

22nd Century Group, Inc. (XXII - \$2.68 - Buy)

COMPANY NOTE

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

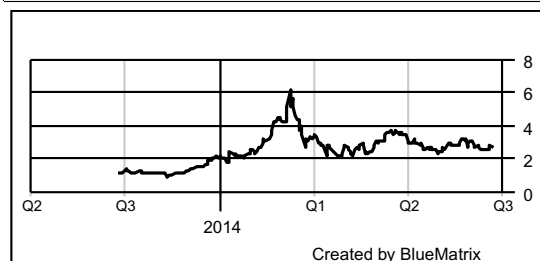
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Stock Data	09/23/14
Price	\$2.68
52 Week Range	(\$0.87 - \$6.36)
Price Target	\$9.00
Market Cap (mil)	\$169.77
Shares out (mil)	63.35
3-Mo Avg Vol	577,824
Cash per share	\$0.22
Total Debt (mil)	\$0.18

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	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	(4.5)x	(17.9)x	–	(134.0)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	0.2A	3.5	–
Sep	0.1	0.2	–	2.5	–
Dec	7.2	1.8	–	4.8	–
YEAR	7.3	2.4	2.5	12.0	–

One year price history XXII



Recent Deals Significantly Strengthen Company. Remains Our Top Pick.

We reiterate our Buy recommendation and \$9 price target for 22nd Century Group and the shares remain our top pick. In the past few weeks the company has made major announcements, including membership in the Master Settlement Agreement (MSA), a manufacturing agreement with Smoker Friendly, an investment in Canadian Anandia Laboratories, securing rights to genes used in cannabinoids production, and a \$10 million investment by Crede, who is expected to be instrumental in 22nd Century completing joint ventures in Asia. All of these events, in our view, make the company much stronger compared to just a few weeks ago. In the coming weeks and quarters we expect additional catalysts, including retailer and distribution agreements, both in the US and Europe, to drive the shares higher. The stock remains our top pick with a \$9 price target.

Earlier this month, 22nd Century became of member of the Master Settlement Agreement, which, in our view, is one of the keys to growth for the company. As a member of the MSA the company is shielded from certain litigation in the US, but maybe just as important membership in the MSA is a sine qua non for working with retailers, distributors, wholesalers and others in the industry. Without MSA membership, producers are relegated to niche markets with limited growth potential. This is a catalyst we have been anticipating since the beginning of the year and we think will lead to additional announcements regarding relationships with retailers and distributors in the coming months and the ramp of Red Sun sales beginning in the next couple of quarters.

Shortly before the MSA announcement 22nd Century entered into a multi-year manufacturing agreement with Smoker Friendly International, an independent chain of over 800 specialty smoke shops in 38 states, operated by licensed retailers. 22nd Century through its manufacturing facility in Mocksville, North Carolina, will produce the Smoker Friendly house brand, SF, beginning next year. The company is also looking to offer Red Sun in Smoker Friendly stores, as evidenced by presentations it made at the recent Smoker Friendly conference in Boulder. Now as a member of the MSA, it is more likely 22nd Century will be able to accomplish this.

Last week 22nd Century announced its Botanical Genetics subsidiary had entered into a worldwide license agreement with Anandia Laboratories. In the US 22nd Century has exclusive rights to four genes required for cannabinoid production in the cannabis plant. Anandia has exclusive rights in Canada and the pair share co-exclusive rights for the rest of the world. The technology is a result of Jonathan Page's work sequencing 30,000 genes in the Cannabis sativa genome. Control of these genes will allow 22nd Century to control the level's of THC and other cannabinoids in cannabis. In addition to the significant opportunity in medical marijuana, and

ultimately recreational marijuana, control of these genes could be used to lower THC levels in hemp, which is restricted in the EU and Canada to less than 0.3%. We expect the agreement with Anandia will focus on perfecting the technology and securing license agreements. Medical marijuana is legal in Canada and we expect that market and hemp will be the focus for Anandia and Botanical. Development in the US market will require resolution of Federal regulation of cannabis laws.

Botanical will invest \$1.5 million in cash (\$700K) and stock (\$800K). This investment over time could be the significant value driver for the shares and there is nothing in our model or valuation for this investment. Others in the marijuana space have significant valuations. For instance, GW Pharmaceuticals (GWPH) is valued at \$1.7 billion and MEDBOX (MDBX) at \$256 million.

A \$10 million private placement with Crede will give 22nd Century ample flexibility to accomplish its expanded mission. In addition, Crede is instrumental to 22nd Century's strategy in Asia. Asia is the largest smoking market in the world and is also not included in our model.

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 Tobacco Control Act bans certain terms, e.g. low tar, light, in cigarette labels, and these labels comprised 70% of the US market prior to the Act. 22nd Century could be the first company to apply for a modified risk label.

The company's research agreement with BAT is progressing as expected. Multiple batches of the company's tobacco is being grown in various locations and will be tested by BAT. We have modeled one milestone in the research agreement completed this year. BAT's payments to 22nd Century under the commercial license agreement are capped at \$25 million per year, but both companies will share 50/50 in any sub-license agreements they make with the fruits of the research agreement. We believe there could be interest in a heat-not-burn high-nicotine product by Big Tobacco to compete against e-cigarettes.

We also believe distribution in Europe is progressing well. Sale of the 22nd Century brand, Magic, should begin soon, and unlike the US, nicotine levels are required and could be a marketing advantage. We assumed European sales will begin next year.

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, 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 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.

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 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)

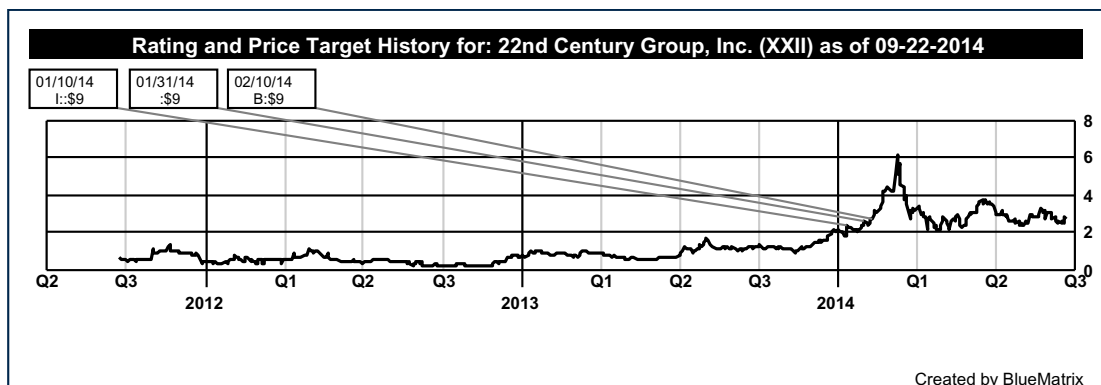
22nd Century Group, Inc
Income Statement \$ in 000s

	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

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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.

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