimilars benefit from an accelerated review process that allow them to reach the market quickly.³³

Once available, generics and biosimilars are competitively priced. Generics tend to be especially economical due to their straightforward manufacturing processes. Both generics and biosimilars reduce the brand-name drug's market share and force the originator's price down.

In 2021, a study by West Health Policy Center found that the introduction of one generic competitor reduced a drug's average sales price (ASP) by 14.9% on average, compared to the price of the brand-name drug.³⁴ With two generic competitors, ASP declined 32.7%; with three generic competitors, ASP declined 52.0%; presence of more than three generic competitors was associated with a 68.6% reduction in ASP on average.³⁵

Partially due to their competitive pricing, generics and biosimilars gain market share quickly. A study by Samsung Bioepis found that at three years after launch, biosimilars achieve 53% market share on average.³⁶

Patent Protection and Regulatory Exclusivity

Patent protection and assertion are critical to the business model of biopharmaceutical companies. Given the industry's competitiveness and the high costs of R&D, sponsors apply for patents to provide a level of certainty for their investments while they develop and commercialize the resulting product. Patents provide a right to exclude others from making, using, and/or selling the protected invention which reduces the risk of opportunistic competitors.

Biopharmaceutical players seek patent protection for a promising invention before drug approval has been granted. Patent filings often track the development process of a medicine and reflect the many innovations needed to bring a medicine to patients. First, they apply for a composition-of-matter patent, which protects their rights to the drug molecule.³⁷ They then apply for patents for other inventions related to the drug, including manufacturing processes and formulations.³⁸ They can also apply for patents for new indications of an existing drug. In these cases, the patented entity is the

³³ "Biosimilars Review and Approval."

³⁴ Dickson and Kent, "Association of Generic Competition With Price Decreases in Physician-Administered Drugs and Estimated Price Decreases for Biosimilar Competition."

³⁵ Dickson and Kent.

³⁶ "Biosimilar Market Dynamics."

³⁷ Rai, Sachs, and Price II, "Cryptic Patent Reform Through the Inflation Reduction Act."

³⁸ Rai, Sachs, and Price II.

application of a molecule for a certain condition. In the United States, all patents are granted by the United States Patent and Trademark Office (USPTO); the standard term of a new patent is 20 years from the date the patent application was filed, though the term can vary.³⁹

Exclusivity is a regulatory tool that serves as a pull incentive for biopharmaceutical companies to pursue ambitious, high-cost research with the promise of uncontested revenues for a set period. The US Food and Drug Administration (FDA) governs the release of new drugs onto the market. The FDA's Center for Drug Evaluation and Research (CDER) assesses new drugs using testing data provided by the biopharmaceutical company ("originator") to corroborate efficacy and safety. If approved, a novel drug is eligible for a period of exclusivity that varies based on the drug type.

Exclusivity type	Period of exclusivity ⁴⁰
Orphan Drug Exclusivity	7 years
New Chemical Entity Exclusivity	5 years
Generating Antibiotic Incentives Now Exclusivity	5 incremental years
New Clinical Investigation Exclusivity	3 years
Pediatric Exclusivity	6 incremental months

The patent protection and exclusivity periods associated with a drug are not necessarily concurrent. All approved small molecule drugs in the US and their associated patents and exclusivity details are captured in the FDA's "Orange Book."

Skinny labelling

When a biopharmaceutical company identifies a new indication for one of its drugs, the company may be able to patent the application of the drug to that new disease area. But when patent protection over the drug's original indication expires, competitors may be able to introduce generic alternatives labeled for the original indication but excluding the newly patented indication. This is called "skinny labelling."

In theory, the originator biopharmaceutical company competes with generic manufacturers on the unpatented, original use of the drug and holds exclusivity over newer uses.⁴¹ Unpatented indications are the only ones listed and sanctioned on the generic product's label.

³⁹ Research, "Frequently Asked Questions on Patents and Exclusivity."

⁴⁰ Research.

⁴¹ Walsh, Bloomfield, and Kesselheim, "A Court Decision on 'Skinny Labeling.'"

In practice, generic products with skinny labels are often used no differently than their full-label brand-name drugs.⁴² Health care providers (HCPs) may prescribe the cheaper, generic version of a drug for those newer indications, to reduce the cost to patients. Thus, the generic version of the drug may be prescribed for indications for which the originator still has exclusivity. This infringes on the originator's exclusivity over new indications but can be hard to enforce.

Inflation Reduction Act

The Inflation Reduction Act (IRA) was signed into law on August 16, 2022. The sweeping legislation includes provisions regarding clean energy investment, supply chain fortification, corporate tax reform, IRS modernization, and healthcare cost reform, among other areas.⁵⁵

The IRA includes regulatory tactics that aim to reduce the cost of healthcare in the United States, especially through drug pricing reform within Medicare, the country's federal health insurance program for those 65 years of age or older. The IRA's drug-pricing provisions do not apply to drug pricing for patients covered by Medicaid.

Approximately 67M Americans, a fifth the population, are covered by Medicare today.⁵⁶ Assuming enrollment criteria are unchanged, as the population ages, the number of Medicare-enrolled individuals will continue to grow.⁵⁷ By 2030, the Centers for Medicare & Medicaid Services (CMS) projects Medicare will cover 76M Americans, a 14% increase. Over the same period, Medicare anticipates spending per enrollee will grow ~37%, from \$16.3K to ~\$22.3K per enrollee.⁵⁸

The IRA's healthcare-related provisions aim to rein in these fast-growing costs. The Congressional Budget Office has estimated that its drug-pricing provisions will reduce the Budget Deficit by ~\$237B between 2022 and 2031.⁵⁹

There are three major changes to drug pricing for Medicare prompted by the IRA, relevant to pharmaceutical companies:

1. Maximum Fair Price determination for top-spend drugs for Medicare
2. Limitations on price increases
3. Medicare Part D Redesign, including reduction in covered individuals' responsibility for drug payments

⁴² Walsh, Bloomfield, and Kesselheim.

⁵⁵ "Inflation Reduction Act."

⁵⁶ Fiore et al., "National Health Expenditure Projections, 2023–32."

⁵⁷ Bureau, "Health Insurance Coverage in the United States."

⁵⁸ Fiore et al., "National Health Expenditure Projections, 2023–32."

⁵⁹ Cubanski, Neuman, and Freed, "Explaining the Prescription Drug Provisions in the Inflation Reduction Act."

The specifics of each change are detailed further below.

Maximum Fair Price (MFP) determination. CMS will be “negotiating” with manufacturers for discounted levels for drugs covered in Medicare. CMS will array the high-spend drugs and select based on several factors. CMS selected the first 10 IRA drugs for the MFP determination in 2023 for the effective date of the MFP to be in 2026.

The “negotiated” price of each drug will be a function of how long the drug has been marketed along with other complex factors; CMS will look to the pricing metric related to non-federal buyers as a guidepost but will apply different factors to determine the actual MFP.⁶⁰ In building the list of drugs subject to the MFP determination, CMS will aggregate data across “dosage forms and strengths of the drug, including new formulations of the drug” and select from a ranked list of spend in the Medicare segment.⁶¹

A table summarizing the buckets defined by the IRA is below, as analyzed in a paper written by professors at Duke and Michigan Law Schools:⁶²

Time marketed (years)	Price relative to non-federal buyers (%)	Implied federal discount (%)
9-11	75%	25%
12-15	65%	35%
16+	40%	60%

Only drugs that have no generic or biosimilar equivalents are subject to an MFP determination.⁶³

Price increase limitations. Between 2019 and 2020, roughly half of Medicare-covered drugs experienced price increases that outpaced inflation.⁶⁴ The price increase limitation provision in the IRA discourages steep price increases in covered drugs to rein in Medicare’s growing costs.

In the future, if a manufacturer raises the price of a drug faster than the rate of inflation, it will be required to pay a rebate to Medicare.

⁶⁰ Rai, Sachs, and Price II, “Cryptic Patent Reform Through the Inflation Reduction Act.”

⁶¹ Rai, Sachs, and Price II.

⁶² Rai, Sachs, and Price II.

⁶³ Rai, Sachs, and Price II.

⁶⁴ Cubanski and Neuman, “Prices Increased Faster Than Inflation for Half of All Drugs Covered by Medicare in 2020.”

Medicare Part D Redesign. IRA introduced significant changes to how different stakeholders are liable for different phases of the Medicare Part D benefit. This change is generally known as the “Part D Redesign” under IRA.

One important component of this change is to provide more stability and visibility to Part D enrollees on their out-of-pocket costs. As of 2025, Medicare Part D enrollees will have a \$2,000 out-of-pocket spending cap on brand-name drugs and enrollees will bear no coinsurance responsibility for catastrophic coverage (currently, enrollees are responsible for 5% of catastrophic coverage for brand-name drugs).⁶⁵

In the future, catastrophic coverage will be funded by Part D Plans (60%), Medicare (20%), and the drug manufacturer (20%).⁶⁶ Manufacturers will also be responsible for funding a 10% discount on drug prices above the deductible but below the annual out-of-pocket spending threshold. This replaces manufacturers’ 70% discount responsibility within the coverage gap in Medicare’s existing structure; but it requires them to provide a discount to a broader population of enrollees given the expansion of initial coverage (see Appendix F).⁶⁷ The financial impact to each pharmaceutical company will vary based on the unique composition of the population using their products.

Other regulatory challenges in the industry

The American pharmaceutical market is large and fast-moving. Given the industry’s value, speed, and impact to the public, pharmaceutical companies are highly and increasingly regulated. These policies touch every part of the product lifecycle, and compliance with national and global regulations can be costly to pharmaceutical companies.⁶⁸

Relevant case study

AbbVie: Humira

Humira is AbbVie’s biologic drug for rheumatoid arthritis and a variety of other autoimmune disorders. Between its launch in 2002 and its loss of exclusivity in January 2023, Humira grossed ~\$200B for the drugmaker, making it the most lucrative drug in history.⁶⁹ AbbVie and its affiliates held 165 patents related to Humira that enabled the long run of exclusivity the branded drug maintained.

AbbVie’s portfolio includes products in immunology, neuroscience, hematologic oncology, aesthetics, and eyecare. Immunology (including Humira) comprised >50% of

⁶⁵ Cubanski, Neuman, and Freed, “Explaining the Prescription Drug Provisions in the Inflation Reduction Act.”

⁶⁶ Cubanski, Neuman, and Freed.

⁶⁷ Cubanski, Neuman, and Freed.

⁶⁸ Buzzeo and Gyzen, “Transforming Regulatory Strategy to Meet the Evolving Compliance Landscape.”

⁶⁹ Walker, “AbbVie’s Blockbuster Drug Humira Finally Loses Its 20-Year, \$200 Billion Monopoly.”

AbbVie US sales in 2022. That year, Humira contributed 40.7% of the company's US net revenue, according to company filings.⁷⁰

In 2023, as AbbVie's exclusivity expired, nine biosimilars launched onto the market. AbbVie's reported US annual revenues from Humira declined 34.7%, accordingly.⁷¹ This effect was less severe than AbbVie had anticipated, partially due to physicians' hesitancy to switch their patients to a biosimilar; however, insulating itself from a decline in Humira revenues remains a strategic priority for AbbVie.

When Humira exclusivity expired in 2023, AbbVie chose to offset the loss by redoubling efforts behind the other two drugs in its immunology portfolio: Skyrizi and Rinvoq. In 2023, revenues from these drugs increased 50.6% (to \$6.75B) and 57.4% (to \$2.82B) year-on-year, respectively. Due to this offsetting effect, US revenues within AbbVie's immunology portfolio declined only 12.7% year-on-year. Net reported revenues across the portfolio within the US declined 8.4% and global revenues declined 6.4%.⁷²

The push behind Skyrizi and Rinvoq suggest AbbVie is looking to maintain its strength in immunology, even as Humira loses market share.⁷³ This strategy allows AbbVie to sharpen its focus on its core competency, immunology, and capitalize on the company's existing expertise and infrastructure in the space.

⁷⁰ "Form 10-K: AbbVie Inc."

⁷¹ "Form 10-K: AbbVie Inc."

⁷² "Form 10-K: AbbVie Inc."

⁷³ Healthcare, "AbbVie's Strong Immunology Portfolio Forecast to Combat Humira Losses."

Case Competition: Key Questions and Considerations

Your challenge, as a participant in the 2024 Gilead Pharma Case Competition, is to make a series of strategic recommendations to help inform the company's 10-year growth plan, positioning Zile to win in the highly competitive biopharmaceutical space. Focus on what you consider to be the key priorities, but include at least the following:

- Any assumptions made & rationale in developing your strategic recommendations
- **Strategic Plan Summary**, including at least 5 strategic goals and associated KPIs
- **Kendizo Strategy:** *Define the role of Kendizo in Zile's portfolio going forward, and analyze revenue implications of generic entry (see Technical appendix section for formulas)*
 - Propose strategies to maximize its value before and after patent expiry
 - Calculate annual revenue risk to Kendizo posed by the two generics nearing launch
 - Calculate implied price of Kendizo after introduction of generics
- **Financial Plan:** *Provide a high-level allocation of the \$4.5B budget, associated rationale and expected return on investment (ROI)*
 - If your recommendation exceeds \$4.5BM, justify additional investment and propose funding options
- **Revenue Diversification:** *Recommend specific strategies to diversify revenue streams and reduce reliance on Kendizo (see Exhibit H)*
- **Implementation Roadmap**
 - 10-year timeline for core activities & major investments
Include key milestones, decision points, and contingency plans

You are welcome to conduct research in the public domain, though we recommend basing your ideas and recommendations primarily on what you read within this document.

If selected as a finalist, you will have **maximum 15 minutes** to present to Sloane Grant and the Zile Board of Directors (case competition judges). They will then have 5-10 minutes to ask questions of your team and probe further into your recommendations and thought processes. **Prepare your final PowerPoint deliverable with that in mind, as significant changes to the recommendations themselves will not be allowed once finalists are notified.** All team members are expected to present during the presentation, and questions from judges may be asked directly to an individual or to the team, at large.

There is no right or wrong answer. The judges are most interested in understanding your original ideas and the logic/rationale behind the team's overall strategy. Do not spend time researching the science behind the drug products themselves, as creative license was taken to provide approximations of real drugs for the context of this case competition. Therefore, that should not form the primary basis in your final deliverable.

Be creative, while also remembering to stay grounded in your recommendations.

Lastly, have fun and good luck!

Appendix

A: Medicare in the United States⁷⁷

Medicare is the United States' federal health insurance program for those aged 65 and above and younger individuals with disabilities. The program is organized into 4 distinct 'Parts:' A, B, C, and D.

Part A covers inpatient care across hospitals, skilled nursing facilities, hospice, and home health care. Part B is traditional medical insurance covering doctors' visits, outpatient care, home health care, medical equipment, and preventive service (e.g., vaccines). Part C (Medicare Advantage): Plans sponsored by commercial entities that have government-approved plans for enrollees. Some have extra benefits like vision and dental. Part D involves prescription drug coverage offered through private plans with guardrails set by Medicare.

B: Phases of Clinical Trials⁷⁸

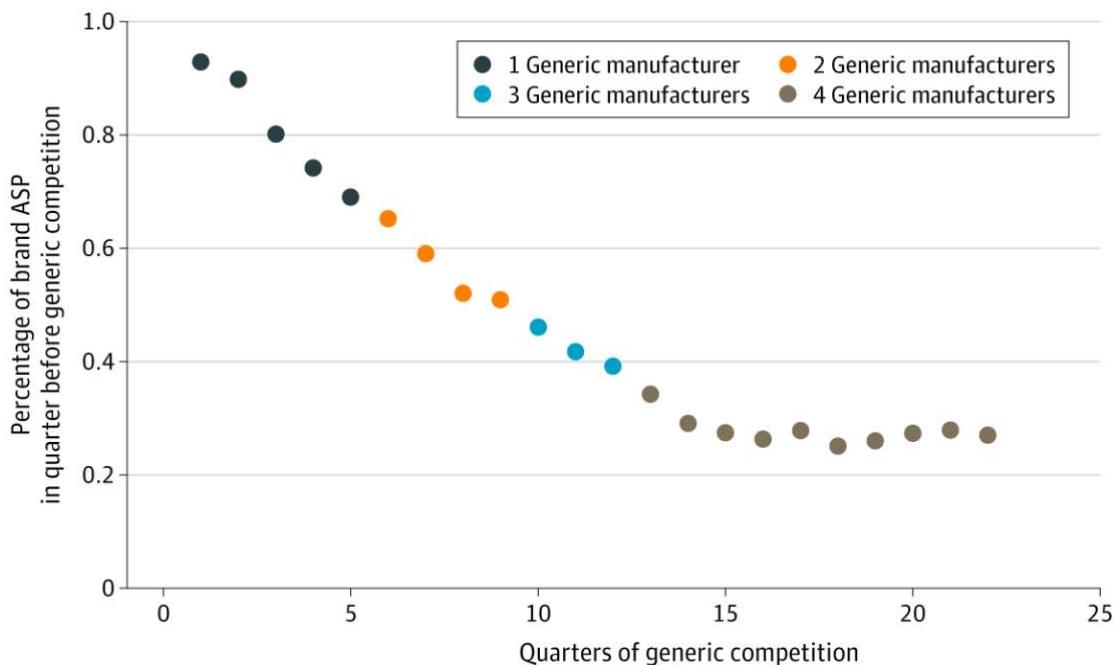


⁷⁷ "Parts of Medicare."

⁷⁸ "Phases of Clinical Trials."

C: Price pressure imposed by generic competition

Percentage Change in ASP with Generic Competition, 2005-2021⁷⁹

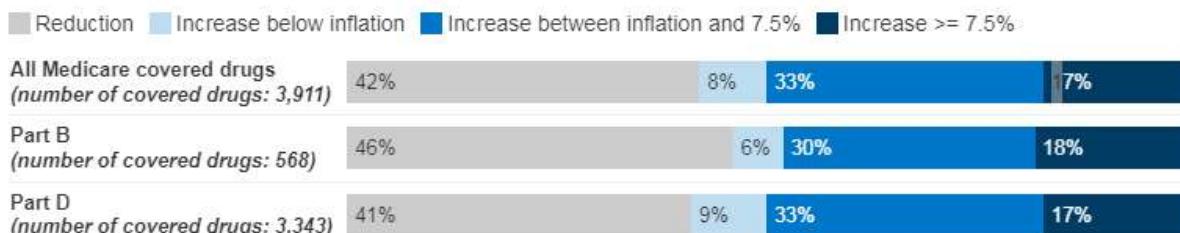


D: Price increases for drugs covered by Medicare (2019-2020)⁸⁰

Figure 1

Half of All Drugs Covered by Medicare Had Price Increases Between 2019 and 2020 Above the Rate of Inflation (1.0%)

Price change, 2019-2020:



NOTE: Includes all drug products listed in the CMS Medicare drug spending datasets for Part D and Part B in both 2019 and 2020. Prices are based on average spending per dosage unit and do not account for rebates (in Part D). 2019-2020 price changes compared to the increase in the CPI-U between July 2019-July 2020.

SOURCE: KFF analysis of CMS Medicare Drug Spending Datasets and Bureau of Labor Statistics data • [PNG](#)



⁷⁹ Dickson and Kent, "Association of Generic Competition With Price Decreases in Physician-Administered Drugs and Estimated Price Decreases for Biosimilar Competition."

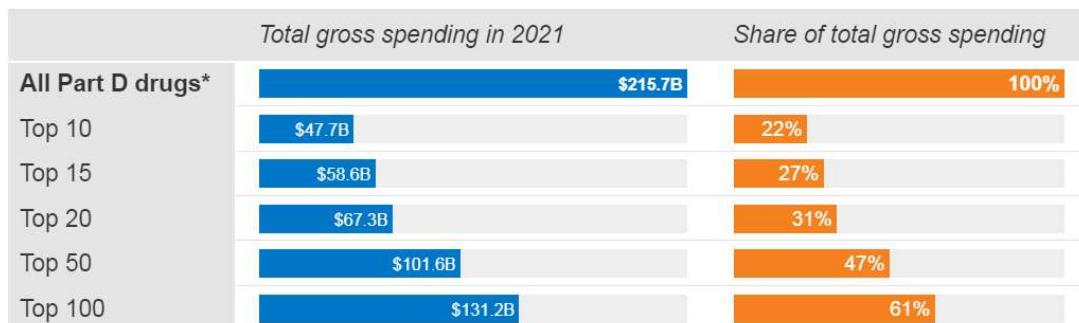
⁸⁰ Cubanski and Neuman, "Prices Increased Faster Than Inflation for Half of All Drugs Covered by Medicare in 2020."

E: Medicare Part D Spending Concentrated in Few Drugs

Figure 1

Relatively Few Drugs Account for a Large Share of Medicare Part D Spending

The 10 Top-Selling Part D Drugs Accounted for 22% of Total Gross Part D Spending in 2021



NOTE: Spending amounts reflect gross spending and do not account for rebates that may result in lower net spending. *In 2021, Medicare Part D covered a total of 3,566 drug products.



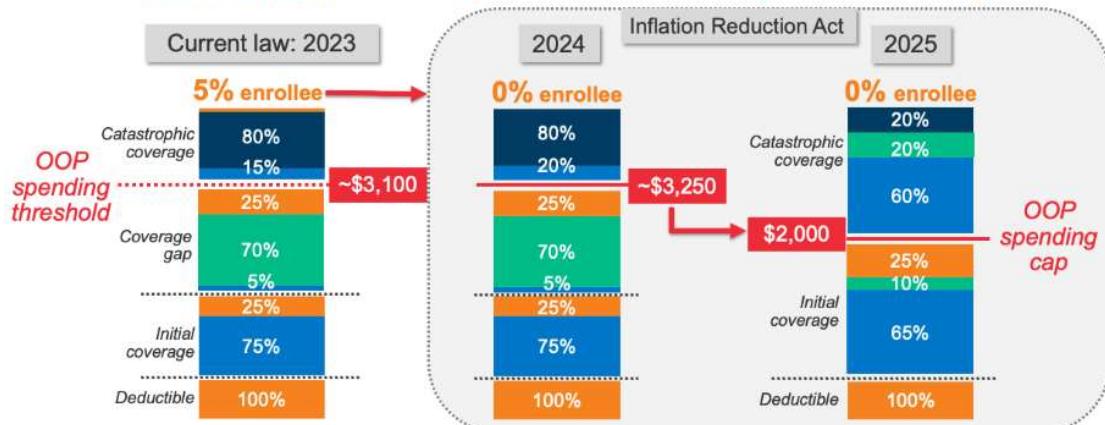
SOURCE: KFF analysis of Centers for Medicare & Medicaid Services 2021 Medicare Part D Spending by Drug. • PNG

F: Changes to Medicare Part D for Brand-Name Drug Costs⁸¹

Figure 2

Changes to Medicare Part D for Brand-Name Drug Costs

Share of brand-name drug costs paid by: ● Enrollees ● Part D Plans ● Drug manufacturers ● Medicare



NOTE: OOP is out-of-pocket. The out-of-pocket spending threshold will be \$7,400 in 2023 and is projected to be \$7,750 in 2024 and \$8,100 in 2025, including what beneficiaries pay directly out of pocket and the value of the manufacturer discount on brand-name drugs in the coverage gap phase. These amounts translate to out-of-pocket spending of approximately \$3,100, \$3,250, and \$3,400 (based on brand-name drug use only).



G: Estimated 2024 new cases by cancer type, American Cancer Society⁸²

Only for cancers >5K incidence per year:

Cancer type / location	New cases
All cancers	2,001,140
Acute lymphocytic leukemia	6,550

⁸¹ Cubanski, Neuman, and Freed, "Explaining the Prescription Drug Provisions in the Inflation Reduction Act."

⁸² "New Cases."

Acute myeloid leukemia	20,800
Anus, anal canal & anorectum	10,540
Brain & other nervous system	25,400
Breast	313,510
Cervix	13,820
Chronic lymphocytic leukemia	20,700
Chronic myeloid leukemia	9,280
Colon	106,590
Colorectum	152,810
Digestive system	353,820
Endocrine system	48,010
Esophagus	22,370
Gallbladder & other biliary	12,350
Genital system	427,800
Hodgkin lymphoma	8,570
Kidney & renal pelvis	81,610
Larynx	12,650
Leukemia	62,770
Liver & intrahepatic bile duct	41,630
Lung & bronchus	234,580
Lymphoma	89,190
Melanoma of the skin	100,640
Mouth	15,490
Myeloma	35,780
Non-Hodgkin lymphoma	80,620
Oral cavity & pharynx	58,450
Other & unspecified primary sites	34,950
Other digestive organs	8,350
Other leukemia	5,440
Other non-epithelial skin	7,630
Other respiratory organs	5,720
Ovary	19,680
Pancreas	66,440
Pharynx	21,830
Prostate	299,010
Rectum	46,220
Respiratory system	252,950
Skin (excluding basal & squamous)	108,270
Small intestine	12,440
Soft tissue (including heart)	13,590
Stomach	26,890
Testis	9,760
Thyroid	44,020
Tongue	19,360
Urinary bladder	83,190
Urinary system	169,360
Uterine corpus	67,880
Vagina & other female genital	8,650
Vulva	6,900

Technical appendix

Revenue risk calculation: Generics

Revenue risk is the difference between current revenues (in this case, from Kendizo) and future revenues, when a key variable changes. Revenue associated with a drug is a function of price and patients reached:

$$\text{Net revenue}_{\text{Kendizo}} = \text{Average price}_{\text{Kendizo}} \times \text{Patients}_{\text{Kendizo}}$$

$$\text{And so, Average price}_{\text{Kendizo}} = \text{Net revenue}_{\text{Kendizo}} \div \text{Patients}_{\text{Kendizo}}.$$

Given that Zile offers rebates for Kendizo, the list price and the actual average price differ. As such, use net revenue and not gross revenue in the revenue risk calculation.

Future average sales price (ASP) can be calculated leveraging West Health Policy Center's study on price reduction with the introduction of generics.⁸³ They have estimated:

Number of generics	ASP reduction
1	14.9%
2	32.7%
3+	68.6%

Average sales price (ASP) is the average across both generics and Kendizo.

For simplicity, you can assume that Kendizo will want to retain a 20% higher price than its generic equivalents. You can also assume that the number of patients is constant and that Kendizo and its competitors will have equal market share, in equilibrium (i.e., if there is one generic introduced, half the patients will use Kendizo, and half will use the generic).

Target Product Profile (TPP)

TPPs help guide biopharmaceutical companies' R&D processes for specific unmet needs. They specify a minimum acceptable result and an ideal result for their research efforts. The basic structure for a TPP is below:⁸⁵

Product targets	Minimum acceptable result	Ideal results
Primary product indication		
Patient population		
Treatment duration		
Delivery mode		

⁸³ Dickson and Kent, "Association of Generic Competition With Price Decreases in Physician-Administered Drugs and Estimated Price Decreases for Biosimilar Competition."

⁸⁵ "CREATE Bio Example."

Dosage form		
Regimen		
Efficacy		
Risk / side effects		

Additional corporate funding sources

If your recommendation exceeds the \$4.5B specified by the CEO, you will need to suggest a strategy to raise the additional capital.

Companies can access additional funding through two primary sources:⁸⁶

1. **Debt capital:** Companies can pursue traditional loans or can publicly issue debt. Debt issues are referred to as corporate bonds. The drawbacks of this strategy are that the principal and interest must be paid to lenders or bondholders at a pre-determined cadence: If this commitment is not honored, the company is at risk of going bankrupt.⁸⁷
2. **Equity capital:** Companies can issue additional shares which individuals and institutions buy for partial ownership of the company. This raises capital but dilutes the value of other outstanding shares. When this strategy is pursued by already-public companies, it is called a secondary offering (where the initial public offering (IPO) is when the company first issued shares to the public). Since additional shareholders will expect a portion of future profits, this can be an expensive way to raise capital.⁸⁸

Because CEO Sloane Grant specified the amount of money available to pursue the revenue diversification strategy, you will need to present a compelling argument for why additional capital should be raised for this purpose.

Components of a strategic plan

For consideration while developing Zile's 10-year plan. You are not required to include all these parts but can use this framework to guide your thinking:

1. **Mission statement:** Statement of Zile's purpose and primary objectives.
2. **Vision statement:** Description of what the company wishes to become in the future; the foundation on which future decisions will be made and goals will be set.

⁸⁶ "What Are the Sources of Funding Available for Companies?"

⁸⁷ "What Are the Sources of Funding Available for Companies?"

⁸⁸ "What Are the Sources of Funding Available for Companies?"

3. **Core values:** Principles underpinning Zile's activities that inform corporate culture and decision-making.
4. **Long-term objectives:** Specific, measurable, achievable, relevant, and time-bound (SMART) goals that the company is committed to achieving in the next 10 years. Should be related to the mission and vision statements.
5. **Strategic initiatives:** Initiatives and detailed actions Zile will undertake to achieve its long-term objectives.
6. **Resource allocation:** Plan for allocating resources (e.g., financial) against achievement of strategic initiatives.
7. **Key performance indicators (KPIs):** Metrics used to measure progress towards objectives set out in the plan.
8. **Implementation plan:** Timeline for execution of the strategic plan.

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Exhibit A

R&D Allocation & Ongoing Clinical Trials

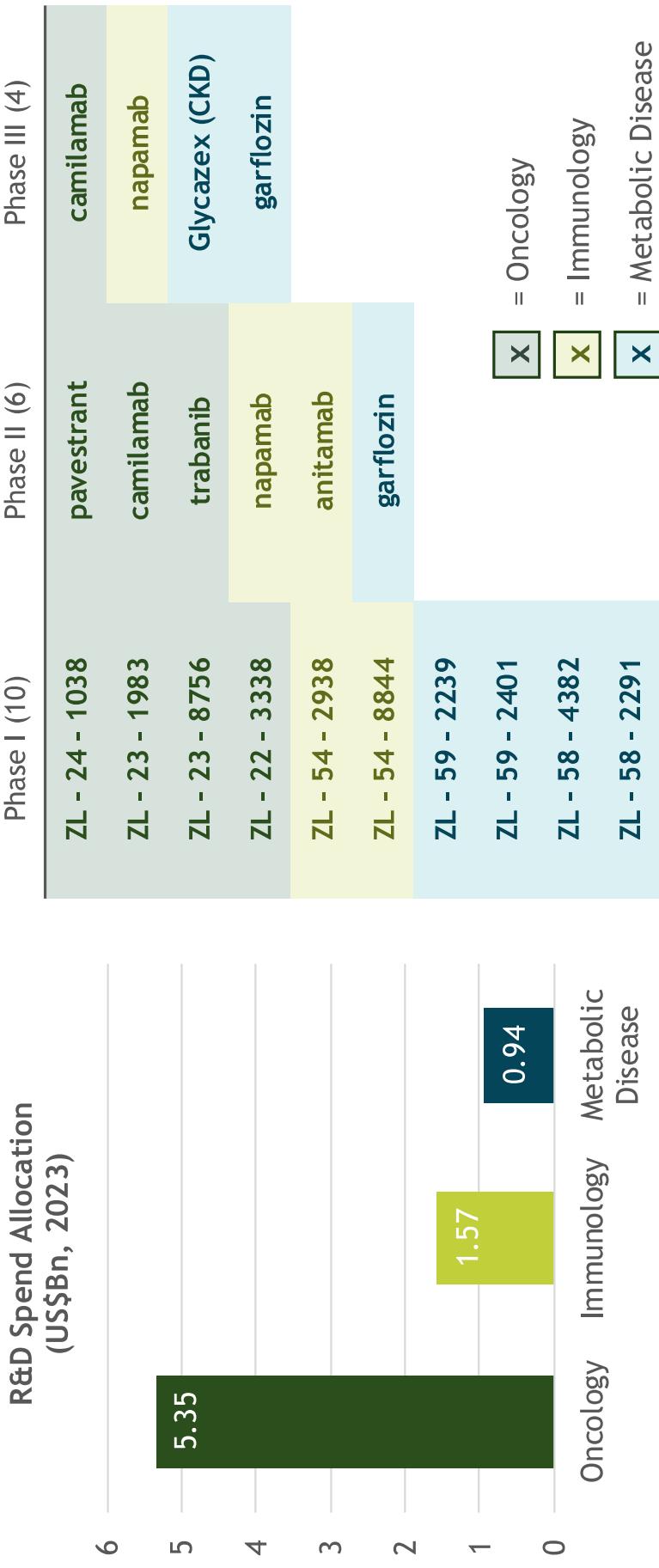
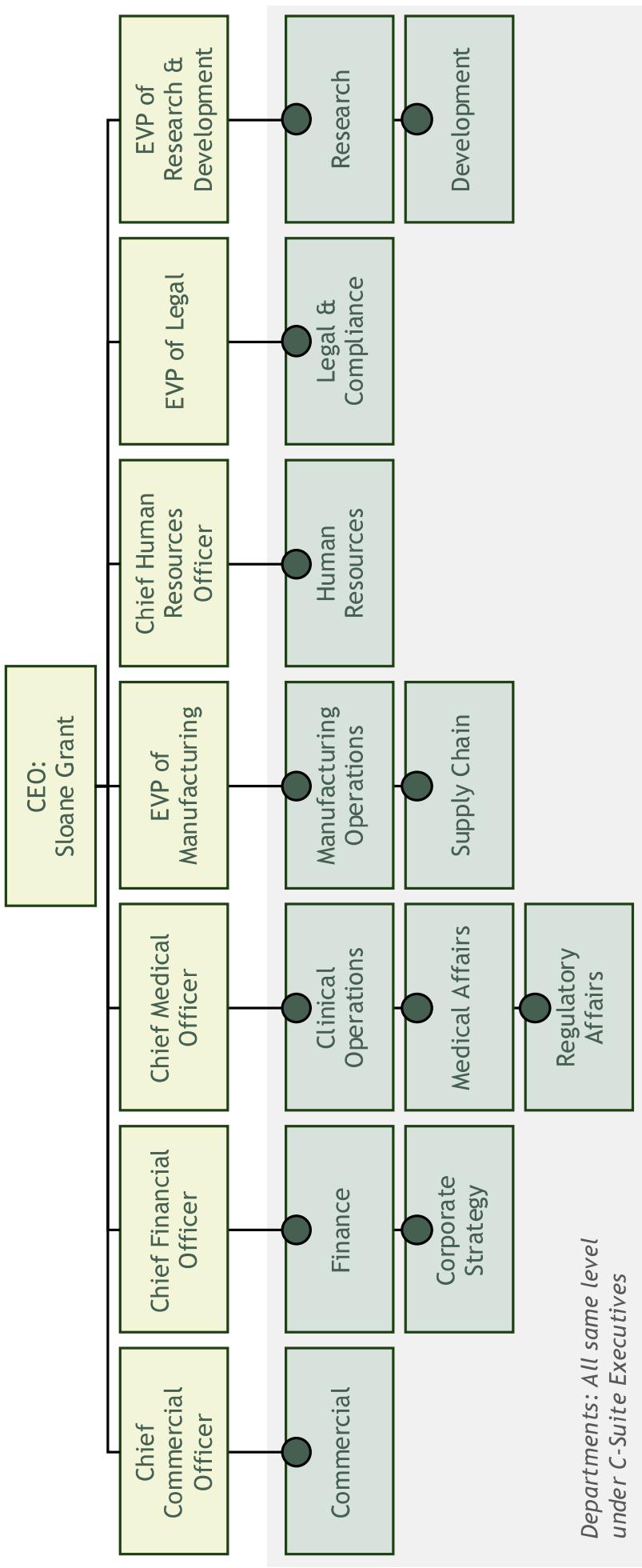


Exhibit B

Organizational Structure



*Departments: All same level
under C-Suite Executives*

Exhibit C

Zile US Revenue Over Time by Therapeutic Area (US\$Bn)



ZILE
BIOSCIENCES

Exhibit D

R&D Benchmark Data

	Phase I	Phase II	Phase III	Approval	Ph I to Approval
Oncology	Benchmark PTRS [^]	35%	38%	62%	90% 7.4%
	Dev timeline (rounded range in yrs)	2 - 2.5	2 - 3	3 - 3.5	0.5 - 1 7.5 - 10
	Average cost (total spend + FTE)	\$5 - 30 M	\$50 - 100 M	\$200 - 500 M	\$5 - 10 M
Immunology	Benchmark PTRS [^]	46%	27%	81%	98% 9.9%
	Dev timeline (rounded range in yrs)	1.5	2.8	5.2	0.5 - 1 10 - 11
	Average cost (total spend + FTE)	\$2.9 M	\$38 M	\$142 M	\$2 M
Metabolic	Benchmark PTRS [^]	46%	27%	81%	98% 9.9%
	Dev timeline (rounded range in yrs)	1.5	2.8	5.2	0.5 - 1 10 - 11
	Average cost (total spend + FTE)	\$2.9 M	\$38 M	\$142 M	\$2 M

[^]PTRS = Probability of Technical & Regulatory Success

*Multiply PTS at each phase x PRS

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Zile Product Launch Timeline

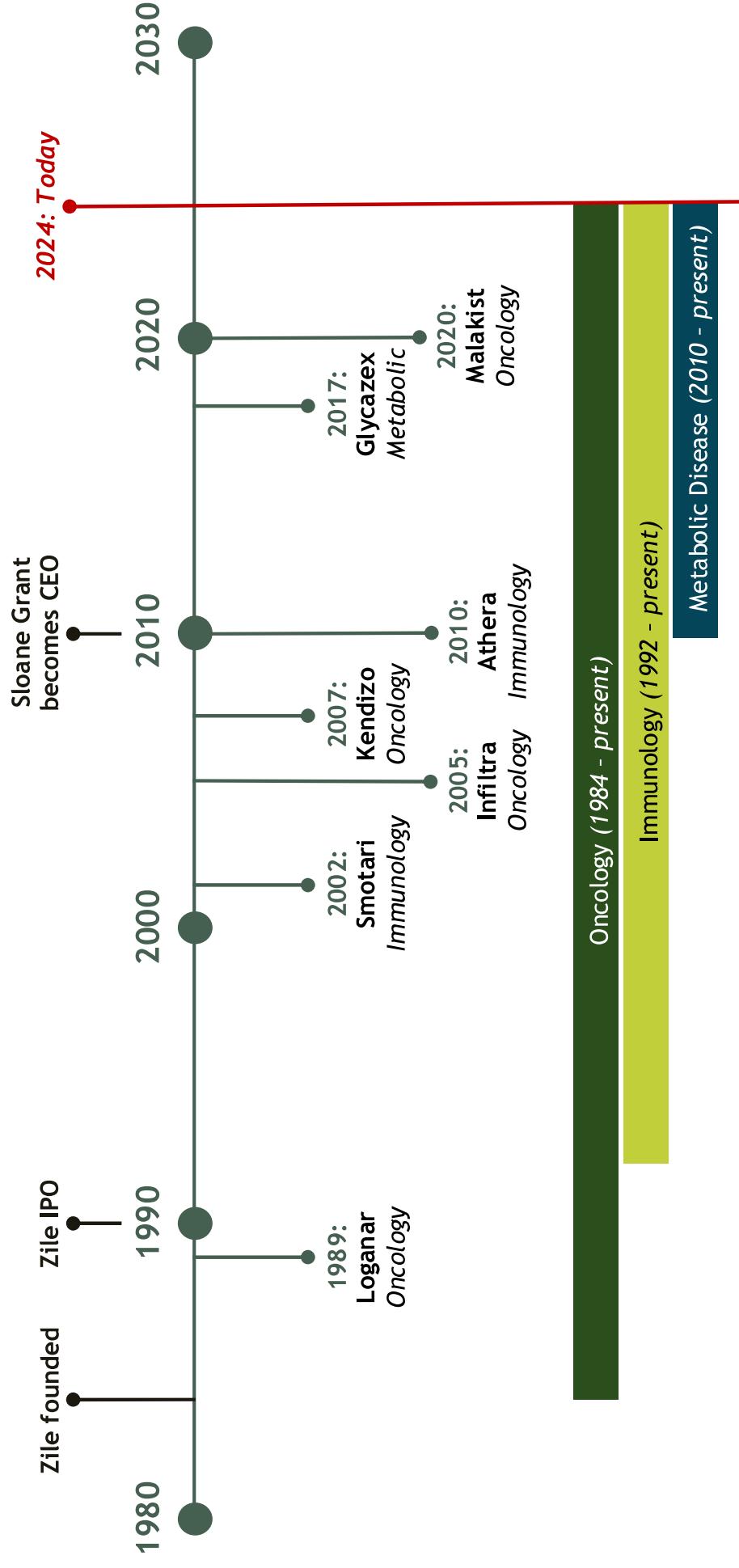


Exhibit F

The late-stage pipeline maintained its value since last review in 2022

- Losses from discontinuation of one P2 and one P3 trial in immunology space offset by movement of two garflozin assets into P3 within the metabolic disease space
- Camilamab and napamab anticipated to reach commercialization by 2032; promising early P3 results released last quarter

Single metabolic asset now second most valuable drug behind Kendizo

- Single metabolic disease asset Glycazex® exceeded 10% of Zile revenues in 2022 and is now second-highest-grossing drug behind Kendizo® (~23% of Kendizo® revenues)
- Glycazex® research has prompted other promising metabolic disease assets; probabilistic simulations suggest ~75% likelihood of another commercialized metabolic asset by 2027

R&D budget continues to be allocated on basis of past revenue contribution

- Despite low spend in metabolic disease R&D, pipeline contains six metabolic assets between P1 and P3; suggests high ROI of R&D spend in metabolic space
- Immunology pipeline sparser due to discontinuation of two trials last year
- Ongoing discussion on whether R&D spend should be allocated based on future potential

Pipeline Intellectual Property (IP) shows on average 12 years of exclusivity at launch

- For pipeline assets, composition-of-matter patents for Malakist® and Glycazex® will expire within next 5 years; other patents underway
- Kendizo® composition-of-matter patent already expired; manufacturing process patents will expire in 2031 with entry of 2 generic competitors Zile settled with in 2019



Exhibit G

Zile Product Portfolio

Drug	Kendizo	Loganar	Inflitra	Malakist	Athera	Smotari	Glycazex
TA	Oncology	Oncology	Oncology	Oncology	Immunology	Immunology	Metabolic Disease
Indications	<ul style="list-style-type: none"> Breast cancer Prostate cancer Pancreatic cancer Thyroid cancer 	<ul style="list-style-type: none"> Non-small cell lung cancer (NSCLC) 	<ul style="list-style-type: none"> Bladder cancer Colorectal cancer 	<ul style="list-style-type: none"> Esophageal cancer 	<ul style="list-style-type: none"> Rheumatoid arthritis Psoriatic arthritis 	<ul style="list-style-type: none"> Crohn's disease Ulcerative colitis Plaque psoriasis 	<ul style="list-style-type: none"> Diabetes Obesity Chronic Kidney Disease (Ph3 trial ongoing)
Hypothesized additional indications (<i>un-tested</i>)	<ul style="list-style-type: none"> Advanced melanoma Kidney cancer 	<ul style="list-style-type: none"> Advanced melanoma Colorectal cancer 	<ul style="list-style-type: none"> Prostate cancer Colorectal cancer Ovarian cancer 	<ul style="list-style-type: none"> Head & neck cancer 	<ul style="list-style-type: none"> Osteoarthritis Ankylosing spondylitis 	<ul style="list-style-type: none"> Lupus Neutrophilic dermatosis Multiple sclerosis 	<ul style="list-style-type: none"> Lipid disorders
Launched	2007	1989	2005	2021	2010	2002	2017
US Revenue (2023)	\$15.14B	\$2.91B	\$1.16B	\$0.58B	\$3.79B	\$2.04B	\$3.49B
Loss of Exclusivity (LOE)	2031	2007	2021	2039	2032	2020	2035



Revenue Diversification Strategies

The slide was extracted from a deck provided by a recent analysis from a consulting firm, outlining key strategies for successful revenue diversification.

Developing New Drugs	Investing in Pipeline Drugs
<p><i>Address unmet medical needs</i></p> <ul style="list-style-type: none">• Create Target Product Profile (TPP)• Outline high-level R&D plan and Budget• Analyze potential market	<p><i>Focus on promising early-stage assets</i></p> <ul style="list-style-type: none">• Evaluate current pipeline assets• Provide rationale for selected investments• Project development timeline and costs
<p><i>Expand use of existing portfolio drugs</i></p> <ul style="list-style-type: none">• Identify potential new indications• Develop basic clinical trial plan• Estimate costs and timeline	<p><i>Evaluate potential company targets</i></p> <ul style="list-style-type: none">• Consider Velocity Sciences, Kennedy Therapeutics, and Belvedere Biosciences• Analyze strategic fit with Zile• Plan integration approach
<p>Consider Other Creative Strategies</p>	



Exhibit I: Recent email from CEO Sloane Grant

CONFIDENTIAL | Re: Potential Targets

⚠ This message is high priority.

Team,

Quick update after last week's meeting with the Board.

There are a few companies on the market that could be a good strategic fit with our portfolio, not sure yet. Please keep within this group; we can't have this leaking. Need you to be discrete about the diligence.

No updates on the \$\$ we're allocating towards this effort. That might impact your assessment of these assets.

Velocity Sciences (Phoenix, AZ):

- Very interesting and secretive GLP-1 agonist in late-stage development. Nobody knows how, but their product looks to be extremely effective: Outperforming Glycazex in terms of avg. patient weight loss by +5-10pp.
- ~\$3.7B est. value, some of our competitors are likely looking at them given tailwinds in diabetes / obesity.

Kennedy Therapeutics (Somerville, MA):

- Expensive (~\$8.5B est. value) but probably worth it; these guys are positioned to win in leukemia and already have two more oncology drugs in Phase II
- Worked with Casper in the past, he's an impressive leader and a good guy. Would be easy to integrate Kennedy given it's right near us too.

Belvedere Biosciences (Buffalo, NY):

- You've probably seen them in the news recently, had a rather hostile buyout of 2/4 co-founders and undergoing a strategy reset.
- BD team has estimated ~\$3.5B purchase price but we know their products are undersold given all the turmoil at the company so far. Need a big cultural reset there. Lin is a visionary leader, though.

Looking forward to your assessment. SG.

—
Sloane Grant
CEO



Exhibit J: Potential targets and associated disease spaces

Potential target 1: Velocity Sciences

Velocity Sciences is an emerging player in the metabolic disease space. Headquartered in Phoenix, Arizona, Velocity is precommercial: It does not have any products on the market to-date. But Velocity has a late-stage GLP-1 agonist asset in development that appears to outcompete all existing commercialized GLP-1 agonists in terms of average patient weight loss, reduction of blood pressure, and resolution of lipid disorders.

Their product has the potential to be a blockbuster drug and could ride strong market tailwinds in the metabolic space. Though there are no guarantees, their late-stage GLP-1 agonist has high likelihood of making it to market in the next 2 years.

The promise of their precommercial asset may attract other potential acquirers. The M&A team has estimated a \$3.7B purchase price if Zile were to acquire Velocity today, a figure that reflects the risk that Velocity's drug does not make it to market. This estimated acquisition price will almost certainly increase in the coming months as Velocity draws closer to commercialization.

With a team of only 30 individuals, 20 of whom are dedicated to research and development, Velocity is extremely lean. But any potential acquirer would need to ensure the full team remained intact upon acquisition given their proprietary knowledge of the product.

Potential target 2: Kennedy Therapeutics

Kennedy Therapeutics is a new player in the oncology space. With one commercial drug and a strong pipeline, Kennedy Therapeutics will already be an expensive asset to buy. Leukalor launched in the middle of last year, so the annual revenue noted reflects just six months of sales: in just half a year, the company grossed \$1.2B from Leukalor alone.

The company's focus is on leukemia, an uncharted space for Zile. The American Cancer Society estimates that there will be 62,770 new cases of Leukemia in 2024, making it the 14th-most-prevalent cancer in the United States.⁸⁹

Because of its prevalence, leukemia is a well-researched disease area and a priority for competitors in the oncology space. The estimated acquisition price reflects the difficulty of gaining market share in the leukemia space, though Zile's strong reputation in the oncology space could build confidence in Leukalor among HCPs.

Headquartered in Somerville, MA, Kennedy has 50 employees, half of whom are dedicated to research and development activities. The CEO, Casper Gomez, is a close

⁸⁹ "Cancer Statistics Center."

friend of Zile CEO Sloane Grant. Grant may have a bias towards acquiring Kennedy, despite its price, because of their relationship to Gomez.

Potential target 3: Belvedere Biosciences

Belvedere Biosciences is a small company in the immunology space based in Buffalo, NY. Belvedere also has unsuccessfully pursued small side-projects in inflammation and virology.

Historically, Belvedere's four co-founders had differing views on the company's core competencies, creating a lack of strategic focus for the company. Last year, two of the co-founders bought out their other partners and doubled down on immunology. The company is now owned by the two co-founders and a group of VCs that backed Belvedere in its early days, providing most of the company's R&D funding.

Belvedere has two commercial assets in the immunology space, but both have struggled to gain traction. Notably, Belvedere's commercial team is thin, and there has been limited investment to market Lupindra and Itrelvia in the past.

Zile CEO Sloane Grant posits that the company's scattered vision and the conflict between its cofounders have dampened the sales of Belvedere's two commercial assets. The company may be undervalued, accordingly.

Exhibit J: Potential Target 1

Company profile: Velocity Sciences

Founded	2017			
Therapeutic focus	Metabolic disease			
Key drug(s):	Late-stage (Ph III) GLP-1 agonist in development; no current commercial assets			
Headquarters	Phoenix, AZ			
CEO	Marie Miller			
Annual revenue	\$0 (pre-commercial)			
Headcount	30			
Estimated price	\$3.7B			
Notes				<ul style="list-style-type: none">Strong tailwinds in diabetes / obesityPre-commercial product demonstrates high efficacy; potential to be very competitive in GLP-1 agonist marketAdds late-stage diabetes / obesity drug to product portfolioHighly competitive spaceMay be attractive to other acquirers: purchase price may increase if action is not taken soonNo guarantee that GLP-1 asset will make it to market, despite high likelihood HQ far from Boston



Exhibit J: Potential Target 2

Company profile: Kennedy Therapeutics

Founded	2020		
Therapeutic focus	Oncology		
Key drug(s):	Leukalor, targeted therapy for leukemia 2x drugs in Phase III trials		
Headquarters	Somerville, MA		
CEO	Casper Gomez	Pros	<ul style="list-style-type: none">• Leukemia would be new cancer subtype in Zile oncology portfolio• Leukalor already commercialized and revenue-generating• Strong product pipeline given two drugs in late-stage trials
Annual revenue	\$1.2B	Cons	<ul style="list-style-type: none">• Expensive purchase price would limit \$ remaining for other strategic initiatives• Limited existing expertise at Zile in leukemia space• Zile already has robust oncology pipeline
Headcount	50	Notes	<ul style="list-style-type: none">• Already located in Boston: Aids ease of integration• CEO Casper Gomez is close with CEO Sloane Grant, as they previously worked together
Estimated price	\$8.5B		



Exhibit J: Potential Target 3

Company profile: Belvedere Biosciences

Founded	2010			
Therapeutic focus	Immunology	Pros		
Key drug(s):	Lupindra: For lupus Irrelyia: For overactive immune systems (e.g., asthma, eczema, rhinitis)		Cons	
Headquarters	Buffalo, NY			
CEO	Felix Lin			
Annual revenue	\$900M			
Headcount	35	Notes		
Estimated price	\$3.5B			

- Could bolster sparse immunology pipeline
- Existing immunology expertise among employees at Zile
- Would support diversification away from oncology space
- Company likely undervalued
- History of scattered strategic focus has likely depressed sales; need major marketing effort
- Employee morale likely low after co-founder conflict
- HQ relatively far from Boston
- VCs invested in Belvedere have been actively involved in management recently through buy-out of two co-founders

