

**22nd Century Group, Inc. (XXII - \$2.92 - Buy)**

**COMPANY NOTE**

**JAMES McILREE, CFA**, Senior Analyst, 646-465-9034  
jmcilree@chardancm.com

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

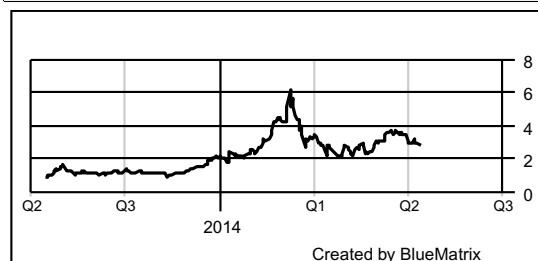
**Sales and trading** 7 p.m. to 7 a.m. ET, (646) 465-9063

Stock Data	07/15/14
Price	\$2.92
52 Week Range	(\$0.87 - \$6.36)
Price Target	\$9.00
Market Cap (mil)	\$171.30
Shares out (mil)	58.67
3-Mo Avg Vol	605,346
Cash per share	\$0.09
Total Debt (mil)	\$0.18

EPS (\$)					
Yr Dec	2013A	2014E		2015E	
	Actual	Curr	Prev	Curr	Prev
Mar	(0.07)	(0.09)A	–	(0.03)	–
Jun	(0.01)	(0.03)	–	0.01	–
Sep	(0.32)	(0.03)	–	(0.02)	–
Dec	(0.15)	0.00	–	0.02	–
YEAR	(0.60)	(0.15)	–	(0.02)	–
P/E	(4.9)x	(19.5)x	–	(146.0)x	–

Revenues (\$ millions)					
Yr Dec	2013A	2014E		2015E	
	Actual	Curr	Prev	Curr	Prev
Mar	0.0	0.4A	–	1.3	–
Jun	0.0	0.2	–	3.5	–
Sep	0.1	0.2	–	2.5	–
Dec	7.2	1.8	–	4.8	–
YEAR	7.3	2.5	–	12.0	–

**One year price history XXII**



**Modified Risk Trial Expected Q4**

22nd Century has hired a contract research organization (CRO) to aid in a trial necessary to submit a modified risk application for the company's Brand B or high nicotine cigarette. This is the first of two modified risk applications we expect the company to make with the FDA. The CRO will manage the trial required to test the impact of 22nd Century's cigarette on bio-markers on the trial participants. The trial will likely begin in Q4, last about a month, with another month or two of data analysis and could cost one million dollars.

The regulatory wheels turn slowly and it will be a process to gain modified risk status, even assuming positive results for the trial. However the company could benefit in the market nonetheless once its membership in the MSA is approved and retailers and consumers attach the company's efforts to achieve a modified risk status with the commercial brands we expect to be available later this year.

The MSA has taken much longer than we expected but we hope for a positive result this quarter. Because progress in the US has taken longer than expected the company has increased its efforts to sell in Europe. 22nd Century's subsidiary, Goodrich Tobacco has signed a letter of intent to export its tobacco to a Polish contract manufacturer that will supply finished product to the European Union. The company is also working on distribution in Asia, but in our opinion, it may take until 2015 before agreements are signed and revenues generated.

The equipment the company purchased that will be used for its own product in the meantime will be used for third-party manufacturing that could result in modest revenues over the next couple of quarters. The factory could be at cash-flow break-even by Q1 2015, on contract manufacturing alone.

Our \$9 price target uses a sum of the parts method, valuing the BAT license stream at \$1.67 per share, the commercial product revenue at \$4.34 per share and the combined modified risk/X-22 at \$3 per share. Risks to achieving this target include increased regulation, inability to obtain MSA membership, delays in finalizing distribution agreements and commercial license revenue lower than expectations.

**Investment Summary:**

We expect meaningful revenues to begin from a number of sources including a license agreement with British American Tobacco (BAT) and commercial product sales from the company's proprietary RED SUN and MAGIC brands. Over the longer-term 22<sup>nd</sup> Century will pursue the \$1 billion US smoking-cessation market with its proprietary X-22 cigarette, and will file with the FDA applications for modified risk cigarettes. We believe there are multiple near-term catalysts for the stock, including an up-listing, inclusion in the modified settlement agreement (MSA), beginning of production in North Carolina and a potential FDA award for research cigarettes. The stock has reacted favorably recently due to growing awareness of these catalysts as well as the recent warrant exchange which cleans up the capital structure and resulted in a cash balance of \$6 million.

22nd Century owns or exclusively controls 113 issued patents and 37 patent applications which gives it exclusive worldwide rights to all uses for certain genes that control nicotine content in tobacco plants. 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.

The value of this technology was validated by BAT in October of 2013 when it signed a worldwide research license agreement with 22nd Century. The company received a \$7 million payment in Q4 of 2013 and we expect \$3 million of license revenue from BAT in 2014 and an additional \$4 million in 2015. BAT has the option to turn this research license into a royalty-bearing commercial license at any time.

22nd Century announced the purchase of NASCO, a member of the Master Settlement Agreement (MSA) in September of last year and the deal's closing will take place following the consent of the National Association of Attorneys General (NAAG). NAAG approval sets off a chain of events, including distribution agreements that will result in commercial sales this year.

**Valuation:**

We approached valuation from a sum-of-the-parts perspective to arrive at our \$9.00 price target. We discounted the projected BAT license revenue at 10% and in the low case assumed the license terminated in 2028, while in the high case we assumed the license was extended by an additional 15 years.

For the commercial products we assume RED SUN can achieve \$142 million in sales by 2023 and MAGIC \$55 million by the same year. Our EV/Sales valuation ranges are comparable to the 3.6x to 5.2x EV/Sales multiples awarded to Altira, British American Tobacco, Lorillard, Reynolds American and Philip Morris International.

Our modified risk/X-22 valuation of \$2 to \$4 per share is derived in a number of ways. E-cigarette makers, Victory Electronic Cigarettes and Vapor Corp., proxies for modified risk valuations, have enterprise values of \$499 million and \$141 million respectively. This equates to \$2.42 per share using the lower EV as a bogey. X-22 valuation using a modest market share of the smoking cessation market and EV/Sales of 2x to 3x also yields per share valuation to 22<sup>nd</sup> Century of over \$2 per share. We have heavily discounted these assumptions due to the longer-term nature of development of these lines of business as well as the additional capital required for them.

**Risks to achievement of target price:**

Risks to achieving our price target: NAAG approval of the NASCO purchase is critical and assumed to occur this quarter. Lacking that approval we believe it will be difficult for the company to achieve our domestic RED SUN estimates. We have also assumed the commercial product growth trajectory will be similar to American Spirit, but changes in the industry can hinder 22<sup>nd</sup> Century from achieving our estimates. We have also assumed the BAT license will change from a research license to a commercial royalty-bearing license, but that too is not assured. The industry is subject to significant regulatory constraints, litigation, societal views on smoking and changing legislation. Any one of these could have a deleterious impact on our assumptions.

**Company description:**

22<sup>nd</sup> Century owns or exclusively controls 113 issued patents and 37 patent applications which gives it exclusive worldwide rights to all uses for certain genes that control nicotine content in tobacco plants. 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. This can be accomplished with or without genetic engineering.

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

	2012	2013	Q1 14	Q2 14 E	Q3 14 E	Q4 14 E	2014 E	Q1 15 E	Q2 15 E	Q3 15 E	Q4 15 E	2015 E
Revenue	19	7,278	448	150	150	1,750	2,498	1,250	3,500	2,500	4,750	12,000
Cost Of Goods Sold	68	462	178	75	75	125	453	625	1,000	1,250	1,375	4,250
Gross Profit	(49)	6,817	270	75	75	1,625	2,045	625	2,500	1,250	3,375	7,750
R&D	729	744	222	300	300	300	1,122	400	400	400	400	1,600
G&A	2,205	4,107	1,005	1,250	1,250	1,250	4,755	1,375	1,375	1,375	1,375	5,500
Sales & marketing	62	9	158	150	150	150	608	250	250	250	250	1,000
Depreciation & Amort.	198	144	71	125	125	125	446	150	150	150	150	600
Opex	3,195	5,004	1,457	1,825	1,825	1,825	6,932	2,175	2,175	2,175	2,175	8,700
Operating Income	(3,244)	1,812	(1,187)	(1,750)	(1,750)	(200)	(4,887)	(1,550)	325	(925)	1,200	(950)
Interest Expense	(1,495)	(749)	(2)	(2)	(2)	(2)	(8)	(2)	(2)	(2)	(2)	(8)
Other	0	122	86	0	0	0	86	0	0	0	0	0
Warrant Charge	(1,998)	(27,339)	(4,212)	0	0	0	(4,212)	0	0	0	0	0
Pretax Income	(6,737)	(26,153)	(5,315)	(1,752)	(1,752)	(202)	(9,021)	(1,552)	323	(927)	1,198	(958)
Income Tax Expense	0	0	0	0	0	0	0	0	0	0	0	0
Net before Minority Interest	(6,737)	(26,153)	(5,315)	(1,752)	(1,752)	(202)	(9,021)	(1,552)	323	(927)	1,198	(958)
Minority Interest	1	0	0	0	0	0	0	0	0	0	0	0
Net to Common	(6,735)	(26,153)	(5,315)	(1,752)	(1,752)	(202)	(9,021)	(1,552)	323	(927)	1,198	(958)
Shares	30,420	43,635	57,647	58,147	58,647	59,147	58,397	59,647	60,147	60,647	61,147	60,397
EPS	(\$0.22)	(\$0.60)	(\$0.09)	(\$0.03)	(\$0.03)	(\$0.00)	(\$0.15)	(\$0.03)	\$0.01	(\$0.02)	\$0.02	(\$0.02)

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

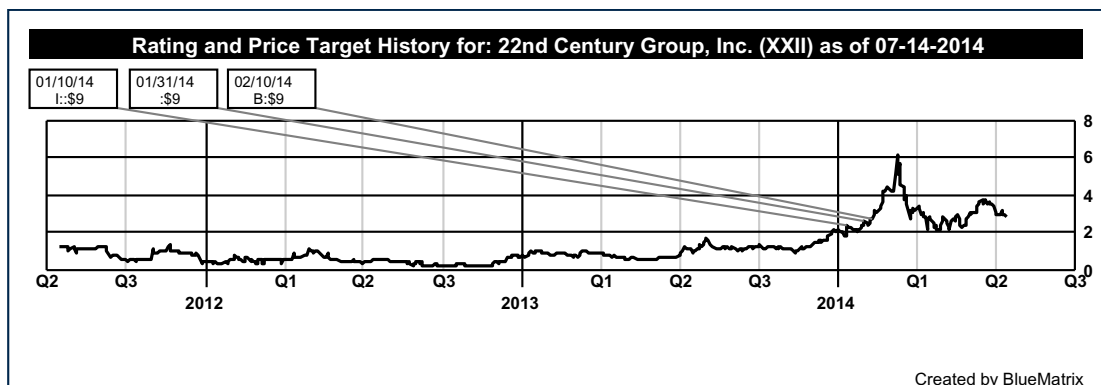
	2012	2013	2014 E	2015 E	2016 E	2017 E	2018 E	2019 E	2020 E	2021 E
Revenue	19	7,278	2,498	12,000	19,925	28,388	43,582	65,373	97,059	127,230
Cost Of Goods Sold	68	462	453	4,250	8,463	13,194	19,791	29,686	44,530	58,615
Gross Profit	(49)	6,817	2,045	7,750	11,463	15,194	23,791	35,686	52,530	68,615
R&D	729	744	1,122	1,600	2,000	2,300	2,645	3,042	3,498	4,023
G&A	2,205	4,107	4,755	5,500	6,050	6,655	7,321	8,053	8,858	9,744
Sales & marketing	62	9	608	1,000	1,400	2,100	3,150	3,938	4,528	4,981
Depreciation & Amort.	198	144	446	600	700	770	847	932	1,025	1,127
Opex	3,195	5,004	6,932	8,700	10,150	11,825	13,963	15,964	17,909	19,875
Operating Income	(3,244)	1,812	(4,887)	(950)	1,313	3,369	9,828	19,723	34,621	48,741
Interest Expense	(1,495)	(749)	(8)	(8)	(8)	(8)	(8)	(8)	(8)	(8)
Other	0	122	86	0	0	0	0	0	0	0
Warrant Charge	(1,998)	(27,339)	(4,212)	0	0	0	0	0	0	0
Pretax Income	(6,737)	(26,153)	(9,021)	(958)	1,305	3,361	9,820	19,715	34,613	48,733
Income Tax Expense	0	0	0	0	457	1,176	3,437	6,900	12,114	17,056
Net before Minority Interest	(6,737)	(26,153)	(9,021)	(958)	848	2,185	6,383	12,815	22,498	31,676
Minority Interest	1	0	0	0	0	0	0	0	0	0
Net to Common	(6,735)	(26,153)	(9,021)	(958)	848	2,185	6,383	12,815	22,498	31,676
Shares	30,420	43,635	58,397	60,397	62,397	64,397	66,397	68,397	70,397	72,397
EPS	(\$0.22)	(\$0.60)	(\$0.15)	(\$0.02)	\$0.01	\$0.03	\$0.10	\$0.19	\$0.32	\$0.44

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

	2012	2013	Q1 14	Q2 14 E	Q3 14 E	Q4 14 E	2014 E	2015 E	2016 E
Cash	0	5,831	5,373	4,457	3,226	3,874	3,874	863	1,042
Due from related party and officers	41	50	42	42	42	0	0	0	0
A/R	0	0	0	123	123	205	205	2,260	4,058
Inventory	1,231	1,406	1,652	1,062	1,062	1,103	1,103	2,129	3,028
Prepaid Exp.	10	458	241	241	241	402	402	4,425	7,944
<b>Total Current Assets</b>	<b>1,281</b>	<b>7,744</b>	<b>7,309</b>	<b>5,925</b>	<b>4,694</b>	<b>5,585</b>	<b>5,585</b>	<b>9,678</b>	<b>16,072</b>
Patent and Trademark costs	1,353	1,545	1,595	1,784	2,172	2,111	2,111	1,866	1,621
PP&E	6	2,998	2,934	2,904	2,869	2,830	2,830	2,629	2,357
Deferred Costs	4	0	0	0	0	0	0	0	0
Advance	0	0	93	93	93	0	0	0	0
<b>Total Assets</b>	<b>\$ 2,645</b>	<b>\$ 12,287</b>	<b>\$ 11,930</b>	<b>\$ 10,706</b>	<b>\$ 9,829</b>	<b>\$ 10,526</b>	<b>\$ 10,526</b>	<b>\$ 14,173</b>	<b>\$ 20,050</b>
Bank Loans and N/P	2,686	175	175	175	175	175	175	175	175
A/P	1,411	55	273	175	175	182	182	352	500
Accrued Interest	4	0	0	0	0	0	0	0	0
Accrued Expenses	503	576	700	450	450	467	467	902	1,283
Deferred Revenue	0	179	0	0	0	0	0	0	0
<b>Total Current Liabilities</b>	<b>4,603</b>	<b>984</b>	<b>1,148</b>	<b>800</b>	<b>800</b>	<b>824</b>	<b>824</b>	<b>1,429</b>	<b>1,958</b>
Warrant Liability	4,173	3,780	623	623	623	623	623	623	623
Shareholder's Equity	(6,131)	7,523	10,159	9,282	8,405	9,078	9,078	12,120	17,468
<b>Total Liabilities And Equity</b>	<b>\$ 2,645</b>	<b>\$ 12,287</b>	<b>\$ 11,930</b>	<b>\$ 10,706</b>	<b>\$ 9,829</b>	<b>\$ 10,526</b>	<b>\$ 10,526</b>	<b>\$ 14,173</b>	<b>\$ 20,050</b>

	2012	2013	Q1 14	Q2 14 E	Q3 14 E	Q4 14 E	2014 E	2015 E	2016 E
Net Income	(6,737)	(26,153)	(5,315)	(1,752)	(1,752)	(202)	(9,021)	(958)	848
Depreciation & Amort.	198	144	71	216	221	225	734	946	1,018
Stock Comp	808	980	357	375	375	375	1,482	2,000	2,500
Other	3,866	29,386	4,126	(0)	0	93	4,219	0	0
Working Capital	100	(501)	(360)	119	0	(218)	(459)	(6,499)	(5,687)
Operating Cash Flow	(1,764)	3,856	(1,121)	(1,041)	(1,156)	273	(3,046)	(4,511)	(1,321)
Acquisition of Patents and trademarks	(163)	(290)	(37)	(250)	(450)	0	(737)	0	0
Capx	0	(3,452)	(46)	(125)	(125)	(125)	(421)	(500)	(500)
Other	0	0	539	0	0	0	539	0	0
Investing Activities	(163)	(3,743)	455	(375)	(575)	(125)	(620)	(500)	(500)
Debt	225	(1,810)	0	0	0	0	0	0	0
Equity	1,468	7,536	202	500	500	500	1,702	2,000	2,000
Other	(17)	(9)	7	0	0	0	7	0	0
Financing Activities	1,675	5,717	209	500	500	500	1,709	2,000	2,000
Change in Cash	<b>(\$252)</b>	<b>\$ 5,830</b>	<b>(\$457)</b>	<b>(\$916)</b>	<b>(\$1,231)</b>	<b>\$ 648</b>	<b>(\$1,956)</b>	<b>(\$3,011)</b>	<b>\$ 179</b>

## Important Research Disclosures



### Distribution of Ratings/IB Services Chardan Capital Markets

Rating	Count	Percent	IB Serv./Past 12 Mos.	
			Count	Percent
BUY [BUY]	30	71.43	8	26.67
HOLD [NEUTRAL]	9	21.43	2	22.22
SELL [SELL]	2	4.76	1	50.00
NOT RATED [NR]	1	2.38	0	0.00

### Regulation Analyst Certification ("Reg AC") — JAMES McILREE, CFA

**ANALYST(s) CERTIFICATION:** The analyst(s) responsible for covering the securities in this report certify that the views expressed in this research report accurately reflect their personal views about "Company" and its securities. The analyst(s) responsible for covering the securities in this report certify that no part of their compensation was, is, or will be directly or indirectly related to the specific recommendation or view contained in this research report.

### DISCLOSURES

Within the last twelve months, Chardan Capital Markets has received compensation for investment banking services from 22nd Century Group, Inc.. This research contains forward looking statements made pursuant to the safe harbor provision of Private Securities Litigation Act of 1995.

Chardan Capital Markets expects to receive or intends to seek compensation for investment banking services from all companies under research coverage within the next three months. Chardan Capital Markets or its officers, employees or affiliates may execute transactions in securities mentioned in this report that may not be consistent with the report's conclusions.

### RATINGS

**Buy:** Expected to materially outperform sector average over 12 months and indicates total return of at least 10% over the next 12 months.

**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.

**FORWARD-LOOKING STATEMENTS:** This Report contains forward-looking statements, which involve risks and uncertainties. Actual results may differ significantly from such forward-looking statements. Factors that might cause such a difference include, but are not limited to, those discussed in the "Risk Factors" section in the SEC filings available in electronic format through SEC Edgar filings at [www.SEC.gov](http://www.SEC.gov) on the Internet.

**GENERAL:** Chardan Capital Markets ("Chardan") a FINRA member firm with offices in New York City NY, Palo Alto, CA and Beijing, China is an investment banking and institutional brokerage firm providing corporate finance, merger and acquisitions, brokerage, and investment opportunities for institutional, corporate, and private clients. The analyst(s) are employed by Chardan. Our research professionals provide important input into our investment banking and other

business selection processes. Our proprietary trading and investing businesses may make investment decisions that are inconsistent with the recommendations expressed herein. Chardan may from time to time perform corporate finance or other services for some companies described herein and may occasionally possess material, nonpublic information regarding such companies. This information is not used in preparation of the opinions and estimates herein. While the information contained in this report and the opinions contained herein are based on sources believed to be reliable, Chardan has not independently verified the facts, assumptions and estimates contained in this report. Accordingly, no representation or warranty, express or implied, is made as to, and no reliance should be placed on, the fairness, accuracy, completeness or correctness of the information and opinions contained in this report. The information contained herein is not a complete analysis of every material fact in respect to any company, industry or security. This material should not be construed as an offer to sell or the solicitation of an offer to buy any security in any jurisdiction where such an offer or solicitation would be illegal. We are not soliciting any action based on this material. It is for the general information of clients of Chardan. It does not take into account the particular investment objectives, financial situations, or needs of individual clients. Before acting on any advice or recommendation in this material, clients should consider whether it is suitable for their particular circumstances and, if necessary, seek professional advice. Certain transactions - including those involving futures, options, and other derivatives as well as non-investment-grade securities - give rise to substantial risk and are not suitable for all investors. The material is based on information that we consider reliable, but we do not represent that it is accurate or complete, and it should not be relied on as such. The information contained in this report is subject to change without notice and Chardan assumes no responsibility to update the report. In addition, regulatory, compliance, or other reasons may prevent us from providing updates.

**COMPENSATION OR SECURITIES OWNERSHIP:** The analyst(s) responsible for covering the securities in this report receives compensation based upon, among other factors, the overall profitability of Chardan Capital Markets including profits derived from investment banking revenue and securities trading and market making revenue. The analyst(s) that prepared the research report did not receive any compensation from the Company or any other companies mentioned in this report in connection with the preparation of this report. The analysts responsible for covering the securities in this report currently do not own common stock in the Company, but in the future may from time to time engage in transactions with respect to the Company or other companies mentioned in the report. Chardan expects to receive, or intends to seek, compensation for investment banking services from the Company in the next three months.