

## Genzyme (GENZ): Hold

February 2<sup>nd</sup>, 2011

### Analysts

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**Business Summary:** Genzyme is a biotechnology company which is principally engaged in developing and applying technologies to counter rare genetic diseases, renal diseases, cancer, as well as transplant and immune diseases. The company is headquartered in Massachusetts, operates worldwide but concentrates in the United States and the United Kingdom.

- **Pipeline & Product Growth through 2015:** For the next 2 years the Gaucher Disease drug Cerezyme represents earnings growth driven by increased shipments and capacity expansion to meet demand. Myozyme / Lumizyme also represents near term earnings growth based on recent launch and penetration into the orphan market for Pompe Disease. However, the valuation of Genzyme hinges on phase III data surrounding Alemtuzumab in relapsing / remitting Multiple Sclerosis patients. A 2013 launch is very likely assuming positive data outcomes.
- **Manufacturing Issues:** In mid-2009, production activities halted for two months at Genzyme's primary Cerezyme and Fabrazyme manufacturing facility in Allston, MA due to facility contamination. Raw materials containing Vesivirus 2117 had contaminated the firm's bioreactors, preventing reliable manufacture of drug Active Ingredients. It took one month to identify the nature of the contamination (because new detection test methods had to be developed), another month to sanitize the facility and bring production back on-line and yet another month to refill the product pipeline. In the interim, finished goods inventories proved insufficient to fulfill patient demand, enabling Genzyme's competitor Shire Plc. to gain market share. Though Cerezyme and Fabrazyme revenue has begun bouncing back in 2010, this incident highlights the ever-present complexity and risk involved in Genzyme's operations and the manufacture of biologics.
- **Acquisition by Sanofi-Aventis:** As of February 2, 2011, French drug maker Sanofi-Aventis is offering a minimum of \$72 or \$73 a share in cash along with a contingent value right based on performance of Alemtuzumab which could be worth between \$2 and \$5 extra per share. The initial offer of \$18.5 billion at \$69 per share was rejected by Genzyme. It is highly likely that the deal will be completed in the next few weeks.

Stats	Feb 2, 2010
Stock Symbol	GENZ
Stock Price (\$)	73.36
Market Cap. (\$M)	19,000
Shares Outstanding (M)	258.99
52-Week Range (\$)	45.39 - 74.95
Beta	0.33
Dividend (\$)	0.00
Employees (#)	12,000
Revenue (\$M)	4,236
S&P Credit Rating	A-
Recommendation	Hold

	2011	2012	2013	2014	2015
Total Revenue	\$4,320M	\$4,572M	\$5,087M	\$6,140M	\$7,371M
Gross Profit	\$3,201M	\$3,561M	\$4,298M	\$5,160M	\$5,741M
Operating Profit	\$270M	\$384M	\$664M	\$1,060M	\$1,286M
Net Income	\$199M	\$280M	\$476M	\$754M	\$913M

**Industry Analysis: Biotech:** The biotechnology sector's growth is driven by the success of late stage pipeline agents regulated by the U.S. Food and Drug Administration (FDA), making it a high risk/high growth sector. Currently, biotechnology companies that own marketed biologic products (Genzyme, Celgene, and Amgen) are showing steady growth for the near term. They remain unaffected by legislation around healthcare reform, however an increase in patients in the healthcare system will certainly benefit them in the future. Because the main revenue generation of these companies consists mainly of biologics they remain unexposed to the loss of market share to generic products. Legislation around biosimilars is not expected to be an issue in the near term, however once the FDA understands how to regulate the entry of biosimilars, all biotechnology companies could see some competitive biosimilar market entrants in the long term horizon (2015+). In addition, the manufacturing of biologics, specifically highly complex enzyme and protein structures, is an especially difficult process that can be more prone to disruption of yield, productive capacity and supply.

Peer Group	Stock Symbol	Stock Market Cap. (\$B)	Shares Outstand-ing (M)	Recent Stock Price (\$)	52 Week Range (\$)	Beta	EPS	P / E Ratio	Average Analyst Opinion
Amgen	AMGN	51.58	932.00	55.63	50.26 - 61.26	0.46	4.79	11.61	Buy
Celgene	CELG	25.02	470.64	53.17	48.02 - 65.79	0.60	1.88	28.21	Buy
Genzyme	GENZ	19.00	258.99	73.36	45.39 - 74.95	0.33	-0.06	-	Hold / Buy

**Company Analysis:** The orphan disease segment is the largest business segment for Genzyme and represents a very unique opportunity and risk. Orphan diseases are classified as diseases acquired by less than 200,000 people in the U.S. or Europe or a highly prevalent disease in the third world that has not been a problem in the U.S. or EU for a long time (malaria, cholera etc.). Legislation in the U.S. and EU gives biotechnology and pharmaceutical companies strong incentives to develop drugs in the orphan space. These incentives include a priority review by the FDA, extra exclusivity, and unlimited pricing power to recover R&D expenses and make profit. Success in the orphan disease space is inherently risky because of the intractable nature and complicated pathology of rare diseases. However, because of the low approval bar, an orphan disease strategy can be lucrative and used to gain approval and then "back into" more prevalent disease markets.

• **Strengths:**

- Diversified therapeutic area product portfolio
- Worldwide product sales
- Market leader in Orphan Disease drugs

• **Opportunities:**

- Aging population and increasing number of patients with chronic diseases
- Emerging markets in BRIC
- Strong R&D Pipeline

• **Weaknesses:**

- Low market share outside of Orphan disease therapeutic area
- Limited liquidity
- Weak operational performance and decreased margins
- High manufacturing difficulty of products exposes to risk for lack of supply and batch integrity.

• **Threats:**

- Increased US and EU pricing controls
- Lengthy approval process for new drugs
- Introduction of biosimilar legislation in the US
- Batch failures may have large-scale business effects, such as shortages and lost sales

## Accounting Practices of Note:

- **Depreciation:** Genzyme does not separately disclose depreciation expenses in their income statements. The supplementary notes to the financial statements indirectly state that it has been aggregated into cost of products sold, as costs of idle production facilities, including related depreciation, are also consolidated here. This makes it very hard to differentiate between direct and indirect product costs, as depreciation incurs no matter the capacity utilization. Removing depreciation would have decreased cost of products sold in 2009 by \$190.1 million (-4.2%).
- **Facility Sanitization:** Costs incurred in sanitizing facilities due to a viral outbreak at one of Genzyme's production facilities in 2009 were allocated to cost of products sold for that period. It is interesting that these costs are not expensed as extraordinary losses as they do not directly relate to variable product costs. The operating margin in 2009 was 11.16% and the gross margin 74.82%. Had these sanitization costs not been recorded this way, operating margin would have been 12.16% (+1.00%) and gross margin 75.83% (+1.01%).
- **IPR&D:** "In Process Research and Development" is research that has been taken on by a company after acquiring another company's business unit, in this case Bayer. In March 2009 Genzyme bought out Campath, a marketed product from Bayer, however this product is also in late stage development for Multiple Sclerosis. Interestingly they assign a "fair value" to the product by discounting the expected future cash flows of the product. This acquisition is recorded as a gain that includes both the marketed and in development indications for the drug, thereby affecting their net income for the year. Assuming the product in development does not get approved, then Genzyme will have to amortize the loss. Therefore, the larger the potential for the drug in the market, the more impact on the net income.

## Financial Ratio Analysis:

Financial Ratios	GENZ			AMGN			CELG		
	2009	2008	2007	2009	2008	2007	2009	2008	2007
<b>Profitability</b>									
Profit Margin	0.09	0.09	0.11	0.31	0.28	0.21	0.29	-0.68	0.16
Return on Assets	0.05	0.05	0.06	0.12	0.12	0.09	0.16	-0.38	0.07
Return on Equity	0.06	0.06	0.08	0.21	0.22	0.17	0.20	-0.48	0.09
<b>Efficiency</b>									
Asset Turnover	0.48	0.54	0.49	0.38	0.42	0.43	0.55	0.56	0.44
Inventory Turnover	2.61	2.57	2.28	0.97	1.10	1.28	2.15	3.46	3.50
Revenue per Employee	376,294	418,640	381,352	851,279	887,751	844,057	956,236	923,712	834,315
<b>Liquidity</b>									
Cash Ratio	0.69	0.63	0.58	0.74	0.36	0.33	2.23	2.07	2.81
Quick Ratio	1.52	1.76	1.18	1.29	0.79	0.67	3.11	2.66	4.39
Current Ratio	2.59	2.75	1.74	4.89	3.12	1.88	7.77	5.39	7.12

## Financial Ratio Analysis: *Continued*

Financial Ratios	GENZ			AMGN			CELG		
	2009	2008	2007	2009	2008	2007	2009	2008	2007
<b>Leverage</b>									
Long-Term Debt Ratio	0.13	0.05	0.02	0.33	0.31	0.31	0.09	0.10	0.09
Debt to Equity	0.31	0.19	0.26	0.75	0.79	0.94	0.23	0.27	0.27
Equity Multiplier	1.31	1.19	1.26	1.75	1.79	1.94	1.23	1.27	1.27
<b>Growth</b>									
R&D as % of Sales	0.19	0.28	0.19	0.20	0.20	0.22	0.30	0.41	0.28
Sales Growth (%)	-0.02	0.21	0.20	-0.02	0.02	0.04	0.19	0.60	0.56

The ratio analysis reveals that Genzyme is a healthy company, but falters when compared to its top two competitors and the industry. The stock should be observed with caution, but there is no need for immediate action. Only the three most vital ratios are depicted in the table above. The following interpretation takes into account further relevant measures.

- **Profitability:** ROA, ROE, Operating Margin and Profit Margin all reveal performance that is less than half than that of its top two competitors and the industry average. Furthermore, Genzyme does not even outperform the S&P 500 performance – the firms in which typically show lower performance in this area as compared to the industry average. Alone the EPS provides reasonably competitive values. However, all values have been steadily declining over the past three years, continuing on into the first three quarters of 2010.
- **Efficiency:** Asset turnover, inventory turnover and R&D expenses are on par with or slightly exceed those of its competitors, suggesting healthy future investment. These values have remained fairly constant over the years. However, the revenue per employee is less than half than those of Genzyme's competition.
- **Liquidity:** Available cash and equivalents do not fully cover short term liabilities, but if quickly convertible assets are included, the value manages to exceed the 1.00 threshold. This section is characterized by an upwards trend over the last few years and has been leveling out throughout 2010. However, both competitors have a more solid liquidity stance.
- **Leverage:** Values remain below Amgen's above-average debt levels and generally exhibit very low long-term debt levels. But the trend does reveal a slight increase over the last three years.
- **Growth:** Despite being a mature company, Genzyme displays considerable sales growth, averaging 20% over the past few years. This number dipped in 2009, analog to its competitors. R&D expenses are on par with those of its competitors, suggesting healthy future investment.

## **Financial Statement Forecast:**

Patient-based forecasts were carried out for the large growth drivers of Genzyme's revenue out to 2015. The only pipeline agent that has been forecasted by MBE Associates is Alemtuzumab which is looking to obtain an indication in relapsing/remitting multiple sclerosis patients.

### **Forecast Key Assumptions & Qualifiers:**

- **Cerezyme Back On-Line:** Due to unforeseen issues in manufacturing issues, supply of Cerezyme was disrupted for a full quarter. In that time, Shire launched a competing drug in the US and the EU that has begun to take patient share from Cerezyme in Gaucher's. However Genzyme has rectified its issues and saw a 30% growth in revenues in the last quarter of 2010. We believe Cerezyme may have lost some patient share, but is quickly ramping back up to supply patients.
- **Myozyme/Lumizyme Patient Share Growing:** The only drug on the market used to treat patients with Pompe's disease is rapidly growing in patient share. Although the patient pool is small the \$400,000 per year therapy is having rapid uptake because of patient advocacy. We believe Genzyme's estimates of penetrating 20% of the worldwide (WW) market are accurate because of patient necessity.
- **Alemtuzumab Launch Q1 2013:** We believe that data surrounding Alemtuzumab in relapsing/remitting multiple sclerosis patients is positive and will be fast tracked by the FDA to Launch in Q1 2013. MBE associates used Genzyme estimates of drug price and market penetration to complete our modeled forecast. We also took into account an increase in marketing spend from adding an additional sales force, should the drug launch.
- **Other Growth is Modest at Best:** Growth of other therapeutic categories that Genzyme markets is on par with the perceived price and patient growth of the disease. We expect that these drugs will have little impact on earnings growth estimates.
- **No Other Outside Threats:** A search through the pipeline found no other late stage pipeline drugs that would greatly threaten market share in any of Genzyme's key therapeutic areas

## Financial Statement Forecast: *Continued*

### Genetic Diseases – Myozyme Revenue\* (Key Product):

	2009 (A)	2010 (Q4E)	2011 (E)	2012 (E)	2013 (E)	2014 (E)	2015 (E)
Patients with Pompe (#)	10,771	10,825	10,879	10,934	10,988	11,043	11,099
Patients on Myozyme (%)	7%	10%	12%	15%	20%	20%	20%
Patients on Myozyme (#)	754	1,083	1,306	1,640	2,198	2,209	2,220
Av. Cost per Year (\$, +5%)	430,000	451,500	474,075	497,779	522,668	548,801	576,241
Myozyme Revenues (\$)	324,522,000	488,761,650	618,918,877	816,392,682	1,148,664,503	1,212,128,217	1,279,098,301

### Immune Diseases – Alemtuzumab Revenue\*\* (Key Product):

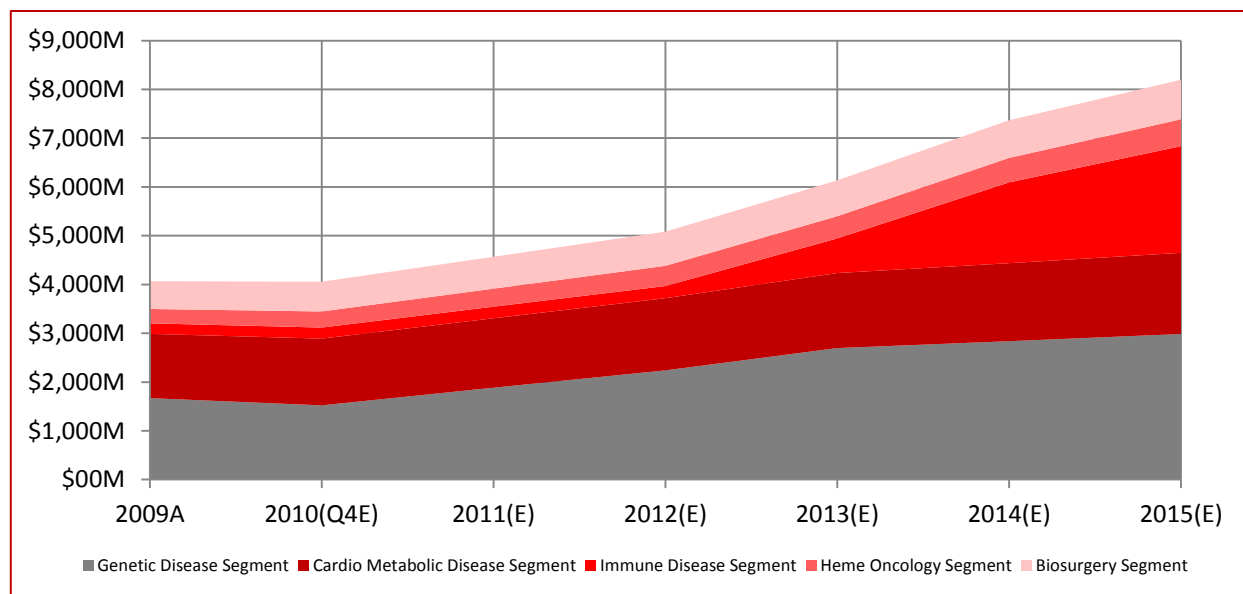
	2009 (A)	2010 (Q4E)	2011 (E)	2012 (E)	2013 (E)	2014 (E)	2015 (E)
M. Sclerosis Patients (#)	2,500,000	2,500,000	2,500,000	2,500,000	2,500,000	2,500,000	2,500,000
Relapsing Remitting (%)	65%	65%	65%	65%	65%	65%	65%
Relapsing Remitting (#)	1,625,000	1,625,000	1,625,000	1,625,000	1,625,000	1,625,000	1,625,000
Patients on Alemtuz. (%)	0%	0%	0%	0%	5%	15%	20%
Patients on Alemtuz. (#)	-	-	-	-	81,250	243,750	325,000
Av. Cost per Year (\$, +3%)	-	-	-	-	5,500	5,665	5,835
Alemtuzumab Revenues (\$)	-	-	-	-	446,875,000	1,380,843,750	1,896,358,750

\* Pompe disease numbers represent worldwide (WW) patient population, Myozyme penetration into patient segments are Genzyme estimates

\*\* MS patient numbers derived from the Multiple Sclerosis Foundation, Alemtuzumab penetration into patient segments are Genzyme estimates

## Financial Statement Forecast: *Continued*

### Revenue by Segment:



	2009 (A)	2010 (Q4E)	2011 (E)	2012 (E)	2013 (E)	2014 (E)	2015 (E)
Genetic Diseases	1,671,236,000	1,522,475,650	1,884,818,577	2,239,447,367	2,696,841,422	2,837,713,982	2,985,963,354
Cardio-M. Diseases	1,316,500,000	1,368,509,500	1,422,712,519	1,479,206,903	1,538,095,058	1,599,484,161	1,663,486,398
Immune Disease	216,000,000	226,800,000	238,140,000	250,047,000	709,424,350	1,656,520,568	2,185,819,408
Heme Oncology	295,000,000	330,000,000	369,600,000	414,480,000	455,928,000	501,520,800	551,672,880
Biosurgery	569,000,000	609,450,000	653,122,500	700,298,625	735,313,556	772,079,234	810,683,196
Revenue from Products	4,076,665,000	4,057,235,150	4,568,393,596	5,083,479,895	6,135,602,386	7,367,318,745	8,197,625,237
Revenue from Diagnostics *	418,518,000	259,000,000	-	-	-	-	-
Revenue from R&D	20,342,000	3,276,000	4,000,000	4,000,000	4,000,000	4,000,000	4,000,000
Total Revenue	4,515,525,000	4,319,511,150	4,572,393,596	5,087,479,895	6,139,602,386	7,371,318,745	8,201,625,237

\* Diagnostics segment sold in September 2010

**Financial Statement Forecast: Continued**
**Pro-Forma Income Statement:**

	2009 (A)	2010 (Q4E)	2011 (E)	2012 (E)	2013 (E)	2014 (E)	2015 (E)
Total Revenue	4,515,525,000	4,319,511,150	4,572,393,596	5,087,479,895	6,139,602,386	7,371,318,745	8,201,625,237
COGS (30%/Sales)	1,386,076,000	1,295,853,345	1,371,718,079	1,526,243,969	1,841,880,716	2,211,395,623	2,460,487,571
SG&A (+6%)	1,428,596,000	1,514,311,760	1,605,170,466	1,701,480,694	1,803,569,535	1,911,783,707	2,026,490,730
New Sales Force (#)	0	0	0	0	200	200	200
Sales Force Salary	-	-	-	-	50,000,000	50,000,000	50,000,000
Total Sales Force Expense	1,428,596,000	1,514,311,760	1,605,170,466	1,701,480,694	1,853,569,535	1,961,783,707	2,076,490,730
R&D (20%/Sales)	865,257,000	863,902,230	914,478,719	1,017,495,979	1,227,920,477	1,474,263,749	1,640,325,047
Contingent Consideration (3%/Sales)	65,584,000	129,585,335	137,171,808	152,624,397	184,188,072	221,139,562	246,048,757
Amortization (6%/Sales)	266,305,000	259,170,669	274,343,616	305,248,794	368,376,143	442,279,125	492,097,514
Total Oper. Expenses	4,011,818,000	4,062,823,339	4,302,882,687	4,703,093,832	5,475,934,943	6,310,861,767	6,915,449,619
Equity Income *	-	(2,947,000)	(2,740,710)	(2,548,860)	(2,370,440)	(2,204,509)	(2,050,194)
Investment in Equ. Secur. *	(56,000)	(52,080)	(48,434)	(45,044)	(41,891)	(38,959)	(36,231)
Acquisition of Business	24,159,000	-	-	-	-	-	-
Investment Income *	17,642,000	11,000,000	11,770,000	12,593,900	13,475,473	14,418,756	15,428,069
Interest Expense **	-	6,716,000	6,716,000	6,716,000	6,716,000	6,716,000	6,716,000
Other Income (+/-0%)	(1,719,000)	447,000	(1,500,000)	(1,500,000)	(1,500,000)	(1,500,000)	(1,500,000)
Income Before Taxes	543,733,000	271,851,732	283,707,764	399,602,059	679,946,585	1,077,848,266	1,304,733,261
Taxes (30%)	121,433,000	81,555,519	85,112,329	119,880,618	203,983,976	323,354,480	391,419,978
Net Income	422,300,000	190,296,212	198,595,435	279,721,441	475,962,610	754,493,787	913,313,283
W.A. Shares Outst. (Dilu.)	274,071,000	*** 258,990,000	258,990,000	258,990,000	258,990,000	258,990,000	258,990,000
EPS (Dilu.)	1.54	0.73	0.77	1.08	1.84	2.91	3.53

\* Based on expected 7% p.a. S&amp;P 500 return from 2010-2015

\*\* Semi-annual interest payments for 2015 and 2020 notes of \$3.358M

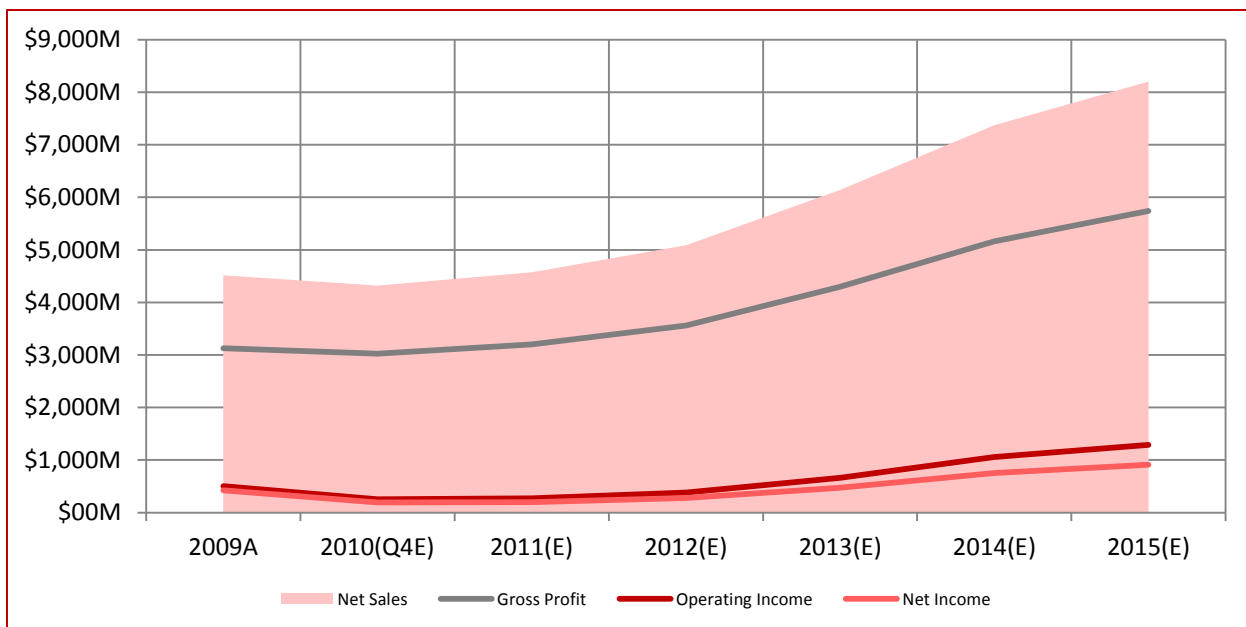
\*\*\* Repurchase of common stock in June 2010



## Financial Statement Forecast: *Continued*

- **New Sales Force:** The 6% annual growth of the Selling, General and Administration Expenses (SG&A) does not consider the additional costs involved in marketing new major drugs. 200 sales reps were added to target the high prescribing segment of the 13,000 neurologists that treat Multiple Sclerosis.
- **Equity Income, Investment in Equity Securities, Investment Income:** It is assumed that these investments and equity incomes have been made in the realm of the U.S. stock market and thus track the growth of the economy. According to analyst forecasts, specifically those of Stifel Financial, the expected S&P 500 growth rate for the coming five years is 7.00%. Although many of these investments may be in overperforming stock, the average S&P 500 return is used as to remain conservative.
- **Other Income:** No growth rate was assigned to other aggregated income due to the fact that it is unclear which values have been aggregated here and given the historically constant value of ~\$1.5M p.a.

## Revenues and Income:



## Financial Statement Forecast: *Continued*

### Free Cash Flow Projections:

	2009 (A)	2010 (Q4E)	2011 (E)	2012 (E)	2013 (E)	2014 (E)	2015 (E)
EBIT	543,733,000	265,135,732	276,991,764	392,886,059	673,230,585	1,071,132,266	1,298,017,261
EBIT x (1 - t)	<b>380,613,100</b>	<b>185,595,012</b>	<b>193,894,235</b>	<b>275,020,241</b>	<b>471,261,410</b>	<b>749,792,587</b>	<b>908,612,083</b>
Depreciation / Amortization	456,405,000	448,576,002	468,484,082	504,242,772	572,344,971	651,347,173	706,392,264
Δ NWC (+7%)	1,722,673	1,843,260	1,972,288	2,110,348	2,258,073	2,416,138	2,585,268
Cap Expenditure (+6.8%)	1,102,780	1,177,769	1,257,857	1,343,392	1,434,742	1,532,305	1,636,501
Free Cash Flow	<b>834,192,647</b>	<b>631,149,985</b>	<b>659,148,172</b>	<b>775,809,273</b>	<b>1,039,913,565</b>	<b>1,397,191,317</b>	<b>1,610,782,577</b>

### Weighted Average Cost of Capital:

- **Cost of Equity:** The cost of equity was computed using the Capital Asset Pricing Model (CAPM), assuming a risk-free rate of 3.42%\*, a market return of 7.00%\*\* and a Beta of 0.33\*\*\*. The amount of equity has been valued at \$19.00B using a stock price of \$73.35\*\*\* and the 258.99M shares\*\*\* outstanding. This represents 90.45% of the enterprise value.
- **Cost of Debt:** Genzyme's long-term debt consists of \$0.5B 2015 notes (at 3.63% p.a.) and \$0.5B 2020 notes (at 5.00% p.a.), as well as \$1.0B of contingent considerations (valued at opportunity cost using risk-free rate). The total amount of debt is thus \$2.0B, representing a 9.55% of the enterprise value. The assumed tax rate is 30.00%.
- **Cost of Capital:** Using the values from above the weighted average cost of capital for Genzyme is 4.420%.

\* Ten-Year Treasury Constant Maturity, Feb 2, 2011

\*\* Expected S&P 500 return from 2010-2015 according to analyst forecasts

\*\*\* as of Feb 2, 2011

## Financial Statement Forecast: *Continued*

### Discounted Cash Flow Analysis:

	2009 (A)	2010 (Q4E)	2011 (E)	2012 (E)	2013 (E)	2014 (E)	2015 (E)
Free Cash Flow (\$)	834,192,647	631,149,985	659,148,172	775,809,273	1,039,913,565	1,397,191,317	1,610,782,577
Discount Factor	* 0.0000	* 0.0000	1.0742	1.1539	1.2395	1.3315	1.4303
PV of Free Cash Flows (\$)	834,192,647	631,149,985	613,614,290	672,325,824	838,946,918	1,049,314,153	1,126,157,126

Enterp. Value (2009-2015) (\$)	5,765,700,943
Continuation P. Value (\$)	15,423,990,924
Book Value of Net Debt (\$)	1,000,000,000
Total Enterp. Value (\$)	20,189,691,867

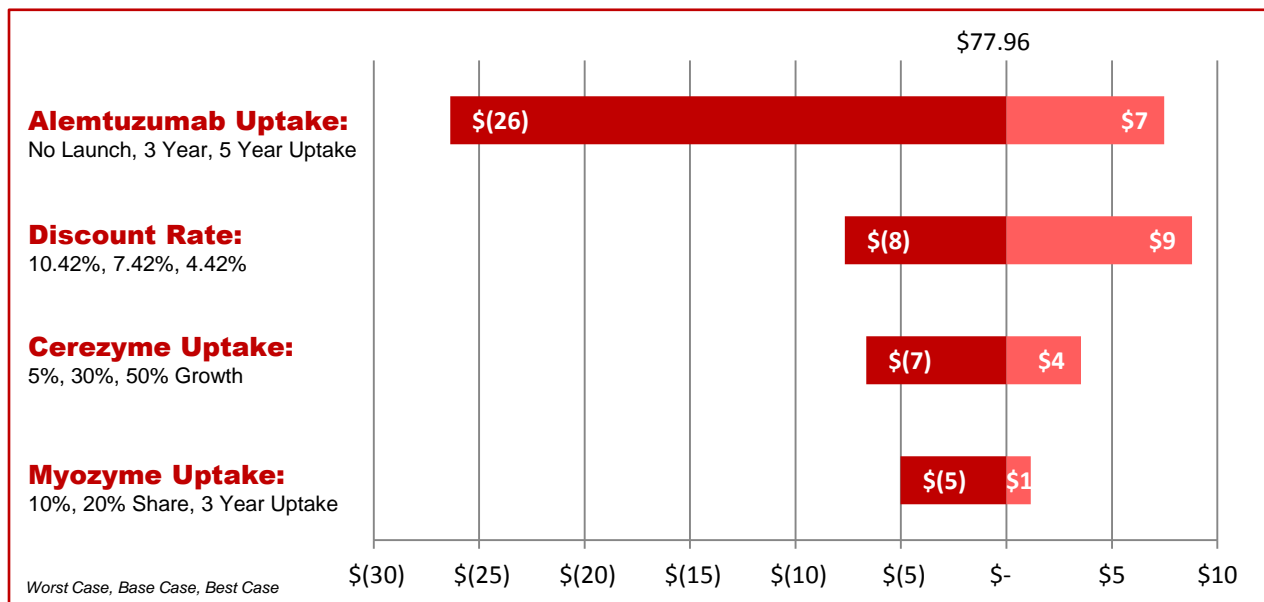
W.A. Shares Outst. (Dilu.)	258,990,000
Projected Share Price (\$)	77.96
Current Share Price (\$)	73.36
Stock under-valued by (%)	6.26%

- **Discount Factor:** A risk premium of 3.00% was added to the computed weighted average cost of capital of 4.42%, creating a discount factor of 7.42%. This premium was added to account for any unconsidered and unforeseeable risks that exist throughout the projection period.
- **Continuation Value:** To compute the total enterprise value, the present value of the 2009-2015 cash flow streams must be complemented with the continuation value to account for the free cash flows into perpetuity in the future. This value is computed using the perpetuity growth model, assuming a constant annual growth rate of 2%.
- **Book Value of Net Debt:** Although total long-term debt sums up to \$2.00B, half of it must be disregarded, as it is been set aside as a contingent consideration and represents no real cost.

\* Discounting begins in 2011

**Financial Statement Forecast: Continued**

**Sensitivity Analysis:**



- Alemtuzumab Uptake:** The majority of Genzyme's future revenue streams depend on the launch of the leukemia treatment drug Alemtuzumab. A rejection by the U.S. Food and Drug Administration (FDA) would result in a severe reduction of the share price by \$26.38 (33.83%). If – on the other hand – the drug is approved and manages to capture more market share with a 5-year uptake Genzyme's stock could benefit by \$7.47 (9.59%).
- Discount Rate:** To simulate a worst case scenario the risk premium is increased from 3.00% to 6.00%. This decreases the share price by \$7.66 (9.82%). For informational purposes, we also substituted the 7.42% discount rate with the pure weighted average cost of capital of 4.42% to project a best case scenario, resulting in a \$8.79 (11.28%) share price increase.
- Cerezyme Uptake:** Cerezyme revenue projections are based largely on Genzyme's own forecasts. Deviations are taken into considerations by performing a sensitivity analysis around these values. These estimates result in a \$6.65 (8.52%) lower, or a \$3.53 (4.53%) higher share price, respectively.
- Myozyme Uptake:** Genzyme expects to be the sole supplier of enzyme replacement therapy for Pompe disease. However, there is a chance that Shire Pharmaceuticals is going to launch its competitor drug, diminishing Genzyme's market share. An assumed 10% share reduction would lead to the loss of \$5.02 (6.43%) in share price. By the same token, the share price could benefit from a longer uptake and increase by \$1.15 (1.48%). The magnitude of this variability is however limited.

## Valuation:

### Third-Party Analyst Forecasts:

Date	Analyst	Recommendation	EPS 2010 (Q4E)	EPS 2011 (E)	EPS 2012 (E)	EPS 2013 (E)
Dec 20, 2010	Market Edge Research	Sell	1.9	3.5	-	-
Jan 7, 2011	Ned David Research	Buy	1.3	3.49	4.47	5.27
Jan 11, 2011	Cowen and Company	Buy	1.79	4.25	5.35	5.5
Jan 12, 2011	Thomson Reuters	Buy	1.87	4.16	-	-
Jan 12, 2011	Collins Stewart	Hold	-	-	-	-
Jan 26, 2011	Standard & Poors	Hold	1.35	3.7	-	-
	Average	Buy / Hold	1.64	3.82	4.91	5.39
Feb 2, 2011	MBE Associates	Hold	0.73	0.77	1.08	1.84

- **EPS Forecasts:** The discrepancies in the Earnings per Share (EPS) values of MBE Associates as compared to the average analyst forecasts arise from the choice of computation method involving P/E ratio multiples. As a consequence that these results could not be reproduced the EPS cannot provide a meaningful comparison of profitability. Revenues, expenses and the projected share price however are on par with the average analyst forecasts. A recommendation based solely on the EPS values would result in a strong “sell” opinion.

### Final Recommendation:

**HOLD**

- **Profitability of Merger Unclear:** The final contract between Sanofi-Aventis and Genzyme is expected to be signed in the few couple of weeks. However, the success of this deal is unclear. Historically pharmaceutical merger's have rarely created value for their shareholders and pre-acquisition stock prices tended to be overvalued. The current stock price should be viewed with caution.
- **Subpar Results in 2010 and 2011:** The viral outbreak in June 2009 that created supply shortages of Cerezyme and Fabrazyme, as well as consuming millions of dollars for sanitization strongly impact Genzyme's 2010 and 2011 results. The state of the economy amplifies this effect. However, full recovery can be expected in 2011.
- **Likely Launch of Alemtuzumab in Q1/2013:** The addition of Alemtuzumab to Genzyme's product portfolio in Q1/2013 sets a foundation for superior growth. Failing to receive FDA approval would eliminate a large proportion of Genzyme's future revenues by as much as 26%. However, phase 3 data provides promising prospects of approval.
- **Stock currently slightly undervalued:** Despite the current pre-merger hype, Genzyme's stock remains undervalued by 6.26% and provides potential for future profits.