CODEXIS INC
Form 10-Q
May 09, 2013

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549
FORM 10-Q
(Mark One)

x QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the quarterly period ended March 31, 2013
OR

.. TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from to
Commission file number: 001-34705

_____

Codexis, Inc.
(Exact name of registrant as specified in its charter)

_____

Delaware	71-0872999
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
200 Penobscot Drive, Redwood City	94063
(Address of principal executive offices)	(Zip Code)

650 421 8100
(Registrant's telephone number, including area code)
(Former name, former address and former fiscal year, if changed since last report)

_____

Indicate by check mark whether the registrant: (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the Registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ý No ¨

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes ý No ¨

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer	¨	Accelerated filer	x
Non-accelerated filer	¨ (Do not check if a smaller reporting company)	Smaller reporting company	¨

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ¨ No ý

As of April 30, 2013, there were 38,026,352 shares of the registrant's Common Stock, par value $0.0001 per share, outstanding.

Codexis, Inc.

Quarterly Report on Form 10-Q
For The Three Months Ended March 31, 2013
INDEX

Codexis, Inc.

Condensed Consolidated Balance Sheets
(In Thousands)

	March 31, 2013 (Unaudited)	December 31, 2012 (*)
Assets		
Current assets:		
Cash and cash equivalents	$31,231	$32,003
Marketable securities	12,944	13,524
Accounts receivable, net of allowances of $150 at March 31, 2013 and December 31, 2012, respectively	7,412	7,545
Inventories	1,686	1,302
Prepaid expenses and other current assets	4,095	5,395
Total current assets	57,368	59,769
Restricted cash	1,511	1,511
Non-current marketable securities	1,939	3,623
Property and equipment, net	14,792	16,650
Intangible assets, net	12,090	12,934
Goodwill	3,241	3,241
Other non-current assets	2,701	2,237
Total assets	$93,642	$99,965
Liabilities and Stockholders' Equity		
Current liabilities:		
Accounts payable	$4,445	$3,654
Accrued compensation	4,152	3,495
Other accrued liabilities	4,826	6,948
Deferred revenues	4,352	2,186
Total current liabilities	17,775	16,283
Deferred revenues, net of current portion	1,254	1,299
Other long-term liabilities	3,868	3,943
Commitments and contingencies (note 8)		
Stockholders' equity:		
Common stock	4	4
Additional paid-in capital	295,863	294,128
Accumulated other comprehensive income (loss)	56	(136)
Accumulated deficit	(225,178)	(215,556)
Total stockholders' equity	70,745	78,440
Total liabilities and stockholders' equity	$93,642	$99,965

(*) The Condensed Consolidated Balance Sheet as of December 31, 2012 has been derived from the audited consolidated financial statements as of that date, but does not include all disclosures including notes required by GAAP for complete financial statements.

See accompanying notes to the unaudited condensed consolidated financial statements

Codexis, Inc.

Condensed Consolidated Statements of Operations
(Unaudited)
(In Thousands, Except Per Share Amounts)

	Three Months Ended March 31,	
	2013	2012
Revenues:		
Product	$9,137	$15,167
Collaborative research and development	2,344	14,612
Government awards	—	1,357
Total revenues	11,481	31,136
Costs and operating expenses:		
Cost of product revenues	5,665	12,642
Research and development	7,322	16,349
Selling, general and administrative	8,124	9,395
Total costs and operating expenses	21,111	38,386
Loss from operations	(9,630)	(7,250)
Interest income	27	75
Other expenses	(85)	(118)
Loss before provision (benefit) for income taxes	(9,688)	(7,293)
Provision (benefit) for income taxes	(65)	197
Net loss	$(9,623)	$(7,490)
Net loss per share of common stock, basic and diluted	(0.25)	(0.21)
Weighted average common shares used in computing net loss per share of common stock, basic and diluted	37,842	36,057

See accompanying notes to the unaudited condensed consolidated financial statements

Codexis, Inc.

Condensed Consolidated Statements of Comprehensive Loss
(Unaudited)
(In Thousands)

	Three Months Ended March 31,	
	2013	2012
Net loss	$(9,623)	$(7,490)
Other comprehensive income (loss):		
Foreign currency translation adjustments	—	165
Unrealized gain (loss) on marketable securities, net of tax of $123 and $0 for the three months ended March 31, 2013 and 2012, respectively	192	(299)
Other comprehensive income (loss)	192	(134)
Total comprehensive loss	$(9,431)	$(7,624)

See accompanying notes to the unaudited condensed consolidated financial statements

Codexis, Inc.

Condensed Consolidated Statements of Cash Flows
(Unaudited)
(In Thousands)

	Three Months Ended March 31,	
	2013	2012
Operating activities:		
Net loss	$(9,623)	$(7,490)
Adjustments to reconcile net loss to net cash used in operating activities:		
Amortization of intangible assets	844	916
Depreciation and amortization of property and equipment	1,798	2,203
Loss on disposal of property and equipment	108	79
Stock-based compensation	1,472	1,169
Accretion of asset retirement obligation	—	7
Amortization of premium on marketable securities	(43)	156
Changes in operating assets and liabilities:		
Accounts receivable	133	370
Inventories	(384)	(325)
Prepaid expenses and other current assets	1,301	(1,748)
Other assets	(464)	160
Accounts payable	792	(1,386)
Accrued compensation	656	(2,399)
Other accrued liabilities	(2,197)	3,646
Deferred revenues	2,120	5,235
Net cash (used in) provided by operating activities	(3,487)	593
Investing activities:		
Purchase of property and equipment	(48)	(2,107)
Purchase of marketable securities	—	(8,926)
Proceeds from sale of marketable securities	—	5,000
Proceeds from maturities of marketable securities	2,500	6,024
Net cash provided by (used in) investing activities	2,452	(9)
Financing activities:		
Proceeds from exercises of stock options	263	94
Net cash provided by financing activities	263	94
Effect of exchange rate changes on cash and cash equivalents	—	164
Net decrease in cash and cash equivalents	(772)	842
Cash and cash equivalents at the beginning of the period	32,003	25,762
Cash and cash equivalents at the end of the period	$31,231	$26,604

See accompanying notes to the unaudited condensed consolidated financial statements

Codexis, Inc.

Notes to Condensed Consolidated Financial Statements
(Unaudited)

1. Description of Business

We were incorporated in Delaware in January 2002. We engineer enzymes for pharmaceutical, biofuel and chemical production. Our proven technologies enable scale-up and implementation of biocatalytic solutions to meet customer needs for rapid, cost-effective and sustainable process development, from research to manufacturing.

We have commercialized our technology and products in the pharmaceuticals market, which is our primary business focus. There are currently over 50 pharmaceutical firms using our technology, products and services in their manufacturing process development, including in the production of some of the world's bestselling and fastest growing drugs.

We are developing our CodeXyme® cellulase enzymes to convert non-food plant material, which we call cellulosic biomass, into affordable sugars, which can then be converted into renewable fuels and chemicals. We are also developing our own manufacturing process for CodeXol® detergent alcohols, which are bio-based chemicals. Detergent alcohols are used to manufacture surfactants, which are key, active cleaning ingredients in consumer products such as shampoos, liquid soaps and laundry detergents. We are seeking collaboration partners to assist us with the development and commercialization of CodeXyme® cellulase enzymes and CodeXol® detergent alcohols, and we are also exploring other strategic options with respect to these products and technologies.

We create our products by applying our CodeEvolver® directed evolution technology platform, which introduces genetic mutations into microorganisms, giving rise to changes in the enzymes that they produce. Once we identify potentially beneficial mutations, we test combinations of these mutations until we have created variant enzymes that exhibit marketable performance characteristics superior to competitive products. This process allows us to make continuous, efficient improvements to the performance of our enzymes.

In these Notes to condensed consolidated financial statements, the “Company,” “we,” “us” and “our” refer to Codexis, Inc. and its subsidiaries on a consolidated basis.

2. Summary of Significant Accounting Policies

Basis of Presentation and Consolidation

The accompanying condensed consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America (“GAAP”) and the applicable rules and regulations of the Securities and Exchange Commission (“SEC”) for interim financial information. Accordingly, they do not include all of the information and notes required by GAAP for complete financial statements. These interim condensed consolidated financial statements should be read in conjunction with the consolidated financial statements and notes thereto contained in our Annual Report on Form 10-K filed with the SEC on April 2, 2013. The December 31, 2012 condensed consolidated balance sheet included herein was derived from the audited consolidated financial statements as of that date, but does not include all disclosures including notes required by GAAP for complete financial statements.

The unaudited interim condensed consolidated financial statements have been prepared on the same basis as the audited consolidated financial statements and, in the opinion of management, reflect all adjustments of a normal recurring nature considered necessary to present fairly our financial position as of March 31, 2013 and results of our operations, comprehensive loss and cash flows for the three months ended March 31, 2013 and 2012. The interim results are not necessarily indicative of the results that may be expected for the year ending December 31, 2013.

The unaudited interim condensed consolidated financial statements include the accounts of Codexis, Inc. and our wholly-owned subsidiaries. We have subsidiaries in the United States, Brazil, Hungary, India, Mauritius, The Netherlands and Singapore. All significant intercompany balances and transactions have been eliminated in consolidation.

Use of Estimates

The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, disclosures of contingent liabilities at the date of

the condensed consolidated financial statements, and the reported amounts of revenues and expenses during the reporting period. Our management regularly assesses these estimates which primarily affect revenue recognition, the valuation of marketable securities and accounts receivable, intangible assets, goodwill arising out of business acquisitions, inventories, accrued liabilities, common stock, and stock options and the valuation allowances associated with deferred tax assets. Actual results could differ from those estimates and such differences may be material to the condensed consolidated financial statements.

Foreign Currency Translation

The assets and liabilities of foreign subsidiaries, where the local currency is the functional currency, are translated from their respective functional currencies into United States dollars at the exchange rates in effect at the balance sheet date, with resulting foreign currency translation adjustments recorded in the condensed consolidated statement of comprehensive loss. Revenue and expense amounts are translated at average rates for each period.

Where the United States dollar is the functional currency, nonmonetary assets and liabilities originally acquired or assumed in other currencies are recorded in United States dollars at the exchange rates in effect at the date they were acquired or assumed. Monetary assets and liabilities denominated in other currencies are translated into United States dollars at the exchange rates in effect at the balance sheet date. Foreign currency transaction gains and losses are recorded in other expense on the condensed consolidated statement of operations and are not material for any period presented.

Concentrations of Credit Risk

Financial instruments that potentially subject us to significant concentrations of credit risk consist primarily of cash and cash equivalents, marketable securities, accounts receivable and restricted cash. Cash and cash equivalents, marketable securities and restricted cash are invested through banks and other financial institutions in the United States, as well as in other foreign countries. Such deposits may be in excess of insured limits.

Our top five customers accounted for 94% and 83% of our total revenues for the three months ended March 31, 2013 and 2012, respectively.

Credit risk with respect to accounts receivable exists to the full extent of amounts presented in the condensed consolidated financial statements. We periodically require collateral to support credit sales. We estimate an allowance for doubtful accounts through specific identification of potentially uncollectible accounts receivable based on an analysis of our accounts receivable aging. Uncollectible accounts receivable are written off against the allowance for doubtful accounts when all efforts to collect them have been exhausted. Recoveries are recognized when they are received. Actual collection losses may differ from our estimates and could be material to our consolidated financial position, results of operations, and cash flows.

Fair Value of Financial Instruments

The carrying amounts of certain of our financial instruments, including cash and cash equivalents, marketable securities, restricted cash, accounts receivable and accounts payable, approximate fair value due to their short maturities.

Fair value is considered to be the price at which an asset could be exchanged or a liability transferred (an exit price) in an orderly transaction between knowledgeable, willing parties in the principal or most advantageous market for the asset or liability. Where available, fair value is based on or derived from observable market prices or other observable inputs. Where observable prices or inputs are not available, valuation models are applied. These valuation techniques involve some level of management estimation and judgment, the degree of which is dependent on the price transparency for the instruments and the instruments' complexity.

Cash, Cash Equivalents and Marketable Securities

We consider all highly liquid investments with maturity dates of three months or less at the date of purchase to be cash equivalents. Cash and cash equivalents consist of cash on deposit with banks and money market funds. The majority of cash and cash equivalents are maintained with major financial institutions in North America. Deposits with these financial institutions may exceed the amount of insurance provided on such deposits. Marketable securities included in current assets are comprised of corporate bonds, commercial paper, and United States Treasury obligations. Marketable securities included in non-current assets are comprised of corporate bonds and United States Treasury obligations that have a maturity date greater than 1 year. Our investment in common shares of CO_2 Solutions Inc. ("CO_2 Solutions") is included in non-current marketable securities. As of March 31, 2013, there were no unrealized losses related to our equity securities.

We perform separate evaluations of impaired debt and equity securities to determine if the unrealized losses as of the balance sheet date are other-than-temporary impairment.

For our investments in equity securities, our evaluation considers a number of factors including, but not limited to, the length of time and extent to which the fair value has been less than cost, the financial condition and near term prospects of the issuer, and our management's ability and intent to hold the securities until fair value recovers. The assessment of the ability and intent to hold these securities to recovery focuses on our current and forecasted liquidity requirements, our capital requirements and securities portfolio objectives. Based on our evaluation, we concluded during the third quarter of 2012, the unrealized losses

related to our equity investment in the common shares of CO_2 Solutions were other-than-temporary and as a result, we recorded $0.8 million as a selling, general and administrative expense in our condensed consolidated statement of operations (see Note 6).

For our investments in debt securities, our management determines whether we intend to sell or if it is more-likely-than-not that we will be required to sell impaired securities. This determination considers our current and forecasted liquidity requirements, our capital requirements and securities portfolio objectives. For all impaired debt securities for which there was no intent or expected requirement to sell, the evaluation considers all available evidence to assess whether it is likely the amortized cost value will be recovered. We conduct a regular assessment of our debt securities with unrealized losses to determine whether the securities have other-than-temporary impairment considering, among other factors, the nature of the securities, credit rating or financial condition of the issuer, the extent and duration of the unrealized loss, expected cash flows of underlying collateral and market conditions. As of March 31, 2013, there were no unrealized losses related to our debt securities.

Our investments in debt and equity securities are classified as available-for-sale and are carried at fair value. Unrealized gains and losses are reported on the condensed consolidated statement of comprehensive loss unless considered other-than-temporary. Amortization of purchase premiums and accretion of purchase discounts, realized gains and losses of debt securities and declines in value deemed to be other than temporary, if any, are included in interest income or other expenses. The cost of securities sold is based on the specific-identification method. There were no significant realized gains or losses from sales of marketable securities during the three months ended March 31, 2013 and 2012.

Impairment of Long-Lived Assets and Intangible Assets

Long-lived and intangible assets with finite lives are reviewed for impairment whenever events or changes in circumstances indicate the carrying amount of an asset may not be recoverable. Recoverability of these assets is measured by comparison of their carrying amounts to future undiscounted cash flows the assets are expected to generate.

Our intangible assets with finite lives consist of customer relationships, developed core technology, trade names, and the intellectual property (“IP”) rights associated with the acquisition of Maxygen's directed evolution technology in 2010. Intangible assets were recorded at their fair values at the date we acquired the assets and, for those assets having finite useful lives, are amortized using the straight-line method over their estimated useful lives. The Company's long-lived assets include property, plant and equipment, and other non-current assets.

We determined that we have a single entity wide asset group (“Asset Group”). The directed evolution technology patent portfolio acquired from Maxygen (“Core IP”) is the most significant component of the Asset Group since it is the base technology for all aspects of our research and development, and represents the basis for all of our identifiable cash flow generating capacity. Consequently, we do not believe that identification of independent cash flows associated with our long-lived assets is currently possible at any lower level than the Asset Group.

The Core IP is the only finite-lived intangible asset on our balance sheet as of March 31, 2013 and is considered the primary asset within the Asset Group. The remaining useful life of the Core IP extends through the fourth quarter of 2016. There has been no significant change in the utilization or estimated life of our Core IP since we acquired the technology patent portfolio from Maxygen. The estimated remaining useful life of our Core IP is not impacted by the termination of the Shell Research Agreement, which is described in Note 3 below.

The carrying value of our long-lived assets in the Asset Group may not be recoverable based upon the existence of one or more indicators of impairment which could include: a significant decrease in the market price of the Company's common stock; current period cash flow losses or operating losses combined with a history of losses or a forecast of continuing losses associated with the use of the assets; slower growth rates in our industry; significant adverse changes in the business climate or legal factors; accumulation of costs significantly in excess of the amount originally expected for the acquisition or construction of the assets; loss of significant customers or partners; or the current expectation that the assets will more likely than not be sold or disposed of significantly before the end of their estimated useful life.

We evaluate recoverability of our long-lived assets and intangible assets based on the sum of the undiscounted cash flows expected to result from the use, and the eventual disposal of, the Asset Group. We make estimates and judgments about the future undiscounted cash flows over the remaining useful life of the Asset Group. Our anticipated

future cash flows include our estimates of existing or in process product revenues, production and operating costs, future capital expenditures, working capital needs, and assumptions regarding the ultimate sale of the Asset Group at the end of the life of the primary asset. The useful life of the Asset Group was based on the remaining useful life of the Core IP, the primary asset.

The result of our impairment analysis as of December 31, 2012 indicated that the undiscounted cash flows for the Asset Group was greater than the carrying value of the Asset Group by approximately 14%. During the first quarter of 2013, we made no

changes to our underlying forecasts nor did we identify any indicators of potential impairment or other new information that would have a material impact on the forecast or the impairment analysis prepared as of December 31, 2012.

Any inability to align future production costs, operating costs, capital expenditures and working capital needs with significant changes in the timing and/or level of estimated future revenue could adversely impact our projected undiscounted cash flows. Future changes in the estimated useful life of our long-lived assets could also adversely impact our projected undiscounted cash flows and result in future impairment charges. If it is determined that the Asset Group is not recoverable, an impairment loss would be calculated based on the excess of the carrying amount of the intangible and long-lived assets over the fair value. Any future impairment charges could have a material adverse effect on our financial position and results of operations.

Impairment of Goodwill

Goodwill represents the excess of the purchase price over the fair value of assets acquired and liabilities assumed. Goodwill is presumed to have an indefinite life and is not subject to amortization. Goodwill is reviewed for impairment annually and whenever events or changes in circumstances indicate that the carrying value of the goodwill may not be recoverable.

We determined that the Company has only one operating segment and reporting unit under the criteria in ASC 280, Segment Reporting, and accordingly, all of our goodwill is associated with the Company. Our review of goodwill for indicators of impairment is performed at the Company level.

The goodwill impairment test consists of a two-step process. The first step of the goodwill impairment test, used to identify potential impairment, compares the fair value of the reporting unit to its carrying value. If the fair value of the reporting unit exceeds its carrying amount, goodwill of the reporting unit is considered not impaired, and the second step of the impairment test is not required.

We use our market capitalization as an indicator of fair value. We believe that since our reporting unit is publicly traded, the ability of a controlling shareholder to benefit from synergies and other intangible assets that arise from control might cause the fair value of our reporting unit as a whole to exceed its market capitalization. However, we believe that the fair value measurement need not be based solely on the quoted market price of an individual share of our common stock, but also can consider the impact of a control premium in measuring the fair value of our reporting unit.

Should our market capitalization be less than our total stockholder's equity as of our annual test date or as of any interim impairment testing date, we would also consider market comparables, recent trends in our stock price over a reasonable period and, if appropriate, use an income approach (discounted cash flow) to determine whether the fair value of our reporting unit is greater than our carrying amount.

The second step, if required, compares the implied fair value of the reporting unit goodwill with the carrying amount of that goodwill. If the carrying amount of the reporting unit's goodwill exceeds its implied fair value, an impairment charge is recognized in an amount equal to that excess. Implied fair value is the excess of the fair value of the reporting unit over the fair value of all identified assets and liabilities.

Goodwill was tested for impairment as of October 1, 2012, the date of the Company's annual impairment review. The Company concluded that the fair value of the reporting unit exceeded the carrying value and no impairment existed. No impairment charges were recorded during the years ended December 31, 2012, 2011 and 2010. During the first quarter of 2013, we did not identify any indicators of impairment that would indicate that the carrying value of goodwill may not be recoverable.

Restricted Cash

Restricted cash consisted of amounts invested in money market accounts primarily for purposes of securing a standby letter of credit as collateral for our Redwood City, California facility lease agreement and for the purpose of securing a working capital line of credit. Restricted cash was unchanged during the three months ended March 31, 2013.

Revenue Recognition

Revenues are recognized when the four basic revenue recognition criteria are met: (1) persuasive evidence of an arrangement exists; (2) products have been delivered, transfer of technology has been completed or services have been rendered; (3) the fee is fixed or determinable; and (4) collectability is reasonably assured.

Our primary sources of revenues consist of product revenues, collaborative research and development agreements and government awards. Collaborative research and development agreements typically provide us with multiple revenue streams, including up-front fees for licensing, exclusivity and technology access, fees for full-time employee equivalent (“FTE”) services and the potential to earn milestone payments upon achievement of contractual criteria and royalty fees based on future product sales or cost savings by our customers. Our collaborative research and development revenues consist of revenues from

Equilon Enterprises LLC dba Shell Oil Products US ("Shell") and revenues from other collaborative research and development agreements.

For each source of product revenues, collaborative research and development revenues and award revenues, we apply the following revenue recognition criteria:

- Up-front fees received in connection with collaborative research and development agreements, including license fees, technology access fees, and exclusivity fees, are deferred upon receipt, are not considered a separate unit of accounting and are recognized as revenues over the relevant performance periods.
- Revenues related to FTE services are recognized as research services are performed over the related performance periods for each contract. We are required to perform research and development activities as specified in each respective agreement. The payments received are not refundable and are based on a contractual reimbursement rate per FTE working on the project. When up-front payments are combined with FTE services in a single unit of accounting, we recognize the up-front payments using the proportionate performance method of revenue recognition based upon the actual amount of research and development labor hours incurred relative to the amount of the total expected labor hours to be incurred by us, up to the amount of cash received. In cases where the planned levels of research services fluctuate substantially over the research term, we are required to make estimates of the total hours required to perform our obligations. Research and development expenses related to FTE services under the collaborative research and development agreements approximate the research funding over the term of the respective agreements.
- A payment that is contingent upon the achievement of a substantive milestone is recognized in its entirety in the period in which the milestone is achieved. A milestone is an event (i) that can only be achieved based in whole or in part on either our performance or on the occurrence of a specific outcome resulting from our performance, (ii) for which there is substantive uncertainty at the date the arrangement is entered into that the event will be achieved, and (iii) results in additional payments being due to us. Milestones are considered substantive when the consideration earned from the achievement of the milestone (i) is commensurate with either our performance to achieve the milestone or the enhancement of value of the item delivered as a result of a specific outcome resulting from our performance, (ii) relates solely to past performance, and (iii) is reasonable relative to all deliverable and payment terms in the arrangement.
- Other payments received, which are contingent solely upon the passage of time or the result of a collaborative partner's performance, are recognized as revenue when earned in accordance with the contract terms and when such payments can be reasonably estimated and collectability is reasonably assured.
- We recognize revenues from royalties based on licensees' sales of products using our technologies. Royalties are recognized as earned in accordance with the contract terms when royalties from licensees can be reasonably estimated and collectability is reasonably assured.
- We generate a significant percentage of our sales in India and other emerging markets. Customers in these countries are subject to significant economic and other challenges that affect their cash flow, and many customers outside the United States are generally accustomed to vendor financing in the form of extended payment terms which may exceed contractual payment terms. To remain competitive in markets outside the United States, we may offer selected customers such payment flexibility. We consider arrangements with extended payment terms not to be fixed or determinable, and accordingly, we defer revenue until payment is received. The costs associated with such revenue deferral are also deferred and classified as other current assets in the financial statements.
- Product revenues are typically based on contractual agreements. Product revenues are recognized once passage of title and risk of loss has occurred and contractually specified acceptance criteria have been met, provided all other revenue recognition criteria have also been met. Product revenues consist of sales of biocatalysts, intermediates, active pharmaceutical ingredients and Codex Biocatalyst Panels and Kits. Cost of product revenues includes both internal and third party fixed and variable costs, including amortization of purchased technology, materials and supplies, labor, facilities and other overhead costs associated with our product revenues.
- We licensed mutually agreed upon third party technology for use in our research and development collaboration with Shell. We recorded the license payments to research and development expense and offset related reimbursements received from Shell. These payments made by Shell to us were direct reimbursements of our costs. We accounted for these direct reimbursable costs as a net amount, whereby no expense or revenue is recorded for the costs reimbursed

by Shell. For any payments not reimbursed by Shell, we recognized these as expenses in the statement of operations. We elected to present the reimbursement from Shell as a component of our research and development expense since presenting the receipt of payment from Shell as revenues does not reflect the substance of the arrangement.

- We receive payments from government entities in the form of government awards. Government awards are agreements that generally provide us with cost reimbursement for certain types of expenditures in return for research and development activities over a contractually defined period. Revenues from government awards are recognized in the period during which the related costs are incurred, provided that the conditions under which the government awards were provided have been met and we have only perfunctory obligations outstanding.
- Shipping and handling costs charged to customers are recorded as revenues. Shipping costs are included in our cost of product revenues. Such charges were not significant in any of the periods presented.

Change in accounting estimate - United States Government awards

We recognize United States Government award revenue based on reimbursable costs incurred. Reimbursable costs include only allocable, allowable and reasonable costs, as determined in accordance with the Federal Acquisition Regulations and the related Cost Accounting Standards as applicable to the United States Government award. Costs incurred include direct labor and materials that are directly associated with the individual award plus indirect overhead and general and administrative type costs based upon our provisional indirect billing rates submitted by us to the United States Department of Energy ("DOE"). Our provisional indirect billing rates are subject to audit by the DOE. Changes in estimates affecting reimbursable costs are recognized in the period in which the change becomes known. During 2011, our provisional indirect billing rates for the award from the DOE under the ARPA-E Recovery Act were audited by the DOE resulting in a revision to our provisional indirect billing rates. The revised indirect rates were subsequently approved by the DOE during the first quarter of 2012. As a result of this change in accounting estimate, we invoiced and recognized $530,000 of additional award revenues during the first quarter of 2012 for reimbursable costs incurred by us in 2010 and 2011. The term of the award agreement ended in June 2012 and no further revenue has been recognized since that date.

Income Taxes

We use the liability method of accounting for income taxes. Deferred tax assets and liabilities are recognized for the estimated future tax consequences attributable to differences between the consolidated financial statement carrying amounts of existing assets and liabilities and their respective tax bases. Deferred tax assets are recognized for deductible temporary differences, along with net operating loss ("NOL") carry forwards, if it is more likely than not that the tax benefits will be realized. To the extent a deferred tax asset cannot be recognized under the preceding criteria, a valuation allowance is established. Deferred tax assets and liabilities are measured using enacted tax rates in effect for the year in which those temporary differences are expected to be recovered or settled.

We recognize the financial statement effects of an uncertain tax position when it is more likely than not, based on the technical merits, that the position will be sustained upon examination.

Stock-Based Compensation

We recognize compensation expense related to share-based transactions, including the awarding of employee stock options, based on the estimated fair value of the awards granted. All awards granted, modified or settled after January 1, 2006 have been accounted for based on the fair value of the awards granted. We generally use the straight-line method to allocate stock-based compensation expense to the appropriate reporting periods. Some awards are accounted for using the accelerated method as appropriate for the terms of the awards.

We account for stock options issued to non-employees based on their estimated fair value determined using the Black-Scholes option-pricing model. The fair value of the options granted to non-employees is remeasured as they vest, and the resulting change in value, if any, is recognized as an increase or decrease in stock based compensation expense during the period the related services are rendered.

Net Loss per Share of Common Stock

Basic net loss per share of common stock is computed by dividing the net loss by the weighted average number of shares of common stock outstanding during the period, less the weighted-average unvested common stock subject to repurchase. Diluted net loss per share of common stock is computed by giving effect to all potential common shares, consisting of stock options, warrants and redeemable convertible preferred stock, to the extent dilutive. Basic and diluted net loss per share of common stock was the same for each period presented as the inclusion of all potential common shares outstanding was anti-dilutive.

The following options to purchase common stock, restricted stock units and warrants to purchase common stock were excluded from the computation of diluted net loss per share of common stock for the three months ended March 31,

2013 and 2012 because including them would have had an anti-dilutive effect (in thousands):

	Three Months Ended March 31,	
	2013	2012
Options to purchase common stock	5,117	8,287
Restricted stock units	2,149	1,138
Warrants to purchase common stock	260	266
Total	7,526	9,691

Accounting Guidance Update

Recently Adopted Accounting Guidance

In February 2013, the FASB issued ASU 2013-02 related to the reporting of amounts reclassified out of accumulated other comprehensive income that requires entities to report, either on their income statement or in a footnote to their financial statements, the effects on earnings from items that are reclassified out of other comprehensive income. We adopted this accounting standard on January 1, 2013, and the adoption of this guidance did not have a material impact on our financial statements or disclosures.

3. Collaborative Research and Development Agreements

Shell and Raízen

In November 2006, we entered into a collaborative research agreement and a license agreement with Shell to develop biocatalysts and associated processes that use such biocatalysts.

In November 2007, we entered into a new and expanded five-year collaborative research agreement ("Shell Research Agreement") and a license agreement (the "Shell License Agreement") with Shell. In connection with the Shell Research Agreement, we agreed to use our proprietary technology platform to discover and develop enzymes and microorganisms for use in converting cellulosic biomass into biofuels and related products and Shell agreed to pay us (i) research funding at specified rates per FTE working on the project during the research term, (ii) payments upon the achievement of milestones, and (iii) royalties on future product sales. The Shell Research Agreement also specified certain minimum levels of FTE services that we were required to allocate to the collaboration efforts that increased over the term of the agreement, which was originally set to expire on November 1, 2012.

In September 2012, we entered into an agreement with Shell (the "New Shell Agreement") which among other things, terminates the Shell Research Agreement effective as of August 31, 2012, except for certain provisions of the Shell Research Agreement which will survive such termination, including provisions regarding intellectual property rights, patent prosecution and maintenance, confidentiality and indemnification. The New Shell Agreement required Shell to pay us approximately $7.5 million as full, complete and final satisfaction of amounts that Shell may have owed us under the Shell Research Agreement with respect to (i) FTEs assigned to the Shell Research Agreement and (ii) milestones achieved or achievable by us under the Shell Research Agreement. The $7.5 million was recognized as revenue during the third quarter of 2012 when all of our obligations were fulfilled under the New Shell Agreement and was collected during the fourth quarter of 2012.

Beginning September 1, 2012, we have no further obligations to Shell under the Shell Research Agreement to provide any FTEs to perform work under or after the collaboration and Shell has no future obligations to us under the Shell Research Agreement to provide funding for FTEs to perform work under or after the collaboration. We remain eligible to receive a one-time $3.0 million payment from Shell under the Shell Research Agreement upon the first sale by Shell of a product in the field of converting cellulosic biomass into fermentable sugars in Brazil, or in the fields of converting fermentable sugars derived from biomass into liquid fuel or liquid fuel additives or into lubricants.

Under the New Shell Agreement, Shell granted us royalty-bearing, non-exclusive rights and licenses to develop, manufacture, use and sell biocatalysts and microbes in the field of converting cellulosic biomass into fermentable sugars on a worldwide basis, except for Brazil, where such sugars are converted into liquid fuels, fuel additives or lubricants (the "Field of Use"). Raízen Energia S.A. ("Raízen") holds the exclusive rights to use our enzymes and microbes for converting cellulosic biomass into fermentable sugars in Brazil, where such sugars are converted into ethanol. Following the date on which our biocatalysts are used to produce sugars used in the Field of Use sufficient to produce 30.0 million gallons of liquid fuel, we will be required to pay Shell a royalty on our sales to third parties of our enzymes and microbes in the Field of Use, equal to a low single-digit percentage of net sales and we will also be required to pay Shell a royalty on our use of biocatalysts in the Field of Use, equal to a low single-digit percentage of our applicable net sales of such enzymes or microbes. Shell is also entitled to discounted pricing under the New Shell

Agreement for biocatalysts purchased from us by Shell for use in the Field of Use, but we are under no obligation to sell such biocatalysts to Shell.

Under the New Shell Agreement, we also granted to Shell a non-exclusive, royalty-free license to manufacture, use and import, solely for the use of Shell and its affiliates, (i) enzymes developed by us during the ten year period following August 31, 2012 outside of the Shell Research Agreement for use in the Field of Use and (ii) improvements to any microbe developed by us during the ten year period following August 31, 2012 outside of the Shell Research Agreement that is derivative of an identified microbe for use in the Field of Use. Shell remains subject to existing royalty obligations to us for future sales of products covered by the intellectual property and technology that remain exclusively licensed to Shell under the License Agreement.

Additionally, with respect to each invention relating to technology or materials regarding novel liquid fuel compounds, liquid fuel additives or lubricants, Shell will continue to be required to work exclusively with us, for a period of three years after the first non-provisional patent application filing for such invention, to identify biological methods of synthesis of the compound(s) that are claimed, or whose use as a liquid fuel compound, additive or lubricant, is claimed, in such patent filing.

The New Shell Agreement has a term that commences on August 31, 2012 and continues until the later of August 31, 2032 or the date of the last to expire patent rights included in our collaboration that claim a biocatalyst or a microbe for use in the Field of Use.

Prior to the New Shell Agreement, Shell had an obligation under the Shell Research Agreement to fund us at specified rates for each FTE, which as of August 2012, were equal to $460,000 on an annual basis for each FTE in the United States and $399,000 on an annual basis for each FTE in Hungary. As of August 31, 2012, the number of FTEs assigned to our collaboration with Shell was 116.

In accordance with our revenue recognition policy, the $20 million up-front exclusivity fee and the research funding fees received for FTE services under the Shell Research Agreement were recognized in proportion to the actual research efforts incurred relative to the amount of total expected effort to be incurred by us over the five-year research period commencing November 2007. Milestones payments to be earned under this agreement were determined to be at risk at the inception of the arrangement and substantive and were recognized upon achievement of the applicable milestone and when collectability of such payment was reasonably assured. There are no further milestone payments under the Shell Research Agreement, other than a $3.0 million milestone payment described above for which we may become eligible. We did not record any milestone revenues during the three months ended March 31, 2013 and 2012. For the three months ended March 31, 2013 and 2012, our collaborative research and development revenue from Shell was zero and $13.9 million, respectively.

Under the Shell Research Agreement and Shell License Agreement, we had the right, if mutually agreed upon with Shell, to license technology from third parties that would assist us in meeting objectives under the collaboration and Shell was obligated to reimburse us for the licensing costs of the technology. Payments made by us to the third-party providers were recorded as research and development expenses related to our collaborative research agreement with Shell. Shell reimbursed us for licensing costs of $105,000 and $233,000 for the three months ended March 31, 2013 and 2012, respectively. We recorded these reimbursements against the costs incurred.

In June 2011, Shell completed the transfer of all of its equity interests in us, together with the associated right to appoint one member to our board of directors, to Raízen, Shell's joint venture with Cosan S.A. Indústria e Comércio, (“Cosan”) in Brazil. As a result, Shell is no longer considered a related party. Notwithstanding the above, Shell did not transfer the Shell Research Agreement to Raízen. Additionally in September 2011, we entered into a joint development agreement directly with Raízen. Work under this joint development agreement has been completed and we do not expect this project to continue.

Research and Development Collaboration

On February 1, 2012, we entered into a five year Sitagliptin Catalyst Supply Agreement ("Sitagliptin Agreement") whereby Merck Sharp and Dohme Corp. ("Merck") may obtain commercial scale substance for their use in the manufacture of their products. Merck may extend the term of the Sitagliptin Agreement for an additional five years in its sole discretion.

The Sitagliptin Agreement calls for Merck to pay an annual license fee for the rights to the Sitagliptin technology each year for the term of the Sitagliptin Agreement. During the first quarter of 2013, we received and recorded as deferred revenue, $2.5 million from Merck related to the license fee. The license fee will be recognized as collaborative research and development revenue ratably during the five year term of the Sitagliptin Agreement. During the first

quarter of 2013, we recognized $328,000 of the license fee as collaborative research and development revenue. Pursuant to the Sitagliptin Agreement, Merck may purchase substance from us for a fee. During the first quarter of 2013 we recognized $0.5 million in revenue related to substance delivered under the Sitagliptin Agreement. The substance price is based on an agreed upon formula. Under the Sitagliptin Agreement, Merck has the right to identify and qualify additional substance manufacturers for a portion of its substance requirements. We have agreed to transfer the necessary technical support to produce the substance to such additional substance manufacturers in exchange for a one-time fee. Due to a lack of stand alone value of the license, we determined the annual license fee cannot be considered as a separate unit of accounting until

Merck qualifies an additional substance manufacturer. Therefore, it is combined with the supply of substance under the arrangement into a single unit of accounting.

Manufacturing Collaboration

Arch

In February 2010, we consolidated certain of the contractual terms in our then-existing agreements with Arch by simultaneously terminating all of our existing agreements with Arch, other than the Master Services Agreement with Arch entered into as of August 1, 2006, and entering into amended agreements with Arch. The amended agreements, among other things, provided for biocatalysts supplied from us to Arch and intermediates supplied from Arch to us. We sold biocatalysts to Arch at an agreed upon price, and Arch manufactured intermediates on our behalf. Arch sold the intermediates to us at a formula-based or at an agreed upon price. We then directly marketed and sold the intermediates to a specified group of customers in the generic pharmaceutical industry. Under the amended agreements, Arch also sold intermediates directly to other customers, and a license royalty was owed by Arch to us based on the volume of product they sold to us and to their other customers. Royalties earned from Arch under this arrangement were zero and $257,000 for the three months ended March 31, 2013 and 2012, respectively.

In November 2012, we entered into a new commercial arrangement with Arch by simultaneously terminating all of our existing supply agreements with Arch and entering into the New Arch Enzyme Supply Agreement pursuant to which Arch agreed to exclusively purchase enzymes from us for use in the manufacture of certain of Arch's products and we agreed to exclusively supply, with limited exceptions, certain of our enzymes to Arch at an agreed upon price for use in such manufacture. Under the New Arch Enzyme Supply Agreement, Arch will no longer produce atorva-family active pharmaceutical ingredients (“APIs”) and intermediates for us and Arch will no longer pay us royalties on their sale of such APIs and intermediates to customers and we will no longer have exclusive rights to market such APIs and intermediates in certain markets. For the three months ended March 31, 2013, we recognized $2.1 million in product revenue for the one-time sale of enzyme inventory to Arch pursuant to the New Arch Enzyme Supply Agreement.

4. Joint Development Agreement with CO_2 Solutions

On December 15, 2009, we entered into an exclusive joint development agreement with CO_2 Solutions, a company based in Quebec City, Quebec, Canada, whose shares are publicly traded in Canada on TSX Venture Exchange. The joint development agreement expired in January 2011. Under the agreement, we obtained a research license to CO_2 Solutions' intellectual property and agreed to conduct research and development activities jointly with CO_2 Solutions with the goal of advancing the development of carbon management technology. We also purchased 10,000,000 common shares (approximately 16.6% of the total common shares outstanding at the time of investment) of CO_2 Solutions in a private placement subject to a four-month statutory resale restriction. This restriction expired on April 15, 2010. In July 2012, Alan Shaw, our former Chief Executive Officer resigned from the board of directors of CO_2 Solutions and we are currently considering potential replacements to this designated board seat.

In January 2011, we extended our joint development agreement with CO_2 Solutions on essentially the same terms as the original agreement. The extended agreement expires nine months after the expiry of any third party collaborations. This agreement expired in February 2013.

We concluded that through March 31, 2013, we did not have the ability to exercise significant influence over CO_2 Solutions' operating and financial policies. We consider our investment in CO_2 Solutions' common shares as an investment in a marketable security that is available for sale, and carry it at fair value in non-current marketable securities. As discussed in Note 6, we recorded an impairment of $0.8 million in our condensed consolidated statement of operations as sales, general and administrative expense during the year ended December 31, 2012. Subsequent changes in fair value have been recognized in the condensed consolidated statement of comprehensive loss. The fair value of our CO_2 Solution’s common shares as of March 31, 2013 was determined by trading on the TSX Venture Exchange. Accordingly, we have classified our investment in CO_2 Solutions as a Level 1 investment as discussed in Note 6.

5. Balance Sheets Details

Cash Equivalents and Marketable Securities

At March 31, 2013, cash equivalents and marketable securities consisted of the following (in thousands):

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	March 31, 2013				
	Adjusted Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value	Average Contractual Maturities (in days)
Money market funds	$17,931	$—	$—	$17,931	n/a
Corporate bonds (unamortized cost)	8,437	9	—	8,446	82
U.S. Treasury obligations (unamortized cost)	5,505	4	—	5,509	172
Common shares of CO2 Solutions	563	367	—	930	n/a
Total	$32,436	$380	$—	$32,816	

The total cash and cash equivalents balance of $31.2 million as of March 31, 2013 was comprised of money market funds of $17.9 million, and $13.3 million held as cash, primarily with major financial institutions in North America. At March 31, 2013, we had no marketable security in an unrealized loss position.

At December 31, 2012, cash equivalents and marketable securities consisted of the following (in thousands):

	December 31, 2012				
	Adjusted Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value	Average Contractual Maturities (in days)
Money market funds	$24,789	$—	$—	$24,789	n/a
Commercial paper	1,499	1	—	1,500	70
Corporate bonds (unamortized cost)	9,512	10	—	9,522	156
U.S. Treasury obligations (unamortized cost)	5,511	5	—	5,516	262
Common shares of CO2 Solutions	563	47	—	610	n/a
Total	$41,874	$63	$—	$41,937	

The total cash and cash equivalents balance of $32.0 million as of December 31, 2012, was comprised of money market funds of $24.8 million and $7.2 million held as cash, primarily with major financial institutions in North America. At December 31, 2012, we had no marketable securities in an unrealized loss position.

Inventories

Inventories, net consisted of the following (in thousands):

	March 31, 2013	December 31, 2012
Raw materials	$629	$588
Work in process	112	52
Finished goods	945	662
Total inventories	$1,686	$1,302

6. Fair Value

Assets and liabilities recorded at fair value in the condensed consolidated financial statements are categorized based upon the level of judgment associated with the inputs used to measure their fair value. Hierarchical levels which are directly related to the amount of subjectivity associated with the inputs to the valuation of these assets or liabilities are as follows:

Level 1 - Inputs that are unadjusted, quoted prices in active markets for identical assets or liabilities at the measurement date.

Level 2 - Inputs (other than quoted prices included in Level 1) that are either directly or indirectly observable for the asset or liability through correlation with market data at the measurement date and for the duration of the instrument's anticipated life.

Level 3 - Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities and which reflect management's best estimate of what market participants would use in pricing the asset or liability at the measurement date.

For Level 2 financial instruments, our investment advisor provides us with monthly account statements documenting the value of each investment based on prices received from an independent third-party valuation service provider. This third party evaluates the types of securities in our investment portfolio and calculates a fair value using a multi-dimensional pricing model that includes a variety of inputs, including quoted prices for similar assets and liabilities in active markets, quoted prices for identical or similar assets or liabilities in markets that are not active, interest rates and yield curves observable at commonly quoted intervals, volatilities, prepayment speeds, loss severities, credit risks and default rates that are observable at commonly quoted intervals. As we are ultimately responsible for the determination of the fair value of these instruments, we perform quarterly analyses using prices obtained from another independent provider of financial instrument valuations, to validate that the prices we have used are reasonable estimates of fair value.

The following table presents our financial instruments that were measured at fair value on a recurring basis at March 31, 2013 by level within the fair value hierarchy (in thousands):

	March 31, 2013			
	Level 1	Level 2	Level 3	Total
Financial Assets				
Money market funds	$17,931	$—	$—	$17,931
Corporate bonds	—	8,446	—	8,446
U.S. Treasury obligations	—	5,509	—	5,509
Common shares of CO2 Solutions	930	—	—	930
Total	$18,861	$13,955	$—	$32,816

The following table presents our financial instruments that were measured at fair value on a recurring basis at December 31, 2012 by level within the fair value hierarchy (in thousands):

	December 31, 2012			
	Level 1	Level 2	Level 3	Total
Financial Assets				
Money market funds	$24,789	$—	$—	$24,789
Commercial paper	—	1,500	—	1,500
Corporate bonds	—	9,522	—	9,522
U.S. Treasury obligations	—	5,516	—	5,516
Common shares of CO2 Solutions	610	—	—	610
Total	$25,399	$16,538	$—	$41,937

We estimated the fair value of our investment in 10,000,000 common shares of CO_2 Solutions using the market value of common shares as determined by trading on the TSX Venture Exchange. Accordingly, we have classified our investment in CO_2 Solutions as a Level 1 investment. As of March 31, 2013, the fair value of our investment in CO_2 Solutions' common stock was $0.9 million with an unrealized gain of $0.2 million, net of $0.1 million of tax. During 2012, we evaluated our investment in the common shares of CO_2 Solutions and determined the impairment was other-than-temporary considering the length of time and extent to which the fair value has been less than our cost, the financial condition and near term prospects of CO_2 Solutions, and our management's ability and intent to hold the securities until fair value recovers. As a result of our analysis, we recorded an impairment of $0.8 million during the year ended December 31, 2012 as an expense in our condensed consolidated statement of operations as selling, general and administrative expense. At December 31, 2012, the estimated fair value of our investment in CO_2 Solutions' common stock was $0.6 million with an unrealized gain of $47,000.

7. Related Party Transactions

Shell and Raízen

Prior to June 2011 Shell was considered a related party due to the size of its ownership interest. As discussed in Note 3, "Collaborative Research and Development Agreements," Shell transferred full ownership of our common stock to Raízen, Shell's joint venture with Cosan in Brazil. Based on our analysis and effective as of July 1, 2011, Shell was no

longer considered a related party. Before June 30, 2011, related party receivables, related party deferred revenue, and related party

collaboration research and development revenue were primarily comprised of transactions under our five-year Shell Research Agreement (replaced by the New Shell Agreement effective as of August 31, 2012) and the Shell License Agreement. The revenues earned from Shell are included in the collaborative research and development line on our condensed consolidated statement of operations. Collaborative research and development revenue received from Shell accounted for 51%, 51% and 62% of our revenues for the years ended December 31, 2012, 2011 and 2010, respectively. Collaborative research and development revenue received from Shell accounted for zero and 45% of our revenues for the three months ended March 31, 2013 and 2012, respectively.

At the time of the transfer, Raízen owned 5.6 million shares of our common stock and had the right to appoint a member to our board of directors. This right terminated upon the termination of the Shell Research Agreement effective August 31, 2012. In September 2011, we entered into a joint development agreement with Raízen to develop an improved first generation ethanol process with enhanced economics. There has been no material financial activity with Raízen through March 31, 2013 and work under this joint development agreement has been completed and we do not expect this project to continue.

Raízen has exclusive rights to market and use CodeXyme® in Brazil. We are engaged in discussions with Raízen about obtaining rights to market CodeXyme® to all ethanol producers in Brazil. Raízen will remain a target customer for CodeXyme® should Raízen decide to build capacity for second generation ethanol in Brazil.

Exela PharmaSci, Inc.

We signed a license agreement with Exela PharmaSci, Inc. (“Exela”) in 2007. A member of our board of directors is also on the board of directors of Exela. Under the terms of the agreement, Exela would pay us a royalty based on their achievement of certain commercial goals.

During the three months ended March 31, 2013 and 2012, we recognized $1.0 million and $150,000 of revenue, respectively, related to this arrangement, shown in our condensed consolidated statement of operations as collaborative research and development revenue. We did not recognize any revenue from Exela prior to 2011. As of March 31, 2013 and December 31, 2012, we had no amounts owed from Exela.

8. Commitments and Contingencies

Operating Leases

Our headquarters are located in Redwood City, California where we occupy approximately 107,000 square feet of office and laboratory space in four buildings. On March 16, 2011, we entered into a Fifth Amendment to Lease (the “Fifth Amendment”) with Metropolitan Life Insurance Company (“MetLife”) with respect to our offices located at 200 and 220 Penobscot Drive, Redwood City, California, (the “Penobscot Space”) and 400 Penobscot Drive, Redwood City, California (the “Building 2 Space”) and with respect to approximately 29,921 square feet of additional space located at 101 Saginaw Drive, Redwood City, California (the “Saginaw Space”). Under the Fifth Amendment, the term of the lease of the Penobscot Space, the Building 2 Space and the Saginaw Space lasts until January 31, 2020, and we have options to extend for two additional five year periods. The Fifth Amendment provided a number of incentives to us including forgiveness of rent payments for the initial two months of the lease term, a tenant improvement allowance (“TIA”) of $2.4 million and an additional $0.8 million in special allowances for certain HVAC costs. We applied the TIA funds toward capital improvements to the expanded facility as well as upgrades and reconfiguration of existing lab and office space.

As of December 31, 2012, we incurred $3.6 million of capital improvement costs related to the facilities. We requested and received $3.2 million of reimbursements from the landlord out of the TIA and the special HVAC allowance for the completed construction. The TIA was recorded when cash was received and is amortized on a straight line basis over the term of the lease as a reduction in rent expense.

We also lease space in the 501 Chesapeake Drive, Redwood City, California (the “501 Chesapeake Space”). The lease for the 501 Chesapeake Space was not extended with the Fifth Amendment. In September 2012, we entered into a Sixth Amendment to Lease (the “Sixth Amendment”) with MetLife with respect to the 501 Chesapeake Space. The Sixth Amendment extends the term of the lease of the 501 Chesapeake Space, which would have otherwise expired on January 31, 2013, to January 31, 2017. Pursuant to the Sixth Amendment, we have two consecutive options to extend the term of the lease for the 501 Chesapeake Space for an additional period of five years per option.

As part of the Q3 2012 Restructuring Plan, we are in the process of vacating the Saginaw Space and we have begun marketing the facility for sublease (see Note 12).

Rent expense is recognized on a straight-line basis over the term of the lease. In accordance with the terms of the amended lease agreement, we exercised our right to deliver letters of credit in lieu of a security deposit. The letters of credit in the

amount of $0.7 million as of March 31, 2013 and December 31, 2012, are collateralized by deposit balances held by our bank. These deposits are recorded as restricted cash on the condensed consolidated balance sheets.

We also rent facilities in Hungary. Rent expense is being recognized on a straight-line basis over the respective terms of these leases. Our leased facility in Singapore has been vacated and we recorded a cease use liability of $320,000 representing the remaining six months lease term for the facility as an accrued expense at December 31, 2012. As of March 31, 2013, $145,000 remained as an accrued expense for the final three months of the lease term.

As of March 31, 2013 and December 31, 2012, we had asset retirement obligations of $109,000 and $109,000, respectively, from operating leases, whereby we must restore the facilities that we are renting to their original form. We incurred zero and $7,000 of accretion expense related to our asset retirement obligations during the three months ended March 31, 2013 and 2012, respectively. We are expensing the asset retirement obligation over the terms of the respective leases. We review the estimated obligation each period and we make adjustments if our estimates change.

Future minimum payments under noncancellable operating leases are as follows at March 31, 2013 (in thousands):

	Lease payments
9 months ending December 31, 2013	$2,280
Years ending December 31,	
2014	2,947
2015	3,031
2016	3,047
2017	2,677
2018 and beyond	5,790
Total	$19,772

Litigation

We have been subject to various legal proceedings related to matters that have arisen during the ordinary course of business. Although there can be no assurance as to the ultimate disposition of these matters, we have determined, based upon the information available, that the expected outcome of these matters, individually or in the aggregate, will not have a material adverse effect on our condensed consolidated financial position, results of operations or cash flows.

Indemnifications

We are required to recognize a liability for the fair value of any obligations we assume upon the issuance of a guarantee. We have certain agreements with licensors, licensees and collaborators that contain indemnification provisions. In such provisions, we typically agree to indemnify the licensor, licensee and collaborator against certain types of third party claims. The maximum amount of the indemnifications is not limited. We accrue for known indemnification issues when a loss is probable and can be reasonably estimated. There were no accruals for expenses related to indemnification issues for any periods presented.

Other Contingencies

In November 2009, one of our foreign subsidiaries sold intellectual property to us. Under the local laws, the sale of intellectual property to a nonresident legal entity is deemed an export and is not subject to value added tax. However, there is uncertainty regarding whether the items sold represented intellectual property or research and development services, which would subject the sale to value added tax. We believe that the uncertainty results in an exposure to pay value added tax that is more than remote but less than likely to occur and, accordingly, have not recorded an accrual for this exposure. Should the sale be deemed a sale of research and development services, we could be obligated to pay an estimated amount of $0.6 million.

9. Warrants

Our outstanding warrants are exercisable for common stock at any time during their respective terms. During the three months ended March 31, 2013, no warrants were exercised.

As of March 31, 2013, the following warrants were issued and outstanding:

March 31, 2013

Issue Date	Shares Subject to warrants	Exercise Price per Share	Expiration
May 25, 2006	184,895	$5.96	May 25, 2013
July 17, 2007	2,384	$12.45	February 9, 2016
September 28, 2007	72,727	$8.25	September 28, 2017

10. Stockholders' Equity

In 2002, we adopted the 2002 Stock Plan (the "2002 Plan"), pursuant to which our board of directors issued incentive stock options, non-statutory stock options (options that do not qualify as incentive stock options) and restricted stock to our employees, officers, directors or consultants. In March 2010, our board of directors and stockholders approved the 2010 Equity Incentive Award Plan (the "2010 Plan"), which became effective upon the completion of our IPO in April 2010. A total of 1,100,000 shares of common stock were initially reserved for future issuance under the 2010 Plan and any shares of common stock reserved for future grant or issuance under our 2002 Plan that remained unissued at the time of completion of the IPO became available for future grant or issuance under the 2010 Plan. In addition, the shares reserved for issuance pursuant to the exercise of any outstanding awards under the 2002 Plan that expire unexercised will also become available for future issuance under the 2010 Plan. The 2010 Plan also provides for automatic annual increases in the number of shares reserved for future issuance, and during the three months ended March 31, 2013 an additional 1,506,707 shares were reserved under the 2010 plan as a result of this provision. As of March 31, 2013, we had a total of 12,029,742 shares of common stock reserved for issuance under our 2010 Plan and no shares available for issuance under the 2002 Plan.

We awarded 833,698 restricted stock units ("RSU") under the 2010 Plan during the three months ended March 31, 2013. The fair value of the RSU awards was calculated based on the NASDAQ quoted stock price on the date of the grant with the expense recognized over the vesting period.

During the three months ended March 31, 2013, we issued 244,379 common shares for stock options exercised and 90,428 common shares for RSUs that vested during the quarter.

Performance Stock Units

We awarded 523,048 performance stock units ("PSU") under the 2010 Plan during the three months ended March 31, 2013. The number of shares of Company common stock to be issued for each vested PSU will range between zero and two, depending on the level of performance as compared to the criteria set by our board with respect to the Company's annual cash burn for the year ended December 31, 2013. We currently estimate 100% of the performance goal will be achieved which will result in one common share issued for each vested PSU. The PSU awards vest in equal installments on March 5, 2014 and March 5, 2015. The fair value of the PSU awards was calculated based on the NASDAQ quoted stock price on the date of the grant with the expense recognized over the vesting period. For the three months ended March 31, 2013 we recorded $171,000 of stock based compensation expense related to the PSU awards.

Stockholder Rights Plan

In August 2012, our board of directors adopted a stockholder rights plan and declared a dividend of one preferred share purchase right for each share of our common stock held by stockholders of record as of September 18, 2012. Each right entitles stockholders, after the rights become exercisable, to purchase one one-thousandth of a share of our Series A Junior Participating Preferred Stock, par value $0.0001, at a purchase price of $11.35 per one thousandth of a share of Series A Junior Participating Preferred Stock. In general, the rights become exercisable when a person or group acquires 15% or more of our common stock or a tender offer for 15% or more of our common stock is announced or commenced. The rights may discourage a third-party from making an unsolicited proposal to acquire us as exercise of the rights would cause substantial dilution to a person or group that attempts to acquire us on terms not approved by our board of directors. The rights should not interfere with any merger or other business combination approved by our board of directors since the rights may be redeemed by us at $0.0001 per right at any time before any person or group acquire 15% or more of our outstanding common stock. These rights expire in September 2013.

Stock-Based Compensation Expense

We estimate the fair value of stock-based awards granted to employees and directors using the Black-Scholes option-pricing model. The Black-Scholes option-pricing model requires the use of highly subjective and complex

assumptions to determine the fair value of stock-based awards, including the expected life of the option and expected volatility of the underlying stock over the expected life of the related grants. Since we were not a publicly traded entity prior to April 2010, sufficient company-specific historical volatility data was not available for reporting periods prior to the second quarter of 2012. As a result, for

those periods, we estimated the expected volatility based on the historical volatility of a group of unrelated public companies within our industry. Effective for the second quarter of 2012, we determined we had sufficient company-specific historical volatility data. As a result, we estimate the expected volatility based on historical volatility of our common stock.

Due to our limited history of grant activity, the expected life of options granted to employees is calculated using the "simplified method" permitted by the SEC as the average of the total contractual term of the option and its vesting period. The risk-free rate assumption was based on United States Treasury instruments whose terms were consistent with the terms of our stock options. The expected dividend assumption was based on our history and expectation of dividend payouts.

The following table presents total stock-based compensation expense included in the condensed consolidated statements of operations (in thousands):

	Three Months Ended March 31,	
	2013	2012
Research and development	$527	$653
Sales, general and administrative	945	516
	$1,472	$1,169

11. Segment Reporting

Operating segments are defined as components of an enterprise about which separate financial information is available that is evaluated regularly by the chief operating decision maker, or decision making group, in deciding how to allocate resources and in assessing performance. Our chief operating decision maker is our Chief Executive Officer and our board of directors. The Chief Executive Officer and our board of directors review financial information presented on a consolidated basis, accompanied by information about revenues by geographic region, for purposes of allocating resources and evaluating financial performance. We have one business activity and there are no segment managers who are held accountable for operations, operating results beyond revenue goals or plans for levels or components below the consolidated unit level. Accordingly, we have a single reporting segment. Operations outside of the United States consist principally of research and development and sales activities.

Geographic revenues are identified by the location of the customer and consist of the following (in thousands):

	Three Months Ended March 31,	
	2013	2012
Revenues		
Americas (1)	$2,120	$15,629
Europe	3,205	5,485
Asia		
India	2,219	6,518
Singapore	3,648	3,253
Others	289	251
	$11,481	$31,136

(1) Primarily United States

Geographic presentation of identifiable long-lived assets below shows those assets that can be directly associated with a particular geographic area and consist of the following (in thousands):

	March 31, 2013	December 31, 2012
Long-lived assets		
Americas (1)	$23,886	$25,953
Europe (2)	5,360	5,157
Asia	337	711
	$29,583	$31,821

(1) Primarily United States

(2) Primarily Hungary

12. Restructuring

As a result of the termination of the Shell Research Agreement, we initiated a series of cost reduction measures. During the third quarter of 2012, our board of directors approved and committed to a restructuring plan (the "Q3 2012 Restructuring Plan") to reduce our cost structure which included approximately 173 employee terminations in the United States and Singapore and the closing of our Singapore facility. Approximately 150 of the total 173 employee terminations impacted the research and development functions with remaining 23 employees impacting the selling, general and administrative functions.

Our cost of the Q3 2012 Restructuring Plan was $2.4 million, comprised of $1.1 million of leasehold improvement write down, $0.7 million for employee severance and other termination benefits, $0.3 million for facility lease termination costs and $0.3 million for equipment disposal charges. As of December 31, 2012, $0.1 million was recorded in accrued compensation and $0.3 million recorded as accrued expenses on our condensed consolidated balance sheet. We made cash payments of approximately $0.2 millions and recorded $14,000 of reductions in previously recorded accruals for changes in estimated liabilities during the quarter ended March 31, 2013. As of March 31, 2013, $13,000 was recorded in accrued compensation and $0.1 million was recorded as accrued expenses on our condensed consolidated balance sheet. We anticipate recording no further costs under this restructuring plan. We anticipate the remaining costs under the Q3 2012 Restructuring Plan will be paid in the second quarter of 2013. The table below summarizes the changes in our restructuring accrual for the Q3 2012 Restructuring Plan (in thousands):

	Severance, benefits and related personnel costs	Facility closing costs	Total
Balance at December 31, 2012	$100	$320	$420
Restructuring charges	—	$—	$—
Cash payments	(73)	(175)	(248)
Adjustments to previously accrued charges	(14)	—	(14)
Balance at March 31, 2013	$13	$145	$158

During the first quarter of 2012, our board of directors approved and committed to a restructuring plan ("Q1 2012 Restructuring Plan") to reduce our cost structure which included approximately 13 employee terminations in Hungary and the United States. The total cost of the Q1 2012 Restructuring Plan was $572,000 comprised of employee severance and other termination benefits. As of March 31, 2012, planned costs of $510,000 were recognized in selling, general and administrative expenses on our condensed consolidated statements of operations with the remaining cost recognized by December31, 2012. During the three months ended March 31, 2012, we made cash payments of $24,000 related to these expenses. All costs under the Q1 2012 Restructuring Plan were paid by December 31, 2012.

ITEM 2. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with the unaudited condensed consolidated financial statements and the related notes thereto included elsewhere in this Quarterly Report on Form 10-Q and the audited consolidated financial statements and notes thereto and management's discussion and analysis of financial condition and results of operations for the year ended December 31, 2012 included in our Annual Report on Form 10-K filed with the SEC on April 2, 2013. This Quarterly Report on Form 10-Q contains "forward-looking statements" within the meaning of Section 21E of the Securities Exchange Act of 1934, as amended,(the "Exchange Act"). These statements are often identified by the use of words such as "may," "will," "expect," "believe," "anticipate," "intend," "could," "should," "estimate," or "continue," and similar exp variations. Such forward-looking statements are subject to risks, uncertainties and other factors that could cause actual results and the timing of certain events to differ materially from future results expressed or implied by such forward-looking statements. Factors that could cause or contribute to such differences include, but are not limited to, those discussed in the section titled "Risk Factors," set forth in Part II, Item 1A of this Quarterly Report on Form 10-Q

and elsewhere in this Report. The forward-looking statements in this Quarterly Report on Form 10-Q represent our views as of the date of this Quarterly Report on Form 10-Q. We anticipate that subsequent events and developments will cause our views to change. However, while we may elect to update these forward-looking statements at some point in the future, we have no current intention of doing so except to the extent required by applicable law. You should, therefore, not rely on these forward-looking statements as representing our views as of any date subsequent to the date of this Quarterly Report on Form 10-Q.

Overview

We engineer enzymes for pharmaceutical, biofuel and chemical production. Our proven technologies enable scale-up and implementation of biocatalytic solutions to meet customer needs for rapid, cost-effective and sustainable process development, from research to manufacturing.

We have commercialized our technology and products in the pharmaceuticals market, which is our primary business focus. There are currently over 50 pharmaceutical firms using our technology, products and services in their manufacturing process development, including in the production of some of the world's bestselling and fastest growing drugs.

We are developing our CodeXyme® cellulase enzymes to convert non-food plant material, or cellulosic biomass, into affordable sugars, which can then be converted into renewable fuels and chemicals. We are also developing our own manufacturing process for CodeXol® detergent alcohols, which are bio-based chemicals. Detergent alcohols are used to manufacture surfactants, which are key, active cleaning ingredients in consumer products such as shampoos, liquid soaps and laundry detergents. We are seeking collaboration partners to assist us with the development and commercialization of CodeXyme® cellulase enzymes and CodeXol® detergent alcohols, and we are also exploring other strategic options with respect to these products and technologies.

We create our products by applying our CodeEvolver® directed evolution technology platform, which introduces genetic mutations into microorganisms, giving rise to changes in the enzymes that they produce. Once we identify potentially beneficial mutations, we test combinations of these mutations until we have created variant enzymes that exhibit marketable performance characteristics superior to competitive products. This process allows us to make continuous, efficient improvements to the performance of our enzymes.

Results of Operations Overview

To date, we have generated revenues primarily from collaborative research and development funding, pharmaceutical product sales and government awards. Our revenues in 2012 were $88.3 million which is down significantly compared to our 2011 revenues of $123.9 million and our 2010 revenues of $107.1 million. Our revenues of $11.5 million for the three months ended March 31, 2013 were down significantly from the $31.1 million for the three months ended March 31, 2012. The decrease in revenues is primarily due to decreases in both our collaborative research and development revenue and pharmaceutical product sales.

Most of our revenues since inception have been derived from collaborative research and development arrangements, which accounted for 57%, 58% and 66% of our revenues in 2012, 2011 and 2010, respectively. Collaborative research and development arrangements accounted for 20% and 47% of our revenues for the three months ended March 31, 2013 and 2012, respectively.

Our collaborative research agreement with Shell terminated effective August 31, 2012 and as a result, we no longer receive collaborative research and development revenues from Shell subsequent to August 31, 2012. This has significantly decreased our revenues as compared to prior periods. Collaborative research and development revenues received from Shell were $45.3 million, $63.2 million and $66.1 million in 2012, 2011 and 2010, respectively, and accounted for 51%, 51% and 62% of our total revenues in 2012, 2011 and 2010, respectively. Collaborative research and development revenue received from Shell accounted for 0% and 45% of our revenues for the three months ended March 31, 2013 and 2012, respectively.

Our product sales accounted for 41%, 40% and 31% of our revenues in 2012, 2011 and 2010, respectively. Product sales accounted for 80% and 49% of our revenues for the three months ended March 31, 2013 and 2012, respectively, primarily as a result of the fact that we no longer receive collaborative research and development revenues from Shell. Our product sales in 2012 were $35.9 million which is down significantly compared to our 2011 product sales of $49.0 million and only a marginal increase compared to our 2010 product sales of $32.8 million. Our product sales in the first quarter of 2013 were $9.1 million which is down significantly compared to our first quarter of 2012 product sales of $15.2 million. The decrease in product sales in the first quarter of 2013 as compared to 2012 is primarily due to the timing of an innovator pharmaceutical product order that was delayed until the second quarter of 2013 and the New Arch Enzyme Supply agreement which became effective on November 1, 2012, as described below.

We have experienced significant losses as we have invested heavily in research and development and administrative infrastructure in connection with the growth in our business. We intend to continue our investment in research and development. As of March 31, 2013, we had an accumulated deficit of $225.2 million. We incurred net losses of $30.9

million, $16.6 million and $8.5 million in the years ended December 31, 2012, 2011 and 2010, respectively. We incurred net losses of $9.6 million and $7.5 million in the three months ended March 31, 2013 and 2012, respectively.

Termination of Shell Collaboration

In September 2012, we entered into the New Shell Agreement, which terminated our collaboration with Shell under the existing Shell Research Agreement and amended the existing Shell License Agreement. See “Collaborations and License Agreements-Shell” in Part I, Item 1 of our Annual Report on Form 10-K filed with the SEC on April 2, 2013 for a description of the New Shell Agreement.

The New Shell Agreement required Shell to pay us $7.5 million as full, complete and final satisfaction of amounts that Shell may have owed to us under the Shell Research Agreement with respect to (i) FTEs assigned by us to perform our obligations under the Shell Research Agreement and (ii) milestones achieved or achievable by us under the Shell Research Agreement. We recognized this $7.5 million payment as collaborative research and development revenues during the year ended December 31, 2012. Beginning September 1, 2012, we had no further obligations to Shell under the Shell Research Agreement to provide any FTEs to perform work under or after the collaboration and Shell correspondingly had no future obligations to us under the Shell Research Agreement to provide funding for FTEs to perform work under or after the collaboration. Following the New Shell Agreement, Shell no longer accounts for a significant portion of our total revenues.

Prior to the New Shell Agreement, Shell had an obligation under the Research Agreement to fund us at specified rates for each FTE, which as of 2012 were equal to $460,000 on an annual basis for each FTE in the United States and $399,000 on an annual basis for each FTE in Hungary. As of August 31, 2012, the number of FTEs assigned by us to perform our obligations under the Research Agreement was 116.For the three months ended March 31, 2012, Shell accounted for 45% of our total revenues. For the year ended December 31, 2012, Shell accounted for 51% of our total revenues.

As a result of the termination of the Shell Research Agreement, we initiated a series of cost reduction measures and refocused our business on the pharmaceuticals market. We terminated approximately 173 employees worldwide, consisting of 150 research and development staff and 23 general and administrative staff. We also closed our Singapore research and development facility. We estimated that we would incur $2.4 million in restructuring expenses related to these cost reduction measures, including severance for terminated employees, and other exit-related costs arising from contractual obligations associated with closed facilities under lease and equipment disposals. During the first quarter of 2013, we made cash payments of $0.2 million and recorded $14,000 of reductions in previously recorded accruals for changes in estimated liabilities. We anticipate the remaining costs under the Q3 2012 Restructuring Plan will be paid in the second quarter of 2013.

We anticipate our expected 2013 cost reductions resulting from restructuring our operation in the United States will be $22.1 million. Our total expected 2013 cost reductions resulting from closing our operations in Singapore are expected to be $7.1 million. We anticipate that these cost reduction measures will generate annual cost savings related to employee compensation costs of $20.9 million, specifically $3.3 million in general and administrative costs and $17.6 million in research and development costs. The remaining cost reduction measure will generate annual cost savings primarily related to outside services, information technology and laboratory equipment expenses, facilities expenses, and recruiting and relocation costs.

Despite the termination of the Shell Research Agreement, we expect to continue our advanced biofuels program, primarily focusing on developing our CodeXyme® cellulase enzymes for use in producing advanced biofuels. We are actively seeking third party funding to support our CodeXyme® cellulase enzyme program. We are in early stage discussions with multiple parties about potential collaborations, but there can be no assurances that any of our discussions will lead to collaborations or that any new collaboration will fully substitute for the termination of the Shell collaboration. We are exploring other strategic options for the program. If we are unable to agree to terms with new collaborators that provide us with the financial assistance and infrastructure necessary for us to develop and commercialize our products and execute our strategy with respect to CodeXyme® cellulase enzymes, or if we are unable to identify and effect attractive strategic options for that program, we will need to continue to fund this development ourselves, which will have a material adverse effect on our liquidity and financial condition, or we may need to suspend the program, which may have a material adverse effect on our business and prospects.

CO_2 Solutions Investment

Our investment in CO_2 Solutions and the joint development agreement we signed with CO_2 Solutions in 2009 was our initial entry into carbon management. We estimated the fair value of our investment in 10,000,000 common shares of

CO_2 Solutions using the market value of common shares as determined by trading on the TSX Venture Exchange. As of March 31, 2013, the fair value of our investment in CO_2 Solutions' common stock was $0.9 million with an unrealized gain recorded in other comprehensive income of $0.2 million, net of $0.1 million of tax.

Arch Collaboration

Since 2006, Arch of Mumbai, India has manufactured substantially all of our commercialized intermediates and APIs for sale to generic and innovator manufacturers. We were party to a number of agreements with Arch that govern the commercialization of

various current and future products for supply into the generic and innovator marketplaces. In November 2012, we entered into the New Arch Enzyme Supply Agreement, which terminated our existing supply agreements with Arch. Under the New Arch Enzyme Supply Agreement, Arch agreed to exclusively purchase our proprietary enzymes from us for use in the manufacture of certain of Arch's products and we agreed to exclusively supply, with limited exceptions, certain of our proprietary enzymes to Arch at an agreed upon price for use in such manufacture. Arch will no longer produce API and intermediates for us to market and sell and Arch will no longer pay us royalties on the sale of APIs and intermediates to customers. We expect that selling our proprietary enzymes to Arch rather than selling the resulting APIs or intermediates that Arch manufactured for us will result in a decrease in our product revenues in all future periods. However, we expect that our product gross margin will be higher, which we expect to result in a product gross profit comparable with our historical product gross profit.

Revenues and Operating Expenses

Revenues

Our revenues are comprised of product revenues, collaborative research and development revenues and government awards.

- Product revenues consist of sales of biocatalysts, intermediates, APIs and Codex® Biocatalyst Panels and Kits.
- Collaborative research and development revenues include license, technology access and exclusivity fees, FTE payments, milestones, royalties, and optimization and screening fees.
- Government awards consist of payments from government entities. The terms of these awards generally provide us with cost reimbursement for certain types of expenditures in return for research and development activities over a contractually defined period. Historically, we have received government awards from Germany, Singapore and the United States.

Cost of Product Revenues

Cost of product revenues includes both internal and third-party fixed and variable costs including amortization of purchased technology, materials and supplies, labor, facilities and other overhead costs associated with our product revenues.

Research and Development Expenses

Research and development expenses consist of costs incurred for internal projects as well as partner-funded collaborative research and development activities. These costs include our direct and research-related overhead expenses, which include salaries and other personnel-related expenses (including stock-based compensation), occupancy-related costs, supplies, depreciation of facilities and laboratory equipment and amortization of acquired technologies, as well as research consultants, and are expensed as incurred. Costs to acquire technologies that are utilized in research and development and that have no alternative future use are expensed when incurred.

Selling, General and Administrative Expenses

Selling, general and administrative expenses consist of compensation expenses (including stock-based compensation), hiring and training costs, consulting and service provider expenses (including patent counsel related costs), marketing costs, occupancy-related costs, depreciation and amortization expenses, and travel and relocation expenses.

Critical Accounting Policies and Estimates

The interim condensed consolidated financial statements have been prepared in conformity with generally accepted accounting principles in the United States and include our accounts and the accounts of our wholly-owned subsidiaries. The preparation of our condensed consolidated financial statements requires our management to make estimates, assumptions, and judgments that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements, and the reported amounts of revenues and expenses during the applicable periods. Management bases its estimates, assumptions and judgments on historical experience and on various other factors that are believed to be reasonable under the circumstances. Different assumptions and judgments would change the estimates used in the preparation of our condensed consolidated financial statements, which, in turn, could change the results from those reported. Our management evaluates its estimates, assumptions and judgments on an ongoing basis. There have been no material changes to our critical accounting policies and estimates discussed in our Annual Report on Form 10-K for the fiscal year ended

December 31, 2012.

Financial Operations Overview

The following table shows the amounts from our condensed consolidated statements of operations for the periods presented (in thousands).

	Three Months Ended March 31,		% of Total Revenues	
	2013	2012	2013	2012
Revenues:				
Product	$9,137	$15,167	80 %	49 %
Collaborative research and development	2,344	14,612	20 %	47 %
Government awards	—	1,357	— %	4 %
Total revenues	11,481	31,136	100 %	100 %
Costs and operating expenses:				
Cost of product revenues	5,665	12,642	49 %	41 %
Research and development	7,322	16,349	64 %	53 %
Selling, general and administrative	8,124	9,395	71 %	30 %
Total costs and operating expenses	21,111	38,386	184 %	123 %
Loss from operations	(9,630)	(7,250)	nm	nm
Interest income	27	75	— %	— %
Other expenses	(85)	(118)	nm	nm
Loss before provision (benefit) for income taxes	(9,688)	(7,293)	nm	nm
Provision (benefit) for income taxes	(65)	197	(1)%	1 %
Net loss	$(9,623)	$(7,490)	nm	nm

Three months ended March 31, 2013 compared three months ended March 31, 2012

Revenues

	Three Months Ended March 31,		Change	
(In Thousands)	2013	2012	$	%
Product	$9,137	$15,167	$(6,030)	(40)%
Collaborative research and development	2,344	14,612	(12,268)	(84)%
Government awards	—	1,357	(1,357)	(100)%
Total revenues	$11,481	$31,136	$(19,655)	(63)%

Revenues decreased during the three months ended March 31, 2013 compared to the three months ended March 31, 2012 due to decreased revenues from all three revenue categories including product sales, collaborative research and development projects, and government awards.

Product revenues decreased $6.0 million during the three months ended March 31, 2013 compared to the three months ended March 31, 2012 primarily due to the expected decrease in sales of our statin-family of products resulting from the New Arch Enzyme Supply Agreement. The decrease in statin-family APIs and intermediates was approximately $8.6 million, which was partially offset by $2.1 million increase in sales related to a one time sale of enzyme inventory to Arch pursuant to the New Arch Enzyme Supply Agreement. Our sales of products used in on-patent pharmaceuticals in cancer, dementia and diabetic therapies increased $3.0 million as a result of pharmaceutical manufacturers increasing use of our products in their manufacturing processes. This was partially offset by a $2.3 million decrease in sales of products used in on-patent pharmaceuticals in hepatitis C therapies due to a customer shipment delayed until the second quarter of 2013. While we expect on-patent pharmaceuticals sales to continue, the timing of orders and delivery of product will continue to fluctuate from quarter-to-quarter.

Collaborative research and development revenues decreased $12.3 million during the three months ended March 31, 2013 compared to the three months ended March 31, 2012 primarily from a $13.9 million reduction due to the termination of the Shell Research Agreement in 2012 partially offset by a $1.6 million increase from collaborations with our pharmaceuticals customers. The $1.6 million increase from collaborations with our pharmaceuticals customers includes $0.9 million increase in revenue recognized from Exela as a result of their commercial launch of argatroban. We expect this royalty revenue to continue for the remainder of 2013. We consider Exela a related party as a member of our board of directors is also on the board of directors of Exela.

Government award revenues decreased $1.4 million during the three months ended March 31, 2013 compared to the three months ended March 31, 2012 as our award from the DOE under the ARPA-E Recovery Act program expired on June 30, 2012, and our award revenue from the Singapore Economic Development Board was terminated in 2012. As of March 31, 2013, we do not have any government awards from which we expect to receive revenues in future periods. We may bid on additional awards from the United States and other governments in the future, but we cannot be certain that we will receive any such awards.

Our top five customers accounted for 94% and 83% of our total revenues for the three months ended March 31, 2013 and 2012, respectively.

Cost of Product Revenues

	Three Months Ended March 31,		Change	
(In Thousands)	2013	2012	$	%
Revenues:				
Product	$9,137	$15,167	(6,030)	(40)%
Cost of revenues:				
Product	$5,665	$12,642	$(6,977)	(55)%
Gross profit:				
Product	$3,472	$2,525	$947	38 %
Product gross margin %	38 %	17 %		

Our cost of product revenues decreased $7.0 million during the three months ended March 31, 2013 compared to the three months ended March 31, 2012 primarily due to the $6.0 million decrease in our product sales. The decrease in product sales was primarily due to $8.6 million decrease in sales of our statin-family of API and intermediate products to generic manufacturers, which generally produce lower gross margins partially offset by $2.1 million increase in sales related to a one time sale of enzyme inventory to Arch pursuant to New Arch Enzyme Supply Agreement which generated higher margins. Additionally, our sales mix showed an increase in product sales of our on-patent, higher margin products in the first quarter of 2013 compared to first quarter of 2012.

Our product gross margins improved from 17% to 38% during three months ended March 31, 2013 compared to the three months ended March 31, 2012 due to the decreased sales of our lower margin statin-family of APIs and intermediates, an increase in product sales of our on-patent, higher margin products in the first quarter of 2013 and the increased sales of higher margin enzymes under the new New Arch Enzyme Supply Agreement.

Our inventory balance increased $0.4 million, or 29%, from $1.3 million as of December 31, 2012 to $1.7 million as of March 31, 2013 in anticipation of product deliveries in the second and third quarters of 2013.

Operating Expenses

	Three Months Ended March 31,		Change	
(In Thousands)	2013	2012	$	%
Research and development	$7,322	$16,349	$(9,027)	(55)%
Selling , general and administrative	8,124	9,395	(1,271)	(14)%
Total operating expenses	$15,446	$25,744	$(10,298)	(40)%

Research and Development. Research and development expenses decreased $9.0 million during the three months ended March 31, 2013 compared to the three months ended March 31, 2012 primarily due to the restructuring the Company initiated in the third quarter of 2012 subsequent to the termination of the Shell Research Agreement. Our research and development headcount decreased approximately 164 employees from 250 employees as of March 31, 2012 to approximately 86 as of March 31, 2013. As a result of this staffing decrease, our compensation and other employee benefit costs decreased $5.5 million in first quarter of 2013 compared to the first quarter of 2012. Lab supply and small equipment costs decreased $1.2 million and outside services and consultants decreased $0.7 million as a result of the termination of the Shell Research Agreement and the resulting headcount reductions. Depreciation cost decreased $0.6 million as a result of disposed equipment as part of the restructuring efforts. We reduced facility costs by $0.2 million as a result of closing our Singapore research facility. We reduced travel costs by $0.1 million as part of our cost control efforts. Stock compensation decreased $0.2 million due to the reduced headcount and fewer outstanding stock awards. Research and development expenses included stock-based compensation expense of $0.5 million and $0.7 million during the three months ended March 31, 2013 and 2012, respectively.

Selling, General and Administrative. Selling, general and administrative expenses decreased $1.3 million during the three months ended March 31, 2013 compared to the three months ended March 31, 2012 primarily due to the restructuring the Company initiated in the third quarter of 2012 subsequent to the termination of the Shell Research Agreement. Our selling, general and administrative headcount decreased approximately 28 employees from 89 employees as of March 31, 2012 to approximately 61 as of March 31, 2013. As a result of this staffing decrease, our compensation and other employee benefit costs decreased $1.8 million in the first quarter of 2013 compared to the first quarter of 2012. Stock compensation costs increased $0.5 million during the first quarter of 2013 compared to the first quarter of 2012 primarily due to the departure of our former Chief Executive Officer in the first quarter of 2012 which resulted in reversing $0.8 million of stock based compensation in 2012 that did not repeat in 2013 and as a result of stock awards granted in first quarter of 2013. The stock awards granted in the first quarter of 2013 included our PSU awards which resulted in $0.2 million of stock compensation expense. Selling, general and administrative expenses included stock-based compensation expense of $1.0 million and $0.5 million during the three months ended March 31, 2013 and 2012, respectively.

Restructuring Charges All Plans

During the first quarter of 2012, our board of directors approved and committed to the Q1 2012 Restructuring Plan to reduce our cost structure which included approximately 13 employee terminations in Hungary and the United States. The total cost of the Q1 2012 Restructuring Plan was $0.6 million comprised of employee severance and other termination benefits. As of March 31, 2012, planned costs of $0.5 million had been recognized in selling, general and administrative expenses on our condensed consolidated statements of operations, with the remaining amounts recognized by December 31, 2012. During the three months ended March 31, 2012, we made cash payments of $24,000. All costs under the Q1 2012 Restructuring Plan were paid by December 31, 2012.

The table below summarizes the changes in our restructuring accrual for the Q1 2012 Restructuring Plan (in thousands):

	Severance, benefits and related personnel costs
Balance at December 31, 2011	$—
Restructuring charges	510
Cash payments	(24)
Balance at March 31, 2012	$486

During the third quarter of 2012, our board of directors approved and committed to the Q3 2012 Restructuring Plan to reduce our cost structure which included approximately 173 employee terminations in the United States and Singapore and the closing of our Singapore facility. Approximately 150 of the total 173 employee terminations impacted the research and development functions with the remaining 23 employees impacting the selling, general and administrative functions. We anticipate that these cost reduction measures will generate annual cost savings related to employee compensation costs of $20.9 million, specifically $3.3 million in general and administrative costs and $17.6 million in research and development costs.

Our cost of the Q3 2012 Restructuring Plan was $2.4 million, comprised of $1.1 million of leasehold improvement write down, $0.7 million for employee severance and other termination benefits, $0.3 million for facility lease termination costs and $0.3 million for equipment disposal charges. As of December 31, 2012, $0.1 million was recorded in accrued compensation and $0.3 million recorded as accrued expenses on our condensed consolidated balance sheet. We made cash payments of approximately $0.2 million and recorded $14,000 of reductions in previously recorded accruals for changes in estimated liabilities during the quarter ended March 31, 2013. As of March 31, 2013, $13,000 was recorded in accrued compensation and $0.1 million was recorded as accrued expenses on our condensed consolidated balance sheet. We anticipate recording no further

costs under this restructuring plan. We anticipate the remaining costs under the Q3 2012 Restructuring Plan will be paid in the second quarter of 2013.

The table below summarizes the changes in our restructuring accrual for the Q3 2012 Restructuring Plan (in thousands):

	Severance, benefits and related personnel costs	Facility closing costs	Total
Balance at December 31, 2012	$ 100	$320	$420
Restructuring charges	—	—	—
Cash payments	(73)	(175)	(248)
Adjustments to previously accrued charges	(14)	—	(14)
Balance at March 31, 2013	$ 13	$145	$158

Other Income (Expense), net

	Three Months Ended March 31,		Change	
(In Thousands)	2013	2012	$	%
Interest income	$27	$75	$(48)	(64)%
Other expenses	(85)	(118)	33	(28)%
Total other income (expense), net	$(58)	$(43)	$(15)	35 %

Interest Income. Interest income decreased during the three months ended March 31, 2013 compared to the three months ended March 31, 2012 due to decreasing invested balances.

Other Expenses. Other expenses, decreased during the three months ended March 31, 2013 compared to the three months ended March 31, 2012 primarily related to decreased losses from foreign currency translations during the three months ended March 31, 2013.

Provision (Benefit) for Income Taxes. The tax benefit for the three months ended March 31, 2013 primarily consisted of income taxes attributable to foreign operations offset by the tax effect on the unrealized gain from our investment in CO_2 Solutions. The tax provision for the three months ended March 31, 2012 primarily consisted of income taxes attributable to foreign operations

Liquidity and Capital Resources

(In Thousands)	March 31, 2013	December 31, 2012
Cash and cash equivalents	$31,231	$32,003
Marketable securities(1)	12,944	13,524
Accounts receivable, net	7,412	7,545
Accounts payable, accrued compensation and accrued liabilities	13,423	14,097
Working capital (1)	$39,593	$43,486

(1) Includes only the current portion of our marketable securities

	Three months ended March 31,	
(In Thousands)	2013	2012
Net cash (used in) provided by operating activities	$(3,487)	$593
Net cash provided by (used in) investing activities	2,452	(9)
Net cash provided by financing activities	263	94
Effect of foreign exchange rates on cash and cash equivalents	—	164
Net decrease (increase) in cash and cash equivalents	$(772)	$842

We have historically experienced negative cash flows from operations as we continue to invest in our infrastructure, our technology platform, and expand our business. Our cash flows from operations will continue to be affected principally by our headcount, primarily in research and development. The timing of hiring of skilled research and development personnel affects cash flows in particular as there is a lag between the hiring of research and development personnel and the generation of collaboration or product revenues and cash flows from those personnel. Our primary source of cash flows from operating activities is cash receipts from our customers for purchases of products from us or research and development services. Our largest uses of cash from operating activities are for employee-related expenditures, rent payments, inventory purchases to support our product revenue and non-payroll research and development costs. We currently intend to continue our investment in research and development.

The Shell Research Agreement terminated effective as of August 31, 2012, and we do not expect to receive further collaboration revenues from Shell. We have derived a substantial portion of our revenues from the Shell Research Agreement. Collaborative research and development revenues received from Shell were $45.3 million, $63.2 million and $66.1 million in 2012, 2011 and 2010, respectively, and accounted for 51%, 51% and 62% of our total revenues in 2012, 2011 and 2010, respectively. Collaborative research and development revenue from Shell was zero and $13.9 million for the three months ended March 31, 2013 and 2012, respectively, and accounted for zero and 45% of our total revenues for the three months ended March 31, 2013 and 2012, respectively. We are in early-stage discussions with multiple parties about potential collaborations but we cannot assure you that any of our discussions will lead to collaborations or that any new collaboration will fully substitute for the termination of the Shell collaboration. We are also exploring other strategic options for our CodeXyme® cellulase enzyme program. If we are unable to agree to terms with new collaborators that provide us with the financial assistance and infrastructure necessary for us to develop and commercialize our products and execute our strategy with respect to CodeXyme® cellulase enzymes, or if we are unable to identify and effect attractive strategic options for that program, we may need to fund this development ourselves, which will have a material adverse effect on our liquidity and financial condition, or we may need to suspend the program, which may have a material adverse effect on our business and prospects.

As a result of the expected significant decrease in revenues following the termination of the Shell Research Agreement, we implemented a significant restructuring plan in the third quarter of 2012. This restructuring plan, when completed in the second quarter of 2013, will result in the closure of our research facility in Singapore, the closure of a facility in Redwood City and the termination of approximately 173 of our more than 332 employees worldwide. As a result of these cost reductions, we anticipate total operating cost reductions of $29.2 million for the year ended December 31, 2013.

Although we believe that, based on our current level of operations, our existing cash, cash equivalents and marketable securities will provide adequate funds for ongoing operations, planned capital expenditures and working capital requirements for at least the next 12 months, we may need additional capital if our current plans and assumptions change. Our need for additional capital will depend on many factors, including the financial success of our pharmaceutical business, identifying business partners to fund our CodeXyme® cellulase program and our CodeXol® detergent alcohol program, or identifying other strategic options with respect to such programs, our spending to develop and commercialize new and existing products, the effect of any acquisitions of other businesses, technologies or facilities that we may make or develop in the future, our spending on new market opportunities, including bio-based chemicals, and the filing, prosecution, enforcement and defense of patent claims. If our capital resources are insufficient to meet our capital requirements, and we are unable to enter into or maintain collaborations with partners that are able or willing to fund our development efforts or commercialize any products that we develop or enable, we will have to raise additional funds to continue the development of our technology and products and complete the commercialization of products, if any, resulting from our technologies. If future financings involve the issuance of equity securities, our existing stockholders would suffer dilution. If we raise debt financing, we may be subject to restrictive covenants that limit our ability to conduct our business. We may not be able to raise sufficient additional funds on terms that are favorable to us, if at all. If we fail to raise sufficient funds and fail to generate sufficient

revenues to achieve planned gross margins and to control operating costs, our ability to fund our operations, take advantage of strategic opportunities, develop products or technologies, or otherwise respond to competitive pressures could be significantly limited. If this happens, we may be forced to delay or terminate research or development programs or the commercialization of products resulting from our technologies, curtail or cease operations or obtain funds through collaborative and licensing arrangements that may require us to relinquish commercial rights, or grant licenses on terms that are not favorable to us. If adequate funds are not available, we will not be able to successfully execute our business plan or continue our business.

Cash Flows from Operating Activities

Operating activities used $3.5 million of net cash during the three months ended March 31, 2013. We incurred a net loss of $9.6 million in the three months ended March 31, 2013, which included depreciation and amortization of $2.6 million and non-cash

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share-based compensation expense of $1.5 million. Changes in operating asset and liability accounts used $2.0 million of net cash during the three months ended March 31, 2013. The change in operating asset and liability accounts of $2.0 million primarily consists of $2.1 million increase in deferred revenue related to an on-patent pharmaceutical product license agreement, a $1.3 million decrease in prepaid expenses related to the release of deferred cost of goods sold partially offset by a net $1.4 million decrease in accounts payable and accrued liabilities resulting from the timing of our vendor payments.

Operating activities provided $0.6 million of net cash during the three months ended March 31, 2012. We incurred a net loss of $7.5 million in the three months ended March 31, 2012, which included non-cash share-based compensation expense of $1.2 million and depreciation and amortization of $3.1 million. Changes in operating asset and liability accounts provided $3.6 million of net cash during the three months ended March 31, 2012.

Cash Flows from Investing Activities

Cash flows from investing activities primarily relate to our investments in marketable securities and purchases of property and equipment.

Cash provided by investing activities was $2.5 million during the three months ended March 31, 2013 and consisted of $2.5 million decrease of our investments in marketable securities which represents amounts transferred into our cash and cash equivalents, offset by capital expenditures of less than $0.1 million for purchases of lab equipment.

Cash used in investing activities was $9,000 during the three months ended March 31, 2012 and consisted of capital expenditures of $2.1 million primarily related to the costs of facility improvements and purchases of lab equipment offset by decreases of our marketable securities of $2.1 million related to our net decrease of investments in marketable securities that represents net amounts transferred to cash and cash equivalents.

Cash Flows from Financing Activities

Cash provided by financing activities totaled $0.3 million during the three months ended March 31, 2013 consisting of proceeds from the exercise of stock options.

Cash flows provided by financing activities totaled $0.1 million during the three months ended March 31, 2012 related to the proceeds from the exercise of stock options.

Contractual Obligations and Commitments

Our contractual obligations relate primarily to operating leases. Our commitments for operating leases primarily relate to our leased facilities in Redwood City, California. The following table summarizes the future commitments arising from our contractual obligations at March 31, 2013 (in thousands):

	Total	2013	2014	2015	2016	2017	2018 and beyond
Operating leases	$19,772	$2,280	$2,947	$3,031	$3,047	$2,677	$5,790
Total	$19,772	$2,280	$2,947	$3,031	$3,047	$2,677	$5,790

Off-Balance Sheet Arrangements

As of March 31, 2013, we had no off-balance sheet arrangements as defined in Item 303(a)(4) of Regulation S-K as promulgated by the SEC.

ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Market Risk Management

Our cash flows and earnings are subject to fluctuations due to changes in foreign currency exchange rates, interest rates and other factors. There were no significant changes in our market risk exposures during the three months ended March 31, 2013. This is discussed in further detail in our Annual Report in Form 10-K filed with the SEC on April 2, 2013.

Equity Price Risk

As described in Note 4 to the condensed consolidated financial statements, we have an investment in common shares of CO2 Solutions, whose shares are publicly traded in Canada on the TSX Venture Exchange. In September 2012, the fair value of our investment in CO2 Solutions' common stock was $0.6 million and our carrying cost for the investment was $1.3 million. We evaluated our investment in the common shares of CO2 Solutions to determine if the

impairment was other-than-temporary considering the length of time and extent to which the fair value has been less than our cost, the financial condition and near

term prospects of CO2 Solutions, and our management's ability and intent to hold the securities until fair value recovers and concluded the impairment is other than temporary. As a result of our analysis, we recorded an impairment of $0.8 million during the three months ended September 30, 2012 as an expense in our condensed consolidated statement of operations as selling, general and administrative expense.

This investment is exposed to fluctuations in both the market price of CO2 Solutions' common shares and changes in the exchange rates between the U.S. dollar and the Canadian dollar. As of March, 31, 2013 the fair value of our investment in CO2 Solutions' common stock was $0.9 million. The effect of a 10% adverse change in the market price of CO2 Solution's common shares as of March 31, 2013 would have been an unrealized loss of approximately $93,000, recognized as a component of our condensed consolidated statement of comprehensive income. The effect of a 10% adverse change in the exchange rates between the U.S. dollar and the Canadian dollar as of March 31, 2013 would have been an unrealized loss of approximately $93,000, recognized as a component of our condensed consolidated statements of comprehensive income.

ITEM 4. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

Our management, under the supervision of our Chief Executive Officer and Chief Financial Officer and with the participation of our disclosure committee, evaluated the effectiveness of the design and operation of our disclosure controls and procedures as of March 31, 2013. The term "disclosure controls and procedures," as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act, means controls and other procedures of a company that are designed to ensure that information required to be disclosed by us in the reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SECs rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by us in the reports that we file or submit under the Exchange Act is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosure. Based on this evaluation, our Chief Executive Officer and Chief Financial Officer concluded that our disclosure controls and procedures were not effective as of March 31, 2013 at the reasonable assurance level due to a material weakness that we identified as of December 31, 2012 that has not been fully remediated. The material weakness we identified relates to the lack of a sufficient number of qualified personnel to timely and appropriately account for complex, non-routine transactions in accordance with United States generally accepted accounting principles. Examples of these significant non-routine transactions include, but are not limited to, complicated revenue recognition transactions and complex contractual arrangements. The material weakness resulted in the recording of audit adjustments for the period ended December 31, 2012. Notwithstanding the existence of the material weakness, management has concluded that the consolidated financial statements included in this report present fairly, in all material respects, our consolidated financial position, results of operations and cash flows for the periods presented in conformity with United States generally accepted accounting principles.

Management's Remediation Activities

With the oversight of senior management and our audit committee, we have begun to take steps intended to address the underlying causes of the material weakness, primarily through the recruitment of accounting and finance personnel with technical accounting and financial reporting experience, and the implementation and validation of improved accounting and financial reporting procedures.

As of March 31, 2013, we have not yet been able to remediate this material weakness. We do not know the specific timeframe needed to remediate all of the control deficiencies underlying this material weakness. In addition, we may need to incur incremental costs associated with this remediation, primarily due to the hiring of finance and accounting personnel, and the implementation and validation of improved accounting and financial reporting procedures. As we continue to evaluate and work to improve its internal control over financial reporting, we may determine to take additional measures to address the material weakness.

Changes in Internal Control over Financial Reporting

Other than the actions taken as described above under "Management's Remediation Activities," there were no changes in our internal control over financial reporting identified in connection with the evaluation required by paragraph (d) of Exchange Act Rules 13a-15 or 15d-15 that occurred during our last fiscal quarter that have materially affected, or are

reasonably likely to materially affect, our internal control over financial reporting.

Inherent Limitations on Effectiveness of Controls

In designing and evaluating the disclosure controls and procedures, management recognizes that any controls and procedures, even if determined effective and no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives to prevent or detect misstatements. In addition, the design of disclosure controls and procedures must reflect the fact that there are resource constraints and that management is required to apply judgment in evaluating the benefits of possible controls and procedures relative to their costs. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

PART II. OTHER INFORMATION

ITEM 1. LEGAL PROCEEDINGS

We are not currently a party to any material litigation or other material legal proceedings.

ITEM 1A. RISK FACTORS

ITEM 1A. RISK FACTORS

You should carefully consider the risks described below together with the other information set forth in this Quarterly Report on Form 10-Q, which could materially affect our business, financial condition or future results. The risks described below are not the only risks facing our company. Risks and uncertainties not currently known to us or that we currently deem to be immaterial also may materially adversely affect our business, financial condition and/or operating results.

Risks Relating to Our Business and Strategy

We have a limited operating history and have recently experienced significant changes to our business, which may make it difficult to evaluate our current business and predict our future performance.

Our company has been in existence since January 2002. From 2002 until 2005, our operations focused on organizing and staffing our company and developing our technology platform. In 2005, we recognized our first revenues from product sales. Since 2005, we have continued to generate revenues, but because our revenue growth has occurred in recent periods, our limited operating history may make it difficult to evaluate our current business and predict our future performance. Additionally, since 2006, a major portion of our business revolved around our research and development collaboration with Shell with respect to advanced biofuels, and the collaboration accounted for 62%, 51% and 51%, of our revenues in 2010, 2011 and 2012 respectively. The Shell collaboration ended in August 2012 and we undertook a significant restructuring of our operations as a result and refocused our business on the pharmaceuticals market. As a result of these changes in our business, and any changes to our business focus that we may make as we move forward, our operating history in past periods may not provide much of a basis to evaluate our current business or predict our future performance. Any assessments of our current business and predictions you make about our future success or viability may not be as accurate as they could be if we had a longer operating history or if we had not experienced significant changes to our business. We have encountered and will continue to encounter risks and difficulties frequently experienced by young companies in rapidly changing industries. If we do not address these risks successfully, our business will be harmed.

Our quarterly or annual operating results may fluctuate in the future. As a result, we may fail to meet or exceed the expectations of research analysts or investors, which could cause our stock price to decline.

Our financial condition and operating results have varied significantly in the past and may continue to fluctuate from quarter to quarter and year to year in the future due to a variety of factors, many of which are beyond our control. Factors relating to our business that may contribute to these fluctuations include the following factors, as well as other factors described elsewhere in this report and in our annual report on Form 10-K:

- our ability to achieve or maintain profitability;
- our ability to secure third-party funding, or other strategic options, for our CodeXyme® cellulase enzymes and CodeXol®detergent alcohols programs;
- our ability to obtain substantial additional capital that may be necessary to expand our business;
- our ability to maintain internal control over financial reporting;
- charges to earnings as a result of any impairment of goodwill, intangible assets or other long-lived assets;
- our ability to realize the expected benefits from the reduction in force we undertook at the end of August 2012;
- our dependence on a limited number of customers;
- our customers' ability to timely pay amounts owed to us;
- our dependence on a limited number of products in our pharmaceutical business;
- our reliance on one contract manufacturer for commercial scale production of substantially all of our enzymes;
- our ability to develop and successfully commercialize new products for the pharmaceuticals market;
- our relationships with, and dependence on, collaborators in our principal markets;
- our ability to deploy our technology platform in new adjacent market spaces;

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- our dependence on, and the need to attract and retain key management and other personnel;
- any adverse effects our recent restructuring plan may have on our ability to react to business developments and manage our business;
- the success of our customers' pharmaceutical products in the market and the ability of such customers to obtain regulatory approvals for products and processes;
- our ability to control and to improve pharmaceutical product gross margins;
- the ability of Arch to effectively market pharmaceutical products manufactured using our enzymes;
- our ability to maintain license rights for commercial scale expression systems for cellulases;
- the feasibility of commercializing biofuels and bio-based chemicals derived from cellulose;
- fluctuations in the price of and demand for commodities that our enzymes and fermentation organisms can be employed to produce or for substitute commodities;
- the availability, cost and location of cellulosic biomass sources;
- changes to existing biofuel regulations and policies;
- our potential bio-based chemical products might not be approved or accepted by our customers;
- our ability to independently develop, manufacture, market, sell and distribute commercial cellulase enzymes;
- risks associated with the international aspects of our business;
- our ability to integrate any businesses we may acquire with our business;
- our ability to accurately report our financial results in a timely manner;
- our ability to obtain, protect and enforce our intellectual property rights;
- our ability to prevent the theft or misappropriation of our biocatalysts, the genes that code for our biocatalysts, know-how or technologies;
- potential advantages that our competitors and potential competitors may have in securing funding or developing products;
- business interruptions, such as earthquakes and other natural disasters;
- public concerns about the ethical, legal and social ramifications of genetically engineered products and processes;
- our ability to comply with laws and regulations;
- our ability to properly handle and dispose of hazardous materials used in our business;
- our ability to obtain and maintain governmental awards;
- potential product liability claims;
- the existence of government subsidies or regulation with respect to carbon dioxide emissions; and
- our ability to use our net operating loss carryforwards to offset future taxable income.

Due to the various factors mentioned above, and others, the results of any prior quarterly or annual periods should not be relied upon as indications of our future operating performance.

We have a history of net losses, such losses may increase due to the termination of our research and collaboration with Shell, and we may not achieve or maintain profitability.

We have incurred net losses since our inception, including losses of $8.5 million, $16.6 million, and $30.9 million in 2010, 2011 and 2012, respectively. As of March 31, 2013, we had an accumulated deficit of $225.2 million. To date, we have derived a substantial portion of our revenues from research and development agreements with our collaborators, particularly Shell, who accounted for 62%, 51%, and 51% of our revenues in 2010, 2011, and 2012, respectively. Our research and development collaboration with Shell terminated effective as of August 31, 2012, and we do not expect to receive further collaboration revenue from Shell. If we are unable to enter into binding collaboration agreements with new partners for our advanced biofuels program, we will have to suspend continued development of our CodeXyme® cellulase enzymes, our revenues will decline substantially and our net losses may increase. In addition, some of our collaboration agreements provide for milestone payments and future royalty payments, which we will only receive if we and our collaborators develop and commercialize products. We also may fund development of additional pharmaceutical and potential bioindustrial products, including CodeXol® detergent alcohols. There can be no assurance that any of these products will become commercially viable or that we will ever achieve profitability on a quarterly or annual basis. If we fail to achieve profitability, or if the time required to achieve profitability is longer than we anticipate, we may not be able to continue our business. Even if we do achieve profitability, we may not be able to sustain or increase profitability on a quarterly or annual basis.

Our CodeXyme® cellulase enzymes and our CodeXol® detergent alcohols programs are heavily dependent on our ability to secure third-party funding, or to identify and effect other strategic options with respect to those programs. Our current business plans for CodeXyme® cellulase enzymes and CodeXol® detergent alcohols are heavily dependent on third-party funding. We previously received significant funding for our advanced biofuels program from Shell under a collaborative research agreement. This agreement terminated effective as of August 31, 2012. We are in early stage discussions with multiple parties about potential collaborations, but we cannot assure you that any of our discussions will lead to collaborations or that

any new collaboration will fully substitute for the termination of the Shell collaboration. Raízen and Shell currently hold rights to use our cellulase enzyme technology in Brazil, which could complicate our efforts to secure funding from third parties for our CodeXyme® cellulase program. To date, we have self-funded all development work for our CodeXol® detergent alcohols program. We are seeking collaboration partners to assist us with funding the development and commercialization of CodeXol® detergent alcohols. We are also exploring other strategic options with respect to both programs. If we are unable to agree to terms with new collaborators that provide us with the financial assistance and infrastructure necessary for us to develop and commercialize our products and execute our strategy with respect to CodeXyme® cellulase enzymes and CodeXol® detergent alcohols, or if we are unable to identify and effect attractive strategic options for those programs, we may need to fund this development ourselves, which will have a material adverse effect on our financial condition, or we may need to suspend the programs which may have a material adverse effect on our business and prospects.

We may need substantial additional capital in the future in order to expand our business.

Our future capital requirements may be substantial, particularly as we continue to develop our business, including investing in our CodeXyme® cellulase enzymes and CodeXol® detergent alcohol business opportunities. Although we believe that, based on our current level of operations, our existing cash, cash equivalents and marketable securities will provide adequate funds for ongoing operations, planned capital expenditures and working capital requirements for at least the next 12 months, we may need additional capital if our current plans and assumptions change. Our need for additional capital will depend on many factors, including the financial success of our pharmaceutical business, identifying business partners to fund our cellulase program and our CodeXol® detergent alcohol program, or identifying other strategic options with respect to such programs, our spending to develop and commercialize new and existing products, the effect of any acquisitions of other businesses, technologies or facilities that we may make or develop in the future, our spending on new market opportunities, including bio-based chemicals, and the filing, prosecution, enforcement and defense of patent claims. If our capital resources are insufficient to meet our capital requirements, and we are unable to enter into or maintain collaborations with partners that are able or willing to fund our development efforts or commercialize any products that we develop or enable, we will have to raise additional funds to continue the development of our technology and products and complete the commercialization of products, if any, resulting from our technologies. If future financings involve the issuance of equity securities, our existing stockholders would suffer dilution. If we raise debt financing, we may be subject to restrictive covenants that limit our ability to conduct our business. We may not be able to raise sufficient additional funds on terms that are favorable to us, if at all. If we fail to raise sufficient funds and fail to generate sufficient revenues to achieve planned gross margins and to control operating costs, our ability to fund our operations, take advantage of strategic opportunities, develop products or technologies, or otherwise respond to competitive pressures could be significantly limited. If this happens, we may be forced to delay or terminate research or development programs or the commercialization of products resulting from our technologies, curtail or cease operations or obtain funds through collaborative and licensing arrangements that may require us to relinquish commercial rights, or grant licenses on terms that are not favorable to us. If adequate funds are not available, we will not be able to successfully execute our business plan or continue our business.

We have determined that we had a material weakness in internal control over financial reporting as of December 31, 2012 that has not been fully remediated, which could, if not remediated, adversely impact the reliability of our financial reports, cause us to submit our financial reports in an untimely fashion, result in material misstatements in our financial statements and cause current and potential stockholders to lose confidence in our financial reporting, which in turn could adversely affect the trading price of our common stock.

Section 404 of the Sarbanes-Oxley Act of 2002 requires companies to conduct a comprehensive evaluation of their disclosure controls and procedures over financial reporting. At the end of each fiscal year, we must perform an evaluation of our disclosure controls and procedures over financial reporting, include in our annual report the results of the evaluation, and have our external auditors publicly attest to such evaluation.

In connection with the integrated audit of our consolidated financial statements and internal control over financial reporting and management's assessment of our internal controls over financial reporting at December 31, 2012, a material weakness in our internal control over financial reporting was identified. The material weakness we identified relates to the lack of a sufficient number of qualified personnel to timely and appropriately account for complex,

non-routine transactions in accordance with United States generally accepted accounting principles. Examples of these significant non-routine transactions include, but are not limited to, complicated revenue recognition transactions and complex contractual arrangements.

As a result of the restructuring activities following the termination of the Shell collaboration in August 2012, we experienced significant turnover in our finance and accounting management. Notwithstanding the use of contract personnel and external consultants, our inability to attract, train, manage and retain qualified finance and accounting personnel negatively impacted our ability to appropriately address complex, non-routine transactions.

A material weakness is defined as a deficiency, or combination of deficiencies, in internal control over financial reporting such that there is a reasonable possibility that a material misstatement of annual or interim consolidated financial statements will not be prevented or detected on a timely basis. As a result of the material weakness described above, we have concluded our internal control over financial reporting was not effective at December 31, 2012 based on the guidelines established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

We have not yet been able to remediate this material weakness. We do not know the specific timeframe needed to remediate all of the control deficiencies underlying this material weakness. In addition, we may need to incur incremental costs associated with this remediation, primarily due to the hiring of finance and accounting personnel, and the implementation and validation of improved accounting and financial reporting procedures. If we are not successful in remediating the material weakness, or if we determine in future fiscal periods that we have additional material weaknesses in our internal control over financial reporting, the reliability of our financial reports may be adversely impacted, we may be unable to submit our reports in a timely fashion and we could be required to restate our financial results. This could cause current and potential stockholders to lose confidence in our financial reporting, which could adversely affect the trading price of our common stock.

If goodwill or our intangible or other long-lived assets become impaired we may be required to record a significant charge to earnings.

Our total assets reflect substantial goodwill, intangible assets and other long-lived assets. Under accounting principles generally accepted in the United States, or GAAP, we review goodwill for impairment on at least an annual basis and at any interim date whenever events or changes in circumstances indicate that the carrying value may not be recoverable. We review our long lived and intangible assets with finite lives for impairment whenever events or changes in circumstances indicate that the carrying amount of the assets may not be recoverable. Events or changes in circumstances (i.e., information that indicates an impairment might exist), could include: a significant decrease in the market price of the Company's common stock; current period cash flow losses or operating losses combined with a history of losses or a forecast of continuing losses associated with the use of the assets; slower growth rates in our industry; significant adverse changes in the business climate or legal factors; accumulation of costs significantly in excess of the amount originally expected for the acquisition or construction of the assets; loss of significant customers or partners; or the current expectation that the assets will more likely than not be sold or disposed of significantly before the end of their estimated useful life. For example, as described in Item 7 of our Annual Report on Form 10-K filed with the SEC on April 2, 2013, we conducted an analysis of our long-lived assets and intangible assets for impairment as of December 31, 2012 after we determined that our continued operating losses and the termination of the Shell Research Agreement were indications of impairment. An example of another specific event that may, if it occurs, require us to conduct an impairment analysis of our long-lived assets and intangible assets in the future would be an assessment by management that our planned efforts to deploy our technology platform in adjacent market spaces had not proven to be as viable as we currently expect. We may be required to record a significant charge to earnings in our financial statements during the period in which any impairment of our goodwill, intangible assets or other long-lived assets is determined, resulting in an adverse impact on our financial position and results of operations.

We implemented cost saving measures in the third and fourth quarters of 2012 and may implement additional cost saving measures in the future. These measures may interfere with the operation of our business and if we are unable to realize the anticipated benefits of these measures, our operating results and financial condition could be adversely affected.

In the third and fourth quarters of 2012, we implemented a reduction in our global workforce and implemented other cost savings measures to reduce our cash expenditures. These measures included the termination of approximately 55% of our global workforce and the closing of our Singapore facility. We are also in the process of vacating one of our facilities in Redwood City, California and attempting to sublease it. If we are unable to realize the expected operational efficiencies and financial benefits from this workforce reduction, or if we are unable to sublease the vacated facility, our operating results and financial condition would be adversely affected. Restructuring costs include expenses related to severance for terminated employees and other exit-related costs arising from contractual and other obligations. We continue to review our cost structure and may implement further cost saving initiatives in the future. These cost reduction efforts may interfere with our ability to achieve our business objectives, may be difficult to

manage, may cause concerns from current and potential customers, suppliers and other third parties with whom we do business and may increase the likelihood of turnover of other key employees, all of which may have an adverse impact on our business.

We are dependent on a limited number of customers.

Our current revenues are derived from a limited number of key customers. For the year ended December 31, 2011, our top five customers accounted for 77% of our total revenues, with Shell accounting for 51% of our total revenues. For the year ended December 31, 2012, our top five customers accounted for 81% of our total revenues, with Shell accounting for 51% of our total revenues. For the three months ended March 31, 2013, our top five customers accounted for 94% of our total revenues. Our

research collaboration with Shell terminated effective as of August 31, 2012, which means that we will not receive any additional collaboration funding from Shell. We expect a limited number of customers to continue to account for a significant portion of our revenues for the foreseeable future. This customer concentration increases the risk of quarterly fluctuations in our revenues and operating results. The loss of business from Shell will, and the loss or reduction from one or a combination of our other significant customers could, materially adversely affect our revenues, financial condition and results of operations.

Our revenues, financial condition and results of operations may also be adversely affected if one or more of our customers is delayed in paying, or becomes unable to pay, for our delivered products on a timely basis.

Certain of our customers are, or in the future may become, subject to significant economic and other challenges that affect their cash flow, and many customers outside of the United States are generally accustomed to vendor financing in the form of extended payment terms which may exceed contractual payment terms. To remain competitive in markets outside of the United States, we may offer selected customers such payment flexibility. We consider arrangements with extended payment terms not to be fixed or determinable, and accordingly, we defer revenue until payment is received. The costs associated with such revenue deferral are also deferred and classified as other current assets in the financial statements. If these customers fail to pay us on a timely basis it may cause our financial results to fluctuate and we may decide to grant concessions to such customers to increase the probability of payment. Such concessions, or failure by such customers to pay at all, would adversely impact our financial condition and results of operations.

We are dependent on a limited number of products in our pharmaceutical business.

Our current product revenues are derived from a limited number of pharmaceutical products. For the year ended December 31, 2012, we derived 78% of our product revenue from two pharmaceutical product families: statins and hepatitis C therapies. We expect a limited number of pharmaceutical products to continue to account for a significant portion of our pharmaceutical product revenues for the foreseeable future. This product concentration increases the risk of quarterly fluctuations in our revenues and operating results. The loss or reduction of business of one or a combination of our significant pharmaceutical products could materially adversely affect our revenues, financial condition and results of operations.

We are dependent on contract manufacturers for commercial scale production of substantially all of our enzymes.

We have limited internal capacity to manufacture enzymes. As a result, we are dependent upon the performance and capacity of third party manufacturers for the commercial scale manufacturing of the enzymes used in our pharmaceutical and cellulase businesses.

We rely on one contract manufacturer, Lactosan, for our pharmaceutical business to manufacture substantially all of the commercial enzymes used in our pharmaceutical business. Our pharmaceutical business, therefore, faces risks of difficulties with, and interruptions in, performance by Lactosan, the occurrence of which could adversely impact the availability, launch and/or sales of our enzymes in the future. We have qualified other contract manufacturers to manufacture enzymes for our pharmaceutical business, but currently have limited reliance on them for our supply requirements. The failure of any contract manufacturers that we may use to supply manufactured enzymes on a timely basis or at all, or to manufacture our enzymes in compliance with our specifications or applicable quality requirements or in volumes sufficient to meet demand would adversely affect our ability to sell pharmaceutical products, could harm our relationships with our collaborators or customers and could negatively affect our revenues and operating results. We may be forced to secure alternative sources of supply, which may be unavailable on commercially acceptable terms, cause delays in our ability to deliver products to our customers, increase our costs and decrease our profit margins.

We do not have any supply agreements in place with any enzyme contract manufacturers, other than Lactosan. In the absence of a supply agreement, a contract manufacturer will be under no obligation to manufacture our enzymes and could elect to discontinue their manufacture at any time. If we require additional manufacturing capacity and are unable to obtain it in sufficient quantity, we may not be able to increase our pharmaceutical sales, or we may be required to make substantial capital investments to build that capacity or to contract with other manufacturers on terms that may be less favorable than the terms we currently have with our suppliers. If we choose to build our own additional manufacturing facility, it could take two years or longer before our facility is able to produce commercial

volumes of our enzymes. Any resources we expend on acquiring or building internal manufacturing capabilities could be at the expense of other potentially more profitable opportunities. In addition, if we contract with other manufacturers, we may experience delays of several months in qualifying them, which could harm our relationships with our collaborators or customers and could negatively affect our revenues or operating results.

We also expect to use contract manufacturers to produce our cellulase enzymes and any products we may manufacture for the fine chemical markets. These businesses will encounter similar risks in engaging contract manufacturers as our pharmaceutical business in the event we elect to use contract manufacturers.

If we are unable to develop and commercialize new products for the pharmaceutical market, our business and prospects will be harmed.

We plan to launch new products for the pharmaceutical market. These efforts are subject to numerous risks, including the following:

- pharmaceutical companies may be reluctant to adopt new manufacturing processes that use our enzymes;
- we may be unable to successfully develop the enzymes or manufacturing processes for our products in a timely and cost-effective manner, if at all;
- we may face difficulties in transferring the developed technologies to our customers and the contract manufacturers that we may use for commercial scale production of intermediates and enzymes;
- the contract manufacturers that we may use may be unable to scale their manufacturing operations to meet the demand for these products and we may be unable to secure additional manufacturing capacity;
- customers may not be willing to purchase these products for the pharmaceutical market from us on favorable terms, if at all;
- we may face product liability litigation, unexpected safety or efficacy concerns and pharmaceutical product recalls or withdrawals;
- changes in laws or regulations relating to the pharmaceutical industry could cause us to incur increased costs of compliance or otherwise harm our business;
- our customers' pharmaceutical products may experience adverse events or face competition from new products, which would reduce demand for our products;
- we may face pressure from existing or new competitive products; and
- we may face pricing pressures from existing or new competitors, some of which may benefit from government subsidies or other incentives.

We are dependent on our collaborators, and our failure to successfully manage these relationships could prevent us from developing and commercializing many of our products and achieving or sustaining profitability, and could lead to disagreements with our current or former collaborators.

Our ability to maintain and manage collaborations in our markets is fundamental to the success of our business. We currently have license agreements, research and development agreements, supply agreements and/or distribution agreements with various collaborators. We may have limited or no control over the amount or timing of resources that any collaborator is able or willing to devote to our partnered products or collaborative efforts. Any of our collaborators may fail to perform its obligations. These collaborators may breach or terminate their agreements with us or otherwise fail to conduct their collaborative activities successfully and in a timely manner. Further, our collaborators may not develop products arising out of our collaborative arrangements or devote sufficient resources to the development, manufacture, marketing, or sale of these products. Moreover, disagreements with a collaborator could develop and any conflict with a collaborator lead to litigation and could reduce our ability to enter into future collaboration agreements and negatively impact our relationships with one or more existing collaborators. If any of these events occur, or if we fail to maintain our agreements with our collaborators, we may not be able to commercialize our existing and potential products, grow our business, or generate sufficient revenues to support our operations, and we may be involved in litigation. Our collaboration opportunities could be harmed if:

- we do not achieve our research and development objectives under our collaboration agreements in a timely manner or at all;
- we develop products and processes or enter into additional collaborations that conflict with the business objectives of our other collaborators;
- we disagree with our collaborators as to rights to intellectual property that are developed during the collaboration, or their research programs or commercialization activities;
- we are unable to manage multiple simultaneous collaborations;
- our collaborators become competitors of ours or enter into agreements with our competitors;
- our collaborators become unable or less willing to expend their resources on research and development or commercialization efforts due to general market conditions, their financial condition or other circumstances beyond our control; or
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our collaborators experience business difficulties, which could eliminate or impair their ability to effectively perform under our agreements.

Additionally, despite the termination of the research term of our three-way research collaboration with Shell and Iogen, many elements of our collaborative research and license agreement with Shell and Iogen will continue. For example, the collaborative research and license agreement provides for certain rights, licenses and obligations of each party with respect to intellectual property and program materials that will continue after the research activities have ended. Disagreements or conflicts between and among the parties could develop even though the research program has ended. These disagreements or conflicts could result in expensive arbitration or litigation, which may not be resolved in our favor.

Finally, our business could be negatively affected if any of our collaborators or suppliers undergo a change of control or were to otherwise assign the rights or obligations under any of our agreements.

Our efforts to deploy our technology platform in adjacent market spaces, such as fine chemicals and therapeutic enzymes, may fail.

We are exploring whether to use our CodeEvolver® directed evolution technology platform to develop new products in several new adjacent market spaces, including fine chemicals and therapeutic enzymes. We do not know if we can successfully compete in these new market opportunities. Each of these new markets is well established and consists of numerous large, well-funded entrenched market participants who have long and established track records and customer relationships. If we develop new products to introduce into one or more of these new markets, we may not succeed in displacing current products. If we succeed in commercializing these new products, we may not generate significant revenue and cashflows from these activities. The failure to successfully deploy products in these new market spaces may limit our growth and have a material adverse effect on our financial condition, operating results and business prospects.

If we lose key personnel, including key management personnel, or are unable to attract and retain additional personnel as needed in the future, it could disrupt the operation of our business, delay our product development programs, harm our research and development efforts, and we may be unable to pursue collaborations or develop our own products.

Our business involves complex, global operations across a variety of markets and requires a management team and employee workforce that is knowledgeable in the many areas in which we operate. The loss of any key members of our management team or the failure to attract or retain other key employees who possess the requisite expertise for the conduct of our business could prevent us from developing and commercializing our products for our target markets and entering into collaborations or licensing arrangements to execute on our business strategy.

In addition, the loss of any key scientific staff, or the failure to attract or retain other key scientific employees, could prevent us from developing and commercializing our products for our target markets and entering into collaborations or licensing arrangements to execute on our business strategy. We may not be able to attract or retain qualified employees in the future due to the intense competition for qualified personnel among biotechnology and other technology-based businesses, particularly in the areas of biofuels and bio-based chemicals, or due to the availability of personnel with the qualifications or experience necessary for our business. Additionally, potential future government awards may require us to maintain a minimum level of staffing. If we are not able to attract and retain the necessary personnel to accomplish our business objectives, we may experience staffing constraints that will adversely affect our ability to meet the demands of our collaborators and customers in a timely fashion or to support our internal research and development programs. In particular, our product and process development programs are dependent on our ability to attract and retain highly skilled scientists and engineers. Competition for experienced scientists and other technical personnel from numerous companies and academic and other research institutions may limit our ability to do so on acceptable terms. All of our employees are at-will employees, which means that either the employee or we may terminate their employment at any time.

Our planned activities will require additional expertise in specific industries and areas applicable to the products and processes developed through our technology platform or acquired through strategic or other transactions, especially in the end markets that we seek to penetrate. These activities will require the addition of new personnel, and the development of additional expertise by existing personnel. The inability to attract personnel with appropriate skills or to develop the necessary expertise could impair our ability to grow our business.

In August and September 2012, we implemented a corporate restructuring plan that included a reduction in work force of approximately 55% of our total workforce and the closure of one of our overseas offices. The restructuring and reductions in workforce have had and may continue to have a negative effect on employee morale, and we may have difficulty in attracting and retaining qualified personnel.

Our business could be adversely affected if our customers' pharmaceutical products are not received well in the market, if their pharmaceutical products, or the processes used by our customers to manufacture their final pharmaceutical products, fail to be approved, or if our customers discontinue their drug development activities for any reason.

Our enzymes are used in the manufacture of intermediates and APIs which are then used in the manufacture of final pharmaceutical products by our existing and potential branded drug customers. Our business could be adversely

affected if these final pharmaceutical products do not perform in the market as well as expected, or if our customers encounter competition from new entrants into the market with competing, and possibly superior, pharmaceutical products. Additionally, these pharmaceutical products must be approved by the FDA in the United States and similar regulatory bodies in other markets prior to commercialization. If our customers who sell branded-drugs, which we refer to as innovators, fail to receive regulatory approval for the drugs, fail to receive regulatory approval for new manufacturing processes for previously approved drugs, or

decide for business or other reasons to discontinue their drug development activities, our revenues and prospects will be negatively impacted. The process of producing these drugs, and their generic equivalents, is also subject to regulation by the FDA in the United States and equivalent regulatory bodies in other markets. If any pharmaceutical process that uses our enzymes does not receive approval by the appropriate regulatory body or if customers decide not to pursue approval, our business could be adversely affected.

Our pharmaceutical product gross margins are variable and may decline from quarter to quarter.

Our pharmaceutical product gross margins have varied significantly in the past and may continue to fluctuate from quarter to quarter and year to year in the future due to a variety of factors, including product mix, pricing pressure from our pharmaceutical customers and competition from other products or technologies. This variability may have a material adverse impact on our operating results and financial condition and cause our stock price to decline.

Our generic pharmaceutical business is partially dependent on Arch's ability to effectively market and sell certain pharmaceutical products.

Under the New Arch Enzyme Supply Agreement, we sell enzymes to Arch that it uses to manufacture APIs and intermediates that it sells to pharmaceutical companies worldwide. A portion of our pharmaceuticals product revenues are dependent on Arch's ability to market and sell APIs and intermediates that are made by Arch using our enzymes. We cannot control Arch's level of activity or expenditures relating to the marketing of such pharmaceutical products relative to the rest of their products or marketing efforts. Arch may fail to effectively market these pharmaceutical products. Conflicting priorities, competing demands or other factors that we cannot control, and of which we may not be aware, may cause Arch to deemphasize such pharmaceutical products. If Arch does not successfully promote these pharmaceutical products in the marketplace, this could have an adverse impact on our pharmaceutical business and our revenues and operating results.

If we are unable to maintain license rights to a commercial scale expression system for enzymes that convert cellulosic biomass to sugars, our business may be materially adversely affected.

We entered into a license agreement with Dyadic International, Inc. and its affiliate, or Dyadic, in November 2008 to obtain access to an expression system and the enzymes that convert cellulosic biomass to sugars. Under the license agreement with Dyadic, we obtained a non-exclusive license under intellectual property rights of Dyadic relating to Dyadic's proprietary fungal expression technology for the production of enzymes and to the cellulase enzymes. We also obtained access to specified materials of Dyadic relating to such Dyadic technology. Our license is sublicenseable to Shell and to affiliates of Shell in the field of biofuels. Dyadic has the right to terminate our licenses under the license agreement if we challenge the validity of any of the patents licensed under the license agreement and for various other reasons. Our licenses and access to such materials of Dyadic under the license agreement will terminate as a result of any termination of the license agreement other than due to Dyadic's material breach. If we are unable to maintain these rights on commercially reasonable terms or if the license agreement is terminated for any reason, we will need to buy or license this type of expression system from another party or develop this type of expression system ourselves, which may be difficult, costly and time consuming, in part because of the broad, existing intellectual property rights owned by Novozymes and E.I. Du Pont De Nemours and Company, or DuPont, and others. If any of these events occur, our business may be materially adversely affected.

Commercialization of biofuels and bio-based chemicals derived from cellulose may not be feasible.

We are developing CodeXyme® cellulase enzymes for use in producing advanced biofuels and bio-based chemicals. However, production and commercialization of cellulosic biofuels and bio-based chemicals may not be feasible for a variety of reasons. For example, the development of technology for converting sugar derived from cellulosic biomass into a commercially viable biofuel or bio-based chemical is still unproven, and we do not know whether this can be done commercially and profitably. We believe that there are very few commercial scale cellulosic biofuel and cellulosic bio-based chemicals production plants in operation. There can be no assurance that anyone will be able or willing to successfully develop and operate these production plants at commercial scale or that any of these facilities can be profitable. Additionally, if existing tax credits, subsidies and other incentives in the United States and foreign markets are phased out or reduced, the overall cost of commercialization of cellulosic biofuels will increase.

Fluctuations in the price of and demand for certain commodities may reduce demand for the commercial products that use our technology, thus reducing demand for our technology.

Biofuels and some bio-based chemicals are anticipated to be marketed as an alternative to fossil fuel-based products. Therefore, if the price of natural gas or oil falls, any revenues that we generate from biofuel or bio-based chemical products could decline, and we may be unable to produce products that are a commercially viable alternative to fossil fuel-based products. For instance, implementation of and advances in hydraulic fracturing technology for the production of natural gas from shale has increased

the availability of, and decreased the price of, natural gas in recent years. Additionally, demand for liquid transportation fuels, including biofuels, may decrease due to economic conditions or otherwise. Demand for bio-based chemicals may also decrease if the price of natural gas or oil decreases. Similarly, CodeXyme® cellulase enzymes are used in producing fermentable sugars, which are anticipated to be marketed as an alternative to fermentable sugars from sugar and starch food sources, such as corn and sugar cane. Therefore, if the price of sugar falls, the demand for CodeXyme® cellulase enzymes, may fall, and we may be unable to produce cellulase enzymes for use in producing fermentable sugars that are a commercially viable alternative to fermentable sugars from sugar and starch food sources.

Our biofuel and bio-based chemical business opportunities may be limited by the availability, cost or location of feedstocks.

Our business opportunities in the biofuel and bio-based chemical markets may be dependent on the availability and price of feedstocks, including sugar, starch and cellulosic biomass. If the availability of these feedstocks decreases or their price increases, this may reduce the desirability of our biofuel and bio-based chemical products and have a material adverse effect on our financial condition and operating results. At certain levels, prices may make these products uneconomical to use and produce.

The price and availability of feedstocks may be influenced by general economic, market and regulatory factors. These factors include the availability of arable land to supply feedstock, weather conditions, farming decisions, logistics for collection and storage of cellulosic biomass, government policies and subsidies with respect to agriculture and international trade, and global demand and supply. The significance and relative impact of these factors on the price of feedstocks is difficult to predict, especially without knowing what types of feedstocks we may need to use.

Our current business plan for the biofuel and bio-based chemical markets is to leverage our primary competitive strength, which we believe is our ability to optimize the performance of CodeXyme® cellulase enzymes rapidly for varying feedstocks and process conditions. While CodeXyme® cellulase enzymes may perform well on specific feedstocks and under certain process conditions, it might not perform well on other feedstocks or process conditions. If CodeXyme® cellulase enzymes do not perform as planned on our customers' feedstocks, our business may be adversely affected.

Changes to existing biofuel regulations and policies may present technical, regulatory and economic barriers, all of which may significantly reduce demand for biofuels.

The market for biofuels is heavily influenced by foreign, federal, state and local government regulations and policies concerning the petroleum industry. In 2007, the United States Congress passed an alternative fuels mandate that currently calls for approximately 36 billion gallons of liquid transportation fuels sold in 2022 to come from alternative sources, including biofuels. Of this amount, a minimum of 21 billion gallons must be advanced biofuels, with 16 billion gallons of that to be cellulosic derived. In the United States and a number of other countries, these regulations and policies have been modified in the past and may be modified again in the future. For example, the United States Environmental Protection Agency has the authority to adjust or reduce the gallon milestones of the alternative fuels mandate to reflect the marketplace supply availability. Any reduction in mandated requirements for fuel alternatives and additives to gasoline may cause demand for biofuels to decline and deter investment in the research and development of biofuels. Congressional and market uncertainty regarding future policies will affect our ability to develop new biofuels products or to license our technologies to third parties. Any inability to address these requirements and any regulatory or policy changes could have a material adverse effect on our biofuels business, financial condition and operating results. Our other potential bioindustrial products may be subject to additional regulations. Adoption of E15 (15% ethanol blend) in the United States may also be a significant factor in commercialization of cellulosic ethanol. The United States Environmental Protection Agency granted final approval for the sale of E15 on June 15, 2012. However, federal, state and local governments have yet to determine their role in providing infrastructure support to aid retailers in installing, or replacing, fuel pumps that are required for E15. Installation of such pumps is an option, not a requirement, and if it is not adopted in the coming years it may limit the future demand for both corn-based and cellulosic ethanol in the United States.

Our potential bio-based chemical products may not be approved or accepted by customers.

We have only recently entered the market for bio-based chemical products used by large consumer products or chemical companies through our collaboration with Chemtex, a subsidiary of Gruppo Mossi & Ghisolfi. In entering

this market, we intend to sell CodeXol® detergent alcohols as an alternative to chemicals currently in use, and in some cases the chemicals that we seek to replace have been used for many years. The potential customers for our bio-based chemical products generally have well developed manufacturing processes and arrangements with suppliers of the chemical components of their products and may resist changing these processes and components. These potential customers frequently impose lengthy and complex product qualification procedures on their suppliers. Factors that these potential customers consider during the product qualification process include consumer preference, manufacturing considerations such as process changes and capital and other costs associated with transitioning to alternative components, supplier operating history, regulatory issues, product liability and

other factors, many of which are unknown to, or not well understood by, us. Satisfying these processes may take many months or years. If we are unable to convince these potential customers that our products are comparable to the chemicals that they currently use or that the use of our products produces benefits to them, we will not be successful in these markets and our business will be adversely affected. Additionally, in contrast to the tax incentives relating to biofuels, tax credits and subsidies are not currently available in the United States for consumer products or chemical companies who use our bio-based chemical products.

We face risks associated with our international business.

Significant portions of our operations are conducted outside of the United States and we expect to continue to have significant foreign operations in the foreseeable future. International business operations are subject to a variety of risks, including:

- changes in or interpretations of foreign regulations that may adversely affect our ability to sell our products, repatriate profits to the United States or operate our foreign-located facilities;
- the imposition of tariffs;
- the imposition of limitations on, or increase of, withholding and other taxes on remittances and other payments by foreign subsidiaries or joint ventures;
- the imposition of limitations on genetically-engineered products or processes and the production or sale of those products or processes in foreign countries;
- currency exchange rate fluctuations;
- uncertainties relating to foreign laws, regulations and legal proceedings including tax, import/export, anti-corruption and exchange control laws;
- the availability of government subsidies or other incentives that benefit competitors in their local markets that are not available to us;
- increased demands on our limited resources created by our diversified, global operations may require us to expand the capabilities of our administrative and operational resources and to attract, train, manage and retain qualified management, technicians, scientists and other personnel which we may be unable to do effectively;
- economic or political instability in foreign countries;
- difficulties associated with staffing and managing foreign operations; and
- the need to comply with a variety of United States and foreign laws applicable to the conduct of international business, including import and export control laws and anti-corruption laws.

In 2011, we began doing business in Brazil and we will likely need to secure licenses, permits or other governmental approvals in order to use our technology there. The failure to obtain any applicable licenses, permits or other governmental approvals could delay or prevent the deployment of our technology in Brazil.

If we engage in any acquisitions, we will incur a variety of costs and may potentially face numerous risks that could adversely affect our business and operations.

We have made acquisitions in the past, and if appropriate opportunities become available, we expect to acquire additional businesses, assets, technologies, or products to enhance our business in the future. For example, in October 2010, we acquired substantially all of the patents and other intellectual property rights associated with Maxygen's directed evolution technology. In connection with any future acquisitions, we could:

- issue additional equity securities, which would dilute our current stockholders;
- incur substantial debt to fund the acquisitions;
- use our cash to fund the acquisitions; or
- assume significant liabilities including litigation risk.

Acquisitions involve numerous risks, including problems integrating the purchased operations, technologies or products, unanticipated costs and other liabilities, diversion of management's attention from our core businesses, adverse effects on existing business relationships with current and/or prospective collaborators, customers and/or suppliers, risks associated with entering markets in which we have no or limited prior experience and potential loss of key employees. We do not have extensive experience in managing the integration process and we may not be able to successfully integrate any businesses, assets, products, technologies, or personnel that we might acquire in the future without a significant expenditure of operating, financial and management resources, if at all. The integration process could divert management's time from focusing on operating our business, result in a decline in employee morale and

cause retention issues to arise from changes in compensation, reporting relationships, future prospects or the direction of the business. Acquisitions may also require us to record goodwill and non-amortizable intangible assets that will be subject to impairment testing on a regular basis and potential periodic impairment charges, incur amortization expenses related to certain intangible assets, and incur large and immediate write offs and restructuring and other related expenses, all of which could harm our operating results and financial condition. In addition, we may acquire companies that have insufficient internal financial controls, which could impair our ability to

integrate the acquired company and adversely impact our financial reporting. If we fail in our integration efforts with respect to any of our acquisitions and are unable to efficiently operate as a combined organization, our business and financial condition may be adversely affected.

We must rely on our suppliers, contract manufacturers and customers to deliver timely and accurate information in order to accurately report our financial results in the time frame and manner required by law.

We need to receive timely, accurate and complete information from a number of third parties in order to accurately report our financial results on a timely basis. We rely on suppliers and certain contract manufacturers to provide us with timely and accurate information regarding our inventories and manufacturing cost information, and we rely on current and former collaborators to provide us with product sales and cost saving information in connection with royalties owed to us. Any failure to receive timely information from one or more of these third parties could require that we estimate a greater portion of our revenues and other operating performance metrics for the period, which could cause our reported financial results to be incorrect. Moreover, if the information that we receive is not accurate, our financial statements may be materially incorrect and may require restatement, and we may not receive the full amount of revenues that we are entitled to under these arrangements. Although we typically have audit rights with these parties, performing such an audit could be harmful to our collaborative relationships, expensive and time consuming and may not be sufficient to reveal any discrepancies in a timeframe consistent with our reporting requirements.

Our ability to compete may decline if we do not adequately protect our proprietary technologies or if we lose some of our intellectual property rights.

Our success depends in part on our ability to obtain patents and maintain adequate protection of our intellectual property for our technologies and products and potential products in the United States and other countries. We have adopted a strategy of seeking patent protection in the United States and in foreign countries with respect to certain of the technologies used in or relating to our products and processes. As such, as of March 31, 2013, we owned or controlled approximately 320 issued patents and approximately 340 pending patent applications in the United States and in various foreign jurisdictions. Some of our gene shuffling patents will expire as early as 2014. We also have license rights to a number of issued patents and pending patent applications in the United States and in various foreign jurisdictions. Our owned and licensed patents and patent applications are directed to our enabling technologies and to the methods and products that support our business in the pharmaceuticals manufacturing, biofuels and bio-based chemicals markets. We intend to continue to apply for patents relating to our technologies, methods and products as we deem appropriate.

Numerous patents in our portfolio involve complex legal and factual questions and, therefore, enforceability cannot be predicted with any certainty. Issued patents and patents issuing from pending applications may be challenged, invalidated, or circumvented. Moreover, the United States Leahy-Smith America Invents Act, enacted in September 2011, brings significant changes to the United States patent system, which include a change to a “first to file” system from a “first to invent” system and changes to the procedures for challenging issued patents and disputing patent applications during the examination process, among other things. The effects of these changes on our patent portfolio and business have yet to be determined, as the final substantive provisions of the America Invents Act took effect on March 16, 2013, the United States Patent and Trademark Office only recently finalized the rules relating to these changes and the courts have yet to address the new provisions. These changes could increase the costs and uncertainties surrounding the prosecution of our patent applications and the enforcement or defense of our patent rights. Additional uncertainty may result from legal precedent handed down by the United States Federal Circuit Court and Supreme Court as they determine legal issues concerning the scope and construction of patent claims and inconsistent interpretation of patent laws by the lower courts. Accordingly, we cannot ensure that any of our pending patent applications will result in issued patents, or even if issued, predict the breadth of the claims upheld in our and other companies' patents. Given that the degree of future protection for our proprietary rights is uncertain, we cannot ensure that: (i) we were the first to invent the inventions covered by each of our pending applications, (ii) we were the first to file patent applications for these inventions, or (iii) the proprietary technologies we develop will be patentable.

In addition, unauthorized parties may attempt to copy or otherwise obtain and use our products or technology. Monitoring unauthorized use of our intellectual property is difficult, and we cannot be certain that the steps we have taken will prevent unauthorized use of our technology, particularly in certain foreign countries where the local laws may not protect our proprietary rights as fully as in the United States. Moreover, third parties could practice our

inventions in territories where we do not have patent protection. Such third parties may then try to import products made using our inventions into the United States or other territories. If competitors are able to use our technology, our ability to compete effectively could be harmed. Moreover, others may independently develop and obtain patents for technologies that are similar to or superior to our technologies. If that happens, we may need to license these technologies, and we may not be able to obtain licenses on reasonable terms, if at all, which could cause harm to our business.

Third parties may claim that we are infringing their intellectual property rights or other proprietary rights, which may subject us to costly and time consuming litigation and prevent us from developing or commercializing our products.

Our commercial success also depends in part on our ability to operate without infringing patents and proprietary rights of third parties, and without breaching any licenses or other agreements that we have entered into with regard to our technologies, products and business. We cannot ensure that patents have not been issued to third parties that could block our ability to obtain patents or to operate as we would like. There may be patents in some countries that, if valid, may block our ability to make, use or sell our products in those countries, or import our products into those countries, if we are unsuccessful in circumventing or acquiring the rights to these patents. There also may be claims in patent applications filed in some countries that, if granted and valid, may also block our ability to commercialize products or processes in these countries if we are unable to circumvent or license them.

The industries in which we operate, and the biotechnology industry in particular, are characterized by frequent and extensive litigation regarding patents and other intellectual property rights. Many biotechnology companies have employed intellectual property litigation as a way to gain a competitive advantage. Our involvement in litigation, interferences, opposition proceedings or other intellectual property proceedings inside and outside of the United States, to defend our intellectual property rights or as a result of alleged infringement of the rights of others, may divert our management's time from focusing on business operations and could cause us to spend significant amounts of money. Any potential intellectual property litigation also could force us to do one or more of the following:

- stop selling or using our products or technologies that use the subject intellectual property;
- pay monetary damages or substantial royalties;
- grant cross-licenses to third parties relating to our patents or proprietary rights;
- obtain from the third party asserting its intellectual property rights a license to sell or use the relevant technology, which license may not be available on reasonable terms, or at all; or
- redesign those products or processes that use any allegedly infringing technology, or relocate the operations relating to the allegedly infringing technology to another jurisdiction, which may result in significant cost or delay to us, could be technically infeasible or could prevent us from selling some of our products in the United States or other jurisdictions.

We are aware of a significant number of patents and patent applications relating to aspects of our technologies filed by, and issued to, third parties. We cannot assure you that if this third party intellectual property is asserted against us that we would ultimately prevail.

If any of our competitors have filed patent applications or obtained patents that claim inventions also claimed by us, we may have to participate in interference proceedings before the United States Patent and Trademark Office to determine priority of invention and, thus, the right to the patents for these inventions in the United States. These proceedings could result in substantial cost to us even if the outcome is favorable. Even if successful, any interference may result in loss of certain claims. Any litigation or proceedings could divert our management's time and efforts. Even unsuccessful claims could result in significant legal fees and other expenses, diversion of management time, and disruption in our business. Uncertainties resulting from initiation and continuation of any patent or related litigation could harm our ability to compete.

We may not be able to enforce our intellectual property rights throughout the world.

The laws of some foreign countries where we do business do not protect intellectual property rights to the same extent as the laws of the United States. Many companies have encountered significant problems in protecting and defending intellectual property rights in certain foreign jurisdictions. The legal systems of certain countries, particularly certain developing countries, do not favor the enforcement of patents and other intellectual property, particularly those relating to biotechnology and/or bioindustrial technologies. Accordingly, our efforts to protect our intellectual property rights in such countries may be inadequate. This could make it difficult for us to stop the infringement of our patents or misappropriation of our other intellectual property rights. Additionally, proceedings to enforce our patent rights in foreign jurisdictions could result in substantial costs and divert our efforts and attention from other aspects of our business.

If our biocatalysts, or the genes that code for our biocatalysts, are stolen, misappropriated or reverse engineered, others could use these biocatalysts or genes to produce competing products.

Third parties, including our contract manufacturers, customers and those involved in shipping our biocatalysts, often have custody or control of our biocatalysts. If our biocatalysts, or the genes that code for our biocatalysts, were stolen, misappropriated or reverse engineered, they could be used by other parties who may be able to reproduce these biocatalysts for their own commercial gain. If this were to occur, it would be difficult for us to challenge this type of use, especially in countries with limited intellectual property protection or in countries in which we do not have patents covering the misappropriated biocatalysts.

Confidentiality agreements with employees and others may not adequately prevent disclosures of trade secrets and other proprietary information.

We rely in part on trade secret protection to protect our confidential and proprietary information and processes. However, trade secrets are difficult to protect. We have taken measures to protect our trade secrets and proprietary information, but these measures may not be effective. We require employees and consultants to execute confidentiality agreements upon the commencement of an employment or consulting arrangement with us. These agreements generally require that all confidential information developed by the individual or made known to the individual by us during the course of the individual's relationship with us be kept confidential and not disclosed to third parties. These agreements also generally provide that inventions conceived by the individual in the course of rendering services to us shall be our exclusive property. Nevertheless, our proprietary information may be disclosed, third parties could reverse engineer our biocatalysts and others may independently develop substantially equivalent proprietary information and techniques or otherwise gain access to our trade secrets. Costly and time-consuming litigation could be necessary to enforce and determine the scope of our proprietary rights, and failure to obtain or maintain trade secret protection could adversely affect our competitive business position.

Competitors and potential competitors who have greater resources and experience than we do may develop products and technologies that make ours obsolete or may use their greater resources to gain market share at our expense.

The biocatalysis industry and each of our target markets are characterized by rapid technological change. Our future success will depend on our ability to maintain a competitive position with respect to technological advances. In addition, as we enter new markets, we will face new competition and will need to adapt to competitive factors that may be different from what we face today.

We are aware that other companies, including Royal DSM N.V., or DSM, DuPont, Novozymes, and Vercipia Biofuels, an affiliate of BP P.L.C., have alternative methods for obtaining and generating genetic diversity or use mutagenesis techniques to produce genetic diversity. Academic institutions such as the California Institute of Technology, the Max Planck Institute and the Center for Fundamental and Applied Molecular Evolution (FAME), a jointly sponsored initiative between Emory University and Georgia Institute of Technology, are also working in this field. Technological development by others may result in our products and technologies, as well as products developed by our customers using our biocatalysts, becoming obsolete.

We face intense competition in the pharmaceuticals market. There are a number of companies who compete with us throughout the various stages of a pharmaceutical product's lifecycle. Many large pharmaceutical companies have internal capabilities to develop and manufacture intermediates and APIs. These companies include many of our large innovator and generic pharmaceutical customers, such as Merck, Pfizer and Teva Pharmaceutical Industries Ltd. There are also many large, well-established fine chemical manufacturing companies, such as DSM, BASF Corporation and Lonza Group Ltd, that compete to supply pharmaceutical intermediates and APIs to our customers. We also face increasing competition from generic pharmaceutical manufacturers and contract manufacturers in low cost centers such as India and China.

In addition to competition from companies manufacturing APIs and intermediates, we face competition from companies that sell biocatalysts for use in the pharmaceutical market. There is competition from large industrial enzyme companies, such as Novozymes and Amano Enzyme Inc., whose industrial enzymes (for detergents, for example) are occasionally used in pharmaceutical processes. There is also competition in this area from several small companies with product offerings comprised primarily of naturally occurring biocatalysts or that offer biocatalyst optimization services.

We expect to enter the market for cellulase enzymes, which are used to produce sugar for the manufacture of biofuels and bio-based chemicals. Our significant competitors in this market include Novozymes and DuPont, which have both been active in this market for many years. Novozymes has partnered with a number of companies and organizations on a regional basis to develop cellulases for the production of biofuels, including partnering with M&G in Italy to be the cellulase supplier to a commercial scale cellulosic ethanol plant being built by Chemtex, and DuPont is marketing a line of cellulases to convert cellulosic biomass into sugar. These competitors have greater resources than we do, own or otherwise control established intellectual rights portfolios, have existing relationships with customers that we hope to sell CodeXyme® cellulase enzymes to, have long-term supply agreements already in place with customers for their bio-based products, and have the supply chain in place to sell their cellulases on a global platform. Our ability to

compete in this market may be limited by our relatively late start. Additionally, DSM has announced that it expects to participate in this market.

There are also other companies developing competing cellulosic ethanol technologies. Significant competitors include companies such as: Novozymes, which is opening a biofuel demonstration plant with Inbicon A/S of Denmark; DuPont is marketing a line of cellulases to convert cellulosic biomass into sugar; DSM, which acquired C5 Yeast Company B.V. in 2011 enhancing DSM's position in the cellulosic biofuel sector, and which has recently partnered with POET LLC to form POET-DSM Advanced Biofuels to construct a facility to produce cellulosic ethanol; Mascoma Corporation, which entered into a definitive agreement with Valero Energy Corporation in December 2011 to build a commercial-scale cellulosic ethanol

biorefinery; BP, which is developing a commercial scale cellulosic ethanol facility through its affiliate Vercipia Biofuels; and Coskata, Inc., which is developing a hybrid thermochemical-biocatalytic process to produce ethanol from a variety of feedstocks.

We entered the bio-based chemical market in 2011 with our CodeXol® detergent alcohols. Our significant competitors in this market include companies that have been active in this marketplace for many years, namely Sasol, Shell, BASF, Kao Corporation and Liaoning Huaxing. These companies have greater resources in this market than we do and have long-term supply arrangements already in place with consumer products companies. We also face competition from smaller companies that are developing biological routes to detergent alcohols, such as LS9, Inc. Our ability to compete in this market may be limited by our relatively late start.

Our ability to compete successfully in any of these markets will depend on our ability to develop proprietary products that reach the market in a timely manner and are technologically superior to and/or are less expensive than other products on the market. Many of our competitors have substantially greater production, financial, research and development, personnel and marketing resources than we do. They also started developing products earlier than we did, which may allow them to establish blocking intellectual property positions or bring products to market before we can. In addition, certain of our competitors may also benefit from local government subsidies and other incentives that are not available to us. As a result, our competitors may be able to develop competing and/or superior technologies and processes, and compete more aggressively and sustain that competition over a longer period of time than we could. Our technologies and products may be rendered obsolete or uneconomical by technological advances or entirely different approaches developed by one or more of our competitors. We cannot be certain that any products we develop in the future will compare favorably to products offered by our competitors or that our existing or future products will compare favorably to any new products that are developed by our competitors. As more companies develop new intellectual property in our markets, the possibility of a competitor acquiring patent or other rights that may limit our products or potential products increases, which could lead to litigation.

In addition, various governments have recently announced a number of spending programs focused on the development of clean technology, including alternatives to petroleum-based fuels. Such spending programs could lead to increased funding for our competitors or the rapid increase in the number of competitors within those markets.

Our limited resources relative to many of our competitors may cause us to fail to anticipate or respond adequately to new developments and other competitive pressures. This failure could reduce our competitiveness and market share, adversely affect our results of operations and financial position, and prevent us from obtaining or maintaining profitability.

Business interruptions could delay us in the process of developing our products and could disrupt our sales.

Our headquarters is located in the San Francisco Bay Area near known earthquake fault zones and is vulnerable to significant damage from earthquakes. We are also vulnerable to other types of natural disasters and other events that could disrupt our operations, such as riot, civil disturbances, war, terrorist acts, flood, infections in our laboratory or production facilities or those of our contract manufacturers and other events beyond our control. We do not have a detailed disaster recovery plan. In addition, we do not carry insurance for earthquakes and we may not carry sufficient business interruption insurance to compensate us for losses that may occur. Any losses or damages we incur could have a material adverse effect on our cash flows and success as an overall business.

Ethical, legal and social concerns about genetically engineered products and processes could limit or prevent the use of our products, processes, and technologies and limit our revenues.

Some of our products and processes are genetically engineered or involve the use of genetically engineered products or genetic engineering technologies. If we and/or our collaborators are not able to overcome the ethical, legal, and social concerns relating to genetic engineering, our products and processes may not be accepted. Any of the risks discussed below could result in increased expenses, delays, or other impediments to our programs or the public acceptance and commercialization of products and processes dependent on our technologies or inventions. Our ability to develop and commercialize one or more of our technologies, products, or processes could be limited by the following factors:

- public attitudes about the safety and environmental hazards of, and ethical concerns over, genetic research and genetically engineered products and processes, which could influence public acceptance of our technologies, products and processes;

public attitudes regarding, and potential changes to laws governing ownership of genetic material, which could harm our intellectual property rights with respect to our genetic material and discourage collaborators from supporting, developing, or commercializing our products, processes and technologies; and

- governmental reaction to negative publicity concerning genetically modified organisms, which could result in greater government regulation of genetic research and derivative products. The subject of genetically modified organisms has received negative publicity, which has aroused public debate. This adverse publicity could lead to

greater regulation and trade restrictions on imports of genetically altered products. The biocatalysts that we develop have significantly enhanced characteristics compared to those found in naturally occurring enzymes or microbes. While we produce our biocatalysts only for use in a controlled industrial environment, the release of such biocatalysts into uncontrolled environments could have unintended consequences. Any adverse effect resulting from such a release could have a material adverse effect on our business and financial condition, and we may have exposure to liability for any resulting harm.

Compliance with stringent laws and regulations may be time consuming and costly, which could adversely affect the commercialization of our bioindustrial products.

Our bioindustrial products, including those used in the biofuels and bio-based chemicals markets, will need to meet a significant number of regulations and standards, including regulations imposed by the United States Department of Transportation, the United States Environmental Protection Agency, various state agencies and others. In addition, our bioindustrial products will be subject to foreign regulations if we attempt to produce or sell our products outside the United States. For example, we expect that our products and technologies will be subject to import and export controls when they are shipped internationally. Any failure to comply or delays in compliance, with the various existing and evolving industry regulations and standards could prevent or delay the commercialization of any bioindustrial products developed using our technologies and subject us to fines and other penalties.

We use hazardous materials in our business and we must comply with environmental laws and regulations. Any claims relating to improper handling, storage or disposal of these materials or noncompliance of applicable laws and regulations could be time consuming and costly and could adversely affect our business and results of operations.

Our research and development and commercial processes involve the use of hazardous materials, including chemical, radioactive, and biological materials. Our operations also produce hazardous waste. We cannot eliminate entirely the risk of accidental contamination or discharge and any resultant injury from these materials. Federal, state, local and foreign laws and regulations govern the use, manufacture, storage, handling and disposal of, and human exposure to, these materials. We may be sued for any injury or contamination that results from our use or the use by third parties of these materials, and our liability may exceed our total assets. Although we believe that our activities comply in all material respects with environmental laws, there can be no assurance that violations of environmental, health and safety laws will not occur in the future as a result of human error, accident, equipment failure or other causes. Compliance with applicable environmental laws and regulations may be expensive, and the failure to comply with past, present, or future laws could result in the imposition of fines, third party property damage, product liability and personal injury claims, investigation and remediation costs, the suspension of production, or a cessation of operations, and our liability may exceed our total assets. Liability under environmental laws can be joint and several and without regard to comparative fault. Environmental laws could become more stringent over time imposing greater compliance costs and increasing risks and penalties associated with violations, which could impair our research, development or production efforts and harm our business. In addition, we may have to indemnify some of our customers or suppliers for losses related to our failure to comply with environmental laws, which could expose us to significant liabilities.

We face compliance risks associated with our government awards.

We are subject to routine audits by government agencies or other third parties as part of our government awards. The government auditor may review our performance, cost structures and compliance with applicable laws, regulations and standards. Funds available under government financial assistance must be applied by us toward the research and development programs specified by the funding agencies, rather than for all of our programs generally. If any of our costs are found to be allocated improperly, the costs may not be reimbursed and any costs already reimbursed may have to be refunded. Accordingly, an audit could result in an adjustment to our revenues and results of operations.

We may be sued for product liability.

The design, development, manufacture and sale of our products involve an inherent risk of product liability claims and the associated adverse publicity. For example, we may be named directly in product liability suits relating to drugs that are produced using our enzymes or that incorporate our intermediates and APIs. The biocatalysts, pharmaceutical intermediates and APIs that we produce or are produced for us by our manufacturing partners could be subject to quality control or contamination issues of which we are not aware. Claims could be brought by various parties, including customers who are purchasing products directly from us, other companies who purchase products from our customers or by the end users of the drugs. We could also be named as co-parties in product liability suits that are

brought against our contract manufacturers who manufacture our enzymes, pharmaceutical intermediates and APIs, such as Lactosan and/or Arch. Insurance coverage is expensive and may be difficult to obtain, and may not be available in the future on acceptable terms, or at all. We cannot assure you that any contract manufacturer that we have used in the past or shall use in the future has or will have adequate insurance coverage to

cover against potential claims. In addition, although we currently maintain product liability insurance for our products in amounts we believe to be commercially reasonable, if the coverage limits of these insurance policies are not adequate, a claim brought against us, whether covered by insurance or not, could have a material adverse effect on our business, results of operations, financial condition and cash flows. This insurance may not provide adequate coverage against potential losses, and if claims or losses exceed our liability insurance coverage, we may go out of business. Moreover, we have agreed to indemnify some of our customers for certain claims that may arise out of the use of our products, which could expose us to significant liabilities.

Our ability to use our net operating loss carryforwards to offset future taxable income may be subject to certain limitations.

In general, under Section 382 of the Internal Revenue Code, a corporation that undergoes an “ownership change” is subject to limitations on its ability to utilize its pre-change net operating loss carryforwards, or NOLs, to offset future taxable income. If the Internal Revenue Service challenges our analysis that our existing NOLs are not subject to limitations arising from previous ownership changes, our ability to utilize NOLs could be limited by Section 382 of the Internal Revenue Code. Future changes in our stock ownership, some of which are outside of our control, could result in an ownership change under Section 382 of the Internal Revenue Code. Furthermore, our ability to utilize NOLs of companies that we may acquire in the future may be subject to limitations. For these reasons, we may not be able to utilize a material portion of the NOLs reflected in our financial statements, even if we attain profitability.

Risks Related to Owning our Common Stock

We are subject to anti-takeover provisions in our certificate of incorporation and bylaws and under Delaware law, as well as our stockholder rights plan, that could delay or prevent an acquisition of our company, even if the acquisition would be beneficial to our stockholders.

Provisions in our amended and restated certificate of incorporation and our bylaws may delay or prevent an acquisition of us. Among other things, our amended and restated certificate of incorporation and bylaws provide for a board of directors which is divided into three classes, with staggered three-year terms and provide that all stockholder action must be effected at a duly called meeting of the stockholders and not by a consent in writing, and further provide that only our board of directors, the chairman of the board of directors, our chief executive officer or president may call a special meeting of the stockholders. In addition, our amended and restated certificate of incorporation allows our board of directors, without further action by our stockholders, to issue up to 5,000,000 shares of preferred stock in one or more series and to fix the rights, preferences, privileges and restrictions thereof. These provisions may also frustrate or prevent any attempts by our stockholders to replace or remove our current management by making it more difficult for stockholders to replace members of our board of directors, who are responsible for appointing the members of our management team. Furthermore, because we are incorporated in Delaware, we are governed by the provisions of Section 203 of the Delaware General Corporation Law, which prohibits, with some exceptions, stockholders owning in excess of 15% of our outstanding voting stock from merging or combining with us. Finally, our charter documents establish advanced notice requirements for nominations for election to our board of directors and for proposing matters that can be acted upon at stockholder meetings. Although we believe these provisions together provide for an opportunity to receive higher bids by requiring potential acquirers to negotiate with our board of directors, they would apply even if an offer to acquire our company may be considered beneficial by some stockholders.

On September 3, 2012, we entered into a stockholder rights plan and declared a dividend of one preferred stock purchase right for each share of our common stock held by stockholders of record as of September 18, 2012. Each right entitles stockholders, after the rights become exercisable, to purchase one one-thousandth of a share of our Series A Preferred Stock, par value $0.0001, at a purchase price of $11.35 per one-thousandth of a share of Series A Preferred Stock. In general, the rights become exercisable at the close of business on the tenth business day following (i) public announcement that a person or group acquired 15% or more of our common stock or (ii) commencement or announcement of a tender offer for 15% or more of our common stock. The rights may discourage a third-party from making an unsolicited proposal to acquire us, as exercise of the rights would cause substantial dilution to a person or

group that attempts to acquire us on terms not approved by our board of directors. The rights should not interfere with any merger or other business combination approved by our board of directors since the rights may be redeemed by us at $0.0001 per right at any time before any person or group acquires 15% or more of our outstanding common stock. These rights expire in September 2013.

Concentration of ownership among our existing officers, directors and principal stockholders may prevent other stockholders from influencing significant corporate decisions and depress our stock price.

Based on the number of shares outstanding as of March 31, 2013, our officers, directors and stockholders who hold at least 5% of our stock together beneficially own approximately 36% of our outstanding common stock. If these officers, directors, and principal stockholders or a group of our principal stockholders act together, they will be able to exert a significant degree of influence over our management and affairs and control matters requiring stockholder approval, including the election of directors and approval of mergers or other business combination transactions. The interests of this concentration of ownership may not always coincide with our interests or the interests of other stockholders. For instance, officers, directors, and principal stockholders, acting together, could cause us to enter into transactions or agreements that we would not otherwise consider. Similarly, this concentration of ownership may have the effect of delaying or preventing a change in control of our company otherwise favored by our other stockholders. As of March 31, 2013, Raízen, Biomedical Sciences Investment Fund Pte Ltd. and CMEA Ventures beneficially owned approximately 14.7%, 8.3% and 7.9% of our common stock, respectively.

Our share price may be volatile which may cause the value of our common stock to decline and subject us to securities class action litigation.

The market price of shares of our common stock could be subject to wide fluctuations in response to many risk factors listed in this section, and others beyond our control, including:

- actual or anticipated fluctuations in our financial condition and operating results;
- the position of our cash, cash equivalents and marketable securities;
- actual or anticipated changes in our growth rate relative to our competitors;
- actual or anticipated fluctuations in our competitors' operating results or changes in their growth rate;
- announcements of technological innovations by us, our collaborators or our competitors;
- announcements by us, our collaborators or our competitors of significant acquisitions or dispositions, strategic partnerships, joint ventures or capital commitments;
- announcements or developments regarding technical progress of CodeXyme® cellulase enzymes or CodeXol® detergent alcohols;
- additions or losses of one or more significant pharmaceutical products;
- announcements or developments regarding pharmaceutical products manufactured using our biocatalysts, intermediates and APIs;
- the entry into, modification or termination of collaborative arrangements;
- additions or losses of customers;
- additions or departures of key management or scientific personnel;
- competition from existing products or new products that may emerge;
- issuance of new or updated research reports by securities or industry analysts;
- fluctuations in the valuation of companies perceived by investors to be comparable to us;
- disputes or other developments related to proprietary rights, including patent litigation and our ability to obtain patent protection for our technologies;
- changes in existing laws, regulations and policies applicable to our business and products, including the National Renewable Fuel Standard program;
- contractual disputes or litigation with our partners, customers or suppliers;
- announcement or expectation of additional financing efforts;
- sales of our common stock by us, our insiders or our other stockholders;
- share price and volume fluctuations attributable to inconsistent trading volume levels of our shares;
- general market conditions in our industry; and
- general economic and market conditions, including the recent financial crisis.

Furthermore, the stock markets have experienced extreme price and volume fluctuations that have affected and continue to affect the market prices of equity securities of many companies. These fluctuations often have been unrelated or disproportionate to the operating performance of those companies. These broad market and industry fluctuations, as well as general economic, political and market conditions such as recessions, interest rate changes or

international currency fluctuations, may negatively impact the market price of shares of our common stock. In the past, companies that have experienced volatility in the market price of their stock have been subject to securities class action litigation. We may be the target of this type of litigation in the future. Securities litigation against us could result in substantial costs and divert our management's attention from other business concerns, which could seriously harm our business.

If securities or industry analysts do not publish research or reports about our business, or publish negative reports about our business, our stock price and trading volume could decline.

The trading market for our common stock will be influenced by the research and reports that securities or industry analysts publish about us or our business. We do not have any control over these analysts. If one or more of the analysts who cover us downgrade our stock or change their opinion of our stock in a negative manner, our stock price would likely decline. If one or more of these analysts cease coverage of our company or fail to regularly publish reports on us, we could lose visibility in the financial markets, which could cause our stock price or trading volume to decline.

We incur significant costs as a result of operating as a public company, and our management is required to devote substantial time to compliance initiatives.

As a public company, we incur significant legal, accounting and other expenses that we did not incur as a private company. In addition, the Sarbanes-Oxley Act and the Dodd-Frank Wall Street Reform and Consumer Protection Act, as well as related rules implemented by the Securities and Exchange Commission and The NASDAQ Stock Market, impose various requirements on public companies that require our management and other personnel to devote a substantial amount of time to compliance initiatives.

In addition, the Sarbanes-Oxley Act requires, among other things, that we maintain effective internal control over financial reporting and disclosure controls and procedures. In particular, we must perform system and process evaluation and testing of our internal control over financial reporting to allow management and our independent registered public accounting firm to report on the effectiveness of our internal control over financial reporting, as required by Section 404 of the Sarbanes-Oxley Act. Our compliance with Section 404 requires that we incur substantial accounting expense and expend significant management time on compliance-related issues. Moreover, if we are not able to maintain compliance with the requirements of Section 404, our stock price could decline, and we could face sanctions, delisting or investigations by The NASDAQ Global Market, or other material adverse effects on our business, reputation, results of operations, financial condition or liquidity.

ITEM 2. Unregistered Sales of Equity Securities and Use of Proceeds

(a)

Not applicable.

(b) Use of Proceeds from Public Offering of Common Stock

On April 27, 2010, we closed our IPO, in which we sold 6,000,000 shares of common stock at a price to the public of $13.00 per share. The aggregate offering price for shares sold in the offering was $78.0 million. The offer and sale of all of the shares in the IPO were registered under the Securities Act of 1933, as amended, pursuant to a registration statement on Form S-1 (File No. 333-164044), which was declared effective by the SEC on April 21, 2010.

There has been no material change in the planned use of proceeds from our IPO as described in our final prospectus filed with the SEC on April 22, 2010 pursuant to Rule 424(b). We invested the funds received in registered money market fund and other marketable securities.

ITEM 3. Defaults Upon Senior Securities

Not applicable.

ITEM 4. Mine Safety Disclosures

Not applicable.

ITEM 5. Other Information

(a)

Not applicable.

(b)
Not applicable.

ITEM 6. Exhibits

3.1	Amended and Restated Certificate of Incorporation of Codexis, Inc. filed with the Secretary of the State of the State of Delaware on April 27, 2010 and effective as of April 27, 2010 (incorporated by reference to Exhibit 3.1 to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2010, filed on May 28, 2010).
3.2	Certificate of Designations of Series A Junior Participating Preferred Stock of Codexis, Inc., filed with the Secretary of State of the State of Delaware on September 4, 2012 (incorporated by reference to Exhibit 3.1 to the Company's Current Report on Form 8-K, filed on September 4, 2012).
3.3	Amended and Restated Bylaws of Codexis, Inc. effective as of April 27, 2010 (incorporated by reference to Exhibit 3.2 to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2010, filed on May 28, 2010).
4.1	Specimen Common Stock Certificate (incorporated by reference to Exhibit 4.1 to the Company's Quarterly Report for the quarter ended June 30, 2012, filed on August 9, 2012).
4.2	Rights Agreement by and between the Company and Wells Fargo Bank, N.A., which includes the Form of Certificate of Designations of Series A Junior Participating Preferred Stock as Exhibit A, the Form of Right Certificate as Exhibit B and the Summary of Rights to Purchase Preferred Shares as Exhibit C, dated as of September 3, 2012 (incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K, filed on September 4, 2012).
31.1	Certification of Principal Executive Officer Required Under Rule 13a-14(a) and 15d-14(a) of the Securities Exchange Act of 1934, as amended.
31.2	Certification of Principal Financial Officer Required Under Rule 13a-14(a) and 15d-14(a) of the Securities Exchange Act of 1934, as amended.
32.1	Certification of Principal Executive Officer and Principal Financial Officer Required Under Rule 13a-14(b) of the Securities Exchange Act of 1934, as amended, and 18 U.S.C. §1350.
101**	The following materials from Registrant's Quarterly Report on Form 10-Q for the quarter ended March 31, 2013, formatted in Extensible Business Reporting Language (XBRL) includes: (i) Condensed Consolidated Balance Sheets at March 31, 2013 and December 31, 2012, (ii) Condensed Consolidated Statements of Income for the Three Months Ended March 31, 2013 and 2012, (iii) Condensed Consolidated Statements of Comprehensive Income for the Three Months Ended March 31, 2013 and 2012, (iv) Condensed Consolidated Statements of Cash Flows for the Three Months Ended March 31, 2013 and 2012, and iv) Notes to Condensed Consolidated Financial Statements.
**	XBRL information is furnished and not filed or a part of a registration statement or prospectus for purposes of sections 11 or 12 of the Securities Exchange Act of 1933, as amended, is deemed not filed for purposes of section 18 of the Securities Exchange Act of 1934, as amended, and otherwise is not subject to liability under these sections.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

Codexis, Inc.

Date:	May 9, 2013	By:	/s/ John Nicols John Nicols President and Chief Executive Officer (principal executive officer)
Date:	May 9, 2013	By:	/s/ David O'Toole David O'Toole Senior Vice President and Chief Financial Officer (principal financial and accounting officer)

EXHIBIT INDEX

Listed and indexed below are all Exhibits filed as part of this report.

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