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Stock Symbol	NYSE: XON
Current Price	\$19.47
12 mos. Target Price	\$40.00
Market Cap	\$1,956.8 mln
Shares O/S	100.5 mln
Avg Daily Vol. (3 mos.)	601,007 shs.
52- Week Price Low/High	\$13.13 - \$38.50
P/B	5.2x
Dividend / Yield	\$0.00 / 0.0%

	EPS		
	FY 13A	FY 14E	FY 15E
Q1 (Mar)	(0.47)A	0.04A	(0.11)E
Q2 (Jun)	(0.07)A	(0.53)A	(0.05)E
Q3 (Sep)	0.16A	(0.18)E	(0.11)E
Q4 (Dec)	(0.13)A	(0.19)E	(0.08)E
	(0.46)A	(0.85)E	(0.36)E



August 22, 2014

Intrexon Corporation

BUY

Company Update : Biotechnology

Intrexon Makes Progress on Multiple Fronts

The latest results point to a bright future, as the Company reported progress in five important areas:

BeyondBio™ should strengthen relations with clients. The communications software entered beta testing with a corporate client who will help identify any areas for improvement. More features will be added, such as links to public databases of genetic information. We think the software will also serve as an avenue to securing new customers and building long-term relationships with future scientists.

The Trans Ova Genetics acquisition provides a link between Intrexon and the livestock industry. One of the Company's goals is to help the world improve the quality and quantity of food available as the human population continues to expand. Even small modifications to an animal's genetic makeup may render it resistant to infectious diseases and thus increase meat production. This example may serve yet another purpose, reducing antibiotics in animal feed which would avoid promoting the growth of drug-resistant bacteria.

Intrexon and Ziopharm lifted the covers slightly on their immunotherapeutics research. The companies issued a press release confirming their work on chimeric antigen receptor modified T cells. This is a very promising field of anticancer research in which genetically modified T cells help a patient's immune system recognize malignant cells and destroy them.

The energy program reported success in creating a second important fuel additive that is also in demand as a chemical intermediate. The latest molecule produced, farnesene, joins isobutanol as a product that can be synthesized via genetically modified methanotrophs. Those microbes utilize methane (natural gas) as a food source. We think a small demonstration plant will become operational within a few years. That will signal success in scaling up microbial production of at least one commercial product and will thus help to attract clients interested in building large production facilities.

Operations reached a milestone in the June quarter. One corporate goal has been to have cash received for R&D services pay for 50% of its cash operating expenses. In the latest quarter, 49% of those costs were covered, as operating expenses remained well controlled. Trans Ova will contribute to further progress. In sum, we are maintaining our BUY recommendation and our price target of \$40.

INVESTMENT CONSIDERATIONS

Intrexon shares have come under the same pressure that has affected many of the smaller biotech stocks. We attribute the trading pattern to a general shift out of the sector in search of other opportunities. The news from the Company has been positive, with success in producing the chemical farnesene from a genetically modified methanotroph, information on the CAR-T cell program in the Ziopharm collaboration, beta-testing of the customer relationship management program called BeyondBio™, and the acquisition of Trans Ova Genetics. Individually, these announcements provide an insight into the progress that has been made lately, but combined, we think they provide a very impressive perspective of Intrexon's capabilities and point to a bright future.

We are maintaining our BUY rating on Intrexon stock and price target of \$40 per share.

WILL INTREXON FOLLOW IN APPLE'S FOOTSTEPS?

Management has occasionally discussed its goal of emulating Intel's success in computing technology by referring to the "Intel Inside®" logo. The recent news of the BeyondBio program led us to think that Intrexon has an opportunity to replicate the success of another technology company, Apple, in its drive to become the central source of technologies supporting synthetic biology.

BeyondBio is a software program that facilitates communication between Intrexon and its clients. It provides a streamlined interface for designing unique DNA-based solutions for a wide variety of markets by combining the principles of precision engineering, statistical modeling, and automation to create effective biological solutions in a highly efficient manner. A client involved in veterinary medicine, which we believe is Eli Lilly's Elanco division, is participating in the first beta test. The goal is to ensure the software is functioning optimally and to identify potential capabilities that may be added. Among the improvements that have already been identified are links to sources of public information, such as the U.S. National Library of Medicine's PubMed.gov website and the National Center for Biotechnology Information.

We think this software will greatly enhance clients' experience in collaborating with Intrexon. But there is another opportunity that may well be pursued and that is offering the program to universities to facilitate research in the field of synthetic biology. That would provide up-and-coming scientists hands-on experience working with the client interface program and with the Company's synthetic biology team. Apple's standardized software and its penetration of the education market have figured importantly in its success. Perhaps, BeyondBio will help Intrexon in a similar manner by securing business with academia while establishing strong relations with future scientists across a broad spectrum of industries.

TRANS OVA GENETICS – THE MISSING LINK

Improving the availability of quality food worldwide is one of the Company's goals, and we believe the Trans Ova Genetics acquisition in early July filled a missing link in achieving that objective. The deal garnered the leading supplier of bovine embryos in the United States with expertise in *in vitro* fertilization and with the exclusive access to cloning technology domestically. These capabilities are a perfect complement to the application of Intrexon's technologies in molecular biology for food production. Much as the partially owned subsidiary AquaBounty has the potential to serve as an outlet for genetically modified fish, Trans Ova has the ability to rapidly expand the number of genetically modified bovine embryos and a distribution infrastructure in place to sell them to farmers in the United States and certain foreign countries.

We believe Trans Ova's business will prosper, in part because of the growth of corporate farming, which is more efficient than small, privately owned farms. For instance, breeding of dairy cows has become a tightly controlled science. According to Penn State University, if every cow in a herd of 250 animals is allowed just 20 extra days beyond the 120 needed for recovery between pregnancies, the farm will incur \$10,000 in extra costs per year.¹ Then, too, genetics have played a role in herd breeding programs for years, with the recognized tradeoff of hybrid vigor

¹ O'Connor, ML. Systematic breeding programs. Fact Sheet available from Penn State University College of Agricultural Sciences.

versus meat tenderness in many cases. Well-conceived breeding programs also create an extra burden for the farmer, since they demand meticulous recordkeeping and care in keeping the herds separated. Most crossbreeding programs are undertaken to solve a specific problem, such as increasing resistance to tick-borne diseases. This takes time – time and energy that can be solved quicker and more efficiently with genetic modification. Accordingly, we believe the introduction of genetically superior animals will be well received, particularly if there is a cost-savings associated with the better animal.

Nonetheless, it will probably take several years before the Company is prepared to offer dairy or beef cattle with genetic improvements, so we have not included this type of animal in our financial projections through 2019. But in the meantime, Intrexon will be able to expand the number of embryos available, extend Trans Ova's reach into overseas markets and diversify its product line to include hogs. These three endeavors figure importantly in defining the sales we are modeling for the Food sector through the end of this decade. Besides helping to increase sales, they should also reduce the seasonality of Trans Ova's business, which greatly influenced by the seasonality of bovine breeding in the United States today. The other factor that should begin to reduce seasonality is the initiation of sales by Aqua Bounty. Our estimates include \$2 million from genetically modified fish eggs in 2015.

AN ADVANCE IN METHANOTROPH ENGINEERING

The announcement that Intrexon successfully modified a methanotroph (a microbe that uses methane as a food source) via genetic engineering to produce the chemical farnesene was not anticipated. But it certainly demonstrates the utility of the microbe that the Company has selected to modify and the diversity of the chemicals that can be synthesized. Farnesene is a very different molecule than isobutanol, which was the first product that the Energy/Chemical division produced via a genetically modified methanotroph. Farnesene is a 15-carbon molecule, while isobutanol is a four-carbon compound. Both are components of fuel and are used as chemical intermediates.

We believe commercial production of either compound is a few years away. Probably the most challenging step involves optimizing the microbe to produce the desired compound in sufficient quantity for commercialization without diverting too much energy from the cell for its survival. Other steps must also be optimized including scale-up of the culture, culture media and growing conditions, and purification of the product.

Our five-year projections reflect an assumption that a demonstration plant will start up in 2017 with an annual production capacity of 1.5 million gallons per year. (This is the same size facility that British Petroleum set up as a demo plant in Jennings, Louisiana.) Further, we have assumed that the plant produces isobutanol as an additive to gasoline. As such, we figure the maximum price of the isobutanol will be the price of premium gasoline, since if were higher, the price of the gasoline would have to increase to maintain the blender's profit margin. However, it seems more likely that the isobutanol will be added to produce midgrade gasoline too. Based on recent bulk midgrade gas prices, the product would be priced at about \$2.80 per gallon today. The U.S. Energy Information Agency does not expect significant changes in the prices of bulk gasoline and methane in the remainder of the decade, so we've assumed the demonstration plant will generate about \$4.2 million in annual sales.² It is possible, though, that the isobutanol will be sold as a chemical intermediate and command a higher price. Regardless, the demo plant should help Intrexon attract corporate partners with an interest in creating high-value chemicals from low-priced methane.

CAR T CELLS IN THE SPOTLIGHT

A recent news announcement underscored the commitment of the Ziopharm-Intrexon collaboration to the development of chimeric antigen receptor T cells. These genetically modified cells of the immune system have synthetically created receptors that recognize antigens on target cells. With careful selection of the antigens, CAR T cells have the potential to become very potent anticancer immunotherapies. Intrexon has already demonstrated its ability to modify cells to express multiple gene products, including interleukin-12, for therapeutic purposes. The latest news confirmed their research into the field. Ziopharm has announced its intention to submit eight INDs in

² Annual Energy Outlook 2014. Published by the U.S. Energy Information Administration.

2014 and 2015. It seems possible that a CAR T cell may be among the therapeutics that will enter clinical development. (For more information on the CAR T cell program, see our April 17, 2014 report.)

FINANCIAL REVIEW

Intrexon achieved a milestone earlier than expected in the June quarter in that 49% of its operating costs were covered by collaboration fees (i.e., upfront payments, milestones, and R&D cost recovery). The Company's goal was to have revenue cover 50% of its costs in 2015. We also note that operations performed better than the bottom line indicates, because of large distortions created by unrealized gains and losses in the fair value of equity securities held in affiliated companies (i.e., collaborators) in the first and second quarters. Otherwise, the latest revenues and operating expenses were within expected ranges.

QUARTERLY INCOME STATEMENTS[‡] (Fiscal year ends December 31st)

[‡] Data are in thousands, except for per-share figures. *Estimates are in italics.*

	2013				2014				2015			
	Q1A	Q2A	Q3A	Q4A	Q1A	Q2A	Q3E	Q4E	Q1E	Q2E	Q3E	Q4E
Base Synthetic business	\$ 3,864	\$ 6,674	\$ 6,028	\$ 6,959	\$ 7,837	\$ 11,764	\$ 11,499	\$ 12,000	\$ 12,500	\$ 13,000	\$ 13,500	\$ 14,000
Trans Ova & Aqua B							10,000	8,000	12,000	34,000	14,000	10,000
Revenues	\$ 3,864	\$ 6,674	\$ 6,028	\$ 6,959	\$ 7,837	\$ 11,764	\$ 21,499	\$ 20,000	\$ 32,000	\$ 53,000	\$ 29,250	\$ 30,000
Other	112	107	105	184	17	23	20	20	20	20	20	20
Total Revenues	\$ 3,976	\$ 6,781	\$ 6,133	\$ 7,143	\$ 7,854	\$ 11,787	\$ 21,519	\$ 20,020	\$ 32,020	\$ 53,020	\$ 29,270	\$ 30,020
Operating expenses												
Cost of products sold	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 5,000	\$ 4,000	\$ 6,000	\$ 17,000	\$ 7,000	\$ 5,000
Research & development	11,502	13,602	10,763	12,571	12,091	14,479	14,500	14,580	14,500	14,500	15,000	15,000
SG&A	6,480	7,433	7,407	12,298	13,635	15,390	19,500	19,975	23,450	28,000	19,700	19,600
Total operating costs	17,982	21,035	18,170	24,869	25,726	29,869	39,000	38,555	43,950	59,500	41,700	39,600
Operating profit/(loss)	\$ (14,006)	\$ (14,254)	\$ (12,037)	\$ (17,726)	\$ (17,872)	\$ (18,082)	\$ (17,481)	\$ (18,535)	\$ (11,930)	\$ (6,480)	\$ (12,430)	\$ (9,580)
Other Income (Expense)												
Unrealized increase (decrease) in fair value of equity securities	(29,369)	7,734	27,339	4,739	21,922	(33,777)	-	-	-	-	-	-
Realized gain on equity investments	7,415	-	-	-	-	-	-	-	-	-	-	-
Interest (expense)	(14)	(11)	(6)	(110)	(39)	(40)	(40)	(41)	(41)	(41)	(41)	(42)
Other	2	12	(305)	295	80	36	10	14				
Total other income (expense)	(21,966)	7,735	27,028	4,924	21,963	(33,781)	(30)	(27)	(41)	(41)	(41)	(42)
Equity in net loss of affiliate	(390)	-	-	(216)	(536)	(1,355)	(1,375)	(1,384)				
Pretax profit/(loss)	\$ (36,362)	\$ (6,519)	\$ 14,991	\$ (13,018)	\$ 3,555	\$ (53,218)	\$ (18,886)	\$ (19,946)	\$ (11,971)	\$ (6,521)	\$ (12,471)	\$ (9,622)
Income taxes	-	-	-	-	(306)	283	-	-	-	-	-	-
Net profit/(loss)	\$ (36,362)	\$ (6,519)	\$ 14,991	\$ (13,018)	\$ 3,249	\$ (52,935)	\$ (18,886)	\$ (19,946)	\$ (11,971)	\$ (6,521)	\$ (12,471)	\$ (9,622)
Net loss attributable to non-controlling interest	158	507	449	814	866	892	900	932	925	950	950	950
Net profit/(loss) to common	\$ (36,204)	\$ (6,012)	\$ 15,440	\$ (12,204)	\$ 4,115	\$ (52,043)	\$ (17,986)	\$ (19,014)	\$ (11,046)	\$ (5,571)	\$ (11,521)	\$ (8,672)
Earnings(loss) per share	\$ (0.48)	\$ (0.07)	\$ 0.16	\$ (0.13)	\$ 0.04	\$ (0.53)	\$ (0.18)	\$ (0.19)	\$ (0.11)	\$ (0.05)	\$ (0.11)	\$ (0.08)
Shares outstanding	75,879	83,141	97,000	97,022	99,338	98,893	101,300	101,500	101,600	101,800	102,000	102,200

Starting in the current quarter, Intrexon will begin to book revenue from Trans Ova Genetics. For our presentation, we have modified our model to break out the Company's synthetic biology service business from its two product-oriented subsidiaries Trans Ova and Aqua Bounty. We understand that demand for Trans Ova's *in vitro* fertilization service and bovine embryos is seasonal, with the highest revenue booked in the June quarter. Our revenue estimates take that into consideration and include a \$2 million contribution from Aqua Bounty in 2015. In addition to presenting our estimates for the two food subsidiaries separately, we have included a line for the related cost of goods sold. At this juncture, we are uncertain how much Trans Ova has been investing in R&D, so we placed the estimated quarterly operating expenses on Intrexon's SG&A line.

ANNUAL INCOME STATEMENTS[‡] (Fiscal year ends December 31st.)[‡] Data are in thousands, except for per-share figures. *Estimates are in italics.*

	2013	2014	2015	2016	2017	2018	2019
Revenues							
Corporate Revenues	\$ 23,525	\$ 61,100	\$ 144,250	\$ 209,202	\$ 310,708	\$ 450,000	\$ 635,000
Other revenues	508	80	80	100	100	100	120
Total Revenues	\$ 24,033	\$ 61,180	\$ 144,330	\$ 209,302	\$ 310,808	\$ 450,100	\$ 635,120
Operating expenses							
Cost of products sold	-	9,000	35,000	36,750	43,200	54,050	67,500
Research & development	48,438	55,650	59,000	65,000	68,000	61,000	61,000
General & administrative	33,618	68,500	90,750	110,000	113,000	117,000	120,000
Total operating costs	82,056	133,150	184,750	211,750	224,200	232,050	248,500
Operating profit/(loss)	\$ (58,023)	\$ (71,970)	\$ (40,420)	\$ (2,448)	\$ 86,608	\$ 218,050	\$ 386,620
Other Income (Expense)							
Unrealized increase (decrease) in fair value of equity securities	\$ 10,443	\$ (11,855)	\$ -	\$ -	\$ -	\$ -	\$ -
Realized gain on equity investments	7,415	-	-	-	-	-	-
Interest expense	(141)	(160)	(42)	(10)	-	-	-
Other	4	140	-	-	-	-	-
Total other income (expense)	17,721	(11,875)	(42)	(10)	-	-	-
Equity in net loss of affiliate	\$ (606)	\$ (4,650)	-	-	-	-	-
Pretax profit/(loss)	\$ (40,908)	\$ (88,495)	\$ (40,462)	\$ (2,458)	\$ 86,608	\$ 218,050	\$ 386,620
Income taxes	-	(23)	-	-	32,911	82,859	146,916
Net profit/(loss)	\$ (40,908)	\$ (88,472)	\$ (40,462)	\$ (2,458)	\$ 53,697	\$ 135,191	\$ 239,704
Net loss (profit) attributable to non-controlling interest	1,928	3,590	3,775	-	(2,000)	(4,875)	(4,875)
Net profit/(loss) to Common	\$ (38,980)	\$ (84,882)	\$ (36,687)	\$ (2,458)	\$ 51,697	\$ 130,316	\$ 234,829
Earnings/(loss) per share	\$ (0.44)	\$ (0.85)	\$ (0.36)	\$ (0.02)	\$ 0.49	\$ 1.22	\$ 2.13
Shares outstanding	88,261	100,258	101,900	103,000	105,000	107,000	110,000

Our 2019 projections are based on the following sources of revenue:

Health sector	\$185 million
Food sector	\$135 million
Energy sector	\$ 15 million
Cost recovery	\$225 million
Upfront/milestones	\$ 75 million

Revenues related to the health sector are derived only from existing ECCs, and revenue from the food sector is from Trans Ova and Aqua Bounty. The energy revenue reflects only sales of product from the demonstration plant and does not include cost recovery or milestone payments which are shown as separate categories.

VALUATION MODEL

We used a discounted future price to set our price target. Specifically, we applied a price-earnings ratio to our 2019 share earnings estimate of \$2.13, which yielded a future value of \$95.85. That value was discounted back four years at a rate of 25%, which we believe is appropriate given the broad range of projects under way and the progress reported to date. The result was a price of \$39.26. Accordingly, we set our price target at \$40 per share.

BALANCE SHEETS[‡] (Fiscal year ends December 31st.)[‡] Data are in thousands.

ASSETS	6/30/2014	12/31/2013
Current Assets		
Cash & equivalents	175,551	177,489
Accounts Receivable	9,808	7,357
Other	2,944	2,710
Total Current Assets	<u>\$ 188,303</u>	<u>\$ 187,556</u>
Long-term investments	\$ 73,545	\$ 60,581
Equity securities	134,895	141,525
Property & equipment	17,389	16,629
Intangible assets	45,406	41,956
Goodwill	34,865	13,823
Investments in affiliates	4,997	6,284
Other	1,137	1,118
Total Assets	<u>\$ 500,537</u>	<u>\$ 469,472</u>
LIABILITIES		
Current Liabilities	6/30/2014	12/31/2013
Accounts payable	\$ 1,799	\$ 1,057
Debt due	-	30
Deferred revenue	10,706	7,793
Accruals	8,092	9,344
Related party payables	95	1,605
Total Current Liabilities	<u>\$ 20,692</u>	<u>\$ 19,829</u>
Long-term debt	\$ 2,001	\$ 1,663
Deferred revenue	88,747	65,778
Other	731	859
Total Long-Term Liabilities	<u>\$ 91,479</u>	<u>\$ 68,300</u>
Shareholders Equity		
Preferred Equity	\$ -	\$ -
Common Stock, par value	-	-
Additional Paid-In Capital	797,516	743,084
Accumulated Deficit	(424,342)	(376,414)
Accum. Comprehensive Loss	81	52
Total Shareholders Equity	<u>\$ 373,255</u>	<u>\$ 366,722</u>
Non-controlling interest	15,111	14,621
Total liabilities & equity	<u>\$ 500,537</u>	<u>\$ 469,472</u>

Note that the June balance sheet does not reflect the cost of the Trans Ova Genetics acquisition, which involved a \$60 million cash payment. Taking that into consideration, Intrexon had about \$189 million of cash and equivalents available at the start of the current quarter.

Disclosures

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XON	Intrexon Corporation	Buy

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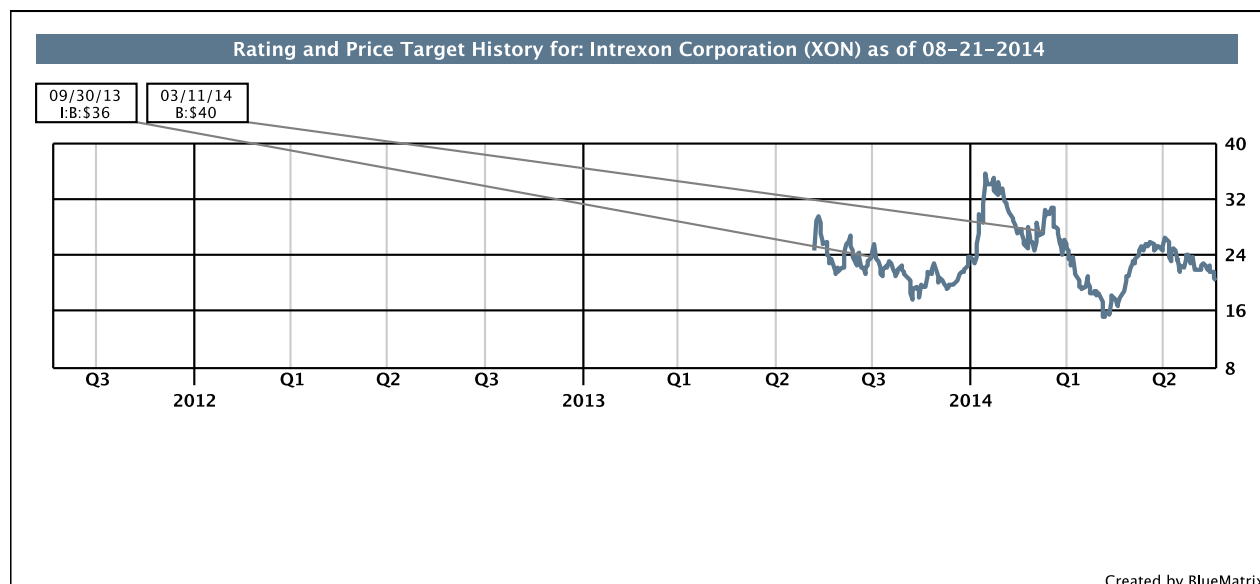
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