

22nd Century Group, Inc. (XXII - \$2.52 - 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

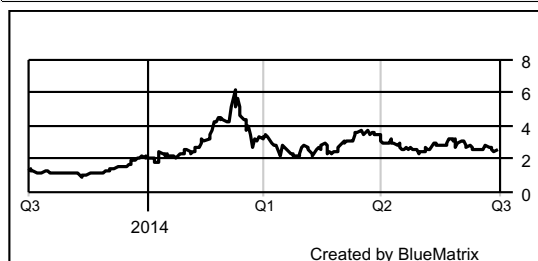
Sales and trading 7 p.m. to 7 a.m. ET, (646) 465-9063

Stock Data	10/01/14
Price	\$2.52
52 Week Range	(\$0.87 - \$6.36)
Price Target	\$9.00
Market Cap (mil)	\$159.63
Shares out (mil)	63.35
3-Mo Avg Vol	534,501
Cash per share	\$0.22
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)A	–	0.00	–
Sep	(0.32)	(0.03)	–	(0.02)	–
Dec	(0.15)	0.00	–	0.02	–
YEAR	(0.60)	(0.15)	–	(0.02)	–
P/E	(4.2)x	(16.8)x	–	(126.0)x	–

Revenues (\$ millions)					
Yr Dec	2013A	2014E		2015E	
	Actual	Curr	Prev	Curr	Prev
Mar	0.0	0.4A	–	1.3	–
Jun	0.0	0.0A	–	3.5	–
Sep	0.1	0.2	–	2.5	–
Dec	7.2	1.8	–	4.8	–
YEAR	7.3	2.4	–	12.0	–

One year price history XXII



Forms China JV. Another Billion Opportunity. Remains Top Pick with \$9 Target.

22nd Century is entering into a joint venture to pursue the sale of tobacco in China, the world's largest market for cigarettes. The JV, 22nd Century Asia Ltd., will be owned by 22nd Century, Crede CG III Ltd. (controlled by Terren Peizer) and Century Champion Investments, Ltd. This is a significant opportunity for 22nd Century given there are 300 million smokers in China, 7x the US market, and is 30% of the world's 1 billion smokers.

In a very short period of time 22nd Century has positioned itself to capitalize on very large markets including the US commercial tobacco market with its recent admission into the Master Settlement Agreement, distribution in the European commercial market, a licensing agreement with Anandia for the cannabis market, progress on bringing modified risk cigarettes to the US market and now China. Shipments of commercial Red Sun and Magic cigarettes to the US and European markets respectively are expected to begin in near November. In addition the company is still making progress on its research agreement with British American Tobacco that should result in \$ 7 million in milestone payments over the next few years and we expect a commercial license with BAT as well. BAT and 22nd Century will also be 50/50 partners on sub-license revenue that results from the research the two are undertaking.

On a conference call yesterday the company was reluctant to discuss the China JV, citing obligations to remain quiet regarding the particulars of the deal. The 8K on the JV provides some details including the owners of the JV (22nd Century, Crede and Century Champion), and warrant compensation to Terren Peizer to provide consulting services to 22nd Century Asia. Century Champion is a British Virgin Islands entity and we can only speculate its role in this venture. Since the British Virgin Islands is often used by Chinese companies to raise capital in the US and UK markets as well as for JV's, we suspect it has close ties to the Chinese tobacco market.

Mr. Peizer has extensive ties to China via joint ventures with the Chinese Communist Youth League and will help guide the JV in the process of opening the Chinese market. For his services, Mr. Peizer will receive 2.25 million warrants with a weighted average exercise price of \$3.02 per share. In addition if the JV is cash flow positive and achieves revenue of \$15 million in either 2017 or 2018, or \$90 million in revenue in either 2018 or 2019, Peizer will receive an additional 1 million warrants with an exercise price of \$3.3736. A final tranche of 1 million warrants with an exercise price of \$3.3736 vest if the JV achieves revenue of \$27 million in either 2018 or 2019. Peizer currently owns about 10% of 22nd Century and a condition of the warrants prevents him from owning more than 9.99% of the company.

We believe this is a tremendous opportunity for the company and not

reflected in the share price. We think little of the company's growth in the US, Europe, cannabis, BAT license revenue and modified risk products are reflected in the share price. We continue to recommend purchase of the shares with a \$9 price target.

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 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.

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 an additional \$7 million over the next 12-18 months. 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 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 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 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	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	16	150	1,750	2,364	1,250	3,500	2,500	4,750	12,000
Cost Of Goods Sold	68	462	178	13	75	125	391	625	1,000	1,250	1,375	4,250
Gross Profit	(49)	6,817	270	3	75	1,625	1,973	625	2,500	1,250	3,375	7,750
R&D	729	744	222	263	300	300	1,086	400	400	400	400	1,600
G&A	2,205	4,107	1,005	1,345	1,250	1,250	4,850	1,479	1,479	1,479	1,479	5,917
Pre-Mfg. Facility Costs				275								
Sales & marketing	62	9	158	34	150	150	492	250	250	250	250	1,000
Depreciation & Amort.	198	144	71	124	125	125	446	150	150	150	150	600
Opex	3,195	5,004	1,457	2,041	1,825	1,825	6,874	2,279	2,279	2,279	2,279	9,117
Operating Income	(3,244)	1,812	(1,187)	(2,038)	(1,750)	(200)	(4,901)	(1,654)	221	(1,029)	1,096	(1,367)
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)	74	0	0	(4,138)	0	0	0	0	0
Pretax Income	(6,737)	(26,153)	(5,315)	(1,966)	(1,752)	(202)	(8,960)	(1,656)	219	(1,031)	1,094	(1,375)
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)	(1,966)	(1,752)	(202)	(8,960)	(1,656)	219	(1,031)	1,094	(1,375)
Minority Interest	1	0	0	0	0	0	0	0	0	0	0	0
Net to Common	(6,735)	(26,153)	(5,315)	(1,966)	(1,752)	(202)	(8,960)	(1,656)	219	(1,031)	1,094	(1,375)
Shares	30,420	43,635	57,647	58,749	59,249	63,847	59,873	64,347	64,847	65,347	65,847	65,097
EPS	(\$0.22)	(\$0.60)	(\$0.09)	(\$0.03)	(\$0.03)	(\$0.00)	(\$0.15)	(\$0.03)	\$0.00	(\$0.02)	\$0.02	(\$0.02)

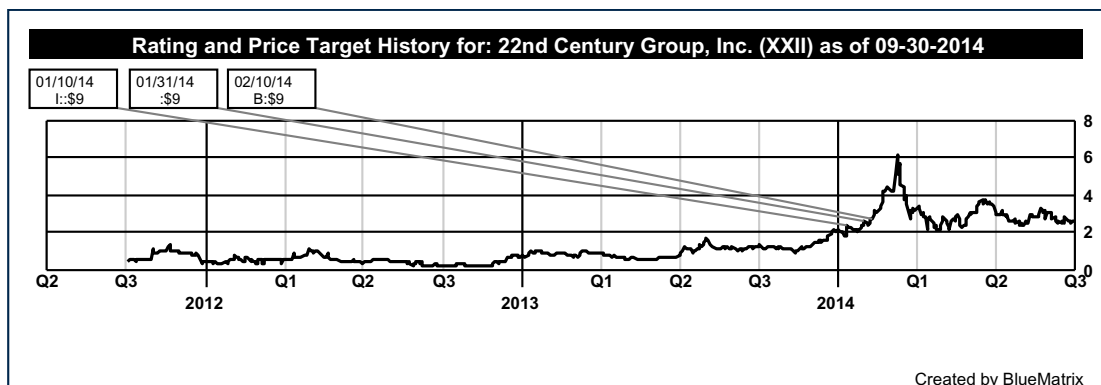
22nd Century Group, Inc
Income Statement \$ in 000s

	2012	2013	2014 E	2015 E	2016 E	2017 E	2018 E	2019 E	2020 E	2021 E
Revenue	19	7,278	2,364	12,000	19,925	28,388	43,582	65,373	97,059	127,230
Cost Of Goods Sold	68	462	391	4,250	8,463	13,194	19,791	29,686	44,530	58,615
Gross Profit	(49)	6,817	1,973	7,750	11,463	15,194	23,791	35,686	52,530	68,615
R&D	729	744	1,086	1,600	2,000	2,300	2,645	3,042	3,498	4,023
G&A	2,205	4,107	4,850	5,917	6,508	7,159	7,875	8,662	9,529	10,482
Pre-Mfg. Facility Costs										
Sales & marketing	62	9	492	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	6,874	9,117	10,608	12,329	14,517	16,573	18,580	20,613
Operating Income	(3,244)	1,812	(4,901)	(1,367)	854	2,865	9,274	19,113	33,950	48,002
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)	(4,138)	0	0	0	0	0	0	0
Pretax Income	(6,737)	(26,153)	(8,960)	(1,375)	846	2,857	9,266	19,105	33,942	47,994
Income Tax Expense	0	0	0	0	296	1,000	3,243	6,687	11,880	16,798
Net before Minority Interest	(6,737)	(26,153)	(8,960)	(1,375)	550	1,857	6,023	12,418	22,062	31,196
Minority Interest	1	0	0	0	0	0	0	0	0	0
Net to Common	(6,735)	(26,153)	(8,960)	(1,375)	550	1,857	6,023	12,418	22,062	31,196
Shares	30,420	43,635	59,873	65,097	67,097	69,097	71,097	73,097	75,097	77,097
EPS	(\$0.22)	(\$0.60)	(\$0.15)	(\$0.02)	\$0.01	\$0.03	\$0.08	\$0.17	\$0.29	\$0.40

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

	2012	2013	Q1 14	Q2 14	Q3 14 E	Q4 14 E	2014 E	2015 E	2016 E
Cash	0	5,831	5,373	4,173	11,587	12,239	12,239	10,586	11,881
Due from related party and officers	41	50	42	45	45	0	0	0	0
A/R	0	0	0	16	123	205	205	2,260	4,058
Inventory	1,231	1,406	1,652	1,733	1,062	1,103	1,103	2,129	3,028
Prepaid Exp.	10	458	241	251	251	418	418	2,877	5,166
Total Current Assets	1,281	7,744	7,309	6,218	13,068	13,965	13,965	17,853	24,133
Patent and Trademark costs	1,353	1,545	1,595	1,728	2,117	2,055	2,055	1,810	1,565
PP&E	6	2,998	2,934	2,952	2,919	2,881	2,881	2,686	2,420
Anandia Investment	0	0	0	0	1,150	1,150	1,150	1,475	1,475
Deferred Costs	4	0	0	0	0	0	0	0	0
Advance	0	0	93	343	93	0	0	0	0
Total Assets	\$ 2,645	\$ 12,287	\$ 11,930	\$ 11,241	\$ 19,346	\$ 20,052	\$ 20,052	\$ 23,824	\$ 29,593
Bank Loans and N/P	2,686	175	175	175	175	175	175	175	175
A/P	1,411	55	273	728	446	463	463	894	1,271
Accrued Interest	4	0	0	0	0	0	0	0	0
Accrued Expenses	503	576	700	659	404	419	419	810	1,151
Deferred Revenue	0	179	0	0	0	0	0	0	0
Total Current Liabilities	4,603	984	1,148	1,562	1,024	1,057	1,057	1,879	2,597
Warrant Liability	4,173	3,780	623	549	549	549	549	549	549
Shareholder's Equity	(6,131)	7,523	10,159	9,130	17,773	18,446	18,446	21,396	26,446
Total Liabilities And Equity	\$ 2,645	\$ 12,287	\$ 11,930	\$ 11,241	\$ 19,346	\$ 20,052	\$ 20,052	\$ 23,824	\$ 29,593
Net Income	(6,737)	(26,153)	(5,315)	(1,966)	(1,752)	(202)	(9,235)	(1,375)	550
Depreciation & Amort.	198	144	71	124	219	224	639	940	1,012
Stock Comp	808	980	357	637	375	375	1,744	2,000	2,500
Other	3,866	29,386	4,126	(74)	250	93	4,395	0	0
Working Capital	100	(501)	(360)	167	27	(213)	(380)	(4,719)	(4,266)
Operating Cash Flow	(1,764)	3,856	(1,121)	(1,111)	(881)	277	(2,836)	(3,153)	(204)
Acquisition of Patents and trademarks	(163)	(290)	(37)	(52)	(450)	0	(539)	0	0
Capx	0	(3,452)	(46)	(84)	(125)	(125)	(380)	(500)	(500)
Other	0	0	539	(250)	(700)	0	(411)	0	0
Investing Activities	(163)	(3,743)	455	(386)	(1,275)	(125)	(1,331)	(500)	(500)
Debt	225	(1,810)	0	(3)	0	0	(3)	0	0
Equity	1,468	7,536	202	299	9,570	500	10,571	2,000	2,000
Other	(17)	(9)	7	0	0	0	7	0	0
Financing Activities	1,675	5,717	209	297	9,570	500	10,576	2,000	2,000
Change in Cash	(\$252)	\$ 5,830	(\$457)	(\$1,201)	\$ 7,414	\$ 652	\$ 6,408	(\$1,653)	\$ 1,296

Important Research Disclosures



Distribution of Ratings/IB Services Chardan Capital Markets

Rating	Count	Percent	IB Serv./Past 12 Mos.	
			Count	Percent
BUY [BUY]	32	72.73	10	31.25
HOLD [NEUTRAL]	9	20.45	1	11.11
SELL [SELL]	2	4.55	1	50.00
NOT RATED [NR]	1	2.27	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.