MANNKIND CORP
Form 10-K
March 15, 2016
Table of Contents

UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

Form 10-K

þ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
For the fiscal year ended December 31, 2015

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: 000-50865

MannKind Corporation

(Exact name of registrant as specified in its charter)

Delaware	**13-3607736**
(State or other jurisdiction of incorporation or organization)	*(I.R.S. Employer Identification No.)*
25134 Rye Canyon Loop Suite 300	
Valencia, California	**91355**
(Address of principal executive offices)	*(Zip Code)*

Registrant s telephone number, including area code

(661) 775-5300

Securities registered pursuant to Section 12(b) of the Act:

Title of Class	Name of Each Exchange on Which Registered
Common Stock, par value $0.01 per share	The NASDAQ Global Market

Securities registered pursuant to Section 12(g) of the Act:

None

(Title of Class)

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ¨ No þ

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ¨ No þ

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 þ 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 during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes þ No ¨

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant s knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. þ

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 þ	Accelerated filer ¨	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 Act). Yes ¨ No þ

As of June 30, 2015, the aggregate market value of the voting stock held by non-affiliates of the registrant, computed by reference to the last sale price of such stock as of such date on the NASDAQ Global Market, was approximately $1,461,620,053.

As of February 22, 2016, there were 428,850,858 shares of the registrant s Common Stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant s definitive Proxy Statement (the Proxy Statement) for the 2016 Annual Meeting of Stockholders to be filed with the Securities and Exchange Commission pursuant to Regulation 14A not later than 120 days after the end of the fiscal year covered by this Form 10-K, are incorporated by reference in Part III of this Annual Report on Form 10-K.

Table of Contents

MANNKIND CORPORATION

Annual Report on Form 10-K

For the Fiscal Year Ended December 31, 2015

TABLE OF CONTENTS

Table of Contents

Forward-Looking Statements

Statements in this report that are not strictly historical in nature are forward-looking statements within the meaning of the federal securities laws made pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995. In some cases, you can identify forward-looking statements by terms such as anticipate, believe, could, estimate, expect, goal, intend, may, plan, potential, p should, will, would, and similar expressions intended to identify forward-looking statements, though not all forward-looking statements contain these identifying words. These statements may include, but are not limited to, statements regarding: our ability to successfully market, commercialize and achieve market acceptance for AFREZZA or any other product candidates or therapies that we may develop; our ability to manufacture sufficient quantities of AFREZZA and obtain insulin supply as needed; our ability to successfully commercialize our Technosphere drug delivery platform; our estimates for future performance; our estimates regarding anticipated operating losses, future revenues, capital requirements and our needs for additional financing; the timing and amount of our future recognition of deferred product sales from collaboration, product costs from collaboration and income from collaboration; the progress or success of our research, development and clinical programs, including the application for and receipt of regulatory clearances and approvals; our ability to protect our intellectual property and operate our business without infringing upon the intellectual property rights of others; and scientific studies and the conclusions we draw from them. These statements are only predictions or conclusions based on current information and expectations and involve a number of risks and uncertainties. The underlying information and expectations are likely to change over time. Actual events or results may differ materially from those projected in the forward-looking statements due to various factors, including, but not limited to, those set forth under the caption Risk Factors and elsewhere in this report. Except as required by law, we undertake no obligation to publicly update or revise any forward-looking statements, whether as a result of new information, future events or otherwise.

AFREZZA®, MedTone®, Dreamboat® and Technosphere® are our trademarks in the United States. We have also applied for or have registered company trademarks in other jurisdictions, including Europe and Japan. This document also contains trademarks and service marks of other companies that are the property of their respective owners.

PART I

Item 1. ***Business***

Unless the context requires otherwise, the words MannKind, we, company, us and our refer to MannKind Corporation and its subsidiaries.

MannKind Corporation is a biopharmaceutical company focused on the discovery and development of therapeutic products for diseases such as diabetes. Our only approved product, AFREZZA, is a rapid-acting inhaled insulin that was approved by the U.S. Food and Drug Administration (the FDA) on June 27, 2014 to improve glycemic control in adult patients with diabetes. AFREZZA became available by prescription in United States retail pharmacies in February 2015. According to the Centers for Disease Control and Prevention, in the United States in 2012, approximately 29.1 million people had diabetes. Globally, the International Diabetes Federation has estimated that approximately 415.0 million people had diabetes in 2015 and approximately 642.0 million people will have diabetes by 2040.

AFREZZA is a rapid-acting, inhaled insulin used to control high blood sugar in adults with type 1 and type 2 diabetes. The product consists of a dry formulation of human insulin delivered from a small and portable inhaler. Administered at the beginning of a meal, AFREZZA dissolves rapidly upon inhalation to the lung and delivers insulin quickly to the bloodstream. Peak insulin levels are achieved within 12 15 minutes of administration.

On August 11, 2014, we entered into a license and collaboration agreement (the Sanofi License Agreement) with Sanofi-Aventis Deutschland GmbH (which subsequently assigned its rights and obligations under the agreement to Sanofi-Aventis U.S. LLC (Sanofi)), pursuant to which Sanofi became responsible for global commercial, regulatory and development activities for AFREZZA. For the year ended December 31, 2015, Sanofi reported a total of 7.0 million in annual sales of AFREZZA.

Table of Contents

On January 4, 2016, we received written notice from Sanofi of its election to terminate in its entirety the Sanofi License Agreement. Sanofi s notice indicated that the termination was pursuant to Sanofi s right to terminate the agreement upon Sanofi s good faith determination that the commercialization of AFREZZA is no longer economically viable in the United States, in which case the effective date of termination (the Termination Date) would be April 4, 2016. In the alternative, Sanofi indicated that the termination was also pursuant to its right to terminate the agreement for any reason, in which case the Termination Date would be July 4, 2016. We believe that Sanofi lacks a good faith basis for determining that commercialization of AFREZZA is no longer economically viable in the United States. Nonetheless, in the interest of an expedient transition, we are currently working with Sanofi to transfer and wind down the agreement activities by April 4, 2016, or as soon as practicable thereafter. As required by the Sanofi License Agreement, we and Sanofi are currently using diligent efforts to facilitate the smooth and orderly transition of development and commercialization activities related to AFREZZA, and are negotiating in good faith a written transition agreement for this purpose. As a result of the foregoing termination, effective on the Termination Date and thereafter during any period which Sanofi is required to perform any wind-down activities pursuant to the terms of the Sanofi License Agreement, the rights granted to Sanofi under the Sanofi License Agreement to develop and commercialize AFREZZA will become non-exclusive and we will have the right to engage one or more other distributors and/or licensees of AFREZZA. Sanofi will continue to distribute AFREZZA during the wind-down period as required by the agreement until such time that we or our designee takes over responsibility for distribution. All profits and losses from AFREZZA product sales by Sanofi or its affiliates after the Termination Date, if any, will continue to be shared 65% by Sanofi and 35% by us pursuant to the terms of the Sanofi License Agreement. We and Sanofi are also parties to a supply agreement, dated August 11, 2014 (the Sanofi Supply Agreement), pursuant to which we are required to supply Sanofi or its affiliates or its sublicensees such quantities of AFREZZA as requested by Sanofi to cover its commercial requirements. As a result of the termination of the Sanofi License Agreement, the Sanofi Supply Agreement will terminate by its terms on the Termination Date. In addition to the foregoing agreements, we and Aventisub LLC, an affiliate of Sanofi, are parties to a Senior Secured Revolving Promissory Note, dated September 23, 2014 (the Sanofi Loan Facility) and a Guaranty and Security Agreement (the Security Agreement). Both the Sanofi Loan Facility and the Security Agreement remain in effect. Pursuant to the Sanofi Loan Facility, we may borrow up to an aggregate of $175.0 million to fund our share of net losses from AFREZZA product sales by Sanofi or its affiliates. The original maturity date of September 23, 2024 for repayment of the outstanding principal amount of the loans under the Sanofi Loan Facility is not affected by the termination of the Sanofi License Agreement.

As part of the approval of AFREZZA, the FDA required us to conduct the following post-marketing studies:

- A dose-ranging pharmacokinetic (PK)-pharmacodynamic (PD) glucose-clamp trial to characterize the dose-response of AFREZZA relative to subcutaneous insulin in patients with type 1 diabetes, which Sanofi completed in 2015;

- A PK-PD glucose-clamp trial to characterize within-subject variability, which Sanofi completed in 2015;

- An open-label PK and multiple-dose safety and tolerability dose-titration trial of AFREZZA in pediatric patients ages 4 to 17 years with type 1 diabetes, for which Sanofi is in the process of enrolling subjects, followed by a prospective, open-label, randomized, controlled trial comparing the efficacy and safety of prandial AFREZZA to prandial subcutaneous insulin as part used in combination with subcutaneous basal insulin in pediatric patients 4 to 17 years old with type 1 or type 2 diabetes; and

- A five-year, randomized, controlled trial in 8,000-10,000 patients with type 2 diabetes to assess the potential serious risk of pulmonary malignancy with AFREZZA use.

Pursuant to the Sanofi License Agreement, we transferred the approved new drug application (NDA) for AFREZZA to Sanofi following the closing of the transaction. Sanofi has completed the two PK-PD studies and is in the process of enrolling subjects in the first part of the pediatric study. The obligation to complete the pediatric study and to conduct the five-year pulmonary safety study will revert to us when the NDA for AFREZZA is transferred back to us in connection with the termination of the Sanofi License Agreement. At that time, we will become responsible for the NDA and its maintenance.

Table of Contents

Manufacturing and Supply

We manufacture AFREZZA in our Danbury, Connecticut facility, where we formulate the AFREZZA inhalation powder, fill it into plastic cartridges and then blister package the cartridges and seal the blister cards inside a foil overwrap. These overwraps are then packaged into cartons along with inhalers and printed material by a third-party packager. The cartridges and inhalers are manufactured for us by a third-party plastic-molding company; the cartridges are delivered to our Connecticut facility whereas the inhalers are shipped directly to the packaging contractor.

The quality management systems of our Connecticut facility were certified to be in conformance with the ISO 13485 and ISO 9001 standards. Our facility has been inspected twice by the FDA, once for a pre-approval inspection in the fall of 2009 and once for a regular inspection in May 2013. The FDA is expected to conduct additional inspections of our facility.

We believe that our Connecticut facility has enough capacity to satisfy the current commercial demand for AFREZZA. We currently have three operational filling lines with the capacity to process 300-360 million cartridges per year. In addition, the facility includes expansion space to accommodate additional filling lines and other equipment, allowing production capacity to be increased based on the demand for AFREZZA over the next several years.

Currently, the only approved source of insulin for AFREZZA is manufactured by Amphastar France Pharmaceuticals S.A.S. (Amphastar). In April 2014, Amphastar acquired a manufacturing facility from N.V. Organon, a subsidiary of Merck & Co., Inc., where we had previously obtained the insulin that we use to make AFREZZA. On July 31, 2014, we entered into a supply agreement with Amphastar (the Insulin Supply Agreement), pursuant to which we agreed to purchase certain annual minimum quantities of insulin for calendar years 2015 through 2019 for an aggregate total purchase price of approximately 120.1 million, of which 98.5 million is remaining at December 31, 2015. We have contracted for the purchase of 28.8 million in 2016 and the remaining annual minimum quantities will be 23.3 million for the years ending December 31, 2017 through 2019. We also may purchase additional quantities of insulin over such annual minimum quantities at our option. Unless earlier terminated, the term of the Insulin Supply Agreement expires on December 31, 2019 and can be renewed for additional, successive two year terms upon 12 months written notice given prior to the end of the initial term or any additional two year term. We and Amphastar each have normal and customary termination rights, including termination for material breach that is not cured within a specific time frame or in the event of liquidation, bankruptcy or insolvency of the other party. In addition, we may terminate the Insulin Supply Agreement upon two years prior written notice to Amphastar without cause or upon 30 days prior written notice to Amphastar if a controlling regulatory authority withdraws approval for AFREZZA, provided, however, in the event of a termination pursuant to either of the latter two scenarios, the provisions of the Insulin Supply Agreement require us to pay the full amount of all unpaid purchase commitments due over the initial term within 60 calendar days of the effective date of such termination.

We also own a quantity of bulk insulin that we acquired in June 2009 from Pfizer Manufacturing Frankfurt GmbH, a subsidiary of Pfizer Inc., as well as an option to purchase from Pfizer additional insulin inventory, in whole or in part, at a specified price, to the extent it remains available. The purchase price for this insulin was fully expensed at the time of the purchase. To date, none of this insulin has been qualified as a source of insulin for AFREZZA.

Currently, we purchase the raw material from which we produce Technosphere particles (fumaryl diketopiperazine (FDKP)) from a major chemical manufacturer with facilities in Europe and North America. We also have the capability of manufacturing this chemical ourselves in our Danbury facility.

We have a three-year supply agreement with the contract manufacturer that produces our inhaler and the corresponding cartridges. We expect to be able to qualify an additional vendor of plastic-molding contract manufacturing services, if warranted by demand.

We also have a three-year agreement with the contractor that performs the final packaging of AFREZZA overwraps, inhalers and printed material into patient kits. We expect to be able to qualify an additional vendor of packaging services, if warranted by demand.

Table of Contents

Our third-party suppliers are subject to extensive governmental regulation. We rely on our suppliers to comply with relevant regulatory requirements, including compliance with Quality System Regulations (QSRs).

Technosphere Formulation Technology

AFREZZA utilizes our proprietary Technosphere formulation technology; however, the application of this technology is not limited to insulin delivery. We believe it represents a versatile drug delivery platform that may allow the oral inhalation of a wide range of therapeutics. We have successfully prepared Technosphere formulations of anionic and cationic drugs, hydrophobic and hydrophilic drugs, proteins, peptides, and small molecules. Technosphere powders are based on our proprietary excipient, FDKP, which is a pH-sensitive organic molecule that self-assembles into small particles under acidic conditions. Certain drugs, such as insulin, can be loaded onto these particles by combining a solution of the drug with a suspension of Technosphere material, which is then dried to powder form. The resulting powder has a consistent and narrow range of particle sizes with good aerodynamic properties that enable them to fly efficiently deep into the lungs. Technosphere powders dissolve extremely fast after inhalation when the particles contact the moist lung surface with its neutral pH, releasing the drug molecules to diffuse across a thin layer of cells into the arterial circulation, bypassing the liver to provide excellent systemic exposure.

We have also created an innovative line of breath-powered, dry powder inhalers. Our inhalers are easy to use, cost-effective and can be produced in both a reusable (chronic treatment) and a single-use (acute treatment) format. Both the reusable and single use inhaler formats use the same internal air-flow design. Being breath-powered, our inhalers require only the patient s inhalation effort to deliver the powder. Patients are not required to activate the inhaler prior to use and no activation step with inhalation is required. To administer the inhalation powder, a patient loads a cartridge into our inhaler and inhales through the mouthpiece. Upon inhalation, the dry powder is lifted out of the cartridge and broken (or de-agglomerated) into small particles. The inhalers are engineered to produce an aggressive airstream to de-agglomerate the powder while keeping the powder moving slowly. This slow-moving powder effectively navigates the patient s airways for delivery into the lung with minimal deposition at the back of the throat. Our inhalers show very little change in performance over a wide range of inhalation efforts and produce high bioavailability. In a handling study, pediatric subjects as young as four years old were readily able to use the inhaler.

To aid in the development of our oral inhalation products, we have created a number of innovative development tools and techniques. For example, our BluHale technology is a novel inhalation profiling tool that uses miniature acoustic sensors to assess the drug delivery process at the level of an individual inhaler. This tool provides real-time insight into patient usage, device system performance and pharmacokinetic effects. We can combine this tool with other development tools, such as patient inhalation simulators and anatomically correct airway models, in order to integrate inhaler performance with formulation development right from the beginning of the development program. The result is a powder/inhaler combination product customized to the target patient population from the first clinical study.

In January 2016, we entered into a collaboration and license agreement with a newly formed entity, Receptor Life Sciences, Inc., pursuant to which Receptor is evaluating the feasibility of developing multiple inhaled therapeutic products using our technology to explore their potential to treat conditions such as chronic pain, neurologic diseases and inflammatory disorders.

Our Strategy

The following are the key elements of our strategy:

Commercialization and development of AFREZZA. As soon as practicable following the Termination Date of the Sanofi License Agreement, our intention is to assume the responsibility for commercializing and developing AFREZZA in the United States. In order to commercially market AFREZZA, we will need to develop an internal sales team and expand our marketing infrastructure, collaborate with third parties who have greater sales and marketing capabilities, purchase services from a contract commercial organization, or utilize some combination of one or more of the above. We also intend to seek regional partnerships for the development and commercialization of AFREZZA in foreign jurisdictions where there are appropriate commercial opportunities.

Table of Contents

Capitalize on our proprietary Technosphere and inhaler technology for the delivery of active pharmaceutical ingredients. We believe that Technosphere formulations of active pharmaceutical ingredients have the potential to demonstrate clinical advantages over existing therapeutic options in a variety of therapeutic areas. In addition to our collaboration with Receptor, we are actively exploring other opportunities to out-license our proprietary Technosphere formulation and device technologies. We are also evaluating several product opportunities that we would consider developing as internally funded efforts.

Sales and Marketing

To date, we have relied on Sanofi to conduct all sales and marketing activities related to AFREZZA. As soon as practicable following the Termination Date of the Sanofi License Agreement, our intention is to assume the responsibility for these activities.

In order to commercially market AFREZZA, we will need to develop an internal sales team and expand our marketing infrastructure, collaborate with third parties who have greater sales and marketing capabilities, purchase services from a contract commercial organization, or utilize some combination of these approaches.

Intellectual Property

Our success will depend in large measure on our ability to obtain and enforce our intellectual property rights, effectively maintain our trade secrets and avoid infringing the proprietary rights of third parties. Our policy is to file patent applications on what we deem to be important technological developments that might relate to our product candidates or methods of using our product candidates and to seek intellectual property protection in the United States, Europe, Japan and selected other jurisdictions for all significant inventions. We have obtained, are seeking, and will continue to seek patent protection on the compositions of matter, methods and devices flowing from our research and development efforts.

Our Technosphere drug delivery platform, including AFREZZA, enjoys patent protection relating to the particles, their manufacture, and their use for pulmonary delivery of drugs. We have additional patent coverage relating to the treatment of diabetes using AFREZZA. We have been granted patent coverage for the commercial version of our inhaler and cartridges. We have additional pending patent applications, and expect to file further applications, relating to the drug delivery platform, methods of manufacture, the AFREZZA product and its use, and other Technosphere-based products, inhalers and inhaler cartridges. Overall, AFREZZA is protected by over 330 issued patents in the United States and selected jurisdictions around the world and we also have over 350 applications pending that may provide additional protection if and when they are allowed. These include composition and inhaler and cartridge patents providing protection for AFREZZA with various expiration dates, the longer-lived of which will not expire until 2032. In addition, we have certain method of treatment claims that have terms extending into 2026 and 2029.

The field of pulmonary drug delivery is crowded and a substantial number of patents have been issued in these fields. In addition, because patent positions can be highly uncertain and frequently involve complex legal and factual questions, the breadth of claims obtained in any application or the enforceability of issued patents cannot be confidently predicted. Further, there can be substantial delays in commercializing pharmaceutical products, which can partially consume the statutory period of exclusivity through patents.

In addition, the coverage claimed in a patent application can be significantly reduced before a patent is issued, either in the United States or abroad. Statutory differences in patentable subject matter may limit the protection we can obtain on some of our inventions outside of the United States. For example, methods of treating humans are not patentable in many countries outside of the United States. These and other issues may limit the patent protection we are able to secure internationally. Consequently, we do not know whether any of our pending or future patent applications will result in the issuance of patents or, to the extent patents have been issued or will be issued, whether these patents will be subjected to further proceedings limiting their scope, will provide significant proprietary protection or competitive advantage, or will be circumvented or invalidated. Furthermore, patents already issued to us or our pending applications may become subject to disputes that could be resolved against us. In addition, in certain countries, including the United States, applications are generally published 18

Table of Contents

months after the application s priority date. In any event, because publication of discoveries in scientific or patent literature often trails behind actual discoveries, we cannot be certain that we were the first inventor of the subject matter covered by our pending patent applications or that we were the first to file patent applications on such inventions.

Although we own a number of domestic and foreign patents and patent applications relating to AFREZZA and our oral inhalation technologies, we have identified certain third-party patents having claims that may trigger an allegation of infringement by virtue of the commercial manufacture and sale of AFREZZA. We believe that AFREZZA does not infringe any valid claims of any patent owned by a third party. However, if a court were to determine that the manufacture or sale of AFREZZA were infringing any of these patent rights, we would have to establish with the court that these patents were invalid in order to avoid legal liability for infringement of these patents. Proving patent invalidity can be difficult because issued patents are presumed valid. Therefore, in the event that we are unable to prevail in an infringement or invalidity action we will either have to acquire the third-party patents outright or seek a royalty-bearing license. Royalty-bearing licenses effectively increase costs and therefore may materially affect product profitability. Furthermore, if the patent holder refuses to either assign or license us the infringed patents, it may be necessary to cease manufacturing the product entirely and/or design around the patents. In either event, our business would be harmed and our profitability could be materially adversely impacted. If third parties file patent applications, or are issued patents claiming technology also claimed by us in pending applications, we may be required to participate in interference proceedings in the United States Patent and Trademark Office (USPTO) to determine priority of invention. We may also be required to participate in interference proceedings involving our issued patents. We also rely on trade secrets and know-how, which are not protected by patents, to maintain our competitive position. We require our officers, employees, consultants and advisors to execute proprietary information and invention and assignment agreements upon commencement of their relationships with us. These agreements provide that all confidential information developed or made known to the individual during the course of our relationship must be kept confidential, except in specified circumstances. These agreements also provide that all inventions developed by the individual on behalf of us must be assigned to us and that the individual will cooperate with us in connection with securing patent protection on the invention if we wish to pursue such protection. There can be no assurance, however, that these agreements will provide meaningful protection for our inventions, trade secrets or other proprietary information in the event of unauthorized use or disclosure of such information.

We also execute confidentiality agreements with outside collaborators. However, disputes may arise as to the ownership of proprietary rights to the extent that outside collaborators apply technological information to our projects that are developed independently by them or others, or apply our technology to outside projects, and there can be no assurance that any such disputes would be resolved in our favor. In addition, any of these parties may breach the agreements and disclose our confidential information or our competitors might learn of the information in some other way. If any trade secret, know-how or other technology not protected by a patent were to be disclosed to or independently developed by a competitor, our business, results of operations and financial condition could be adversely affected.

Competition

The pharmaceutical and biotechnology industries are highly competitive and characterized by rapidly evolving technology and intense research and development efforts. We compete with companies, including major global pharmaceutical companies, and other institutions that have substantially greater financial, research and development, marketing and sales capabilities and have substantially greater experience in undertaking preclinical and clinical testing of products, obtaining regulatory approvals and marketing and selling biopharmaceutical products. We face competition based on, among other things, product efficacy and safety, the timing and scope of regulatory approvals, product ease of use and price.

Diabetes Treatments

We believe that AFREZZA has important competitive advantages in the delivery of insulin when compared with currently known alternatives. However, new drugs or further developments in alternative drug delivery

Table of Contents

methods may provide greater therapeutic benefits, or comparable benefits at lower cost, than AFREZZA. There can be no assurance that existing or new competitors will not introduce products or processes competitive with or superior to our product candidates.

We have set forth below more detailed information about certain of our competitors. The following is based on information currently available to us.

Rapid-acting (Injected) Insulin

Currently, there is no approved insulin product that is absorbed into the bloodstream as rapidly as AFREZZA, i.e., reaching peak levels within 12 to 15 minutes after administration. There are several formulations of rapid-acting insulin analogs that reach peak insulin levels within 45 to 90 minutes after injection. The principal products in this category are insulin lispro, which is marketed by Eli Lilly & Company, or Lilly; insulin aspart, which is marketed by Novo Nordisk A/S, or Novo Nordisk; and insulin glulisine, which is marketed by Sanofi.

Several insulin products in development are reported to have a time-action profile that is more rapid than that of the currently available injected rapid-acting insulin analogs. For example, Novo Nordisk is developing NN1218, an insulin analog that is intended to provide faster onset of action than aspart. NN1218 is currently undergoing regulatory review in the United States and Europe. In addition, Biodel, Inc. has conducted a Phase 2 clinical trial of BIOD-123, a formulation of human insulin with certain excipients that increase the rate of absorption following injection.

Inhaled Insulin Delivery Systems

In January 2006, Exubera®, developed by Pfizer in collaboration with Nektar Therapeutics, Inc., was approved for the treatment of adults with type 1 and type 2 diabetes. Exubera® was slow to gain market acceptance and, in October 2007, Pfizer announced that it was discontinuing the product. In September 2008, we announced a collaboration agreement with Pfizer pursuant to which certain patients with a continuing medical need for inhaled insulin were transitioned to AFREZZA on a compassionate use basis. Pfizer subsequently withdrew the NDA for Exubera from the FDA.

In January 2008, Novo Nordisk announced that it was halting development of its inhaled insulin product, having reached the conclusion that the product did not have adequate commercial potential.

In March 2008, Lilly announced that it was terminating the development of its AIR® inhaled insulin system. Lilly stated that this decision resulted from increasing uncertainties in the regulatory environment and after a thorough evaluation of the evolving commercial and clinical potential of its product compared to existing medical therapies.

Dance Biopharm, Inc. has completed Phase 2 clinical studies of an inhaled insulin product that utilizes a liquid formulation of human insulin, dispensed through a handheld electronic aerosol device, and is preparing to commence pivotal studies.

Non-insulin Medications

AFREZZA also competes with currently available non-insulin medication products for type 2 diabetes. These products include the following:

- GLP-1 agonists, such as exenatide or liraglutide, which mimic a naturally occurring hormone that stimulates the pancreas to secrete insulin when blood glucose levels are high.

- Inhibitors of dipeptidyl peptidase IV, such as sitagliptin or saxagliptin, are a class of drugs that work by blocking the enzyme that normally degrades GLP-1.

- Sulfonylureas and meglitinides, which are classes of drugs that act on the pancreatic cells to stimulate the secretion of insulin.

Thiazolidinediones, such as pioglitizone, and biguanides, such as metformin, which lower blood glucose by improving the sensitivity of cells to insulin, or diminishing insulin resistance.

Table of Contents

Alpha-glucosidase inhibitors, which lower the amount of glucose absorbed from the intestines, thereby reducing the rise in blood glucose that occurs after a meal.

SGLT-2 inhibitors, such as dapagliflozin and canagliflozin, are a class of medications that lower blood glucose by increasing glucose excretion in urine.

Government Regulation and Product Approval

The FDA and comparable regulatory agencies in state, local and foreign jurisdictions impose substantial requirements upon the clinical development, manufacture and marketing of medical devices and new drug and biologic products. These agencies, through regulations that implement the Federal Food, Drug, and Cosmetic Act, as amended (FDCA), and other regulations, regulate research and development activities and the development, testing, manufacture, labeling, storage, shipping, approval, recordkeeping, advertising, promotion, sale and distribution of such products. In addition, if any of our products are marketed abroad, they will also be subject to export requirements and to regulation by foreign governments. The regulatory approval process is generally lengthy, expensive and uncertain. Failure to comply with applicable FDA and other regulatory requirements can result in sanctions being imposed on us or the manufacturers of our products, including hold letters on clinical research, civil or criminal fines or other penalties, product recalls, or seizures, or total or partial suspension of production or injunctions, refusals to permit products to be imported into or exported out of the United States, refusals of the FDA to grant approval of drugs or to allow us to enter into government supply contracts, withdrawals of previously approved marketing applications and criminal prosecutions.

The steps typically required before an unapproved new drug or biologic product for use in humans may be marketed in the United States include:

Preclinical studies that include laboratory evaluation of product chemistry and formulation, as well as animal studies to assess the potential safety and efficacy of the product. Certain preclinical tests must be conducted in compliance with good laboratory practice regulations. Violations of these regulations can, in some cases, lead to invalidation of the studies, or requiring such studies to be repeated. In some cases, long-term preclinical studies are conducted while clinical studies are ongoing.

Submission to the FDA of an investigational new drug application (IND), which must become effective before human clinical trials may commence. The results of the preclinical studies are submitted to the FDA as part of the IND. Unless the FDA objects and places a clinical hold, the IND becomes effective 30 days following receipt by the FDA.

Approval of clinical protocols by independent institutional review boards (IRBs) at each of the participating clinical centers conducting a study. The IRBs consider, among other things, ethical factors, the potential risks to individuals participating in the trials and the potential liability of the institution. The IRB also approves the consent form signed by the trial participants. The IRB also approves the consent form signed by the trial participants. The IRB of FDA may place a trial on hold at any time if it believes the risks to subjects outweigh the potential benefits.

Adequate and well-controlled human clinical trials to establish the safety and efficacy of the product. Clinical trials involve the administration of the drug to healthy volunteers or to patients under the supervision of a qualified medical investigator according to an approved protocol. The clinical trials are conducted in accordance with protocols that detail the objectives of the study, the parameters to be used to monitor participant safety and efficacy or other criteria to be evaluated. Each protocol is submitted to the FDA as part of the IND. Human clinical trials are typically conducted in the following four sequential phases that may overlap or be combined:

In Phase 1, the drug is initially introduced into a small number of individuals and tested for safety, dosage tolerance, absorption, metabolism, distribution and excretion. Phase 1 clinical trials are often conducted in healthy human volunteers and such cases do not provide evidence of efficacy. In the case of severe or life-threatening diseases, the initial human testing is often conducted in patients rather than healthy volunteers. Because these patients already have the target disease, these studies may provide initial

Table of Contents

evidence of efficacy that would traditionally be obtained in Phase 2 clinical trials. Consequently, these types of trials are frequently referred to as Phase 1/2 clinical trials. The FDA receives reports on the progress of each phase of clinical testing and it may require the modification, suspension or termination of clinical trials if it concludes that an unwarranted risk is presented to patients or healthy volunteers.

Phase 2 involves clinical trials in a limited patient population to further identify any possible adverse effects and safety risks, to determine the efficacy of the product for specific targeted diseases and to determine dosage tolerance and optimal dosage.

Phase 3 clinical trials are undertaken to further evaluate dosage, clinical efficacy and to further test for safety in an expanded patient population at geographically dispersed clinical study sites. Phase 3 clinical trials usually include a broader patient population so that safety and efficacy can be substantially established. Phase 3 clinical trials cannot begin until Phase 2 evaluation demonstrates that a dosage range of the product may be effective and has an acceptable safety profile.

Phase 4 clinical trials are performed if the FDA requires, or a company pursues, additional clinical trials after a product is approved. These clinical trials may be made a condition to be satisfied after a drug receives approval. The results of Phase 4 clinical trials can confirm the effectiveness of a product and can provide important safety information to augment the FDA s voluntary adverse event reporting system.

Concurrent with clinical trials and preclinical studies, companies also must develop information about the chemistry and physical characteristics of the drug and finalize a process for manufacturing the product in accordance with the FDA s current good manufacturing practices (cGMPs), requirements for drug products. The manufacturing process must be capable of consistently producing quality batches of the product and the manufacturer must develop methods for testing the quality, purity, and potency of the final products. Additionally, appropriate packaging must be selected and tested and chemistry stability studies must be conducted to demonstrate that the product does not undergo unacceptable deterioration over its shelf-life.

Submission to the FDA of an NDA based on the clinical trials. The results of product development, preclinical studies, and clinical trials are submitted to the FDA in the form of an NDA for approval of the marketing and commercial shipment of the product. Under the Pediatric Research Equity Act, NDAs are required to include an assessment, generally based on clinical study data, of the safety and efficacy of drugs for all relevant pediatric populations. The statute provides for waivers or deferrals in certain situations.

In its review of an NDA, the FDA may also convene an advisory committee of external experts to provide input on certain review issues relating to risk, benefit and interpretation of clinical trial data. The FDA may delay approval of an NDA if applicable regulatory criteria are not satisfied and/or the FDA requires additional testing or information. Before approving an NDA, the FDA may inspect the facilities at which the product is manufactured and will not approve the product unless the manufacturing facility complies with cGMPs and will also inspect clinical trial sites for integrity of data supporting safety and efficacy. The FDA will issue either an approval of the NDA or a Complete Response Letter, detailing the deficiencies and information required in order for reconsideration of the NDA.

Medical products containing a combination of new drugs, biological products, or medical devices are regulated as combination products in the United States. A combination product generally is defined as a product comprised of components from two or more regulatory categories (e.g., drug/device, device/biologic, drug/biologic). Each component of a combination product is subject to the requirements established by the FDA for that type of component, whether a new drug, biologic, or device.

The testing and approval process requires substantial time, effort and financial resources. Data that we submit are subject to varying interpretations, and the FDA and comparable regulatory authorities in foreign jurisdictions may not agree that our product candidates have been shown to be safe and effective. We cannot be certain that any approval of our products will be granted on a timely basis, if at all. If any of our products are approved for marketing by the FDA, we will be subject to continuing regulation by the FDA, including post marketing study

Table of Contents

commitments or requirements, risk evaluation and mitigation strategies, record-keeping requirements, reporting of adverse experiences with the product, submitting other periodic reports, drug sampling and distribution requirements, notifying the FDA and gaining its approval of certain manufacturing or labeling changes, and complying with certain electronic records and signature requirements. Prior to and following approval, if granted, all manufacturing sites are subject to inspection by the FDA and other national regulatory bodies and must comply with cGMP, QSR and other requirements enforced by the FDA and other national regulatory bodies through their facilities inspection program. Foreign manufacturing establishments must comply with similar regulations. In addition, our drug-manufacturing facilities located in Danbury and the facilities of our insulin supplier, the supplier(s) of our Technosphere material and the supplier(s) of our inhaler and cartridges are subject to federal registration and listing requirements and, if applicable, to state licensing requirements. Failure, including those of our suppliers, to obtain and maintain applicable federal registrations or state licenses, or to meet the inspection criteria of the FDA or the other national regulatory bodies, would disrupt our manufacturing processes and would harm our business. In complying with standards set forth in these regulations, manufacturers must continue to expend time, money and effort in the area of production and quality control to ensure full compliance.

Numerous device regulatory requirements apply to the device part of a drug-device combination. These include:

- product labeling regulations;
- general prohibition against promoting products for unapproved or off-label uses;
- corrections and removals (*e.g.*, recalls);
- establishment registration and device listing;
- general prohibitions against the manufacture and distribution of adulterated and misbranded devices; and
- the Medical Device Reporting regulation, which requires that manufacturers report to the FDA if their device may have caused or contributed to a death or serious injury or malfunctioned in a way that would likely cause or contribute to a death or serious injury if it were to recur.

Further, the company we contract with to manufacture our inhaler and cartridges will be subject to the QSR, which requires manufacturers to follow elaborate design, testing, control, documentation and other quality assurance procedures during the manufacturing process of medical devices, among other requirements.

Failure to adhere to regulatory requirements at any stage of development, including the preclinical and clinical testing process, the review process, or at any time afterward, including after approval, may result in various adverse consequences. These consequences include action by the FDA or another national regulatory body that has the effect of delaying approval or refusing to approve a product; suspending or withdrawing an approved product from the market; seizing or recalling a product; or imposing criminal penalties against the manufacturer. In addition, later discovery of previously unknown problems may result in restrictions on a product, its manufacturer, or the NDA holder, or market restrictions through labeling changes or product withdrawal. Also, new government requirements may be established or current government requirements may be changed at any time, which could delay or prevent regulatory approval of our products under development. We cannot predict the likelihood, nature or extent of adverse governmental regulation that might arise from future legislative or administrative action, either in the United States or abroad.

In addition, the FDA imposes a number of complex regulations on entities that advertise and promote drugs, which include, among other requirements, standards for and regulations of direct-to-consumer advertising, off-label promotion, industry sponsored scientific and educational activities, and promotional activities involving the Internet. The FDA has very broad enforcement authority under the FDCA, and failure to comply with these regulations can result in penalties, including the issuance of a warning letter requirements for corrective advertising to healthcare providers, a requirement that future advertising and promotional materials be pre-cleared by the FDA, and state and federal civil and criminal investigations and prosecutions.

Table of Contents

Products manufactured in the United States and marketed outside the United States are subject to certain FDA regulations, as well as regulation by the country in which the products are to be sold. We also would be subject to foreign regulatory requirements governing clinical trials and drug product sales if products are studied or marketed abroad. Whether or not FDA approval has been obtained, approval of a product by the comparable regulatory authorities of foreign countries usually must be obtained prior to the marketing of the product in those countries. The approval process varies from jurisdiction to jurisdiction and the time required may be longer or shorter than that required for FDA approval.

There can be no assurance that the current regulatory framework will not change or that additional regulation will not arise at any stage of our product development or marketing that may affect approval, delay the submission or review of an application or require additional expenditures by us. There can be no assurance that we will be able to obtain necessary regulatory clearances or approvals on a timely basis, if at all, for any of our product candidates under development, and delays in receipt or failure to receive such clearances or approvals, the loss of previously received clearances or approvals, or failure to comply with existing or future regulatory requirements could have a material adverse effect on our business and results of operations.

In addition to the foregoing, we are subject to numerous federal, state and local laws relating to such matters as laboratory practices, the experimental use of animals, the use and disposal of hazardous or potentially hazardous substances, controlled drug substances, privacy of individually identifiable healthcare information, safe working conditions, manufacturing practices, environmental protection and fire hazard control.

Healthcare Regulatory and Pharmaceutical Pricing

Government coverage and reimbursement policies both directly and indirectly affect our ability to successfully commercialize our approved products, and such coverage and reimbursement policies will be affected by future healthcare reform measures. Government health administration authorities, private health insurers and other organizations generally decide which drugs they will pay for and establish reimbursement levels for healthcare. In particular, in the United States, private health insurers and other third-party payors often provide reimbursement for products and services based on the level at which the government (through the Medicare or Medicaid programs) provides reimbursement for such treatments. In the United States, the European Union and other potentially significant markets for our product candidates, government authorities and third-party payors are increasingly attempting to limit or regulate the price of medical products and services, particularly for new and innovative products and therapies, which has resulted in lower average selling prices. Further, the increased emphasis on managed healthcare in the United States and on country and regional pricing and reimbursement controls in the European Union will put additional pressure on product pricing, reimbursement and usage, which may adversely affect our future product sales and results of operations. Recently, in the United States there has been heightened governmental scrutiny over the manner in which drug manufacturers set prices for their marketed products. For example, there have been several recent U.S. Congressional inquiries regarding certain drug manufacturers pricing practices and proposed bills designed to, among other things, bring more transparency to drug pricing, review the relationship between pricing and manufacturer patient programs, and reform government program reimbursement methodologies for drugs. These pressures can arise from rules and practices of managed care groups, judicial decisions and governmental laws and regulations related to Medicare, Medicaid and healthcare reform, pharmaceutical reimbursement policies and pricing in general.

The United States and some foreign jurisdictions have enacted or are considering a number of additional legislative and regulatory proposals to change the healthcare system in ways that could affect our ability to sell our products profitably. Among policy makers and payors in the U.S. and elsewhere, there is significant interest in promoting changes in healthcare systems with the stated goals of containing healthcare costs, improving quality and/or expanding access. In the United States, the pharmaceutical industry has been a particular focus of these efforts and has been significantly affected by major legislative initiatives, including, most recently, the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act (collectively, PPACA), enacted in March 2010. The Physician Payments Sunshine Act within PPACA, and its implementing regulations, require certain manufacturers of drugs, devices, biological and medical supplies for which payment is available under Medicare, Medicaid or the Children s Health Insurance Program (with certain

Table of Contents

exceptions) to report information related to certain payments or other transfers of value made or distributed to physicians and teaching hospitals, or to entities or individuals at the request of, or designated on behalf of, the physicians and teaching hospitals and to report annually certain ownership and investment interests held by physicians and their immediate family members.

Further, if a drug product is reimbursed by Medicare, Medicaid or other federal or state healthcare programs, we must comply with, among others, the federal civil and criminal false claims laws, including the civil False Claims Act, as amended, the federal Anti-Kickback Statute, as amended, and similar state laws. If a drug product is reimbursed by Medicare or Medicaid, pricing and rebate programs must comply with, as applicable, the Medicaid rebate requirements of the Omnibus Budget Reconciliation Act of 1990, as amended, and the Medicare Prescription Drug Improvement and Modernization Act of 2003. Additionally, PPACA substantially changed the way healthcare is financed by both governmental and private insurers. Among other cost containment measures, PPACA established: an annual, nondeductible fee on any entity that manufactures or imports certain branded prescription drugs and biologic agents; a new Medicare Part D coverage gap discount program; and a new formula that increased the rebates a manufacturer must pay under the Medicaid Drug Rebate Program. There have been judicial and Congressional challenges to certain aspects of PPACA, and we expect there will be additional challenges and amendments to PPACA. Other legislative changes have been proposed and adopted in the United States since PPACA. For example, through the process created by the Budget Control Act of 2011, there are automatic reductions of Medicare payments to providers up to 2% per fiscal year, which went into effect in April 2013 and, following passage of the Bipartisan Budget Act of 2015, will remain in effect through 2025 unless additional Congressional action is taken. In January 2013, President Obama signed into law the American Taxpayer Relief Act of 2012, which, among other things, further reduced Medicare payments to several providers. In the future, there may continue to be additional proposals relating to the reform of the U.S. health care system, some of which could further limit the prices we are able to charge for our products, or the amounts of reimbursement available for our products. If drug products are made available to authorized users of the Federal Supply Schedule of the General Services Administration, additional laws and requirements apply. All of these activities are also potentially subject to federal and state consumer protection and unfair competition laws.

In addition, we may be subject to data privacy and security regulation by both the federal government and the states in which we conduct our business. The federal Health Insurance Portability and Accountability Act of 1996 (HIPAA), as amended by the Health Information Technology and Clinical Health Act (HITECH), and its implementing regulations, imposes certain requirements relating to the privacy, security and transmission of individually identifiable health information. Among other things, HITECH makes HIPAA s privacy and security standards directly applicable to business associates independent contractors or agents of covered entities that receive or obtain protected health information in connection with providing a service on behalf of a covered entity. HITECH also increased the civil and criminal penalties that may be imposed against covered entities, business associates and possibly other persons, and gave state attorneys general new authority to file civil actions for damages or injunctions in federal courts to enforce the federal HIPAA laws and seek attorneys fees and costs associated with pursuing federal civil actions. In addition, state laws govern the privacy and security of health information in certain circumstances, many of which differ from each other in significant ways and may not have the same effect, thus complicating compliance efforts.

Also, many states have similar healthcare statutes or regulations that apply to items and services reimbursed under Medicaid and other state programs, or, in several states, that apply regardless of the payer. Additional state laws require pharmaceutical companies to implement a comprehensive compliance program and/or limit expenditure for, or payments to, individual medical or health professionals.

We may incur significant costs to comply with these laws and regulations now or in the future. If our operations are found to be in violation of any of the federal and state laws described above or any other governmental regulations that apply to us, we may be subject to penalties, including criminal and significant civil monetary penalties, damages, fines, imprisonment, disgorgement, exclusion of products from reimbursement under government programs, and the curtailment or restructuring of our operations, any of which could adversely affect our ability to operate our business and our results of operations.

Table of Contents

Research and Development Expenses; Long-Lived Assets

A significant portion of our operating expenses relates to research and development. Our research and development expenses totaled $29.7 million, $100.2 million, and $109.7 million for the years ended December 31, 2015, 2014, and 2013, respectively.

Our long-lived assets are located in the United States and totaled $48.7 million, $192.1 million, and $176.6 million as of December 31, 2015, 2014, and 2013, respectively.

Employees

As of December 31, 2015, we had 192 full-time employees. Six of these employees were engaged in basic research and development, 105 in manufacturing, 41 in clinical research and development, regulatory affairs and quality assurance and 40 in administration, finance, management, information systems, marketing, corporate development and human resources. Twenty of these employees had a Ph.D. degree and/or M.D. degree and were engaged in activities relating to research and development, manufacturing, quality assurance or business development.

None of our employees are subject to a collective bargaining agreement. We believe relations with our employees are good.

Corporate Information

We were incorporated in the State of Delaware on February 14, 1991. Our principal executive offices are located at 25134 Rye Canyon Loop Suite 300, Valencia, California 91355, and our telephone number at that address is (661) 775-5300. MannKind Corporation and the MannKind Corporation logo are our service marks. Our website address is http://www.mannkindcorp.com. Our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, and amendments to reports filed pursuant to Sections 13(a) and 15(d) of the Securities Exchange Act of 1934, as amended, or the Exchange Act, are available free of charge on our website as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC. The contents of these websites are not incorporated into this Annual Report. Further, our references to the URLs for these websites are intended to be inactive textual reference only.

Scientific Advisors

We seek advice from a number of leading scientists and physicians on scientific, technical and medical matters. These advisors are leading scientists in the areas of pharmacology, chemistry, immunology and biology. Our scientific advisors are consulted regularly to assess, among other things:

- our research and development programs;
- the design and implementation of our clinical programs;
- our patent and publication strategies;
- market opportunities from a clinical perspective;
- new technologies relevant to our research and development programs; and
- specific scientific and technical issues relevant to our business.

13

Table of Contents

Executive Officers of the Registrant

The following table sets forth our current executive officers and their ages:

Name	Age	Position(s)
Matthew J. Pfeffer	58	Chief Executive Officer, Chief Financial Officer, and Director
Raymond W. Urbanski, M.D, Ph.D.	56	Corporate Vice President, Chief Medical Officer
Michael E. Castagna, Pharm.D	39	Chief Commercial Officer
David B. Thomson, Ph.D., J.D	49	Corporate Vice President, General Counsel and Secretary
Joseph Kocinsky	52	Corporate Vice President, Chief Technology Officer
Linda Adreveno	60	Senior Vice President, Human Resources

Matthew J. Pfeffer has served as our Chief Executive Officer and one of our directors since January 2016 and as our Chief Financial Officer since April 2008. Mr. Pfeffer also served as our Corporate Vice President from April 2008 until January 2016. Previously, Mr. Pfeffer served as Chief Financial Officer and Senior Vice President of Finance and Administration of VaxGen, Inc. from March 2006 until April 2008, with responsibility for finance, tax, treasury, human resources, IT, purchasing and facilities functions. Prior to VaxGen, Mr. Pfeffer served as CFO of Cell Genesys, Inc. During his nine year tenure at Cell Genesys, Mr. Pfeffer served as Director of Finance before being named CFO in 1998. Prior to that, Mr. Pfeffer served in a variety of financial management positions at other companies, including roles as Corporate Controller, Manager of Internal Audit and Manager of Financial Reporting. Mr. Pfeffer began his career at Price Waterhouse. Mr. Pfeffer graduated from the University of California, Berkeley and is a Certified Public Accountant.

Raymond W. Urbanski, M.D., Ph.D. has been our Chief Medical Officer since August 2015. Prior to joining us, he served as Chief Medical Officer at Mylan, Inc. from September 2012 to September 2014 and Chief Medical Officer at Metabolex, Inc. from October 2011 to June 2012. From June 2004 to October 2011, Dr. Urbanski held several positions with Pfizer Inc. most recently as Vice President and Medical Head of the Established Products Business Unit. He also served as Vice President of Research and Development and Chief Medical Officer at Suntory Pharmaceutical, Inc. Dr. Urbanski earned both his M.D. and Ph.D. in pharmacology and toxicology at the University of Medicine and Dentistry of New Jersey. He completed his residency and fellowship training at Thomas Jefferson University Hospital in Philadelphia.

Michael E. Castagna, Pharm.D. has been our Chief Commercial Officer since March 2016. From November 2012 until he joined MannKind, Dr. Castagna was at Amgen, Inc., where he initially served as Vice President, Global Lifecycle Management and was most recently Vice President, Global Commercial Lead for Amgen s Biosimilar Business Unit. From 2010 to 2012, he was Executive Director, Immunology, at Bristol-Myers Squibb. Before BMS, Dr. Castagna served as Vice President & Head, Biopharmaceuticals, North America, at Sandoz. He has also held positions with commercial responsibilities at EMD (Merck) Serono, Pharmasset and DuPont Pharmaceuticals. He received his pharmacy degree from University of the Sciences-Philadelphia College of Pharmacy, a Doctor of Pharmacy from Massachusetts College of Pharmacy & Sciences and an MBA from The Wharton School of Business at the University of Pennsylvania.

David B. Thomson, Ph.D., J.D. has been our Corporate Vice President, General Counsel and Corporate Secretary since January 2002. Prior to joining us, he practiced corporate/commercial and securities law at a major Toronto law firm. Earlier in his career, Dr. Thomson was a post-doctoral fellow at the Rockefeller University. Dr. Thomson obtained his bachelor s degree, master s degree and Ph.D. from Queens University and obtained his J.D. from the University of Toronto.

Joseph Kocinsky has been our Corporate Vice President, Chief Technology Officer since October 2015. Mr. Kocinsky has over 28 years of experience in the pharmaceutical industry in technical operations and product development. Prior to joining us in 2003, he held a variety of technical and management positions with increased responsibility at Schering-Plough Corp. Mr. Kocinsky holds a bachelor s degree in chemical engineering and a master s degree in Biomedical Engineering from New Jersey Institute of Technology and a master s degree in business administration from Seton Hall University.

Table of Contents

Linda Adreveno has been our Senior Vice President of Human Resources since March 2015. Prior to joining us, she was President of reOptimize, Inc., a boutique Human Resources consulting firm working with small to medium sized companies, from April 2006 to March 201, and Senior Director of Human Resources at Nektar Therapeutics from August 2001 to January 2006. Previously, she held senior management positions at Scient, a consulting company, and Sybase. She is a member of the Society of Human Resources Management (SHRM) and is also a certified Senior Professional in Human Resources (SPHR). She holds a bachelor s degree in liberal arts from Regents College (now Excelsior College) in New York, and a master s degree in management from John F. Kennedy University in California.

Executive officers serve at the discretion of our Board of Directors. There are no family relationships between any of our directors and executive officers.

Item 1A. ***Risk Factors***

You should consider carefully the following information about the risks described below, together with the other information contained in this Annual Report before you decide to buy or maintain an investment in our common stock. We believe the risks described below are the risks that are material to us as of the date of this Annual Report. Additional risks and uncertainties that we are unaware of may also become important factors that affect us. If any of the following risks actually occur, our business, financial condition, results of operations and future growth prospects would likely be materially and adversely affected. In these circumstances, the market price of our common stock could decline, and you may lose all or part of the money you paid to buy our common stock.

RISKS RELATED TO OUR BUSINESS

We depend heavily on the successful commercialization of our only approved product, AFREZZA.

We have expended significant time, money and effort in the development of our only approved product, AFREZZA. We anticipate that in the near term, our ability to generate revenues will depend on the successful commercialization of AFREZZA and our ability to enter into licensing arrangements for our Technosphere platform technology that involve license, milestone, royalty or other payments to us.

On February 3, 2015, AFREZZA became available by prescription in United States retail pharmacies. We must receive the necessary approvals from foreign regulatory agencies before AFREZZA can be marketed outside of the United States. Even with such regulatory approval, we ultimately may be unable to gain market acceptance of AFREZZA for a variety of reasons, including the treatment and dosage regimen, potential adverse effects, the availability of alternative treatments and lack of coverage or adequate reimbursement. As of December 31, 2015, Sanofi reported 7.0 million in annual sales of AFREZZA.

As a result of the termination of the Sanofi License Agreement, we intend to pursue development and commercialization of AFREZZA in the United States on our own and seek regional partnerships for the development and commercialization of AFREZZA in foreign jurisdictions where there are appropriate commercial opportunities. If we fail to commercialize AFREZZA successfully, our business, financial condition and results of operations will be materially and adversely affected.

We may not be able to successfully develop and commercialize AFREZZA on our own in the United States or find regional partnerships for the development and commercialization of AFREZZA in foreign jurisdictions. The commercialization and development of AFREZZA will require substantially increased capital that we may not be able to fund.

Sanofi has been responsible for global commercial, regulatory and post-approval development activities for AFREZZA pursuant to the Sanofi License Agreement, and we have been responsible for manufacturing AFREZZA to supply Sanofi s demand for the product. On January 4, 2016, we received written notice from Sanofi of Sanofi s election to terminate in its entirety the Sanofi License Agreement.

Table of Contents

Our ability to continue the development and commercialization of AFREZZA is dependent upon the successful transition of AFREZZA from Sanofi. Pursuant to the terms of the Sanofi License Agreement, we and Sanofi are required to use diligent efforts to facilitate the smooth and orderly transition of relevant obligations and rights to us with respect to development and commercialization activities related to AFREZZA, and are also required to negotiate in good faith a written transition agreement for this purpose. During the transition period, we will be dependent on Sanofi to perform certain activities related to AFREZZA, which subjects us to a number of risks, including:

- Sanofi may not perform as expected and we are not be able to control the amount and timing of resources that Sanofi devotes to the transition;
- there may be disputes between us and Sanofi that may result in the delay of the achievement of regulatory and commercial objectives, or costly litigation or arbitration that diverts our management s attention and resources;
- the manner in which Sanofi effects the transition could adversely impact the development of or sales of AFREZZA and failure to comply with applicable regulatory guidelines could result in administrative or judicially imposed sanctions, including warning letters, civil and criminal penalties, injunctions, product seizures or detention, product recalls, total or partial suspension of production and refusal to approve any new drug applications;
- business combinations or significant changes in Sanofi s business strategy or failure to apply financial and other resources to the transition may also adversely affect Sanofi s ability to perform its obligations; and
- Sanofi may not properly maintain or defend our intellectual property rights or may use our proprietary information in such a way as to invite litigation that could jeopardize or invalidate our proprietary information or expose us to potential litigation.

There are also risks relating to whether we will have the available financial and other resources to implement the transition smoothly.

As a result of the termination of the Sanofi License Agreement, we will also assume the responsibility for commercializing and developing AFREZZA in the United States. We have no experience with commercializing AFREZZA and may not have the resources to undertake such activities on our own. In order to commercialize AFREZZA in the United States, we will need to build our commercialization capabilities, including sales and marketing capabilities, which we will do through hiring our own personnel or subcontracting to a commercial sales organization, or a combination of these. The market for skilled commercial personnel is highly competitive, and we may not be able to find and hire all of the personnel we need on a timely basis. We may engage in sales and marketing activities by subcontracting with a skilled commercial sales organization, though there are risks regarding whether a subcontractor will provide the level of effort and attention to AFREZZA necessary for successful commercialization. We will also become responsible for negotiating and securing coverage and reimbursement for AFREZZA. If we are unable to obtain coverage of, and adequate payment levels for AFREZZA, physicians may limit how much or under what circumstances they will prescribe or administer AFREZZA and patients may decline to purchase AFREZZA, which would have an adverse effect on our ability to generate revenues. Building the internal infrastructure to further develop and commercialize AFREZZA will be costly and time-consuming, and may be distracting to management, and we may not be successful in our efforts or successful in obtaining financing to support those efforts.

We will also become responsible for the NDA for AFREZZA and its maintenance. We have no experience with the maintenance of an NDA and may fail to comply with maintenance requirements, including timely submitting required reports, particularly if Sanofi is not fully cooperative in transferring required data to us. Furthermore, we will become responsible for the conduct of ongoing or still required post-approval trials of AFREZZA once transferred from Sanofi. The transfer of these trials and our financial and resources constraints may result in delays or adversely impact their reliability and completion.

We also intend to seek regional partnerships for the development and commercialization of AFREZZA in foreign jurisdictions where there are appropriate commercial opportunities. It may be difficult to find a new

Table of Contents

collaboration partner that is willing to devote the time and resources necessary to successfully commercialize AFREZZA. Collaborations with third parties may require us to relinquish material rights, including revenue from commercialization, on terms that are less attractive than our collaboration with Sanofi or to assume material ongoing development obligations that we would have to fund. These collaboration arrangements are complex and time-consuming to negotiate, and if we are unable to reach agreements with third-party collaborators, we may fail to meet our business objectives and our financial condition may be adversely affected. We may also face significant competition in seeking collaboration partners, especially in the current market, and may not be able to find a suitable collaboration partner in a timely manner on acceptable terms, or at all. Any of these factors could cause delay or prevent the successful commercialization of AFREZZA and could have a material and adverse impact on our business, financial condition and results of operations and the market price of our common stock and other securities could decline.

We may not be successful in our efforts to develop and commercialize our other product candidates.

We have sought to develop our other product candidates through our internal research programs. All of our product candidates will require additional research and development and, in some cases, significant preclinical, clinical and other testing prior to seeking regulatory approval to market them. Accordingly, these product candidates will not be commercially available for a number of years, if at all. Further research and development on these programs will require significant financial resources. Given our limited financial resources and our focus on development and commercialization of AFREZZA, we will not be able to advance these programs unless we are able to enter into collaborations with third parties to fund of these programs or to obtain funding to enable us to continue these programs.

A significant portion of the research that we have conducted involves new technologies, including our Technosphere platform technology. Even if our research programs identify product candidates that initially show promise, these candidates may fail to progress to clinical development for any number of reasons, including discovery upon further research that these candidates have adverse effects or other characteristics that indicate they are unlikely to be effective. In addition, the clinical results we obtain at one stage are not necessarily indicative of future testing results. If we fail to develop and commercialize our other product candidates, or if we are significantly delayed in doing so, our business, financial condition and results of operations will be harmed and the market price of our common stock and other securities could decline.

We have a history of operating losses, we expect to incur losses in the future and we may not generate positive cash flow from operations in the future.

We have never been profitable or generated positive cash flow from cumulative operations to date. Historically, we have reported negative cash flow from operations other than for the nine months ended September 30, 2014, for the year ended December 31, 2014, and for the three months ended March 31, 2015 as a result of our receipt of an upfront payment and milestone payments from Sanofi. As of December 31, 2015, we had an accumulated deficit of $2.9 billion. The accumulated deficit has resulted principally from costs incurred in our research and development programs, the write-off of goodwill and general operating expenses. We expect to make substantial expenditures and to incur increasing operating losses in the future in order to continue the commercialization of AFREZZA, after the termination of the Sanofi License Agreement is effective. In connection with our quarterly assessment of impairment indicators and inventory valuation, we identified an impairment of our long-lived assets which resulted in charges of $140.4 million in the fourth quarter of 2015. In addition, we have agreed to purchase annual minimum quantities of insulin for calendar years 2015 through 2019 under the Insulin Supply Agreement with Amphastar in the aggregate of approximately 120.1 million, of which 104.0 million is remaining at December 31, 2015. We are obligated to purchase 34.1 million in 2016 and the remaining annual minimum quantities will be 23.3 million for the years ending December 31, 2017 through 2019. We may not have the necessary capital resources on hand in order to service this contractual commitment. We recognized a loss on purchase commitments of $66.2 million in the fourth quarter of 2015. Additional impairment charges may be identified and recognized in the future. Our cumulative net loss may therefore increase significantly.

Table of Contents

Our losses have had, and are expected to continue to have, an adverse impact on our working capital, total assets and stockholders equity. As of December 31, 2015, we had stockholders deficit of $350.3 million. Our ability to achieve and sustain positive cash flow from operations and profitability depends heavily upon successfully commercializing AFREZZA, and we cannot be sure when we will generate positive cash flow from operations or become profitable, if at all.

We will need to raise additional capital to fund our operations, and our inability to do so could raise substantial doubt about our ability to continue as a going concern.

We will need to raise additional capital, whether through the sale of equity or debt securities, additional strategic business collaborations, the establishment of other funding facilities, licensing arrangements, asset sales or other means, in order to support our ongoing activities including the commercialization of AFREZZA and the development of other product candidates and to avoid defaulting under the covenant in our facility agreement with Deerfield Private Design Fund II, L.P. (Deerfield Private Design Fund) and Deerfield Private Design International II, L.P. (collectively, Deerfield) dated July 1, 2013 (as amended, the Facility Agreement) that requires us to maintain at least $25.0 million in cash and cash equivalents or available borrowings under the loan arrangement, dated as of October 2, 2007, between us and The Mann Group LLC (as amended, restated, or otherwise modified as of the date hereof, The Mann Group Loan Arrangement), as of the last day of each fiscal quarter. It may be difficult for us to raise additional funds on favorable terms, or at all. As of December 31, 2015, we had stockholders deficit of $350.3 million, which may raise concerns about our solvency and affect our ability to raise additional capital. The extent of our additional funding requirements will depend on a number of factors, including:

- the degree to which AFREZZA is commercially successful;
- the degree to which we are able to generate revenue from our Technosphere drug delivery platform;
- the costs of developing and commercializing AFREZZA on our own in the United States, including the costs of building our commercialization capabilities;
- the costs of finding regional collaboration partners for the development and commercialization of AFREZZA in foreign jurisdictions;
- the demand by any or all of the holders of the 5.75% Convertible Senior Subordinated Exchange Notes due 2018 (the 2018 notes), the 9.75% Senior Convertible Notes due 2019 issued to Deerfield (the 2019 notes), and the 8.75% Senior Convertible Notes due 2019 issued to Deerfield (the Tranche B notes) to require us to repay or repurchase such debt securities if and when required;
- our ability to repay or refinance existing indebtedness, and the extent to which the 2018 notes or any other convertible debt securities we may issue are converted into or exchanged for shares of our common stock;
- the rate of progress and costs of our clinical studies and research and development activities;
- the costs of procuring raw materials and operating our manufacturing facilities;
- our obligation to make milestone payments pursuant to the milestone rights issued to Deerfield Private Design Fund and Horizon Santé FLML SÁRL (collectively, the Milestone Purchasers) and pursuant to the Milestone Rights Purchase Agreement dated July 1, 2013 (the Milestone Agreement);

our obligation to bear our share of net losses, if any, if Sanofi makes any product sales under the Sanofi License Agreement after the Termination Date;

our success in establishing strategic business collaborations or other sales or licensing of assets, and the timing and amount of any payments we might receive from any such transactions;

actions taken by the FDA and other regulatory authorities affecting AFREZZA and our product candidates and competitive products;

the emergence of competing technologies and products and other market developments;

Table of Contents

the costs of preparing, filing, prosecuting, maintaining and enforcing patent claims and other intellectual property rights or defending against claims of infringement by others;

the level of our legal and litigation expenses; and

the costs of discontinuing projects and technologies, and/or decommissioning existing facilities, if we undertake any such activities.

We have raised capital in the past through the sale of equity and debt securities and we may in the future pursue the sale of additional equity and/or debt securities, or the establishment of other funding facilities including asset-based borrowings. There can be no assurances, however, that we will be able to raise additional capital on acceptable terms, or at all. Issuances of additional debt or equity securities or the conversion of any of our currently outstanding convertible debt securities into shares of our common stock or the exercise of our currently outstanding warrants for shares of our common stock could impact the rights of the holders of our common stock and will dilute their ownership percentage. Moreover, the establishment of other funding facilities may impose restrictions on our operations. These restrictions could include limitations on additional borrowing and specific restrictions on the use of our assets, as well as prohibitions on our ability to create liens, pay dividends, redeem our stock or make investments. We also will need to raise additional capital by pursuing opportunities for the licensing or sale of certain intellectual property and other assets. We cannot offer assurances, however, that any strategic collaborations, sales of securities or sales or licenses of assets will be available to us on a timely basis or on acceptable terms, if at all. We may be required to enter into relationships with third parties to develop or commercialize products or technologies that we otherwise would have sought to develop independently, and any such relationships may not be on terms as commercially favorable to us as might otherwise be the case.

In the event that sufficient additional funds are not obtained through strategic collaboration opportunities, sales of securities, funding facilities, licensing arrangements and/or asset sales on a timely basis, we may be required to reduce expenses through the delay, reduction or curtailment of our projects, or further reduction of costs for facilities and administration. Moreover, if we do not obtain such additional funds, there will be substantial doubt about our ability to continue as a going concern and increased risk of insolvency and loss of investment to the holders of our securities. As of the date hereof, we have not obtained a solvency opinion or otherwise conducted a valuation of our properties to determine whether our debts exceed the fair value of our property within the meaning of applicable solvency laws. If we are or become insolvent, holders of our common stock or other securities may lose the entire value of their investment.

We cannot provide assurances that changed or unexpected circumstances will not result in the depletion of our capital resources more rapidly than we currently anticipate, in which case we will be required to raise additional capital. There can be no assurances that we will be able to raise additional capital on favorable terms, or at all. If we are unable to raise adequate additional capital we will be required to reduce expenses through the delay, reduction or curtailment of our projects, or further reduction of costs for facilities and administration, and there will continue to be substantial doubt about our ability to continue as a going concern.

We have a substantial amount of debt pursuant to the 2018 notes, 2019 notes, Tranche B notes, The Mann Group Loan Arrangement and the Sanofi Loan Facility, and we may incur additional indebtedness under The Mann Group Loan Arrangement and we may be unable to make required payments of interest and principal as they become due.

As of February 22, 2016, we had $219.6 million principal amount of outstanding debt, consisting of:

$27.7 million principal amount of 2018 notes bearing interest at 5.75% per annum and maturing on August 15, 2018;

$60.0 million principal amount of 2019 notes bearing interest at 9.75% per annum, $5.0 million of which is due and payable in July 2016, $15.0 million of which is due and payable in July 2017, $15.0 million of which is due and payable in July 2018 and $25.0 million of which is due and payable in July and December 2019;

Table of Contents

$20.0 million principal amount of Tranche B notes bearing interest at 8.75% per annum, $5.0 million of which is due and payable in each of May 2017, 2018 and 2019, the balance of which is due and payable in December 2019;

$49.5 million principal amount of indebtedness under The Mann Group Loan Arrangement, bearing interest at 5.84% and maturing and due on January 5, 2020; and

$62.4 million principal amount borrowed under the Sanofi Loan Facility to fund our share of net losses under the Sanofi License Agreement, bearing interest at a rate of 8.5% per annum, with accrued interest payable in-kind and compounded quarterly, and maturing and due on September 23, 2024.

We may borrow an additional $30.1 million under The Mann Group Loan Arrangement. We anticipate using a portion of these available borrowings to capitalize accrued interest into principal, upon mutual agreement of the parties, as it becomes due and payable under The Mann Group Loan Arrangement. As of December 31, 2015 the accrued and unpaid interest under The Mann Group Loan Arrangement was $6.4 million.

All profits and losses from AFREZZA product sales by Sanofi or its affiliates after the Termination Date, if any, will continue to be shared 65% by Sanofi and 35% by us pursuant to the terms of the Sanofi License Agreement, and we may borrow up to an aggregate of $175.0 million pursuant to the Sanofi Loan Facility to fund our share of net losses from AFREZZA product sales by Sanofi or its affiliates. Our total share of the net losses are $62.4 million as of December 31, 2015, classified as Sanofi loan facility and loss share obligation, and such amount has been borrowed under the Sanofi Loan Facility as of February 22, 2016.

There can be no assurance that we will have sufficient resources to make any required repayments of principal under the terms of our indebtedness when required. Further, if we undergo a fundamental change, as that term is defined in the indentures governing the terms of the 2018 notes, or certain Major Transactions as defined in the Facility Agreement in respect of the 2019 notes and the Tranche B notes, the holders of the respective debt securities will have the option to require us to repurchase all or any portion of such debt securities at a repurchase price of 100% of the principal amount of such debt securities to be repurchased plus accrued and unpaid interest, if any. The 2018 notes bear interest at the rate of 5.75% per year on the outstanding principal amount, payable in cash semiannually in arrears on February 15 and August 15 of each year. The 2019 notes bear interest at the rate of 9.75% per year on the outstanding principal amount and the Tranche B notes bear interest at the rate of 8.75% on the outstanding principal amount, with accrued interest on each payable in cash quarterly in arrears on the last business day of March, June, September and December of each year. Loans under the Sanofi Loan Facility bear interest at a rate of 8.5% per annum, paid-in-kind on a quarterly basis (2.06% per quarter compounded). Loans under The Mann Group Loan Arrangement accrue interest at a rate of 5.84% per annum, due and payable quarterly in arrears on the first day of each calendar quarter for the preceding quarter, or at such other time as we and The Mann Group mutually agree. While we have been able to timely make our required interest payments to date, we cannot guarantee that we will be able to do so in the future. If we fail to pay interest on the 2018 notes, 2019 notes, Tranche B notes, or on the loans under the Sanofi Loan Facility, or if we fail to repay or repurchase the 2018 notes, 2019 notes, Tranche B notes, or the loans under the Sanofi Loan Facility when required, we will be in default under the indenture governing the terms of the 2018 notes, the Facility Agreement or other applicable instrument for such debt securities or loans, and may also suffer an event of default under the terms of other borrowing arrangements that we may enter into from time to time. Any of these events could have a material adverse effect on our business, results of operations and financial condition, up to and including the note holders initiating bankruptcy proceedings or causing us to cease operations altogether.

The agreements governing our indebtedness contain covenants that we may not be able to meet and place restrictions on our operating and financial flexibility.

Our obligations under the Facility Agreement, including any indebtedness under the 2019 notes and the Tranche B notes, and the Milestone Agreement are secured by substantially all of our assets, including our intellectual property, accounts receivables, equipment, general intangibles, inventory (excluding the insulin inventory) and investment property, and all of the proceeds and products of the foregoing. Our obligations under the Facility Agreement and the Milestone Agreement are also secured by a certain mortgage on our facility in

Table of Contents

Danbury, Connecticut. Our obligations under the Sanofi Loan Facility are secured by a first priority mortgage on our facility in Valencia, California, a first priority security interest in certain insulin inventory located in the United States and any contractual rights and obligations pursuant to which we purchase or have purchased such insulin, and a second priority security interest in our assets that secure our obligations under the Facility Agreement.

The Facility Agreement includes customary representations, warranties and covenants by us, including restrictions on our ability to incur additional indebtedness, grant certain liens, engage in certain mergers and acquisitions, make certain distributions and make certain voluntary prepayments. Events of default under the Facility Agreement include: our failure to timely make payments due under the 2019 notes or the Tranche B notes; inaccuracies in our representations and warranties to Deerfield; our failure to comply with any of our covenants under any of the Facility Agreement, Milestone Agreement or certain other related security agreements and documents entered into in connection with the Facility Agreement, subject to a cure period with respect to most covenants; our insolvency or the occurrence of certain bankruptcy-related events; certain judgments against us; the suspension, cancellation or revocation of governmental authorizations that are reasonably expected to have a material adverse effect on our business; the acceleration of a specified amount of our indebtedness; our cash and cash equivalents, including amounts available to us under The Mann Group Loan Arrangement, falling below $25.0 million as of the last day of any fiscal quarter. If one or more events of default under the Facility Agreement occurs and continues beyond any applicable cure period, the holders of the 2019 notes and Tranche B notes may declare all or any portion of the 2019 notes and Tranche B notes to be immediately due and payable. The Milestone Agreement includes customary representations and warranties and covenants by us, including restrictions on transfers of intellectual property related to AFREZZA. The milestones are subject to acceleration in the event we transfer our intellectual property related to AFREZZA in violation of the terms of the Milestone Agreement.

Similarly, the Sanofi Loan Facility includes customary representations, warranties and covenants by us, including restrictions on our ability to incur additional indebtedness, grant certain liens and make certain changes to our organizational documents. Events of default under the Sanofi Loan Facility include: our failure to make timely payments due under the Sanofi Loan Facility; inaccuracies in our representations and warranties to the lender; our failure to comply with any of our covenants under any of the Sanofi Loan Facility or certain other related security agreements and documents entered into in connection with the Sanofi Loan Facility, subject to a cure period with respect to most covenants; our insolvency or the occurrence of certain bankruptcy-related events; termination by Sanofi of the Sanofi License Agreement as a result of our breach of the Sanofi License Agreement; and the failure of any material provision under any of the Sanofi Loan Facility or certain other related security agreements and documents entered into in connection with the Sanofi Loan Facility to remain in full force and effect. If one or more events of default occurs and is continuing, the lender may terminate its obligation to make advances under the Sanofi Loan Facility, and, if certain specified events of default (including our failure to timely make payments due under the Sanofi Loan Facility; our failure to comply with the negative covenants under the Sanofi Loan Facility limiting our ability to incur additional indebtedness or grant certain liens; our insolvency or the occurrence of certain bankruptcy-related events; termination by Sanofi of the Sanofi License Agreement as a result of our breach of the non-compete provisions of the Sanofi License Agreement; or the failure of any material provision under any of the Sanofi Loan Facility or certain other related security agreements and documents entered into in connection with the Sanofi Loan Facility to remain in full force and effect) occur and are continuing, the lender may accelerate all of our repayment obligations under the Sanofi Loan Facility and otherwise exercise any of its remedies as a secured creditor.

There can be no assurance that we will be able to comply with the covenants under any of the foregoing agreements, and we cannot predict whether the holders of the 2019 notes or Tranche B notes or the lender under the Sanofi Loan Facility would demand repayment of the outstanding balance of the 2019 notes, the Tranche B notes or the loans under the Sanofi Loan Facility as applicable or exercise any other remedies available to such holders if we were unable to comply with these covenants. The covenants and restrictions contained in the foregoing agreements could significantly limit our ability to respond to changes in our business or competitive activities or take advantage of business opportunities that may create value for our stockholders and the holders

Table of Contents

of our other securities. In addition, our inability to meet or otherwise comply with the covenants under these agreements could have an adverse impact on our financial position and results of operations and could result in an event of default under the terms of our other indebtedness, including our indebtedness under the 2018 notes. In the event of certain future defaults under the foregoing agreements for which we are not able to obtain waivers, the holders of the 2018 notes, 2019 notes and Tranche B notes and the lender under the Sanofi Loan Facility may accelerate all of our repayment obligations, and, with respect to the 2019 notes and Tranche B notes and the loans under the Sanofi Loan Facility, take control of our pledged assets, potentially requiring us to renegotiate the terms of our indebtedness on terms less favorable to us, or to immediately cease operations.

If we enter into additional debt arrangements, the terms of such additional arrangements could further restrict our operating and financial flexibility. In the event we must cease operations and liquidate our assets, the rights of any holders of our outstanding secured debt would be senior to the rights of the holders of our unsecured debt and our common stock to receive any proceeds from the liquidation.

If we do not achieve our projected development goals in the timeframes we expect, our business, financial condition and results of operations will be harmed and the market price of our common stock and other securities could decline.

For planning purposes, we estimate the timing of the accomplishment of various scientific, clinical, regulatory and other product development goals, which we sometimes refer to as milestones. These milestones may include the commencement or completion of scientific studies and clinical studies and the submission of regulatory filings. From time to time, we publicly announce the expected timing of some of these milestones. All of these milestones are based on a variety of assumptions. The actual timing of the achievement of these milestones can vary dramatically from our estimates, in many cases for reasons beyond our control, depending on numerous factors, including:

- the rate of progress, costs and results of our clinical studies and preclinical research and development activities;
- our ability to identify and enroll patients who meet clinical study eligibility criteria;
- our ability to access sufficient, reliable and affordable supplies of components used in the manufacture of our product candidates;
- the costs of expanding and maintaining manufacturing operations, as necessary;
- the extent to which our clinical studies compete for clinical sites and eligible subjects with clinical studies sponsored by other companies; and
- actions by regulators.

In addition, if we do not obtain sufficient additional funds through sales of securities, strategic collaborations or the license or sale of certain of our assets on a timely basis, we may be required to reduce expenses by delaying, reducing or curtailing our development of product candidates. If we fail to commence or complete, or experience delays in or are forced to curtail, our proposed clinical programs or otherwise fail to adhere to our projected development goals in the timeframes we expect (or within the timeframes expected by analysts or investors), our business, financial condition and results of operations will be harmed and the market price of our common stock and other securities may decline.

AFREZZA or our product candidates may be rendered obsolete by rapid technological change.

A number of established pharmaceutical companies have or are developing technologies for the treatment of unmet medical needs.

The rapid rate of scientific discoveries and technological changes could result in AFREZZA or one or more of our product candidates becoming obsolete or noncompetitive. Our competitors may develop or introduce new products that render our technology or AFREZZA less competitive, uneconomical or obsolete. Our future

Table of Contents

success will depend not only on our ability to develop our product candidates but to improve them and keep pace with emerging industry developments. We cannot assure you that we will be able to do so.

We also expect to face competition from universities and other non-profit research organizations. These institutions carry out a significant amount of research and development in various areas of unmet medical need. These institutions are becoming increasingly aware of the commercial value of their findings and are more active in seeking patent and other proprietary rights as well as licensing revenues.

Continued testing of AFREZZA or our product candidates may not yield successful results, and even if it does, we may still be unable to commercialize our product candidates.

Forecasts about the effects of the use of drugs, including AFREZZA, over terms longer than the clinical studies or in much larger populations may not be consistent with the earlier clinical results. For example, with the approval of AFREZZA, the FDA has required a five-year, randomized, controlled trial in 8,000 10,000 patients with type 2 diabetes, the primary objective of which is to compare the incidence of pulmonary malignancy observed with AFREZZA to that observed in a standard of care control group. If long-term use of a drug results in adverse health effects or reduced efficacy or both, the FDA or other regulatory agencies may terminate our or any of our current or future marketing partner s ability to market and sell the drug, may narrow the approved indications for use or otherwise require restrictive product labeling or marketing, or may require further clinical studies, which may be time-consuming and expensive and may not produce favorable results.

Our research and development programs are designed to test the safety and efficacy of our product candidates through extensive nonclinical and clinical testing. We may experience numerous unforeseen events during, or as a result of, the testing process that could delay or impact commercialization of any of our product candidates, including the following:

- safety and efficacy results obtained in our nonclinical and early clinical testing may be inconclusive or may not be predictive of results that we may obtain in our future clinical studies or following long-term use, and we may as a result be forced to stop developing a product candidate or alter the marketing of an approved product;

- the analysis of data collected from clinical studies of our product candidates may not reach the statistical significance necessary, or otherwise be sufficient to support FDA or other regulatory approval for the claimed indications;

- after reviewing clinical data, we or any collaborators may abandon projects that we previously believed were promising; and

- our product candidates may not produce the desired effects or may result in adverse health effects or other characteristics that preclude regulatory approval or limit their commercial use once approved.

As a result of any of these events, we, any collaborator, the FDA, or any other regulatory authorities, may suspend or terminate clinical studies or marketing of the drug at any time. Any suspension or termination of our clinical studies or marketing activities may harm our business, financial condition and results of operations and the market price of our common stock and other securities may decline.

If our suppliers fail to deliver materials and services needed for the production of AFREZZA in a timely and sufficient manner, if they fail to comply with applicable regulations, or if we fail to identify and qualify alternative suppliers, our business, financial condition and results of operations would be harmed and the market price of our common stock and other securities could decline.

For the commercial manufacture of AFREZZA, we need access to sufficient, reliable and affordable supplies of insulin, our AFREZZA inhaler, the related cartridges and other materials. Currently, the only approved source of insulin for AFREZZA is manufactured by Amphastar and the only source of our proprietary inert excipient, FDKP (fumaryl diketopiperazine), which is the primary component of our Technosphere technology platform, is manufactured by Lonza. We must rely on our suppliers, including Amphastar, to comply with relevant regulatory

Table of Contents

and other legal requirements, including the production of insulin and FDKP in accordance with the FDA s cGMPs for drug products, and the production of the AFREZZA inhaler and related cartridges in accordance with QSRs. The supply of any of these materials may be limited or any of the manufacturers may not meet relevant regulatory requirements, and if we are unable to obtain any of these materials in sufficient amounts, in a timely manner and at reasonable prices, or if we encounter delays or difficulties in our relationships with manufacturers or suppliers, the production of AFREZZA may be delayed. Likewise, if Amphastar or Lonza ceases to manufacture or is otherwise unable to deliver insulin for AFREZZA, we will need to locate an alternative source of supply and the production of AFREZZA may be delayed. If any of our suppliers is unwilling or unable to meet its supply obligations and we are unable to secure an alternative supply source in a timely manner and on favorable terms, our business, financial condition, and results of operations may be harmed and the market price of our common stock and other securities may decline.

If we fail as an effective manufacturing organization or fail to engage third-party manufacturers with this capability, we may be unable to support commercialization of this product.

We use our Danbury, Connecticut facility to formulate AFREZZA inhalation powder, fill plastic cartridges with the powder, package the cartridges in blister packs, and place the blister packs into foil pouches. We utilize a contract packager to assemble the final kits of foil-pouched blisters containing cartridges along with inhalers and the package insert. The manufacture of pharmaceutical products requires significant expertise and capital investment, including the development of advanced manufacturing techniques and process controls. Manufacturers of pharmaceutical products often encounter difficulties in production, especially in scaling up initial production. These problems include difficulties with production costs and yields, quality control and assurance and shortages of qualified personnel, as well as compliance with strictly enforced federal, state and foreign regulations. If we engage a third-party manufacturer, we would need to transfer our technology to that third-party manufacturer and gain FDA approval, potentially causing delays in product delivery. In addition, our third-party manufacturer may not perform as agreed or may terminate its agreement with us.

Any of these factors could cause us to delay or suspend production, could entail higher costs and may result in our being unable to effectively support commercialization of AFREZZA. Furthermore, if we or a third-party manufacturer fail to deliver the required commercial quantities of the product or any raw material on a timely basis, and at commercially reasonable prices and acceptable quality, and we were unable to promptly find one or more replacement manufacturers capable of production at a substantially equivalent cost, in substantially equivalent volume and quality on a timely basis, we would likely be unable to meet demand for AFREZZA and we would lose potential revenues.

If AFREZZA or any other product that we develop does not become widely accepted by physicians, patients, third-party payors and the healthcare community, we may be unable to generate significant revenue, if any.

AFREZZA and other products that we may develop in the future may not gain market acceptance among physicians, patients, third-party payors and the healthcare community. For example, as of December 31, 2015, Sanofi reported 7.0 million in annual sales of AFREZZA. Failure to achieve market acceptance would limit our ability to generate revenue and would adversely affect our results of operations.

The degree of market acceptance of AFREZZA and other products that we may develop in the future depends on many factors, including the:

- approved labeling claims;
- effectiveness of efforts by us or any of our current or future marketing partner(s) to educate physicians about the benefits and advantages of AFREZZA or our other products and to provide adequate support for them, and the perceived advantages and disadvantages of competitive products;
- willingness of the healthcare community and patients to adopt new technologies;
- ability to manufacture the product in sufficient quantities with acceptable quality and cost;

Table of Contents

perception of patients and the healthcare community, including third-party payors, regarding the safety, efficacy and benefits compared to competing products or therapies;

convenience and ease of administration relative to existing treatment methods;

coverage and pricing and reimbursement relative to other treatment therapeutics and methods; and

marketing and distribution support.

Because of these and other factors, AFREZZA and any other product that we get approved may not gain market acceptance, which would materially harm our business, financial condition and results of operations.

If third-party payors do not cover AFREZZA or any of our product candidates for which we receive regulatory approval, AFREZZA or such product candidates might not be prescribed, used or purchased, which would adversely affect our revenues.

Our future revenues and ability to generate positive cash flow from operations may be affected by the continuing efforts of governments and third-party payors to contain or reduce the costs of healthcare through various means. For example, in certain foreign markets the pricing of prescription pharmaceuticals is subject to governmental control. In the United States, there has been, and we expect that there will continue to be, a number of federal and state proposals to implement similar governmental controls. We cannot be certain what legislative proposals will be adopted or what actions federal, state or private payors for healthcare goods and services may take in response to any drug pricing and reimbursement reform proposals or legislation. Such reforms may limit our ability to generate revenues from sales of AFREZZA or other products that we may develop in the future and achieve profitability. Further, to the extent that such reforms have a material adverse effect on the business, financial condition and profitability of any of our current or future marketing partners for AFREZZA, and companies that are prospective collaborators for our product candidates, our ability to commercialize AFREZZA and our product candidates under development may be adversely affected.

In the United States and elsewhere, sales of prescription pharmaceuticals still depend in large part on the availability of coverage and adequate reimbursement to the consumer from third-party payors, such as governmental and private insurance plans. Third-party payors are increasingly challenging the prices charged for medical products and services. The market for AFREZZA and our product candidates for which we may receive regulatory approval will depend significantly on access to third-party payors drug formularies, or lists of medications for which third-party payors provide coverage and reimbursement. The industry competition to be included in such formularies often leads to downward pricing pressures on pharmaceutical companies. Also, third-party payors may refuse to include a particular branded drug in their formularies or otherwise restrict patient access to a branded drug when a less costly generic equivalent or other alternative is available. In addition, because each third-party payor individually approves coverage and reimbursement levels, obtaining coverage and adequate reimbursement is a time-consuming and costly process. We may be required to provide scientific and clinical support for the use of any product to each third-party payor separately with no assurance that approval would be obtained. This process could delay the market acceptance of any product and could have a negative effect on our future revenues and operating results. Even if we succeed in bringing more products to market, we cannot be certain that any such products would be considered cost-effective or that coverage and adequate reimbursement to the consumer would be available. Patients will be unlikely to use our products unless coverage is provided and reimbursement is adequate to cover a significant portion of the cost of our products.

In addition, in many foreign countries, particularly the countries of the European Union, the pricing of prescription drugs is subject to government control. In some non-U.S. jurisdictions, the proposed pricing for a drug must be approved before it may be lawfully marketed. The requirements governing drug pricing vary widely from country to country. For example, the European Union provides options for its member states to restrict the range of medicinal products for which their national health insurance systems provide reimbursement and to control the prices of medicinal products for human use. A member state may approve a specific price for the medicinal product or it may instead adopt a system of direct or indirect controls on the profitability of the company placing the medicinal product on the market. We may face competition for AFREZZA or any of our

Table of Contents

other product candidates that receives marketing approval from lower-priced products in foreign countries that have placed price controls on pharmaceutical products. In addition, there may be importation of foreign products that compete with our own products, which could negatively impact our profitability.

If we or any of our current or future marketing partners are unable to obtain coverage of, and adequate payment levels for, AFREZZA or any of our other product candidates that receive marketing approval from third-party payors, physicians may limit how much or under what circumstances they will prescribe or administer them and patients may decline to purchase them. This in turn could affect our and any of our current or future marketing partner s ability to successfully commercialize AFREZZA and our ability to successfully commercialize any of our other product candidates that receives regulatory approval and impact our profitability, results of operations, financial condition, and prospects.

Healthcare legislation may make it more difficult to receive revenues.

In both the United States and certain foreign jurisdictions, there have been a number of legislative and regulatory proposals in recent years to change the healthcare system in ways that could impact our ability to sell our products profitably. For example, in March 2010, PPACA became law in the United States. PPACA substantially changes the way healthcare is financed by both governmental and private insurers and significantly affects the healthcare industry. Among the provisions of PPACA of importance to us are the following:

an annual, nondeductible fee on any entity that manufactures or imports certain branded prescription drugs and biologic agents, apportioned among these entities according to their market share in certain government healthcare programs;

a 2.3% medical device excise tax on certain transactions, including many U.S. sales of medical devices, which currently includes and we expect will continue to include U.S. sales of certain drug-device combination products;

an increase in the statutory minimum rebates a manufacturer must pay under the Medicaid Drug Rebate Program to 23.1% and 13% of the average manufacturer price for most branded and generic drugs, respectively;

a licensure framework for follow-on biological products;

expansion of healthcare fraud and abuse laws, including the False Claims Act and the Anti-Kickback Statute, new government investigative powers, and enhanced penalties for noncompliance;

a new Medicare Part D coverage gap discount program, in which manufacturers must agree to offer 50% point-of-sale discounts off negotiated prices of applicable brand drugs to eligible beneficiaries during their coverage gap period, as a condition for the manufacturer s outpatient drugs to be covered under Medicare Part D;

extension of manufacturers Medicaid rebate liability to covered drugs dispensed to individuals who are enrolled in Medicaid managed care organizations;

expansion of eligibility criteria for Medicaid programs by, among other things, allowing states to offer Medicaid coverage to additional individuals with income at or below 133% of the Federal Poverty Level, thereby potentially increasing manufacturers Medicaid rebate liability;

expansion of the entities eligible for discounts under the Public Health Service pharmaceutical pricing program;

new requirements to report annually to the Centers for Medicare & Medicaid Services (CMS) certain financial arrangements with physicians and teaching hospitals, as defined in PPACA and its implementing regulations, including reporting any payments or transfers of value made or distributed to prescribers, teaching hospitals and other healthcare providers and reporting any ownership and investment interests held by physicians and their immediate family members and applicable group purchasing organizations during the preceding calendar year;

Table of Contents

a new requirement to annually report drug samples that certain manufacturers and authorized distributors provide to physicians; and

a new Patient-Centered Outcomes Research Institute to oversee, identify priorities in, and conduct comparative clinical effectiveness research, along with funding for such research.

The medical device excise tax has been suspended by the Consolidated Appropriations Act of 2016 (the CAA) through December 31, 2017. Absent further Congressional action, the excise tax will be reinstated for medical device sales beginning January 1, 2018. The CAA also temporarily delays implementation of other taxes intended to help fund PPACA programs. Further, there have been judicial and Congressional challenges to other aspects of PPACA, and we expect there will be additional challenges and amendments to PPACA in the future.

In addition, other legislative changes have been proposed and adopted since PPACA was enacted. For example, on August 2, 2011, the Budget Control Act of 2011, among other things, created measures for spending reductions by Congress. A Joint Select Committee on Deficit Reduction, tasked with recommending a targeted deficit reduction of at least $1.2 trillion for the years 2013 through 2021, was unable to reach required goals, thereby triggering the legislation s automatic reduction to several government programs. This includes aggregate reductions to Medicare payments to providers of up to 2% per fiscal year, starting in 2013, and, following passage of the Bipartisan Budget Act of 2015, will stay in effect through 2025 unless additional Congressional action is taken. On January 2, 2013, President Obama signed into law the American Taxpayer Relief Act of 2012 (the ATRA), which, among other things, reduced Medicare payments to several providers, including hospitals, imaging centers and cancer treatment centers, and increased the statute of limitations period for the government to recover overpayments to providers from three to five years. In addition, recently there has been heightened governmental scrutiny over the manner in which manufacturers set prices for their marketed products. These new laws and initiatives may result in additional reductions in Medicare and other healthcare funding, which could have a material adverse effect on our customers and accordingly, our financial operations.

We expect that PPACA, as well as other healthcare reform measures that may be adopted in the future, may result in more rigorous coverage criteria and in additional downward pressure on the price that we receive for any approved product, and could seriously harm our future revenues. Any reduction in reimbursement from Medicare or other government programs may result in a similar reduction in payments from private third-party payors. The implementation of cost containment measures or other healthcare reforms may prevent us from being able to generate revenue, attain profitability, or commercialize our products.

If we or any of our current or future marketing partners fail to comply with federal and state healthcare laws, including fraud and abuse and health information privacy and security laws, we could face substantial penalties and our business, results of operations, financial condition and prospects could be adversely affected.

As a biopharmaceutical company, even though we do not and will not control referrals of healthcare services or bill directly to Medicare, Medicaid or other third-party payors, certain federal and state healthcare laws and regulations, including those pertaining to fraud and abuse and patients rights are and will be applicable to our business. For example, we could be subject to healthcare fraud and abuse and patient privacy regulation by both the federal government and the states in which we conduct our business. The laws that may affect our ability to operate include, among others:

the federal Anti-Kickback Statute (as amended by PPACA, which modified the intent requirement of the federal Anti-Kickback Statute so that a person or entity no longer needs to have actual knowledge of the Statute or specific intent to violate it to have committed a violation), which constrains our business activities, including our marketing practices, educational programs, pricing policies, and relationships with healthcare providers or other entities by prohibiting, among other things, knowingly and willfully offering soliciting, receiving, offering or paying remuneration, directly or indirectly, to induce, or in return for, either the referral of an individual or the purchase or recommendation of an item or service reimbursable under a federal healthcare program, such as the Medicare and Medicaid programs;

Table of Contents

federal civil and criminal false claims laws, including without limitation the civil False Claims Act, and civil monetary penalty laws, which prohibit, among other things, individuals or entities from knowingly presenting, or causing to be presented, claims for payment from Medicare, Medicaid, or other federal healthcare programs that are false or fraudulent and under PPACA, the government may assert that a claim including items or services resulting from a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the federal false claims laws;

HIPAA, which created new federal criminal statutes that prohibit, among other things, executing a scheme to defraud any healthcare benefit program or making false statements relating to healthcare matters;

HIPAA, as amended by HITECH and its implementing regulations, which imposes certain requirements relating to the privacy, security and transmission of individually identifiable health information;

the federal physician sunshine requirements under PPACA, which requires certain manufacturers of drugs, devices, biologics, and medical supplies to report annually to the CMS information related to payments and other transfers of value to physicians, other healthcare providers, and teaching hospitals, and ownership and investment interests held by physicians and other healthcare providers and their immediate family members; and

state and foreign law equivalents of each of the above federal laws, such as anti-kickback and false claims laws which may apply to items or services reimbursed by any third-party payor, including commercial insurers, and state and foreign laws governing the privacy and security of health information in certain circumstances, many of which differ from each other in significant ways and often are not preempted by HIPAA, thus complicating compliance efforts; state laws that require pharmaceutical companies to comply with the industry s voluntary compliance guidelines and the applicable compliance guidance promulgated by the federal government that otherwise restricts certain payments that may be made to healthcare providers and entities; and state laws that require drug manufacturers to report information related to payments and other transfer of value to physicians and other healthcare providers and entities.

Because of the breadth of these laws and the narrowness of available statutory and regulatory exceptions, it is possible that some of our business activities could be subject to challenge under one or more of such laws. To the extent that AFREZZA or any of our product candidates that receives marketing approval is ultimately sold in a foreign country, we may be subject to similar foreign laws and regulations. If we or our operations are found to be in violation of any of the laws described above or any other governmental regulations that apply to us, we may be subject to penalties, including civil and criminal penalties, damages, fines, individual imprisonment, disgorgement, exclusion of products from reimbursement under U.S. federal or state healthcare programs, and the curtailment or restructuring of our operations. Any penalties, damages, fines, curtailment or restructuring of our operations could materially adversely affect our ability to operate our business and our financial results. Although compliance programs can mitigate the risk of investigation and prosecution for violations of these laws, the risks cannot be entirely eliminated. Any action against us for violation of these laws, even if we successfully defend against it, could cause us to incur significant legal expenses and divert our management s attention from the operation of our business. Moreover, achieving and sustaining compliance with applicable federal and state privacy, security and fraud laws may prove costly.

If product liability claims are brought against us, we may incur significant liabilities and suffer damage to our reputation.

The testing, manufacturing, marketing and sale of AFREZZA and our other product candidates expose us to potential product liability claims. A product liability claim may result in substantial judgments as well as consume significant financial and management resources and result in adverse publicity, decreased demand for a product, injury to our reputation, withdrawal of clinical studies volunteers and loss of revenues. We currently carry worldwide product liability insurance in the amount of $10.0 million. However, our insurance coverage may not be adequate to satisfy any liability that may arise, and because insurance coverage in our industry can be very expensive and difficult to obtain, we cannot assure you that we will be able to obtain sufficient coverage at an acceptable cost, if at all. If losses from such claims exceed our liability insurance coverage, we may ourselves

Table of Contents

incur substantial liabilities. If we are required to pay a product liability claim our business, financial condition and results of operations would be harmed and the market price of our common stock and other securities may decline.

If we lose any key employees or scientific advisors, our operations and our ability to execute our business strategy could be materially harmed.

We face intense competition for qualified employees among companies in the biotechnology and biopharmaceutical industries. Our success depends upon our ability to attract, retain and motivate highly skilled employees. We may be unable to attract and retain these individuals on acceptable terms, if at all. In addition, in order to commercialize AFREZZA successfully, we may be required to expand our work force, particularly in the areas of manufacturing and sales and marketing. These activities will require the addition of new personnel, including management, and the development of additional expertise by existing personnel, and we cannot assure you that we will be able to attract or retain any such new personnel on acceptable terms, if at all.

The loss of the services of any principal member of our management and scientific staff could significantly delay or prevent the achievement of our scientific and business objectives. All of our employees are at will and we currently do not have employment agreements with any of the principal members of our management or scientific staff, and we do not have key person life insurance to cover the loss of any of these individuals. Replacing key employees may be difficult and time-consuming because of the limited number of individuals in our industry with the skills and experience required to develop, gain regulatory approval of and commercialize products successfully.

We have relationships with scientific advisors at academic and other institutions to conduct research or assist us in formulating our research, development or clinical strategy. These scientific advisors are not our employees and may have commitments to, and other obligations with, other entities that may limit their availability to us. We have limited control over the activities of these scientific advisors and can generally expect these individuals to devote only limited time to our activities. Failure of any of these persons to devote sufficient time and resources to our programs could harm our business. In addition, these advisors are not prohibited from, and may have arrangements with, other companies to assist those companies in developing technologies that may compete with AFREZZA or our product candidates.

We have identified a material weakness in our internal control over financial reporting. If our internal controls over financial reporting are not considered effective, our business, financial condition and market price of our common stock and other securities could be adversely affected.

Section 404 of the Sarbanes-Oxley Act of 2002 requires us to evaluate the effectiveness of our internal controls over financial reporting as of the end of each fiscal year, and to include a management report assessing the effectiveness of our internal controls over financial reporting in our annual report on Form 10-K for that fiscal year. Section 404 also requires our independent registered public accounting firm to attest to, and report on, our internal controls over financial reporting.

Our management, including our Chief Executive Officer and Chief Financial Officer, does not expect that our internal controls over financial reporting will prevent all errors and all fraud. A control system, no matter how well designed and operated, can provide only reasonable, not absolute, assurance that the control system s objectives will be met. Further, the design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud involving a company have been, or will be, detected. The design of any system of controls is based in part on certain assumptions about the likelihood of future events, and we cannot assure you that any design will succeed in achieving its stated goals under all potential future conditions. Over time, controls may become inadequate because of changes in conditions or deterioration in the degree of compliance with policies or procedures. Because of the inherent limitations in a cost-effective control system, misstatements due to error or fraud may occur and not be detected.

Table of Contents

We cannot assure you that we or our independent registered public accounting firm will not identify a material weakness in our internal controls in the future. In connection with the audit of our financial statements for the year ended December 31, 2015, we concluded that there was a material weakness in our internal control over financial reporting. A material weakness is a significant deficiency, or a combination of significant deficiencies, in internal control over financial reporting such that it is reasonably possible that a material misstatement of the annual or interim financial statements will not be prevented or detected on a timely basis. The material weakness we identified related to impairment testing that we performed in accordance with ASC 360-10, *Impairment and Disposal of Long-Lived Assets* and ASC 330-10, *Inventories*, as of December 31, 2015. Specifically, our review controls did not operate at a sufficient level of precision to identify certain errors. As a result of this material weakness, we and our independent registered public accounting firm evaluated our internal control over financial reporting as ineffective.

We are taking steps to remediate the material weakness in our internal control over financial reporting, including designing additional training programs for relevant personnel and developing specific review procedures regarding the review of the impairment of assets. However, we cannot assure you that these efforts will remediate our material weakness in a timely manner, or at all. If we are unable to successfully remediate our material weakness, or identify any future material weaknesses, the accuracy and timing of our financial reporting may be adversely affected, we may be unable to maintain compliance with securities law requirements regarding timely filing of periodic reports and we may experience a loss of public confidence, which could have an adverse effect on our business, financial condition and the market price of our common stock and other securities.

We may undertake internal restructuring activities in the future that could result in disruptions to our business or otherwise materially harm our results of operations or financial condition.

From time to time we may undertake internal restructuring activities as we continue to evaluate and attempt to optimize our cost and operating structure in light of developments in our business strategy and long-term operating plans. These activities may result in write-offs or other restructuring charges. There can be no assurance that any restructuring activities that we undertake will achieve the cost savings, operating efficiencies or other benefits that we may initially expect. Restructuring activities may also result in a loss of continuity, accumulated knowledge and inefficiency during transitional periods and thereafter. In addition, internal restructurings can require a significant amount of time and focus from management and other employees, which may divert attention from commercial operations. If we undertake any internal restructuring activities and fail to achieve some or all of the expected benefits therefrom, our business, results of operations and financial condition could be materially and adversely affected.

We and certain of our executive officers and directors have been named as defendants in ongoing securities class action lawsuits that could result in substantial costs and divert management s attention.

Several complaints were filed in the U.S. District Court for the Central District of California against us and certain of our officers and directors on behalf of certain purchasers of our common stock. The complaints include claims asserted under Sections 10(b) and 20(a) of the Exchange Act and have been pled as putative shareholder class actions. In general, the complaints allege that we and certain of our officers and directors violated federal securities laws by making materially false and misleading statements regarding the prospects for AFREZZA, thereby artificially inflating the price of our common stock. We and certain of our directors and executive officers have also been named in similar lawsuits filed in Israel. We intend to vigorously defend against these claims. If we are not successful in our defense, we could be forced to make significant payments to or other settlements with our stockholders and their lawyers, and such payments or settlement arrangements could have a material adverse effect on our business, operating results or financial condition. Even if such claims are not successful, the litigation could result in substantial costs and significant adverse impact on our reputation and divert management s attention and resources, which could have a material adverse effect on our business, operating results and financial condition.

Our operations might be interrupted by the occurrence of a natural disaster or other catastrophic event.

We expect that at least for the foreseeable future, our manufacturing facility in Danbury, Connecticut will be the sole location for the manufacturing of AFREZZA. This facility and the manufacturing equipment we use

Table of Contents

would be costly to replace and could require substantial lead time to repair or replace. We depend on our facilities and on collaborators, contractors and vendors for the continued operation of our business, some of whom are located in other countries. Natural disasters or other catastrophic events, including interruptions in the supply of natural resources, political and governmental changes, severe weather conditions, wildfires and other fires, explosions, actions of animal rights activists, terrorist attacks, volcanic eruptions, earthquakes and wars could disrupt our operations or those of our collaborators, contractors and vendors. We might suffer losses as a result of business interruptions that exceed the coverage available under our and our contractors insurance policies or for which we or our contractors do not have coverage. For example, we are not insured against a terrorist attack. Any natural disaster or catastrophic event could have a significant negative impact on our operations and financial results. Moreover, any such event could delay our research and development programs or cause interruptions in our commercialization of AFREZZA.

We deal with hazardous materials and must comply with environmental laws and regulations, which can be expensive and restrict how we do business.

Our research and development and commercialization of AFREZZA work involves the controlled storage and use of hazardous materials, including chemical and biological materials. In addition, our manufacturing operations involve the use of a chemical that may form an explosive mixture under certain conditions. Our operations also produce hazardous waste products. We are subject to federal, state and local laws and regulations (i) governing how we use, manufacture, store, handle and dispose of these materials (ii) imposing liability for costs of cleaning up, and damages to natural resources from past spills, waste disposals on and off-site, or other releases of hazardous materials or regulated substances, and (iii) regulating workplace safety. Moreover, the risk of accidental contamination or injury from hazardous materials cannot be completely eliminated, and in the event of an accident, we could be held liable for any damages that may result, and any liability could fall outside the coverage or exceed the limits of our insurance. Currently, our general liability policy provides coverage up to $1.0 million per occurrence and $2.0 million in the aggregate and is supplemented by an umbrella policy that provides a further $20.0 million of coverage; however, our insurance policy excludes pollution liability coverage and we do not carry a separate hazardous materials policy. In addition, we could be required to incur significant costs to comply with environmental laws and regulations in the future. Finally, current or future environmental laws and regulations may impair our research, development or production efforts or have an adverse impact on our business, results of operations and financial condition.

When we purchased the facilities located in Danbury, Connecticut in 2001, a soil and groundwater investigation and remediation was being conducted by a former site operator (the responsible party) under the oversight of the Connecticut Department of Environmental Protection. During the construction of our expanded manufacturing facility, we excavated contaminated soil under the footprint of our building expansion location. The responsible party reimbursed us for our increased excavation and disposal costs of contaminated soil in the amount of $1.6 million. It has conducted at its expense all work and will make all filings necessary to achieve closure for the environmental remediation conducted at the site, and has agreed to indemnify us for any future costs and expenses we may incur that are directly related to the final closure. If we are unable to collect these future costs and expenses, if any, from the responsible party, our business, financial condition and results of operations may be harmed.

RISKS RELATED TO GOVERNMENT REGULATION

Our product candidates must undergo costly and time-consuming rigorous nonclinical and clinical testing and we must obtain regulatory approval prior to the sale and marketing of any product in each jurisdiction. The results of this testing or issues that develop in the review and approval by a regulatory agency may subject us to unanticipated delays or prevent us from marketing any products.

Our research and development activities, as well as the manufacturing and marketing of AFREZZA and our product candidates, are subject to regulation, including regulation for safety, efficacy and quality, by the FDA in the United States and comparable authorities in other countries. FDA regulations and the regulations of comparable foreign regulatory authorities are wide-ranging and govern, among other things:

Table of Contents

product design, development, manufacture and testing;

product labeling;

product storage and shipping;

pre-market clearance or approval;

advertising and promotion; and

product sales and distribution.

The requirements governing the conduct of clinical studies and manufacturing and marketing of AFREZZA and our product candidates outside the United States vary widely from country to country. Foreign approvals may take longer to obtain than FDA approvals and can require, among other things, additional testing and different clinical study designs. Foreign regulatory approval processes include essentially all of the risks associated with the FDA approval processes. Some of those agencies also must approve prices of the products. Approval of a product by the FDA does not ensure approval of the same product by the health authorities of other countries. In addition, changes in regulatory policy in the United States or in foreign countries for product approval during the period of product development and regulatory agency review of each submitted new application may cause delays or rejections.

Clinical testing can be costly and take many years, and the outcome is uncertain and susceptible to varying interpretations. We cannot be certain if or when regulatory agencies might request additional studies, under what conditions such studies might be requested, or what the size or length of any such studies might be. The clinical studies of our product candidates may not be completed on schedule, regulatory agencies may order us to stop or modify our research, or these agencies may not ultimately approve any of our product candidates for commercial sale. The data collected from our clinical studies may not be sufficient to support regulatory approval of our product candidates. Even if we believe the data collected from our clinical studies are sufficient, regulatory agencies have substantial discretion in the approval process and may disagree with our interpretation of the data. Our failure to adequately demonstrate the safety and efficacy of any of our product candidates would delay or prevent regulatory approval of our product candidates, which could prevent us from achieving profitability.

Questions that have been raised about the safety of marketed drugs generally, including pertaining to the lack of adequate labeling, may result in increased cautiousness by regulatory agencies in reviewing new drugs based on safety, efficacy, or other regulatory considerations and may result in significant delays in obtaining regulatory approvals. Such regulatory considerations may also result in the imposition of more restrictive drug labeling or marketing requirements as conditions of approval, which may significantly affect the marketability of our drug products.

If we do not comply with regulatory requirements at any stage, whether before or after marketing approval is obtained, we may be fined or forced to remove a product from the market, subject to criminal prosecution, or experience other adverse consequences, including restrictions or delays in obtaining regulatory marketing approval.

Even if we comply with regulatory requirements, we may not be able to obtain the labeling claims necessary or desirable for product promotion. We may also be required to undertake post-marketing studies. For example, the FDA required the following post-marketing studies for AFREZZA that remain to be completed:

a clinical trial to evaluate pharmacokinetics, safety and efficacy in pediatric patients; and

a clinical trial to evaluate the potential risk of pulmonary malignancy with AFREZZA (as well as cardiovascular risk and the long-term effect of AFREZZA on pulmonary function).

In addition, if we or other parties identify adverse effects after any of our products are on the market, or if manufacturing problems occur, regulatory approval may be withdrawn and a reformulation of our products, additional clinical studies, changes in labeling of, or indications of use for, our products and/or additional marketing applications may be required. If we encounter any of the foregoing problems, our business, financial condition and results of operations will be harmed and the market price of our common stock and other securities may decline.

Table of Contents

We are subject to stringent, ongoing government regulation.

The manufacture, marketing and sale of AFREZZA are subject to stringent and ongoing government regulation. The FDA may also withdraw product approvals if problems concerning the safety or efficacy of a product appear following approval. We cannot be sure that FDA and United States Congressional initiatives or actions by foreign regulatory bodies pertaining to ensuring the safety of marketed drugs or other developments pertaining to the pharmaceutical industry will not adversely affect our operations. For example, stability failure of AFREZZA could lead to product recall or other sanctions.

We also are required to register our establishments and list our products with the FDA and certain state agencies. We and any third-party manufacturers or suppliers must continually adhere to federal regulations setting forth requirements, known as cGMP (for drugs) and QSR (for medical devices), and their foreign equivalents, which are enforced by the FDA and other national regulatory bodies through their facilities inspection programs. In complying with cGMP and foreign regulatory requirements, we and any of our potential third-party manufacturers or suppliers will be obligated to expend time, money and effort in production, record-keeping and quality control to ensure that our products meet applicable specifications and other requirements. QSR requirements also impose extensive testing, control and documentation requirements. State regulatory agencies and the regulatory agencies of other countries have similar requirements. In addition, we will be required to comply with regulatory requirements of the FDA, state regulatory agencies and the regulatory agencies of other countries concerning the reporting of adverse events and device malfunctions, corrections and removals (e.g., recalls), promotion and advertising and general prohibitions against the manufacture and distribution of adulterated and misbranded devices. Failure to comply with these regulatory requirements could result in civil fines, product seizures, injunctions and/or criminal prosecution of responsible individuals and us. Any such actions would have a material adverse effect on our business, financial condition and results of operations.

FDA and comparable foreign regulatory authorities subject AFFREZZA and any approved drug product to extensive and ongoing regulatory requirements concerning the manufacturing processes, labeling, packaging, distribution, adverse event reporting, storage, advertising, promotion, import, export and recordkeeping. These requirements include submissions of safety and other post-marketing information and reports, registration, as well as continued compliance with cGMPs and GCP requirements for any clinical trials that we conduct post-approval. Later discovery of previously unknown problems, including adverse events of unanticipated severity or frequency, or with our third-party manufacturers or manufacturing processes, or failure to comply with regulatory requirements, may result in, among other things:

- restrictions on the marketing or manufacturing of our product candidates, withdrawal of the product from the market, or voluntary or mandatory product recalls;
- fines, warning letters or holds on clinical trials;
- refusal by the FDA to approve pending applications or supplements to approved applications filed by us or suspension or revocation of approvals;
- product seizure or detention, or refusal to permit the import or export of our product candidates; and
- injunctions or the imposition of civil or criminal penalties.

The FDA s and other regulatory authorities policies may change and additional government regulations may be enacted that could prevent, limit or delay regulatory approval of our product candidates. We cannot predict the likelihood, nature or extent of government regulation that may arise from future legislation or administrative action, either in the United States or abroad. If we are slow or unable to adapt to changes in existing requirements or the adoption of new requirements or policies, or if we are not able to maintain regulatory compliance, we may lose any marketing approval that we may have obtained and we may not achieve or sustain profitability.

Our suppliers are subject to FDA inspection.

We depend on suppliers for insulin and other materials that comprise AFREZZA, including our AFREZZA inhaler and cartridges. Each supplier must comply with relevant regulatory requirements and is subject to

33

Table of Contents

inspection by the FDA. Although we conduct our own inspections and investigations of each supplier, there can be no assurance that the FDA, upon inspection, would find that the supplier substantially complies with the QSR or cGMP requirements, where applicable. If we or any potential third-party manufacturer or supplier fails to comply with these requirements or comparable requirements in foreign countries, regulatory authorities may subject us to regulatory action, including criminal prosecutions, fines and suspension of the manufacture of our products.

If we are required to find a new or additional supplier of insulin, we will be required to evaluate the new supplier s ability to provide insulin that meets regulatory requirements, including cGMP requirements as well as our specifications and quality requirements, which would require significant time and expense and could delay the manufacturing and commercialization of AFREZZA.

Reports of side effects or safety concerns in related technology fields or in other companies clinical studies could delay or prevent us from obtaining regulatory approval for our product candidates or negatively impact public perception of AFREZZA or any other products we may develop.

At present, there are a number of clinical studies being conducted by other pharmaceutical companies involving insulin delivery systems. If other pharmaceutical companies announce that they observed frequent adverse events in their studies involving insulin therapies, we may be subject to class warnings in the label for AFREZZA. In addition, the public perception of AFREZZA might be adversely affected, which could harm our business, financial condition and results of operations and cause the market price of our common stock and other securities to decline, even if the concern relates to another company s products or product candidates.

There are also a number of clinical studies being conducted by other pharmaceutical companies involving compounds similar to, or competitive with, our other product candidates. Adverse results reported by these other companies in their clinical studies could delay or prevent us from obtaining regulatory approval or negatively impact public perception of our product candidates, which could harm our business, financial condition and results of operations and cause the market price of our common stock and other securities to decline.

RISKS RELATED TO INTELLECTUAL PROPERTY

If we are unable to protect our proprietary rights, we may not be able to compete effectively, or operate profitably.

Our commercial success depends, in large part, on our ability to obtain and maintain intellectual property protection for our technology. Our ability to do so will depend on, among other things, complex legal and factual questions, and it should be noted that the standards regarding intellectual property rights in our fields are still evolving. We attempt to protect our proprietary technology through a combination of patents, trade secrets and confidentiality agreements. We own a number of domestic and international patents, have a number of domestic and international patent applications pending and have licenses to additional patents. We cannot assure you that our patents and licenses will successfully preclude others from using our technologies, and we could incur substantial costs in seeking enforcement of our proprietary rights against infringement. Even if issued, the patents may not give us an advantage over competitors with alternative technologies.

Moreover, the term of a patent is limited and, as a result, the patents protecting our products expire at various dates. For example, some patents providing protection for AFREZZA inhalation powder have terms extending into 2020, 2029, 2030 and 2031. In addition, patents providing protection for our inhaler and cartridges have terms extending into 2023, 2031 and 2032, and we have method of treatment claims that extend into 2026 and 2029. As and when these different patents expire, AFREZZA could become subject to increased competition. As a consequence, we may not be able to recover our development costs.

Moreover, the issuance of a patent is not conclusive as to its validity or enforceability and it is uncertain how much protection, if any, will be afforded by our patents. A third party may challenge the validity or enforceability of a patent after its issuance by various proceedings such as oppositions in foreign jurisdictions or re-examinations or other review in the United States. In some instances we may seek re-examination or

Table of Contents

reissuance of our own patents. If we attempt to enforce our patents, they may be challenged in court where they could be held invalid, unenforceable, or have their breadth narrowed to an extent that would destroy their value.

On September 16, 2011, the Leahy-Smith America Invents Act (the Leahy-Smith Act) was signed into law. The Leahy-Smith Act includes a number of significant changes to United States patent law. These include provisions that affect the way patent applications will be prosecuted, subjected to post-grant challenge, and may also affect patent litigation. The USPTO is continuing to develop regulations and procedures to govern administration of the Leahy-Smith Act, and while all of the substantive changes to patent law associated with the Leahy-Smith Act have become effective, their true impact will only emerge with time. Moreover there will be a transitional period of many years during which some applications may be eligible for prosecution under the previous rules. There are many ambiguities in this new law and how the courts will interpret it cannot be predicted with confidence. Accordingly, it is not clear what, if any, impact the Leahy-Smith Act will have on the operation of our business. The Leahy-Smith Act and its implementation could increase the uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of our issued patents, all of which could have a material adverse effect on our business, financial condition and results of operations.

Moreover, patent law continues to evolve. Several further changes to patent law are before Congress. The United States Supreme Court has exhibited an increased interest in patent law and several of its recent decisions have tended to narrow the scope of patentable subject matter related to medical products and methods. For example, in March 2014 the USPTO, in response to Supreme Court decisions, issued new examination guidelines which call into question the patentability of biological inventions that had previously been considered patentable. While none of this has an immediately apparent impact on our core technology and patents, the full and ultimate effect of these developments is not yet known. We also rely on unpatented technology, trade secrets, know-how and confidentiality agreements. We require our officers, employees, consultants and advisors to execute proprietary information and invention and assignment agreements upon commencement of their relationships with us. These agreements provide that all inventions developed by the individual on behalf of us must be assigned to us and that the individual will cooperate with us in connection with securing patent protection on the invention if we wish to pursue such protection. We also execute confidentiality agreements with outside collaborators. There can be no assurance, however, that our inventions and assignment agreements and our confidentiality agreements will provide meaningful protection for our inventions, trade secrets, know-how or other proprietary information in the event of unauthorized use or disclosure of such information. If any trade secret, know-how or other technology not protected by a patent were to be disclosed to or independently developed by a competitor, our business, results of operations and financial condition could be adversely affected.

If we become involved in lawsuits to protect or enforce our patents or the patents of our collaborators or licensors, we would be required to devote substantial time and resources to prosecute or defend such proceedings.

Competitors may infringe our patents or the patents of our collaborators or licensors. To counter infringement or unauthorized use, we may be required to file infringement claims, which can be expensive and time-consuming. In addition, in an infringement proceeding, a court may decide that a patent of ours is not valid or is unenforceable, or may refuse to stop the other party from using the technology at issue on the grounds that our patents do not cover its technology. A court may also decide to award us a royalty from an infringing party instead of issuing an injunction against the infringing activity. An adverse determination of any litigation or defense proceedings could put one or more of our patents at risk of being invalidated or interpreted narrowly and could put our patent applications at risk of not issuing.

Interference proceedings brought by the USPTO, may be necessary to determine the priority of inventions with respect to our patent applications or those of our collaborators or licensors. Additionally, the Leahy-Smith Act has greatly expanded the options for post-grant review of patents that can be brought by third parties. In particular Inter Partes Review (IPR) has resulted in a higher rate of claim invalidation as compared to re-examination, due in part to the much reduced opportunity to repair claims by amendment. Moreover, the filing of IPR petitions has been used by short-sellers as a tool to help drive down stock prices. Litigation, post-grant

Table of Contents

review, or interference proceedings may fail and, even if successful, may result in substantial costs and be a distraction to our management. We may not be able, alone or with our collaborators and licensors, to prevent misappropriation of our proprietary rights, particularly in countries where the laws may not protect such rights as fully as in the United States. We may not prevail in any litigation, post-grant review, or interference proceeding in which we are involved. Even if we do prevail, these proceedings can be very expensive and distract our management.

Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information could be compromised by disclosure during this type of litigation. In addition, during the course of this kind of litigation, there could be public announcements of the results of hearings, motions or other interim proceedings or developments. If securities analysts or investors perceive these results to be negative, the market price of our common stock and other securities may decline.

If our technologies conflict with the proprietary rights of others, we may incur substantial costs as a result of litigation or other proceedings and we could face substantial monetary damages and be precluded from commercializing our products, which would materially harm our business and financial condition.

Biotechnology patents are numerous and may, at times, conflict with one another. As a result, it is not always clear to industry participants, including us, which patents cover the multitude of biotechnology product types. Ultimately, the courts must determine the scope of coverage afforded by a patent and the courts do not always arrive at uniform conclusions.

A patent owner may claim that we are making, using, selling or offering for sale an invention covered by the owner s patents and may go to court to stop us from engaging in such activities. Such litigation is not uncommon in our industry.

Patent lawsuits can be expensive and would consume time and other resources. There is a risk that a court would decide that we are infringing a third party s patents and would order us to stop the activities covered by the patents, including the commercialization of our products. In addition, there is a risk that we would have to pay the other party damages for having violated the other party s patents (which damages may be increased, as well as attorneys fees ordered paid, if infringement is found to be willful), or that we will be required to obtain a license from the other party in order to continue to commercialize the affected products, or to design our products in a manner that does not infringe a valid patent. We may not prevail in any legal action, and a required license under the patent may not be available on acceptable terms or at all, requiring cessation of activities that were found to infringe a valid patent. We also may not be able to develop a non-infringing product design on commercially reasonable terms, or at all.

Moreover, certain components of AFREZZA may be manufactured outside the United States and imported into the United States. As such, third parties could file complaints under 19 U.S.C. Section 337(a)(1)(B) (a 337 action) with the International Trade Commission (the ITC). A 337 action can be expensive and would consume time and other resources. There is a risk that the ITC would decide that we are infringing a third party s patents and either enjoin us from importing the infringing products or parts thereof into the United States or set a bond in an amount that the ITC considers would offset our competitive advantage from the continued importation during the statutory review period. The bond could be up to 100% of the value of the patented products. We may not prevail in any legal action, and a required license under the patent may not be available on acceptable terms, or at all, resulting in a permanent injunction preventing any further importation of the infringing products or parts thereof into the United States. We also may not be able to develop a non-infringing product design on commercially reasonable terms, or at all.

Although we own a number of domestic and foreign patents and patent applications relating to AFREZZA, we have identified certain third-party patents having claims that may trigger an allegation of infringement in connection with the commercial manufacture and sale of AFREZZA. If a court were to determine that AFREZZA was infringing any of these patent rights, we would have to establish with the court that these patents were invalid or unenforceable in order to avoid legal liability for infringement of these patents. However, proving

Table of Contents

patent invalidity or unenforceability can be difficult because issued patents are presumed valid. Therefore, in the event that we are unable to prevail in a non-infringement or invalidity action we will have to either acquire the third-party patents outright or seek a royalty-bearing license. Royalty-bearing licenses effectively increase production costs and therefore may materially affect product profitability. Furthermore, should the patent holder refuse to either assign or license us the infringed patents, it may be necessary to cease manufacturing the product entirely and/or design around the patents, if possible. In either event, our business, financial condition and results of operations would be harmed and our profitability could be materially and adversely impacted.

Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information could be compromised by disclosure during this type of litigation. In addition, during the course of this kind of litigation, there could be public announcements of the results of hearings, motions or other interim proceedings or developments. If securities analysts or investors perceive these results to be negative, the market price of our common stock and other securities may decline.

In addition, patent litigation may divert the attention of key personnel and we may not have sufficient resources to bring these actions to a successful conclusion. At the same time, some of our competitors may be able to sustain the costs of complex patent litigation more effectively than we can because they have substantially greater resources. An adverse determination in a judicial or administrative proceeding or failure to obtain necessary licenses could prevent us from manufacturing and selling our products or result in substantial monetary damages, which would adversely affect our business, financial condition and results of operations and cause the market price of our common stock and other securities to decline.

We may not obtain trademark registrations for our potential trade names.

We have not selected trade names for some of our product candidates; therefore, we have not filed trademark registrations for such potential trade names for our product candidates, nor can we assure that we will be granted registration of any potential trade names for which we do file. No assurance can be given that any of our trademarks will be registered in the United States or elsewhere, or once registered that, prior to our being able to enter a particular market, they will not be cancelled for non-use. Nor can we give assurances, that the use of any of our trademarks will confer a competitive advantage in the marketplace.

Furthermore, even if we are successful in our trademark registrations, the FDA has its own process for drug nomenclature and its own views concerning appropriate proprietary names. It also has the power, even after granting market approval, to request a company to reconsider the name for a product because of evidence of confusion in the marketplace. We cannot assure you that the FDA or any other regulatory authority will approve of any of our trademarks or will not request reconsideration of one of our trademarks at some time in the future.

RISKS RELATED TO OUR COMMON STOCK

We may not be able to generate sufficient cash to service all of our indebtedness. We may be forced to take other actions to satisfy our obligations under our indebtedness or we may experience a financial failure.

Our ability to make scheduled payments on or to refinance our debt obligations will depend on our financial and operating performance, which is subject to prevailing economic and competitive conditions and to certain financial, business and other factors beyond our control. We cannot assure you that we will maintain a level of cash flows from operating activities sufficient to permit us to pay the principal, premium, if any, and interest on our indebtedness. If our cash flows and capital resources are insufficient to fund our debt service obligations, we may be forced to reduce or delay capital expenditures, sell assets or operations, seek additional capital or restructure or refinance our indebtedness. We cannot assure you that we would be able to take any of these actions, that these actions would be successful and permit us to meet our scheduled debt service obligations or that these actions would be permitted under the terms of our future debt agreements. In the absence of sufficient operating results and resources, we could face substantial liquidity problems and might be required to dispose of material assets or operations to meet our debt service and other obligations. We may not be able to consummate

Table of Contents

those dispositions or obtain sufficient proceeds from those dispositions to meet our debt service and other obligations when due.

Future sales of shares of our common stock in the public market, or the perception that such sales may occur, may depress our stock price and adversely impact the market price of our common stock and other securities.

If our existing stockholders or their distributees sell substantial amounts of our common stock in the public market, the market price of our common stock could decrease significantly. The perception in the public market that our existing stockholders might sell shares of common stock could also depress the market price of our common stock and the market price of our other securities. Any such sales of our common stock in the public market may affect the price of our common stock or the market price of our other securities.

In the future, we may sell additional shares of our common stock to raise capital. In addition, a substantial number of shares of our common stock is reserved for: issuance upon the exercise of stock options and, in the future, may be reserved for the vesting of restricted stock unit awards; the purchase of shares of common stock under our employee stock purchase program; and the issuance of shares upon exchange or conversion of the 2018 notes or any other convertible debt we may issue. We cannot predict the size of future issuances or the effect, if any, that they may have on the market price for our common stock. The issuance or sale of substantial amounts of common stock, or the perception that such issuances or sales may occur, could adversely affect the market price of our common stock and other securities.

Our stock price is volatile and may affect the market price of our common stock and other securities.

Since January 1, 2013, our closing stock price as reported on The NASDAQ Global Market has ranged from $0.66 to $10.96, through February 22, 2016. The trading price of our common stock is likely to continue to be volatile. The stock market, particularly in recent years, has experienced significant volatility particularly with respect to pharmaceutical and biotechnology stocks, and this trend may continue. The volatility of pharmaceutical and biotechnology stocks often does not relate to the operating performance of the companies represented by the stock. Our business and the market price of our common stock may be influenced by a large variety of factors, including:

- our ability to develop and commercialize AFREZZA on our own in the United States;
- our ability to find collaboration partners for the development and commercialization of AFREZZA in foreign jurisdictions;
- the progress of the commercial launch of AFREZZA and other events or circumstances that we or others estimate will impact the future commercialization of AFREZZA;
- our future estimates of AFREZZA sales, prescriptions or other operating metrics;
- our ability to successful commercialize our Technosphere drug delivery platform;
- the progress of preclinical and clinical studies of our product candidates and the post-approval studies of AFREZZA required by the FDA;
- the results of preclinical and clinical studies of our product candidates;
- general economic, political or stock market conditions;
- legislative developments;

announcements by us, our collaborators, or our competitors concerning clinical study results, acquisitions, strategic alliances, technological innovations, newly approved commercial products, product discontinuations, or other developments;

the availability of critical materials used in developing and manufacturing AFREZZA or other product candidates;

Table of Contents

developments or disputes concerning our relationship with any of our current or future collaborators or third party manufacturers;

developments or disputes concerning our patents or proprietary rights;

the expense and time associated with, and the extent of our ultimate success in, securing regulatory approvals;

announcements by us concerning our financial condition or operating performance;

changes in securities analysts estimates of our financial condition or operating performance;

general market conditions and fluctuations for emerging growth and pharmaceutical market sectors;

sales of large blocks of our common stock, including sales by our executive officers, directors and significant stockholders;

the status of any legal proceedings or regulatory matters against or involving us or any of our executive officers and directors; and

discussion of AFREZZA, our other product candidates, competitors products, or our stock price by the financial and scientific press, the healthcare community and online investor communities such as chat rooms. In particular, it may be difficult to verify statements about us and our investigational products that appear on interactive websites that permit users to generate content anonymously or under a pseudonym and statements attributed to company officials may, in fact, have originated elsewhere.

Any of these risks, as well as other factors, could cause the market value of our common stock and other securities to decline.

If we fail to continue to meet all applicable listing requirements, our common stock may be delisted from The NASDAQ Global Market, which could have an adverse impact on the liquidity and market price of our common stock.

Our common stock is currently listed on The NASDAQ Global Market, which has qualitative and quantitative listing criteria. If we are unable to meet any of the NASDAQ listing requirements in the future, including, for example, if the closing bid price for our common stock falls below $1.00 per share for 30 consecutive trading days, NASDAQ could determine to delist our common stock, which could adversely affect the market liquidity of our common stock and the market price of our common stock could decrease. As of February 22, 2016, the closing price of our common stock on The NASDAQ Global Market was $1.00. A delisting of our common stock could also adversely affect our ability to obtain financing for the continuation of our operations and could result in the loss of confidence in our company.

If other biotechnology and biopharmaceutical companies or the securities markets in general encounter problems, the market price of our common stock and other securities could be adversely affected.

Public companies in general, including companies listed on The NASDAQ Global Market, have experienced price and volume fluctuations that have often been unrelated or disproportionate to the operating performance of those companies. There has been particular volatility in the market prices of securities of biotechnology and other life sciences companies, and the market prices of these companies have often fluctuated because of problems or successes in a given market segment or because investor interest has shifted to other segments. These broad market and industry factors may cause the market price of our common stock and other securities to decline, regardless of our operating performance. We have no control over this volatility and can only focus our efforts on our own operations, and even these may be affected due to the state of the capital markets.

In the past, following periods of large price declines in the public market price of a company s securities, securities class action litigation has often been initiated against that company. Litigation of this type could result in substantial costs and diversion of management s attention and resources, which would hurt our business. Any adverse determination in litigation could also subject us to significant liabilities.

39

Table of Contents

As a result of the death of Alfred Mann, the stock that he previously controlled is currently controlled by various trusts, and we cannot assure you of the manner in which the trustees will manage the holdings.

At December 31, 2015, Alfred E. Mann beneficially owned approximately 35.7% of our outstanding shares of capital stock, including shares held in the Alfred E. Mann Living Trust, Mann Group LLC, Mannco LLC, Biomed Partners, LLC and Biomed Partners II, LLC.

Mr. Mann passed away on February 25, 2016. All of the shares beneficially owned by Mr. Mann in the Alfred E. Mann Living Trust, The Mann Group LLC and Mannco LLC are controlled by an administrative trust during the period of administration of Mr. Mann s estate. The trustees of the administrative trust are Mr. Mann s wife and two other trustees. The trustees have the power to sell the shares or deal with them as an owner. Relatives and other individuals may receive bequests of shares under Mr. Mann s trust. The residuary beneficiary of the trust is the Alfred E. Mann Family Foundation, a charitable organization under section 501(c)(3) of the Internal Revenue Code that is a private foundation under section 509 of the Code. The same three trustees control the Alfred E. Mann Family Foundation. The Alfred E. Mann Family Foundation will have the power to sell the shares or deal with them as an owner. If not sold by the trust, the shares owned by the trust may be distributed to one or more of the individual or charitable beneficiaries of the trust.

The managing members of Biomed Partners, LLC and Biomed Partners II, LLC are now controlled by trusts for which the same individuals described above are the trustees. Biomed Partners, LLC and Biomed Partners II, LLC will have the power to sell the shares or deal with them as an owner.

Although we understand that the trustees now in control of Mr. Mann s holdings have been advised of Mr. Mann s objectives, we cannot assure you as to how those shares will be distributed or how they will be voted.

The future sale of our common stock, the exchange or conversion of our 2018 notes into common stock or the exercise of our warrants for common stock could negatively affect the market price of our common stock and other securities.

As of February 22, 2016, we had 428,850,858 shares of common stock outstanding. Substantially all of these shares are available for public sale, subject in some cases to volume and other limitations or delivery of a prospectus. If our common stockholders sell substantial amounts of common stock in the public market, or the market perceives that such sales may occur, the market price of our common stock and other securities may decline. Likewise the issuance of additional shares of our common stock upon the exchange or conversion of some or all of our 2018 notes or upon the exercise of outstanding warrants, could adversely affect the market price of our common stock and other securities. In addition, the existence of these notes and warrants may encourage short selling of our common stock by market participants, which could adversely affect the market price of our common stock and other securities.

In addition, we will need to raise substantial additional capital in the future to fund our operations. If we raise additional funds by issuing equity securities or additional convertible debt, the market price of our common stock and other securities may decline.

Anti-takeover provisions in our charter documents and under Delaware law could make an acquisition of us, which may be beneficial to our stockholders, more difficult and may prevent attempts by our stockholders to replace or remove our current management.

We are incorporated in Delaware. Certain anti-takeover provisions under Delaware law and in our certificate of incorporation and amended and restated bylaws, as currently in effect, may make a change of control of our company more difficult, even if a change in control would be beneficial to our stockholders or the holders of our other securities. Our anti-takeover provisions include provisions such as a prohibition on stockholder actions by written consent, the authority of our board of directors to issue preferred stock without stockholder approval, and supermajority voting requirements for specified actions. In addition, we are governed by the provisions of Section 203 of the Delaware General Corporation Law, which generally prohibits stockholders owning 15% or

Table of Contents

more of our outstanding voting stock from merging or combining with us in certain circumstances. These provisions may delay or prevent an acquisition of us, even if the acquisition may be considered beneficial by some of our stockholders. In addition, they may 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, which is responsible for appointing the members of our management.

Because we do not expect to pay dividends in the foreseeable future, you must rely on stock appreciation for any return on any investment in our common stock.

We have paid no cash dividends on any of our capital stock to date, and we currently intend to retain our future earnings, if any, to fund the development and growth of our business. As a result, we do not expect to pay any cash dividends in the foreseeable future, and payment of cash dividends, if any, will also depend on our financial condition, results of operations, capital requirements and other factors and will be at the discretion of our board of directors. Pursuant to the Facility Agreement, we are subject to contractual restrictions on the payment of dividends. There is no guarantee that our common stock will appreciate or maintain its current price. You could lose the entire value of any investment in our common stock.

We have a limited number of unreserved shares available for future issuance, which may impair our ability to conduct future financing and other transactions.

Our amended and restated certificate of incorporation currently authorizes us to issue up to 550,000,000 shares of common stock and 10,000,000 shares of preferred stock. As of February 22, 2016, we had a total of 121,149,142 shares of common stock that were authorized but unissued, and we have currently reserved a significant number of these shares for future issuance pursuant to outstanding equity awards, our equity plans and our 2018 notes. As a result, our ability to issue shares of common stock other than pursuant to existing arrangements will be limited until such time, if ever, that we are able to amend our amended and restated certificate of incorporation to further increase our authorized shares of common stock or shares currently reserved for issuance otherwise become available (for example, due to the termination of the underlying agreement to issue the shares).

If we are unable to enter into new arrangements to issue shares of our common stock or securities convertible or exercisable into shares of our common stock, our ability to complete equity-based financings or other transactions that involve the potential issuance of our common stock or securities convertible or exercisable into our common stock, will be limited. In lieu of issuing common stock or securities convertible into our common stock in any future equity financing transactions, we may need to issue some or all of our authorized but unissued shares of preferred stock, which would likely have superior rights, preferences and privileges to those of our common stock, or we may need to issue debt that is not convertible into shares of our common stock, which may require us to grant security interests in our assets and property and/or impose covenants upon us that restrict our business. If we are unable to issue additional shares of common stock or securities convertible or exercisable into our common stock, our ability to enter into strategic transactions such as acquisitions of companies or technologies, may also be limited. If we propose to amend our amended and restated certificate of incorporation to increase our authorized shares of common stock, such a proposal would require the approval by the holders of a majority of our outstanding shares of common stock, and we cannot assure you that such a proposal would be adopted. If we are unable to complete financing, strategic or other transactions due to our inability to issue additional shares of common stock or securities convertible or exercisable into our common stock, our financial condition and business prospects may be materially harmed.

Item 1B. ***Unresolved Staff Comments***

None.

Table of Contents

Item 2. ***Properties***

In 2001, we acquired a facility in Danbury, Connecticut that included two buildings comprising approximately 190,000 square feet encompassing 17.5 acres. In September 2008, we completed the construction of approximately 140,000 square feet of new manufacturing space providing us with two buildings totaling approximately 328,000 square feet, housing our research and development, administrative and manufacturing functions for AFREZZA. We believe the Danbury facility will have sufficient space to satisfy commercial demand for AFREZZA.

We own approximately 142,000 square feet of laboratory, office and warehouse space in Valencia, California. This facility is currently listed for sale.

Our obligations under the Facility Agreement, the Milestone Agreement, and Sanofi Loan Facility are secured by certain mortgages on our facilities in Danbury, Connecticut and Valencia, California.

We also lease approximately 12,500 square feet of office space in Valencia, California pursuant to a lease that expires in April 2017. The facility contains our principal executive offices.

Item 3. ***Legal Proceedings***

Following the receipt by us of the notice of termination from Sanofi regarding the Sanofi License Agreement and the subsequent decline of the price of our common stock, several complaints were filed in the U.S. District Court for the Central District of California against us and certain of our officers and directors on behalf of certain purchasers of our common stock. The complaints include claims asserted under Sections 10(b) and 20(a) of the Exchange Act and have been pled as putative shareholder class actions. In general, the complaints allege that we and certain of our officers and directors violated federal securities laws by making materially false and misleading statements regarding the prospects for AFREZZA, thereby artificially inflating the price of our common stock. The plaintiffs are seeking monetary damages and other relief. We expect the complaints to be transferred to a single court and consolidated for all purposes, following which the court would be expected to appoint a lead plaintiff and lead counsel and to order the lead plaintiff to file a consolidated complaint. We will vigorously defend against the claims advanced.

Following the receipt by us of the notice of termination from Sanofi regarding the Sanofi License Agreement and the subsequent decline of the price of our common stock, two motions were submitted to the District Court at Tel Aviv (Economic Department) for the certification of a class action against us and certain of our officers and directors. In general, the complaints allege that we and certain of our officers and directors violated Israeli and US securities laws by making materially false and misleading statements regarding the prospects for AFREZZA, thereby artificially inflating the price of our common stock. The plaintiffs are seeking monetary damages. We will vigorously defend against these claims.

We are also subject to legal proceedings and claims which arise in the ordinary course of our business. As of the date hereof, we believe that the final disposition of such matters will not have a material adverse effect on our financial position, results of operations or cash flows. We maintain liability insurance coverage to protect our assets from losses arising out of or involving activities associated with ongoing and normal business operations.

Item 4. ***Mine Safety Disclosures***

Not applicable.

Table of Contents

PART II

Item 5. ***Market for the Registrant s Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities***

Common Stock Market Price

Our common stock has been traded on The NASDAQ Global Market under the symbol MNKD since July 28, 2004. The following table sets forth for the quarterly periods indicated, the high and low sales prices for our common stock as reported by The NASDAQ Global Market.

	High	Low
Year ended December 31, 2015		
First quarter	$ 7.88	$ 5.03
Second quarter	$ 7.32	$ 3.46
Third quarter	$ 5.80	$ 3.00
Fourth quarter	$ 4.07	$ 1.38
Year ended December 31, 2014		
First quarter	$ 7.21	$ 3.80
Second quarter	$ 11.48	$ 4.02
Third quarter	$ 10.81	$ 5.91
Fourth quarter	$ 6.65	$ 4.45

The closing sales price of our common stock on The NASDAQ Global Market was $1.00 on February 22, 2016 and there were 183 registered holders of record as of that date.

Performance Measurement Comparison

The material in this section is not soliciting material, is not deemed filed with the SEC and shall not be incorporated by reference by any general statement incorporating by reference this Annual Report on Form 10-K into any of our filings under the Securities Act, or the Exchange Act, except to the extent we specifically incorporate this section by reference.

Table of Contents

The following graph illustrates a comparison of the cumulative total stockholder return (change in stock price plus reinvested dividends) of our common stock with (i) The NASDAQ Composite Index and (ii) The NASDAQ Biotechnology Index. The graph assumes a $100 investment, on December 31, 2010, in (i) our common stock, (ii) the securities comprising The NASDAQ Composite Index and (iii) the securities comprising The NASDAQ Biotechnology Index.

The comparisons in the graph are required by the SEC and are not intended to forecast or be indicative of possible future performance of our common stock.

Dividend Policy

We have never declared or paid any cash dividends on our common stock. We currently intend to retain all available funds and any future earnings for use in the operation and expansion of our business. Accordingly, we do not anticipate paying any cash dividends on our common stock in the foreseeable future. Any future determination to pay dividends will be at the discretion of our board of directors. In addition, under the terms of the Facility Agreement, we are restricted from distributing any of our assets or declaring and distributing a dividend to our stockholders.

Recent Sales of Unregistered Securities

Pursuant to the terms of our engagement letter with Sunrise Securities Corp., our placement agent for the registered direct offering that we completed in November 2015, on November 16, 2015 we issued three affiliates of Sunrise Securities Corp. warrants to purchase an aggregate of 159,303 shares of our common stock at an exercise price of $2.61 per share. The warrants are exercisable for cash, and in some cases on a cashless basis, for a period of five years following the issuance date. On December 15, 2015, we registered for resale the shares of common stock issuable upon exercise of the warrants.

We issued the warrants in reliance on the exemption from registration provided by Section 4(a)(2) of the Securities Act of 1933, as amended. The recipients acquired the warrants for investment only and not with a view to or for sale in connection with any distribution thereof and appropriate legends were affixed to the warrants.

Table of Contents

Item 6. ***Selected Financial Data***

The information set forth below should be read in conjunction with Management s Discussion and Analysis of Financial Condition and Results of Operations and the audited consolidated financial statements, and the notes thereto, and other financial information included herein this Annual Report on Form 10-K.

	Year Ended December 31,				
Statement of Operations Data:	**2015**	**2014**	**2013**	**2012**	**2011**
	(In thousands, except per share amounts)				
Revenue	$	$	$	$ 35	$ 50
Operating expenses:					
Research and development	29,674	100,244	109,719	101,522	99,959
General and administrative	40,960	79,383	59,682	45,473	40,630
Product Manufacturing	67,442				
Property and equipment impairment	140,412				
Loss on purchase commitments	66,167				
Total operating expenses	344,655	179,627	169,401	146,995	140,589
Loss from operations	(344,655)	(179,627)	(169,401)	(146,960)	(140,539)
Other income (expense)	1,366	1,679	(635)	(1,191)	1,541
Loss on extinguishment of debt	(1,049)				
Interest expense on note payable to principal stockholder	(2,894)	(2,894)	(6,309)	(10,491)	(10,883)
Interest expense	(21,231)	(17,549)	(15,153)	(11,139)	(10,941)
Interest income	18	9	8	7	18
Loss before provision for income taxes	(368,445)	(198,382)	(191,490)	(169,774)	(160,804)
Income taxes				408	
Net loss	$ (368,445)	$ (198,382)	$ (191,490)	$ (169,366)	$ (160,804)
Basic and diluted net loss per share	$ (0.91)	$ (0.51)	$ (0.64)	$ (0.94)	$ (1.32)
Shares used to compute basic and diluted net loss per share	406,165	385,229	299,591	180,855	121,817

	December 31,				
Balance Sheet Data:	**2015**	**2014**	**2013**	**2012**	**2011**
	(In thousands)				
Cash and cash equivalents	$ 59,074	$ 120,841	$ 70,790	$ 61,840	$ 2,681
Total assets	126,412	394,439	258,646	251,314	199,553
Senior convertible notes	27,613	99,355	98,439	212,026	210,642
Note payable to our principal stockholder	49,521	49,521	49,521	119,635	277,203
Facility financing obligation	74,582	72,995	102,300		
Sanofi loan facility and loss share obligation	62,371	3,034			
Accumulated deficit	(2,863,229)	(2,494,784)	(2,296,402)	(2,104,912)	(1,935,546)
Total stockholders deficit	(350,329)	(73,770)	(30,713)	(110,679)	(313,652)

Table of Contents

Item 7. ***Management s Discussion and Analysis of Financial Condition and Results of Operations***

The following discussion of our financial condition and results of operations should be read in conjunction with our consolidated financial statements and notes thereto included in this Annual Report on Form 10-K.

Overview

We are a biopharmaceutical company focused on the discovery and development of therapeutic products for diseases such as diabetes. Our only approved product, AFREZZA, is a rapid-acting inhaled insulin that was approved by the FDA on June 27, 2014 to improve glycemic control in adult patients with diabetes. AFREZZA became available by prescription in United States retail pharmacies in February 2015.

For the year ended December 31, 2015, Sanofi reported a total of 7.0 million in annual sales of AFREZZA. As of December 31, 2015, we had an accumulated deficit of $2.9 billion and a stockholders deficit of $350.3 million. We incurred net losses of approximately $368.4 million, $198.4 million, and $191.5 million in the years ended December 31, 2015, 2014, and 2013, respectively. We have funded our operations primarily through the sale of equity securities and convertible debt securities, borrowings under the Facility Agreement, borrowings under The Mann Group Loan Arrangement, receipt of upfront and milestone payments under the Sanofi License Agreement and borrowings under the Sanofi Loan Facility to fund our portion of the loss share. As discussed below in Liquidity and Capital Resources , if we are unable to obtain additional funding, there will be substantial doubt about our ability to continue as a going concern.

To date, all sales and marketing activities related to AFREZZA have been conducted by Sanofi pursuant to the Sanofi License Agreement, and we have been responsible for manufacturing AFREZZA to supply Sanofi s demand for the product pursuant to the Sanofi Supply Agreement. On January 4, 2016, we received written notice from Sanofi of its election to terminate in its entirety the Sanofi License Agreement. Sanofi s notice indicated that the termination was pursuant to Sanofi s right to terminate the agreement upon Sanofi s good faith determination that the commercialization of AFREZZA is no longer economically viable in the United States, in which case the effective date of termination (the Termination Date) would be April 4, 2016. In the alternative, Sanofi indicated that the termination was also pursuant to its right to terminate the Sanofi License Agreement for any reason, in which case the Termination Date would be July 4, 2016. We believe that Sanofi lacks a good faith basis for determining that commercialization of AFREZZA is no longer economically viable in the United States. Nonetheless, in the interest of an expedient transition, we are currently working with Sanofi to transfer and wind down the agreement activities by April 4, 2016, or as soon as practicable thereafter. We intend to assume responsibility for commercializing and developing AFREZZA in the United States as soon as practicable following the Termination Date. As a result of the termination of the Sanofi License Agreement, the Sanofi Supply Agreement will terminate by its terms on the Termination Date. We also intend to seek regional partnerships for the development and commercialization of AFREZZA in foreign jurisdictions where there are appropriate commercial opportunities.

Our business is subject to significant risks, including but not limited to our ability to successfully commercialize and manufacture sufficient quantities of AREZZA and the risks inherent in our ongoing clinical trials and the regulatory approval process for our product candidates. Additional significant risks also include the results of our research and development efforts, competition from other products and technologies and uncertainties associated with obtaining and enforcing patent rights.

Research and Development Expenses

Historically our research and development expenses have consisted mainly of costs associated with research and development of our product candidates, including associated clinical trials, and manufacturing process development. This includes the salaries, benefits and stock-based compensation of research and development personnel, raw materials, laboratory supplies and materials, facility costs, costs for consultants and related contract research, licensing fees, and depreciation of equipment. We track research and development costs by the type of cost incurred. We partially offset research and development expenses with the recognition of estimated amounts receivable from the State of Connecticut pursuant to a program under which we can exchange qualified research and development income tax credits for cash.

Table of Contents

Our research and development staff conducts our internal research and development activities, which include research, product development, clinical development, manufacturing process development and related activities. This staff is located in our facilities in Valencia, California and Danbury, Connecticut. We expense research and development costs as we incur them.

General and Administrative Expenses

Our general and administrative expenses are driven by salaries, benefits and stock-based compensation for administrative, finance, business development, human resources, legal and information systems support personnel. In addition, general and administrative expenses include professional service fees and business insurance costs.

Product Manufacturing Expenses

Product manufacturing expenses represent under-absorbed labor and overhead and inventory write-offs, which are expensed in the period in which they are incurred rather than as a portion of the inventory cost.

Critical Accounting Policies

We have based our discussion and analysis of our financial condition and results of operations on our financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States. The preparation of these financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities and expenses. We evaluate our estimates and judgments on an ongoing basis. We base our estimates on historical experience and on various assumptions that we believe to be reasonable under the circumstances, the results of which form the basis for making estimates of expenses such as stock option expenses and judgments about the carrying values of assets and liabilities. Actual results may differ from these estimates under different assumptions or conditions. The significant accounting policies that are critical to the judgments and estimates used in the preparation of our financial statements are described in more detail below.

License and collaboration agreements

Pursuant to the Sanofi License Agreement, we granted to Sanofi exclusive, worldwide licenses to certain of our patents, trademarks and know-how for the development and commercialization of AFREZZA. The terms of the Sanofi License Agreement provide for consideration to us in the form of a non-refundable up-front payment, product sales, manufacturing, regulatory and sales milestone payments and profit and loss sharing. On January 4, 2016, we received written notice from Sanofi of its election to terminate in its entirety the Sanofi License Agreement, effective either on April 4, 2016 or July 4, 2016 depending on the permitted basis for termination.

We analyze consideration received under the provisions of ASC 605, Revenue Recognition, to determine whether the consideration, or a portion thereof, could be recognized as revenue. ASC 605 provides that revenue is recognized when there is persuasive evidence that an arrangement exists, delivery has occurred or services have been rendered, the price is fixed or determinable and collection is reasonably assured.

In arrangements involving the delivery of more than one element, each required deliverable is evaluated to determine whether it qualifies as a separate unit of accounting. This determination is generally based on whether the deliverable has stand-alone value to the customer. The arrangement s consideration that is fixed and determinable is then allocated to each separate unit of accounting based on the relative selling price of each deliverable. The estimated selling price of each deliverable is determined using the following hierarchy of values: (i) vendor-specific objective evidence of fair value, (ii) third-party evidence of selling price and (iii) best estimate of selling price (BESP). The BESP reflects our best estimate of what the selling price would be if the deliverable was regularly sold by us on a stand-alone basis. In general, the consideration allocated to each unit of accounting is recognized as the related goods or services are delivered, limited to the consideration that is not contingent upon future deliverables.

The assessment of multiple element arrangements requires judgment in order to determine the appropriate units of accounting and the points in time that, or periods over which, revenue should be recognized. As of

Table of Contents

December 31, 2015, we did not have the ability to estimate the amount of costs that would potentially be incurred under the loss sharing provision of the Sanofi License Agreement, and accordingly we believe the fixed and determinable fee requirement for revenue recognition was not met. Given the fact that Sanofi has terminated the Sanofi License Agreement, we expect to have the ability in the future to estimate the amount of costs that would potentially be incurred under the loss sharing provision of the Sanofi License Agreement, and accordingly we believe the fixed and determinable fee requirement for revenue recognition will be met in 2016.

Inventories

Inventories are stated at the lower of cost or market value. We determine the cost of inventory using the first-in, first-out (FIFO) method. We capitalize inventory costs associated with AFREZZA based on management s judgment and the future economic benefit expected to be realized; otherwise, such costs are expensed as research and development or as product manufacturing expense for under-absorbed labor and overhead. We periodically analyze our inventory levels to identify inventory that may expire or has a cost basis in excess of its estimated realizable value, and write down such inventories as appropriate. In addition, AFREZZA is subject to strict quality control and monitoring, which we perform throughout the manufacturing process. If certain batches of AFREZZA inhalation powder, the inhaler or cartridges, no longer meet quality specifications or become obsolete due to expiration, we will record a charge to write down such unmarketable inventory to its estimated realizable value. Inventory that is not expected to be used within one year is classified as a long term asset on the accompanying condensed consolidated balance sheet.

We analyzed our inventory levels to identify inventory that may expire or has a cost basis in excess of its estimated realizable value. We performed an assessment of projected sales to evaluate the lower of cost or market and the potential excess inventory on hand at December 31, 2015. As a result of this assessment, we recorded a charge of $39.3 million to record the inventory raw materials on hand at the lower of cost or market, inventory expiry, and write-off other inventory related assets.

In connection with the projected sales assessment, we also evaluated our inventory purchase commitments totalling $116.2 million for potential impairment. As a result of this assessment, we recorded a $66.2 million charge related to a loss on future purchase commitments both from a lower of cost or market and excess inventory perspective. The purchase commitment obligation has been reduced to reflect our expectation that a portion will be recoverable from a third party.

Deferred product costs from collaboration

Cost of product manufacturing includes costs in connection with producing commercial and clinical product for Sanofi. Deferred costs represent the costs of product manufactured and shipped to Sanofi, not to exceed the amount of deferred product sales related to the collaboration, for which recognition of revenue has been deferred. Given that the costs of inventory delivered to Sanofi, but for which revenue may not yet be recognized, meet both the definition and characteristics of an asset and management believes that it is probable that the amount of future revenue will exceed the amount of deferred costs (i.e., the asset would be realizable through the recognition of probable future income), we have elected to account for the deferred costs related to the product sold to Sanofi as an asset and carry forward to future periods until the related revenue is recognized.

Milestone Rights

In connection with the execution of the Facility Agreement on July 1, 2013, we issued Milestone Rights to the Milestone Purchasers. The Milestone Rights provide the Milestone Purchasers certain rights to receive payments up to $90.0 million upon the occurrence of specified strategic and sales milestones, including the first commercial sale of an AFREZZA product, and the achievement of specified net sales figures. We analyzed the Milestone Rights under the provisions of Financial Accounting Standards Board (FASB) Accounting Standards Codification (ASC), 815 *Derivatives and Hedging*, referred to as ASC 815, and determined that the instruments do not meet the definition of a freestanding derivative. Since we have not elected to apply the fair value option to the Milestone Rights, we have recorded the Milestone Rights at their estimated fair value and accounted for the Milestone Rights as a liability by applying the indexed debt guidance contained in paragraphs ASC 470-10-25-3 and 35-4.

Table of Contents

The initial fair value estimate of the Milestone Rights was calculated using the income approach in which the cash flows associated with the specified contractual payments were adjusted for both the expected timing and the probability of achieving the milestones and discounted to present value using a selected market discount rate. The expected timing and probability of achieving the milestones was developed with consideration given to both internal data, such as progress made to date and assessment of criteria required for achievement, and external data, such as market research studies. The discount rate was selected based on an estimation of required rate of returns for similar investment opportunities using available market data.

The Milestone Rights liability will be remeasured as the specified milestone events are achieved. Specifically, as each milestone event is achieved, the portion of the initially recorded Milestone Rights liability that pertains to such milestone event being achieved, will be remeasured to the amount of the specified related milestone payment. The resulting change in the balance of the Milestone Rights liability due to remeasurement will be recorded in our Statement of Operations as interest expense. Furthermore, the Milestone Rights liability will be reduced upon each milestone payment being paid. As a result, each milestone payment would be effectively allocated between a reduction of the recorded Milestone Rights liability and an expense representing a return on a portion of the Milestone Rights liability paid to the investor for the achievement of the related milestone event.

Impairment of Long-Lived Assets

Assessing long-lived assets for impairment requires us to make assumptions and judgments regarding the carrying value of these assets. We evaluate long-lived assets for impairment whenever events or changes in circumstances indicate that the carrying value of an asset may not be recoverable. The assets are considered to be impaired if we determine that the carrying value may not be recoverable based upon our assessment of the following events or changes in circumstances:

- significant changes in our strategic business objectives and utilization of the assets;
- a determination that the carrying value of such assets cannot be recovered through undiscounted cash flows;
- loss of legal ownership or title to the assets;
- a significant adverse change in legal factors or in the business climate that could affect the value of a long-lived asset (asset group), including an adverse action or assessment by a regulator; or
- the impact of significant negative industry or economic trends.

If we believe our assets to be impaired, the impairment we recognize is the amount by which the carrying value of the assets exceeds the fair value of the assets. Any write-downs would be treated as permanent reductions in the carrying amount of the asset and an operating loss would be recognized. In addition, we base the useful lives and related amortization or depreciation expense on our estimate of the useful lives of the assets. If a change were to occur in any of the above-mentioned factors or estimates, our reported results could materially change.

In connection with our quarterly assessment of impairment indicators, we evaluated the continued lower than expected sales of AFREZZA as reported by Sanofi throughout the fourth quarter of 2015, revised forecasts for sales of AFREZZA provided by Sanofi in the fourth quarter of 2015 and level of commercial production in the fourth quarter of 2015, as well as the uncertainty associated with Sanofi s announcement during the fourth quarter of their intent to reorganize their diabetes business. These factors indicated potentially significant changes in the timing and extent of cash flows, and we therefore determined that an impairment indicator existed in the fourth quarter of 2015.

On January 4, 2016, we received written notice from Sanofi of its election to terminate in its entirety the Sanofi License Agreement. Sanofi s notice indicated that the termination was pursuant to Sanofi s right to terminate the agreement upon Sanofi s good faith determination that the commercialization of AFREZZA is no longer economically viable in the United States, in which case the effective date of termination (the Termination Date) would be April 4, 2016. In the alternative, Sanofi indicated that the termination was also pursuant to its right to terminate the License Agreement for any reason, in which case the Termination Date would be July 4, 2016. We believe that Sanofi lacks a good faith basis for determining that commercialization of AFREZZA is no longer economically viable in the United

49

Table of Contents

States. Nonetheless, in the interest of an expedient transition, we are currently working with Sanofi to transfer and wind down the agreement activities by April 4, 2016, or as soon as practicable thereafter.

We identified two primary asset groups to be evaluated for impairment: the Danbury manufacturing facility, which currently performs all the manufacturing of AFREZZA, and the Valencia facility, which was previously our corporate headquarters. The Danbury manufacturing facility is the primary asset group that has been impacted by the impairment indicators noted above but we also evaluated the Valencia facility for potential impairment given the circumstances, and identified an impairment charge of $1.8 million based on a valuation utilizing a combination of market, income and cost approaches. Within the Danbury manufacturing facility, we identified the machinery and equipment as the primary assets within the asset group as they are associated with the production of AFREZZA. As such, we performed the fixed asset impairment test and performed the first step to test for recoverability of the Danbury manufacturing facility by utilizing two undiscounted cash flow projections and applying a probability weighted average to those cash flow projections. The first undiscounted cash flow projection was developed under a scenario assuming Sanofi would continue to sell and market AFREZZA as the termination of the arrangement by Sanofi was not known as of the balance sheet date. The second undiscounted cash flow projection assumed Sanofi would terminate the Sanofi License Agreement and that we would manufacture, sell and market AFREZZA independently.

Based on the evaluation performed, the probabilities assigned to the two undiscounted cash flows were not significant to the evaluation due to the projected negative cash flows over the estimation period, and it was determined that the probability weighted undiscounted cash flows were not sufficient to recover the carrying value of the Danbury manufacturing facility. As such, we were required to determine the fair value of the Danbury manufacturing facility to recognize an impairment loss if the carrying amount exceeds its fair value. We determined the fair value of the Danbury manufacturing facility by applying the highest and best use valuation concept and utilizing the market approach valuation technique to value the machinery and equipment and a combination of the market approach and cost approach in valuing the land, buildings, and building improvements. As a result of this assessment, we recorded an impairment charge of $138.6 million for the Danbury manufacturing facility.

To date, we have had recurring operating losses, and the recoverability of our long-lived assets is contingent upon executing our business plan. If we are unable to execute our business plan, we may require additional write downs of the value of our long-lived assets in future periods.

Clinical Trial Expenses

Our clinical trial accrual process seeks to account for expenses resulting from our obligations under contract with vendors, consultants, and clinical site agreements in connection with conducting clinical trials. The financial terms of these contracts are subject to negotiations which vary from contract to contract and may result in payment flows that do not match the periods over which materials or services are provided to us under such contracts. Our objective is to reflect the appropriate trial expenses in our financial statements by matching period expenses with period services and efforts expended. We account for these expenses according to the progress of the trial as measured by patient progression and the timing of various aspects of the trial. We determine accrual estimates through discussions with internal clinical personnel and outside service providers as to the progress or state of completion of trials, or the services completed. Service provider status is then compared to the contractual obligated fee to be paid for such services. During the course of a clinical trial, we adjust our rate of clinical expense recognition if actual results differ from our estimates. In the event that we do not identify certain costs that have begun to be incurred or we underestimate or overestimate the level of services performed or the costs of such services, our reported expenses for a period would be too low or too high. The date on which certain services commence, the level of services performed on or before a given date and the cost of the services are often judgmental. We make these judgments based upon the facts and circumstances known to us in accordance with generally accepted accounting principles.

Although we do not expect our estimates to be materially different from amounts actually incurred, our understanding of the status and timing of services performed relative to the actual status and timing of services performed may vary and may result in our reporting amounts that are too high or too low for any particular period.

Table of Contents

Stock-Based Compensation

We account for stock-based compensation in accordance with ASC 718 *Compensation Stock Compensation*. ASC 718 requires all share-based payments to employees, including grants of stock options, restricted stock units, performance-based awards and the compensatory elements of employee stock purchase plans, to be recognized in the income statement based upon the fair value of the awards at the grant date. We use the Black-Scholes option valuation model to estimate the grant date fair value of employee stock options and the compensatory elements of employee stock purchase plans. Option valuation models require the input of assumptions, including the expected life of the stock-based awards, the estimated stock price volatility, the risk-free interest rate, and the expected dividend yield. Beginning in the third quarter of 2014, we began to assess both historical and implied volatility in order to determine the estimated volatility rate for our stock. Implied volatility was considered due to the change in our business, which occurred with the approval for the sale of AFREEZA. The expected volatility assumption is based on an assessment of the historical volatility and the implied volatility of our common stock, derived from an analysis of historical traded and quoted options on our common stock. Restricted stock units are valued based on the market price on the grant date. We evaluate stock awards with performance conditions as to the probability that the performance conditions will be met and estimate the date at which the performance conditions will be met in order to properly recognize stock-based compensation expense over the requisite service period.

Accounting for Income Taxes

Our management must make judgments when determining our provision for income taxes, our deferred tax assets and liabilities and any valuation allowance recorded against our net deferred tax assets. At December 31, 2015, we had established a valuation allowance of $962.6 million against all of our net deferred tax asset balance, due to uncertainties related to the realizability of our deferred tax assets as a result of our history of operating losses. The valuation allowance is based on our estimates of taxable income by jurisdiction in which we operate and the period over which our deferred tax assets will be recoverable. In the event that actual results differ from these estimates or we adjust these estimates in future periods, we may need to change the valuation allowance, which could materially impact our financial position and results of operations.

Results of Operations

Years ended December 31, 2015 and 2014

Revenues

During the years ended December 31, 2015 and 2014, we did not recognize any revenue. Due to the termination of the Sanofi License Agreement and based on our current operating plan, we expect to recognize, likely within 2016, $17.5 million as product sales from collaboration, $13.5 million as product costs from collaboration and income from collaboration related to upfront and milestone payments in excess of $100 million, which amounts are deferred as of December 31, 2015 due to the revenue recognition criteria not being met as of such date.

Table of Contents

Research and Development Expenses

The following table provides a comparison of the research and development expense categories for the years ended December 31, 2015 and 2014 (dollars in thousands):

	Year Ended December 31,			
	2015	2014	$ Change	% Change
Clinical	$ 11,941	$ 27,962	$ (16,021)	(57%)
Manufacturing	8,939	44,901	(35,962)	(80%)
Research	6,554	5,841	713	12%
Research and development tax credit	(789)	(817)	28	(3%)
Stock-based compensation expense	3,029	22,357	(19,328)	(86%)
Research and development expenses	$ 29,674	$ 100,244	$ (70,570)	(70%)

The decrease in research and development expenses of $70.6 million for the year ended December 31, 2015 compared to the year ended December 31, 2014 was primarily due to a decrease of $36.0 million in manufacturing process development expenses resulting from the shift to commercial production of AFREZZA of $30.8 million and decreased expenses of $0.7 million following the completion of restructuring activities in early 2015. The decrease is also attributable to a $19.3 million decrease in stock-based compensation expense compared to 2014 as a result of a non-recurring modification of the settlement terms (the Modification) of certain performance-based restricted stock units and the achievement of performance-based grants in 2014 and the first quarter of 2015. The Modification resulted in the reclassification of these performance grants from equity awards to liability awards, which required re-measurement on the modification date and resulted in incremental stock-based compensation expense. Further, the reductions in research and development expenses was also driven by a decrease in clinical trial related expenses of $16.0 million primarily resulting from the completion of the affinity trials of $11.1 million and decreased personnel costs related to restructuring of $9.0 million.

We anticipate that our overall research and development expenses will decrease in 2016 compared to 2015 due to the focus on the transition of the AFREZZA rights in 2016 and minimal incremental cost associated with our development pipeline.

General and Administrative Expenses

The following table provides a comparison of the general and administrative expense categories for the years ended December 31, 2015 and 2014 (dollars in thousands):

	Year Ended December 31,			
	2015	2014	$ Change	% Change
Salaries, employee related and other general expenses	$ 35,264	$ 53,118	$ (17,854)	(34%)
Stock-based compensation expense	5,696	26,265	(20,569)	(78%)
General and administrative expenses	$ 40,960	$ 79,383	$ (38,423)	(48%)

The decrease in general and administrative expenses of $38.4 million for the year ended December 31, 2015 compared to the year ended December 31, 2014 was primarily due to decreased stock-based compensation expense of $20.6 million, resulting from the modification and achievement of performance-based grants in 2014 and the first quarter of 2015, as described above. Additionally, the decrease is also attributable to professional fees of $13.8 million related to the Sanofi License Agreement incurred in the third quarter of 2014 and decreased expenses of $3.2 million following the completion of restructuring activities and decreased personnel costs in early 2015.

We expect general and administrative expenses to remain relatively flat in 2016 as compared to 2015 due to restructuring measures in 2015 offset by an increase in professional fees related to the Sanofi termination.

We expect to have sales and marketing expenses in 2016 due to termination of the Sanofi License Agreement and the transition of sales and marketing efforts to us in 2016.

52

Table of Contents

Product Manufacturing Expenses

Product manufacturing expenses were $67.4 million for the year ended December 31, 2015, resulting from product manufacturing costs associated with AFREZZA product sales, which cannot be capitalized due to excess capacity. We had no product manufacturing expense for the year ended December 31, 2014, as pre-commercial manufacturing costs associated with AFREZZA were accounted for as research and development expenses. Product manufacturing expenses represent under-absorbed labor and overhead of $21.4 million and inventory write-offs of 36.1 million, which are expensed in the period in which they are incurred.

Although the Sanofi License Agreement will terminate in the second quarter of 2016, we expect our 2016 production of AFREZZA to be relatively consistent with production levels in 2015, primarily as a result of existing customer demand. With the exception of the inventory write-off, we expect product manufacturing expense to remain relatively flat in 2016 compared to 2015.

Property and equipment impairment

Property and equipment impairment increased $140.4 million for the year ended December 31, 2015 compared to the year ended December 31, 2014. The property and equipment impairment was to reduce the carrying amount of our real property and machinery and equipment to fair value based on our impairment assessment in the fourth quarter of 2015.

Loss on purchase commitments

Loss on purchase commitments increased $66.2 million for the year ended December 31, 2015 compared to the year end 2014. The loss on purchase commitments was related to the loss on future purchase commitments resulting from our assessment of excess inventory as a result of lower than expected sales of AFREZZA as well as a lower of cost or market adjustment due to estimated conversion costs in excess of our estimated selling price of AFREZZA.

Other Income (Expense)

Other income for the year ended December 31, 2015 was $1.4 million resulting from the relief of an accrual for potential expenses associated with the sale of intellectual property related to oncology in 2014, which was subsequently resolved without payment in the first quarter of 2015. For the year ended December 31, 2014, other income was $1.7 million resulting from the sale of intellectual property related to oncology in the third quarter of 2014 in the amount of $7.9 million, partially offset by a $6.4 million non-cash charge recognized upon the conversion of 2019 notes into equity.

Loss on Extinguishment of Debt

Loss on extinguishment of debt increased $1.0 million for the year ended December 31, 2015 compared to the year ended December 31, 2014. The loss on extinguishment is due to the settlement of the 2015 notes through payment of cash and issuance of new debt.

Interest Income and Expense

Interest expense increased $3.7 million from $20.4 million for the year ended December 31, 2014 to $24.1 million for the year ended December 31, 2015. The increase was primarily due to $5.8 million interest expense associated with the milestone payment resulting from the achievement and re-measurement of the second milestone under the Milestone Agreement in the first quarter of 2015 compared to the $1.9 million interest expense from the payment of the first milestone in 2014. The increase was also due to an increase of $1.7 million related to the Sanofi Loan Facility and $0.8 million in interest for 2018 notes, which was offset by a decrease in interest expense of $2.7 million resulting from the maturity of 2015 notes.

Years ended December 31, 2014 and 2013

Revenues

During the years ended December 31, 2014 and 2013, we did not recognize any revenue.

53

Table of Contents

Research and Development Expenses

The following table provides a comparison of the research and development expense categories for the years ended December 31, 2014 and 2013 (dollars in thousands):

	Year Ended December 31,			
	2014	2013	$ Change	% Change
Clinical	$ 27,962	$ 42,711	$ (14,749)	(35)%
Manufacturing	44,901	40,530	4,371	11%
Research	5,841	6,351	(510)	(8)%
Research and development tax credit	(817)	(282)	(535)	190%
Stock-based compensation expense	22,357	20,409	1,948	10%
Research and development expenses	$ 100,244	$ 109,719	$ (9,475)	(9)%

The decrease in research and development expenses for the year ended December 31, 2014 compared to the year ended December 31, 2013 was driven by a decrease in clinical trial related expenses of $14.8 million with the completion of two Phase 3 clinical studies of AFREZZA in 2013. This decrease was offset by a $4.4 million increase in manufacturing spending due to supply purchases, increased headcount for commercial readiness and a $1.9 million increase in stock-based compensation resulting from the net effect of $10.4 million in increased stock-based compensation expense due to the Modifications. The foregoing increase in stock-based compensation in 2014 was partially offset by an overall decrease in stock-based compensation of $7.1 million due to the decreased recognition period in 2014 as a result of the achievement of milestones under company-wide performance-based grants in the second and third quarters of 2014, in addition to a reduction of other option and award compensation of $1.4 million due to a reduction in force.

We began commercial manufacturing in the latter part of the fourth quarter of 2014. As such, commercial manufacturing costs incurred in the fourth quarter and included in manufacturing expenses above are immaterial for the year ended December 31, 2014.

General and Administrative Expenses

The following table provides a comparison of the general and administrative expense categories for the years ended December 31, 2014 and 2013 (dollars in thousands):

	Year Ended December 31,			
	2014	2013	$ Change	% Change
Salaries, employee related and other general expenses	$ 53,118	$ 34,905	$ 18,213	52%