

**22nd Century Group, Inc. (XXII - \$1.75 - Buy)**

**COMPANY NOTE**

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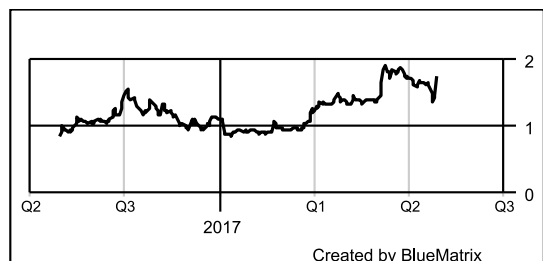
**Sales and trading** 7 a.m. to 7 p.m. ET, (646) 465-9090  
**Sales and trading** 7 p.m. to 7 a.m. ET, (646) 465-9063

<b>Stock Data</b>		07/28/17
Price		\$1.75
52 Week Range		(\$0.81 - \$2.00)
Price Target		\$3.50
Market Cap (mil)		\$158.73
Shares out (mil)		90.70
3-Mo Avg Vol		1,102,980
Cash per share		\$0.12
Total Debt (mil)		\$0.31

<b>Revenues (\$ millions)</b>					
Yr Dec	2016A	2017E		2018E	
	Actual	Curr	Prev	Curr	Prev
Mar	3.0	2.2	-	-	-
Jun	2.8	2.6	-	-	-
Sep	3.1	6.0	-	-	-
Dec	3.3	6.6	-	-	-
YEAR	12.3	16.5	-	21.5	-

<b>EPS (\$)</b>					
Yr Dec	2016A	2017E		2018E	
	Actual	Curr	Prev	Curr	Prev
Mar	(0.04)	(0.03)A	-	-	-
Jun	(0.04)	(0.03)	-	-	-
Sep	(0.03)	(0.02)	-	-	-
Dec	(0.03)	(0.02)	-	-	-
YEAR	(0.15)	(0.09)	-	(0.09)	-

**One year price history XXII**



**Does XXII Have a Solution to Big Tobacco's \$20B Market Cap Loss?**

On Friday, Altira Group, British American Tobacco, Imperial Brands and Vector Group lost a cumulative \$21 billion in market value after the FDA proposed a new regulatory plan that includes “lowering nicotine levels in combustible cigarettes to non-addictive levels.” 22nd Century, whose technology enables lowering nicotine levels in combustible cigarettes to non-addictive levels gained \$27 million in market value.

The FDA’s proposed plan is not solely targeted to lowering nicotine levels, but it certainly is a critical element to the plan. Even if lowering nicotine levels in tobacco is only 10% of what the market is worried about, that equals \$2 billion in value that could be addressed by 22nd Century’s technology. All in, including warrants, 22nd Century has about 115 million shares, or about \$200 million in market cap. To state the obvious, the market estimates the potential harm to Big Tobacco of the FDA’s proposed plan is \$20 billion. However, 22nd Century, which has a technology to mitigate that loss, is valued at \$200 million. Our price target of \$3.50, or a market cap of \$400 million, is a fraction of Big Tobacco’s market cap loss last Friday and demonstrates, in our opinion, the significant value in the shares.

The FDA’s “comprehensive regulatory plan to shift trajectory of tobacco-related disease, death,” is potentially very bullish for 22nd Century. “The FDA plans to begin a public dialogue about lowering nicotine levels in combustible cigarettes to non-addictive levels through achievable product standards. The agency intends to issue an Advance Notice of Proposed Rulemaking (ANPRM) to seek input on the potential public health benefits and any possible adverse effects of lowering nicotine in cigarettes.” 22nd Century’s raison d’être is controlling nicotine levels in tobacco and owns the intellectual property that enables this. With the FDA exploring lower nicotine cigarettes as a way to reduce tobacco addiction, we believe this is a major boost for the company.

The FDA’s regulatory plan is the start of a process that will take many months to complete but we do expect that as this process continues Big Tobacco will become interested in exploring the technology controlled by 22nd Century. How this new regulatory plan will impact the company’s current work with the FDA is uncertain, but the company’s work on introducing lower-nicotine cigarettes as smoking cessation tools demonstrates clearly the company is at the forefront of the FDA’s strategy on tobacco regulation.

There have been multiple studies showing the efficacy of low-nicotine cigarettes as a way to reduce or quit smoking. Currently, 22nd Century is pursuing three paths with the FDA with three different products, two of

which have low-nicotine levels: 1) Brand A 2) X-22 and 3) Brand B. A few months ago the company met with the FDA and based on those meetings has decided to “significantly expand” its Modified Risk Tobacco Product (MRTP) application and will request FDA approval of packaging and marketing disclosing that its Brand A Very Low Nicotine cigarettes reduce smokers’ exposure to nicotine. We still expect 22nd Century to bifurcate the application into a Premarket Tobacco Product application (PMTA) and MRTP. The PMTA could advance quickly while the MRTPA would likely take 12 months to conclude.

This company has received guidance from the FDA regarding design and implementation of two parallel, Phase III clinical trials of 22nd Century’s X-22 prescription-based smoking cessation product. Further work will be required to reach agreement on the construction of these trials which could begin in the first half of 2018, depending on funding.

We expect the company to also receive guidance from the FDA on an MRTP for Brand B, the company’s low tar-to-nicotine product. This is a third path for commercialization in a market that has been prevented by government from innovating. However, because of the company’s unique technology as well as progress on determining, in conjunction with the FDA, the efficacy of 22nd Century’s products on smoking cessation and smoking behavior, it could end up offering a truly innovate product to the market.

We believe all of these paths are consistent with the FDA’s proposed new regulatory path, but how the new plan will impact the timing of these is uncertain.

We expect continued momentum in revenue growth for the remainder of the year as well as progress on the multiple paths the company is pursuing to commercialize its technology that regulates nicotine in tobacco plants. Recently, the company strengthened its balance sheet with a warrant exchange that raised over \$13 million resulting in a cash runway well in to 2019. We expect a strong Q2 and even stronger 2H as it delivers on a large contract manufacturing agreement. There has also been advancements recently on 22nd Century’s three-pronged approach to monetizing the company technology for the smoking cessation and traditional smoking market. In our view, this is bullish for the shares and supports our Buy recommendation and \$3.50 price target.

We value X-22/Modified risk at \$2.50 per share and the combined value of the potential BAT royalty stream and commercial products at \$1.00 per share to reflect a modest tempo in the roll-out of commercial products as well as a less steep ramp for the BAT royalties. We have not given any value for the company’s 25% ownership of Anandia or its exclusive US rights to four genes required for cannabinoid production in the cannabis plant. Risks to achieving our price target include delays in the FDA process, ability to find partners for X-22, challenges in attracting contract manufacturing and selling product overseas and possibility of requiring additional capital.

### **Investment Summary:**

The company’s path to value creation remains the same: monetizing its extensive intellectual property which allows it to modulate the level of nicotine in tobacco plants through genetic engineering and plant breeding. There are a number of paths the company is pursuing to monetize this technology.

One of the most promising paths for 22nd Century is the pending application with the FDA for a reduced exposure designation for its Brand A, low-nicotine cigarette.

Most of the company’s revenues this year have been for contract manufacturing which it is seeking to expand.

Recently, in testimony for the Crede litigation, the company stated that its patents are worth more than \$200 million, or greater than \$2.50 per share. We value X-22/Modified risk at \$2.50 per share and the combined value of the potential BAT royalty stream and commercial products at \$1.00 per share to reflect a modest tempo in the roll-out of commercial products as well as a less steep ramp for the BAT royalties. We have not given any value for the company’s 25% ownership of Anandia or its exclusive US rights to four genes required for cannabinoid production in the cannabis plant. Risks to achieving our price target include delays in the FDA process, ability to find partners for X-22, challenges in attracting contract manufacturing and selling product overseas and possibility of requiring additional capital. The company is fully funded for almost two years.

### **Valuation:**

We value X-22/Modified risk at \$2.50 per share and the combined value of the potential BAT royalty stream and commercial products at \$1.00 per share. We have not included a value for the company’s investment in Anandia.

**Risks to achievement of target price:**

Risks to achieving our price target include delays in the FDA process, ability to find partners for X-22, challenges in attracting contract manufacturing and selling product overseas and possibility of requiring additional capital.

**Company description:**

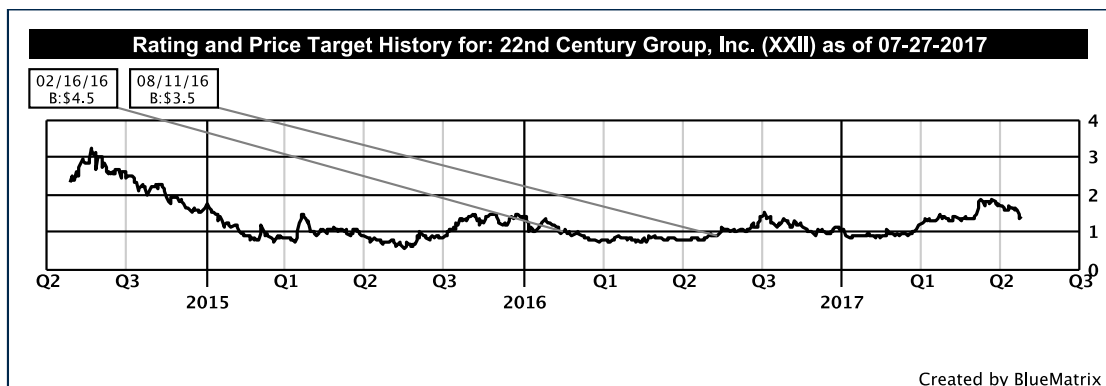
22nd Century owns or exclusively controls over 200 issued patents, 50 pending patent applications. The company's proprietary technology enables the control of nicotine levels in tobacco plants by controlling the genes responsible for nicotine production in tobacco plants.

22nd Century Group, Inc  
Income Statement \$ in 000s

	2014	2015	2016	Q1 17	Q2 17 E	Q3 17 E	Q4 17 E	2017 E	2018 E
Revenue	\$ 529	\$ 8,522	\$ 12,280	\$ 2,232	\$ 2,582	\$ 5,087	\$ 6,642	\$ 16,543	\$ 21,500
Cost Of Goods Sold	498	9,103	12,710	2,505	2,600	4,644	6,021	15,770	19,350
Gross Profit	31	(581)	(430)	(274)	(18)	444	621	773	2,150
R&D	1,249	1,669	2,341	551	550	550	550	2,201	2,314
G&A	8,793	7,760	6,193	1,620	1,400	1,400	1,400	5,820	6,806
Pre-Mfg. Facility Costs	1,177	0	0					0	0
Sales & marketing	86	1,358	1,582	296	350	350	350	1,346	1,242
Depreciation & Amort.	463	676	842	229	193	193	193	807	770
Opex	11,768	11,463	10,958	2,696	2,493	2,493	2,493	10,174	11,132
Operating Income	\$ (11,737)	\$ (12,044)	\$ (11,388)	\$ (2,970)	\$ (2,511)	\$ (2,049)	\$ (1,872)	\$ (9,401)	\$ (8,982)
Interest Expense	(7)	(22)	(21)	8	(2)	(2)	(2)	2	(8)
Other	(30)	889	(202)	346	0	0	0	346	0
Warrant Charge	(3,821)	145	30	(5)	0	0	0	(5)	0
Pretax Income	(15,595)	(11,032)	(11,581)	(2,621)	(2,513)	(2,051)	(1,874)	(9,058)	(8,990)
Income Tax Expense	0	0	0	0	0	0	0	0	0
Net before Minority Interest	(15,595)	(11,032)	(11,581)	(2,621)	(2,513)	(2,051)	(1,874)	(9,058)	(8,990)
Minority Interest	0	0	0					0	0
Net to Common	\$ (15,595)	\$ (11,032)	\$ (11,581)	\$ (2,621)	\$ (2,513)	\$ (2,051)	\$ (1,874)	\$ (9,058)	\$ (8,990)
Shares	59,993	68,143	79,843	90,700	91,000	102,023	102,073	96,449	102,198
EPS	(\$0.26)	(\$0.16)	(\$0.15)	(\$0.03)	(\$0.03)	(\$0.02)	(\$0.02)	(\$0.09)	(\$0.09)

22nd Century Group, Inc  
Balance Sheet and Cash Flow Statement \$ in 000s

	2014	2015	2016	Q1 17	Q2 17 E	Q3 17 E	Q4 17 E	2017 E	2018 E
Cash	6,403	3,760	13,468	10,729	20,448	18,690	17,070	17,070	9,889
Due from related party and officers	46	0	0	0	0	0	0	0	0
A/R	0	51	41	2	478	482	528	528	616
Inventory	2,065	2,706	3,093	3,035	3,136	4,814	5,945	5,945	4,973
Prepaid Consulting Fees	1,979	0	0	0	0	0	0	0	0
Prepaid Exp.	214	636	196	434	448	688	850	850	711
<b>Total Current Assets</b>	<b>\$ 10,707</b>	<b>\$ 7,154</b>	<b>\$ 16,797</b>	<b>\$ 14,200</b>	<b>\$ 24,510</b>	<b>\$ 24,674</b>	<b>\$ 24,393</b>	<b>\$ 24,393</b>	<b>\$ 16,189</b>
Patent and Trademark costs	7,078	7,364	7,390	7,439	7,378	7,316	7,255	7,255	7,010
PP&E	2,851	2,556	2,435	2,360	2,396	2,428	2,455	2,455	2,519
Equity Investment	1,318	1,223	1,020	1,366	1,366	1,366	1,366	1,366	1,366
<b>Total Assets</b>	<b>\$ 21,954</b>	<b>\$ 18,296</b>	<b>\$ 27,642</b>	<b>\$ 25,365</b>	<b>\$ 35,650</b>	<b>\$ 35,785</b>	<b>\$ 35,469</b>	<b>\$ 35,469</b>	<b>\$ 27,085</b>
Bank Loans and N/P	495	309	308	314	314	314	314	314	314
A/P	884	1,283	1,340	1,729	1,786	2,742	3,386	3,386	2,833
Accrued Expenses	1,294	1,570	1,601	1,376	1,422	2,183	2,696	2,696	2,256
Deferred Revenue	0	0	0	0	0	0	0	0	0
<b>Total Current Liabilities</b>	<b>\$ 2,673</b>	<b>\$ 3,162</b>	<b>\$ 3,249</b>	<b>\$ 3,419</b>	<b>\$ 3,522</b>	<b>\$ 5,239</b>	<b>\$ 6,397</b>	<b>\$ 6,397</b>	<b>\$ 5,402</b>
Long-Term Debt	605	308	0	0	0	0	0	0	0
Accrued Severance	412	200	0	0	(69)	0	0	0	0
Warrant Liability & Other	3,043	2,898	59	64	64	64	64	64	64
Shareholder's Equity	15,220	11,729	24,334	21,882	32,133	30,482	29,008	29,008	21,619
<b>Total Liabilities And Equity</b>	<b>\$ 21,954</b>	<b>\$ 18,296</b>	<b>\$ 27,642</b>	<b>\$ 25,365</b>	<b>\$ 35,650</b>	<b>\$ 35,785</b>	<b>\$ 35,469</b>	<b>\$ 35,469</b>	<b>\$ 27,085</b>
Net Income	(15,595)	(11,032)	(11,581)	(2,621)	(2,513)	(2,051)	(1,874)	(9,058)	(8,990)
Depreciation & Amort.	463	774	842	205	150	155	159	668	681
Stock Comp	2,293	1,326	881	169	350	350	350	1,219	1,400
Other	6,740	2,341	241	(318)	(69)	69	0	(318)	0
Working Capital	(483)	(731)	(270)	(129)	(488)	(205)	(181)	(1,003)	28
Operating Cash Flow	<b>\$ (6,583)</b>	<b>\$ (7,322)</b>	<b>\$ (9,888)</b>	<b>\$ (2,695)</b>	<b>\$ (2,569)</b>	<b>\$ (1,683)</b>	<b>\$ (1,545)</b>	<b>\$ (8,493)</b>	<b>\$ (6,881)</b>
Acquisition of Patents and trademarks	(727)	(413)	(357)	(30)	0	0	0	(30)	0
Capx	(212)	(37)	(197)	(14)	(125)	(125)	(125)	(389)	(500)
Other	(1,769)	0	0	0	0	0	0	0	0
Investing Activities	<b>\$ (2,708)</b>	<b>\$ (451)</b>	<b>\$ (554)</b>	<b>\$ (44)</b>	<b>\$ (125)</b>	<b>\$ (125)</b>	<b>\$ (125)</b>	<b>\$ (419)</b>	<b>\$ (500)</b>
Debt	(4)	(508)	(333)	0	0	0	0	0	0
Equity	9,859	5,592	20,483	0	12,413	50	50	12,513	200
Other	7	46	0	0	0	0	0	0	0
Financing Activities	<b>\$ 9,863</b>	<b>\$ 5,130</b>	<b>\$ 20,149</b>	<b>\$ -</b>	<b>\$ 12,413</b>	<b>\$ 50</b>	<b>\$ 50</b>	<b>\$ 12,513</b>	<b>\$ 200</b>
Change in Cash	<b>\$ 572</b>	<b>(\$2,642)</b>	<b>\$ 9,708</b>	<b>(\$2,739)</b>	<b>\$ 9,719</b>	<b>(\$1,758)</b>	<b>(\$1,620)</b>	<b>\$ 3,602</b>	<b>(\$7,181)</b>

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			Count	Percent
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SELL [SELL]	2	2.04	0	0.00
NOT RATED [NR]	1	1.02	1	100.00

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**Neutral:** Returns expected to be in line with sector average over 12 months and indicates total return between negative 10% and 10% over the next 12 months.

**Sell:** Returns expected to be materially below sector average over 12 months and indicates total price decline of at least 10% over the next 12 months.

**22nd Century Group, Inc. (XXII - \$1.75 - Buy)**

Price Target \$3.50

**VALUATION:**

We value X-22/Modified risk at \$2.50 per share and the combined value of the potential BAT royalty stream and commercial products at \$1.00 per share. We have not included a value for the company's investment in Anandia.

**RISKS TO ACHIEVEMENT OF TARGET PRICE:**

Risks to achieving our price target include delays in the FDA process, ability to find partners for X-22, challenges in attracting contract manufacturing and selling product overseas and possibility of requiring additional capital.

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