

22nd Century Group, Inc. (XXII - \$0.97 - Buy)
Estimate Change

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	05/12/15
Price	\$0.97
52 Week Range	(\$0.65 - \$3.87)
Price Target	\$9.00
Market Cap (mil)	\$62.79
Shares out (mil)	64.73
3-Mo Avg Vol	425,633
Cash per share	\$0.21
Total Debt (mil)	\$1.10

EPS (\$)						
Yr Dec	2014A		2015E		2016E	
	Actual	Curr	Prev	Curr	Prev	
Mar	(0.09)	(0.06)A	(0.04)A	(0.02)	-	
Jun	(0.03)	(0.02)	(0.04)	(0.02)	-	
Sep	(0.05)	(0.03)	-	(0.02)	-	
Dec	(0.09)	(0.03)	-	(0.01)	(1.00)	
YEAR	(0.26)	(0.15)	(0.13)	(0.07)	-	
P/E	(3.7)x	(6.5)x	-	(13.9)x	-	

Revenues (\$ millions)						
Yr Dec	2014A		2015E		2016E	
	Actual	Curr	Prev	Curr	Prev	
Mar	0.4	0.6A	0.1A	2.4	-	
Jun	0.0	1.3	0.2	3.0	-	
Sep	0.1	1.3	-	3.8	-	
Dec	0.0	1.6	2.0	4.5	-	
YEAR	0.5	4.7	3.5	13.6	-	

One year price history XXII



Q1 Better than Expected. Raising Revenue Estimate

Q1 revenue was substantially above our estimate and we have raised our revenue estimate for the year as well. The catalysts for the shares this year remain the roll-out of RED SUN in the US, MAGIC in Europe and contract manufacturing. Other pivot points for the stock include 22nd Century's pursuit of multiple JVs in Asia (China, Japan, and South Korea) and it intends on consummating at least one of them this year. In addition, the company is hoping to close a deal to fund a phase 3 study for X-22. We have not built the latter two events into our estimates.

For the quarter the company reported revenue of \$616 thousand but didn't segment the total between contract manufacturing and proprietary RED SUN sales. Based on the negative gross margin for the quarter and what we believe are modest inventory fills for RED SUN, we think the sales skewed towards contract manufacturing. The negative gross margin reflects among other things, overhead allocation. As volume ramps, margins will improve.

For the year, we have raised our revenue estimate to \$4.7 million from \$3.5 million. We have about 75% of revenue coming from contract manufacturing and the remainder about evenly split between RED SUN and MAGIC. The proprietary products have significantly higher gross margin than contract manufacturing, so to the extent there is upside in RED SUN and MAGIC there is also upside to our gross profit estimate.

RED SUN is now in about 300 retail stores and hopes to be in 500 by the end of the quarter. More will come as the year progresses and distributors expand into existing markets and into the 25 states currently without product. In addition, 22nd Century will be dispatching "brand ambassadors" to about 340 events during the remainder of the year to increase consumer awareness of the product.

MAGIC is also proceeding well. At launch the company had pre-orders from 900 stores in Spain, and currently has orders from 1,100 outlets and expects 2,500 by year-end. By year-end 22nd Century also hopes to have MAGIC available in the UK, Belgium, Italy and France.

The take-up rate, is still an unknown. To date sales have been made to distributors but the real success of the product depends on end-user demand. Early indications probably won't be available until the end of this quarter, but more realistically by the end of Q3. At that point, re-orders by retailers, to distributors, will indicate how successful the company has been in the initial launch phase. It will take time to build demand and for that reason we have modeled modest growth this year for both RED SUN and MAGIC.

The net loss for the quarter was \$4.2 million, but includes a \$2.0 million non-cash charge, paid in shares, for a consulting agreement.

We think the quarterly cash burn is around \$1.5 to \$2 million per quarter depending on inventory needs and the success in the proprietary brand roll-out. At the end of Q1 the company had \$3.8 million in cash but was set to receive \$1 million through August in settlement of a legal dispute. The company indicated cash was sufficient through the end of this year.

Other catalysts for the shares include an application for modified risk cigarettes, X-22 and the China JV. 22nd Century is seeking a pharmaceutical partner to fund a phase 3 study of its Brand A very-low nicotine cigarette. A handful of studies can be presented to the FDA, supplemented with a consumer perception study, reducing the time and expense required to get modified risk designation from the FDA. The company is also seeking a pharmaceutical partner to fund a phase 3 study for X-22. The China JV remains the biggest upside to our estimates since its contribution could quickly dwarf contributions from RED SUN, MAGIC and contract manufacturing.

We remain positive on the shares given near-term revenue generation for multiple sources but clearly the story has taken longer to develop than we expected. We believe there is a good chance the company will exceed our revenue estimates and there is significant upside possible from its Asian joint venture. Our \$9 price target is driven by a sum-of-the-parts methodology comprised of the discounted present value of the projected BAT license revenue, the discounted value of commercial product sales, RED SUN and MAGIC, and a value for the company's modified risk and X-22 initiatives.

Investment Summary:

We expect meaningful revenues to begin from product sales of the company's proprietary RED SUN and MAGIC brands. Over the longer-term 22nd 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.

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. BAT has the option to turn this research license into a royalty-bearing commercial license at any time.

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 and MAGIC can achieve \$150 to \$200 million in sales by 2023. 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 22nd 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: We have assumed the commercial product growth trajectory will be similar to American Spirit, but changes in the industry can hinder 22nd 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:

22nd Century owns or exclusively controls 128 issued patents, 53 pending patent applications and has co-exclusive rights to another 2 patents and 16 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.

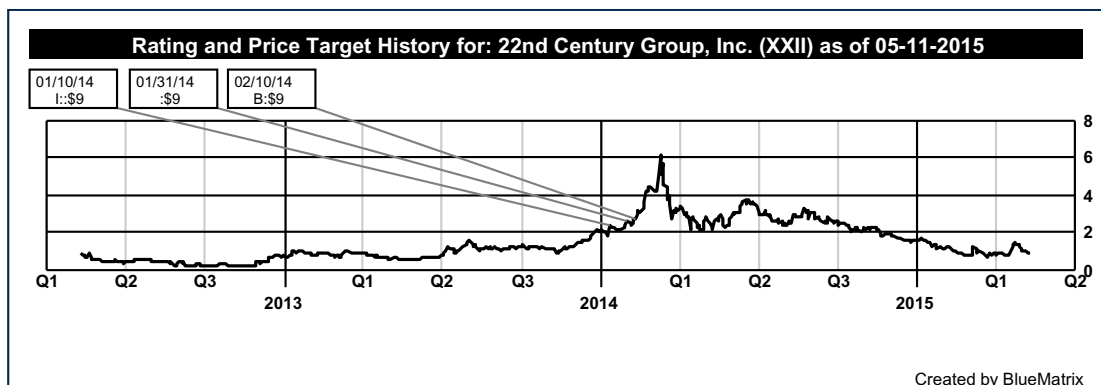
22nd Century Group, Inc
Income Statement \$ in 000s

	2012	2013	2014	Q1 15	Q2 15 E	Q3 15 E	Q4 15 E	2015 E	2016 E
Revenue	19	7,278	529	616	1,250	1,250	1,550	4,666	13,625
Cost Of Goods Sold	68	462	498	633	1,065	1,065	1,215	3,978	9,813
Gross Profit	(49)	6,817	31	(16)	185	185	335	689	3,813
R&D	729	744	1,249	183	400	400	400	1,383	2,000
G&A	2,205	4,107	8,793	3,644	1,644	1,644	1,644	8,576	7,233
Pre-Mfg. Facility Costs	0	0	1,177	0	0	0	0	0	0
Sales & marketing	62	9	86	115	250	250	250	865	1,400
Depreciation & Amort.	198	144	463	161	150	150	150	611	700
Opex	3,195	5,004	11,768	4,103	2,444	2,444	2,444	11,435	11,333
Operating Income	(3,244)	1,812	(11,737)	(4,119)	(2,259)	(2,259)	(2,109)	(10,746)	(7,521)
Interest Expense	(1,495)	(749)	(7)	(6)	(2)	(2)	(2)	(12)	(8)
Other	0	122	(30)	(51)	1,000	0	0	949	0
Warrant Charge	(1,998)	(27,339)	(3,821)	59	0	0	0	59	0
Pretax Income	(6,737)	(26,153)	(15,595)	(4,117)	(1,261)	(2,261)	(2,111)	(9,750)	(7,529)
Income Tax Expense	0	0	0	0	0	0	0	0	(2,635)
Net before Minority Interest	(6,737)	(26,153)	(15,595)	(4,117)	(1,261)	(2,261)	(2,111)	(9,750)	(4,894)
Minority Interest	1	0	0	0	0	0	0	0	0
Net to Common	(6,735)	(26,153)	(15,595)	(4,117)	(1,261)	(2,261)	(2,111)	(9,750)	(4,894)
Shares	30,420	43,635	59,993	64,188	64,688	65,188	65,688	64,938	72,938
EPS	(\$0.22)	(\$0.60)	(\$0.26)	(\$0.06)	(\$0.02)	(\$0.03)	(\$0.03)	(\$0.15)	(\$0.07)

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

	2012	2013	2014	Q1 15	Q2 15 E	Q3 15 E	Q4 15 E	2015 E	2016 E
Cash	0	5,831	6,403	3,844	4,217	3,426	974	974	7,974
Due from related party and officers	41	50	46	46	46	46	46	46	46
A/R	0	0	0	209	329	329	575	575	2,055
Inventory	1,231	1,406	2,065	2,563	1,875	1,875	1,998	1,998	3,587
Prepaid Consulting Fees	0	0	1,979	0	(506)	(1,012)	0	0	0
Prepaid Exp.	10	458	214	458	335	335	357	357	641
Total Current Assets	1,281	7,744	10,707	7,120	6,295	4,999	3,951	3,951	14,303
Patent and Trademark costs	1,353	1,545	7,078	7,166	7,104	7,043	6,982	6,982	6,737
PP&E	6	2,998	2,851	2,794	2,826	2,854	2,878	2,878	2,928
Equity Investment	0	0	1,318	1,267	1,592	1,592	1,592	1,592	1,592
Total Assets	\$ 2,645	\$ 12,287	\$ 21,954	\$ 18,347	\$ 17,818	\$ 16,489	\$ 15,403	\$ 15,403	\$ 25,561
Bank Loans and N/P	2,686	175	495	495	495	495	495	495	495
A/P	1,411	55	884	1,414	1,034	1,034	1,102	1,102	1,978
Accrued Expenses	503	576	1,294	537	393	393	419	419	752
Deferred Revenue	0	179	0	0	0	0	0	0	0
Total Current Liabilities	4,603	984	2,673	2,446	1,922	1,922	2,016	2,016	3,225
Long-Term Debt	0	0	605	605	605	605	605	605	605
Accrued Severance	0	0	412	364	295	227	158	158	0
Warrant Liability & Other	4,173	3,780	3,043	2,984	2,984	2,984	2,984	2,984	2,984
Shareholder's Equity	(6,131)	7,523	15,220	11,948	12,012	10,751	9,640	9,640	18,747
Total Liabilities And Equity	\$ 2,645	\$ 12,287	\$ 21,954	\$ 18,347	\$ 17,818	\$ 16,488	\$ 15,403	\$ 15,403	\$ 25,561
Net Income	(6,737)	(26,153)	(15,595)	(4,117)	(1,261)	(2,261)	(2,111)	(9,750)	(4,894)
Depreciation & Amort.	198	144	463	185	154	158	163	660	695
Stock Comp	808	980	2,293	2,441	500	500	500	3,941	2,500
Other	3,866	29,386	6,740	52	(69)	(69)	(69)	(154)	(158)
Working Capital	100	(501)	(483)	(1,082)	674	506	(1,310)	(1,212)	(2,143)
Operating Cash Flow	(1,764)	3,856	(6,583)	(2,521)	(2)	(1,165)	(2,827)	(6,515)	(4,000)
Acquisition of Patents and trademarks	(163)	(290)	(727)	0	0	0	0	0	0
Capx	0	(3,452)	(212)	(4)	(125)	(125)	(125)	(379)	(500)
Other	0	0	(1,769)	0	0	0	0	0	0
Investing Activities	(163)	(3,743)	(2,708)	(4)	(125)	(125)	(125)	(379)	(500)
Debt	225	(1,810)	(4)	0	0	0	0	0	0
Equity	1,468	7,536	9,859	(35)	500	500	500	1,466	11,500
Other	(17)	(9)	7	0	0	0	0	0	0
Financing Activities	1,675	5,717	9,863	(35)	500	500	500	1,466	11,500
Change in Cash	(\$252)	\$ 5,830	\$ 572	(\$2,559)	\$ 373	(\$790)	(\$2,452)	(\$5,428)	\$ 7,000

Important Research Disclosures



Distribution of Ratings/IB Services Chardan Capital Markets

Rating	Count	Percent	IB Serv./Past 12 Mos.	
			Count	Percent
BUY [BUY]	32	68.09	11	34.38
HOLD [NEUTRAL]	14	29.79	3	21.43
SELL [SELL]	0	0.00	0	0.00
NOT RATED [NR]	1	2.13	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 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.