

22nd Century Group, Inc. (XXII - \$1.40 - Buy)

Estimate Change

COMPANY NOTE

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

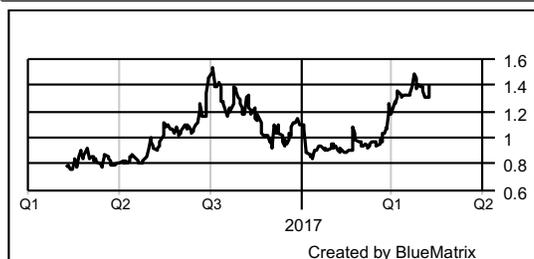
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| Stock Data | | 05/09/17 |
|-------------------|--|-------------------|
| Price | | \$1.40 |
| 52 Week Range | | (\$0.74 - \$1.71) |
| Price Target | | \$3.50 |
| Market Cap (mil) | | \$126.98 |
| Shares out (mil) | | 90.70 |
| 3-Mo Avg Vol | | 948,295 |
| Cash per share | | \$0.12 |
| Total Debt (mil) | | \$0.31 |

| Revenues (\$ millions) | | | | | | |
|-------------------------------|--------|------|-------|------|-------|--|
| Yr Dec | 2016A | | 2017E | | 2018E | |
| | Actual | Curr | Prev | Curr | Prev | |
| Mar | 3.0 | 2.2 | 1.6 | - | - | |
| Jun | 2.8 | 2.6 | - | - | - | |
| Sep | 3.1 | 6.0 | - | - | - | |
| Dec | 3.3 | 6.6 | - | - | - | |
| YEAR | 12.3 | 16.5 | 15.9 | 21.5 | - | |

| EPS (\$) | | | | | | |
|-----------------|--------|---------|-------|--------|--------|--|
| 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) | (0.10) | - | (0.10) | (0.09) | |

One year price history XXII



Q1 Beat and Raise. Multiple Catalysts Pending

We reiterate our Buy recommendation and \$3.50 price target on 22nd Century post the company's Q1 results, increased guidance to this year and indications of a strong and event-filled 2018. Q1 revenue of \$2.2 million exceeded our \$1.6 million estimate while opex was a bit more than modeled. On the back of new manufacturing agreements for the production of filtered cigars and other tobacco products, the company is now guiding to \$16 million in total revenue in 2017 and significantly more than \$20 million in revenue in 2018. Both are above our estimates. In addition the coming months and quarters are laden with catalysts as 22nd Century pursues multiple paths to address the smoking-cessation market as well as introducing unique products to the smoking market which is 10x larger than the smoking cessation market.

In June the company meets with the FDA's CEDR (Center for Drug Evaluation and Research) for a pre-Phase III Meeting on X-22. X-22 is contemplated as a prescription-only product for the smoking cessation market. There have been many trials using X-22 as a smoking cessation tool, all with positive results, and the company will determine, with the FDA, the best path forward. One path would be a Phase III trial in 2018.

Also in June, 22nd Century meets with the FDA's Center for Tobacco Products for a guidance meeting to determine the way forward on a reduced exposure designation for its Brand A, very-low nicotine cigarette. The current thinking is bifurcating the application into a Premarket Tobacco Product application) and MRTPA (Modified Risk Tobacco Product application). The PMTA could advance quickly while the MRTPA would likely take 12 months to conclude.

Recently, the company announced it will pursue an MRTPA 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.

Contract manufacturing does not generate positive margins, yet, but will with scale. Because of the recently announced manufacturing agreement, 22nd Century expects to generate \$16 million in sales this year and significantly over \$20 million next year. Even so, this will be a low-margin business, but will contribute to covering corporate overhead as revenues scale.

At the end of the quarter the company had \$10.7 million in cash, enough, we believe, until the middle of next year and maybe longer at current operational needs.

Over the coming months we expect news on FDA guidance on X-22

the PMT and MRTP applications for Brand A, progress on Brand B and continuing news on the industrial hemp market. The key for the shares remains monetization of the company's technology to control nicotine levels in tobacco. This can be used for smoking cessation products and 22nd Century is pursuing multiple paths here including applications with the FDA for a reduced exposure designation. We also believe the technology is suitable for heat-not-burn products that industry leaders like Philip Morris International are pursuing.

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.
Actual v. Estimates

| Q1 17 | | | |
|------------------------------|------------|------------|--------|
| | Actual | Estimates | |
| Revenue | \$ 2,232 | \$ 1,552 | 43.8% |
| Cost Of Goods Sold | 2,505 | 1,641 | 52.7% |
| Gross Profit | (274) | (89) | NM |
| R&D | 551 | 550 | 0.2% |
| G&A | 1,620 | 1,400 | 15.7% |
| Sales & marketing | 296 | 350 | -15.5% |
| Depreciation & Amort. | 229 | 193 | 19.0% |
| Opex | 2,696 | 2,493 | 8.2% |
| Operating Income | \$ (2,970) | \$ (2,581) | -15.1% |
| Interest Expense | 8 | (2) | |
| Other | 346 | 0 | |
| Warrant Charge | (5) | 0 | |
| Pretax Income | (2,621) | (2,583) | |
| Income Tax Expense | 0 | 0 | |
| Net before Minority Interest | (2,621) | (2,583) | |
| Minority Interest | | | |
| Net to Common | \$ (2,621) | \$ (2,583) | |
| Shares | 90,700 | 90,698 | |
| EPS | \$ (0.03) | \$ (0.03) | |

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 | 90,723 | 90,773 | 90,823 | 90,755 | 91,417 |
| EPS | (\$0.26) | (\$0.16) | (\$0.15) | (\$0.03) | (\$0.03) | (\$0.02) | (\$0.02) | (\$0.10) | (\$0.10) |

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 | 8,085 | 6,327 | 4,707 | 4,707 | 2,476 |
| 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 |
| Total Current Assets | \$ 10,707 | \$ 7,154 | \$ 16,797 | \$ 14,200 | \$ 12,147 | \$ 12,311 | \$ 12,029 | \$ 12,029 | \$ 8,776 |
| 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 |
| Total Assets | \$ 21,954 | \$ 18,296 | \$ 27,642 | \$ 25,365 | \$ 23,287 | \$ 23,422 | \$ 23,106 | \$ 23,106 | \$ 19,672 |
| 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 |
| Total Current Liabilities | \$ 2,673 | \$ 3,162 | \$ 3,249 | \$ 3,419 | \$ 3,522 | \$ 5,239 | \$ 6,397 | \$ 6,397 | \$ 5,402 |
| 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 | 19,770 | 18,119 | 16,645 | 16,645 | 14,205 |
| Total Liabilities And Equity | \$ 21,954 | \$ 18,296 | \$ 27,642 | \$ 25,365 | \$ 23,287 | \$ 23,422 | \$ 23,106 | \$ 23,106 | \$ 19,672 |
| 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 | \$ (6,583) | \$ (7,322) | \$ (9,888) | \$ (2,695) | \$ (2,569) | \$ (1,683) | \$ (1,545) | \$ (8,493) | \$ (6,881) |
| 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 | \$ (2,708) | \$ (451) | \$ (554) | \$ (44) | \$ (125) | \$ (125) | \$ (125) | \$ (419) | \$ (500) |
| Debt | (4) | (508) | (333) | 0 | 0 | 0 | 0 | 0 | 0 |
| Equity | 9,859 | 5,592 | 20,483 | 0 | 50 | 50 | 50 | 150 | 5,150 |
| Other | 7 | 46 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Financing Activities | \$ 9,863 | \$ 5,130 | \$ 20,149 | \$ - | \$ 50 | \$ 50 | \$ 50 | \$ 150 | \$ 5,150 |
| Change in Cash | \$ 572 | (\$2,642) | \$ 9,708 | (\$2,739) | (\$2,644) | (\$1,758) | (\$1,620) | (\$8,762) | (\$2,231) |

Required Research Disclosures



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| Rating | Count | Percent | IB Serv./Past 12 Mos. | |
|----------------|-------|---------|-----------------------|---------|
| | | | Count | Percent |
| BUY [BUY] | 61 | 67.03 | 18 | 29.51 |
| HOLD [NEUTRAL] | 25 | 27.47 | 3 | 12.00 |
| SELL [SELL] | 4 | 4.40 | 0 | 0.00 |
| NOT RATED [NR] | 1 | 1.10 | 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) - \$1.40 - 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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