

**22nd Century Group, Inc. (XXII - \$3.96 - Buy)**

**FLASH NOTE**

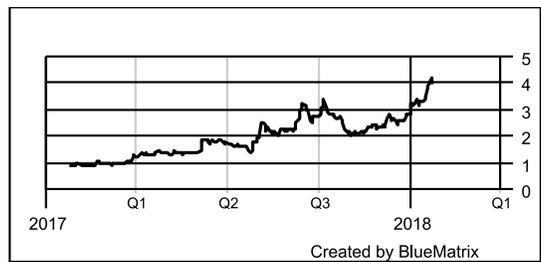
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**Sales and trading** 7 a.m. to 7 p.m. ET, (646) 465-9090

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

Stock Data	01/23/18
52 Week Range	(\$0.86 - \$4.44)
Price Target	\$11.50
Market Cap (mil)	\$488.66
Shares out (mil)	123.40

**One year price history XXII**



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**National Academies Report on e-Cigs. Positive for XXII**

A review of the health effects of e-cigs, titled, the “Public Health Consequences of E-Cigarettes” was published yesterday, with mixed conclusions on the category’s impact on health and the initiation and cessation of tobacco use. We believe the report’s conclusions are positive for 22nd Century since multiple studies have shown the company’s technology can be used as a smoking cessation tool, which is a primary goal of the FDA.

In December of 2016 the National Academies of Sciences, Engineering, and Medicine, began a review of the science of battery-powered Electronic Nicotine Delivery Systems” (ENDS) to answer, among other questions: the short-and long-term health risks of regular use of e-cigarettes; the important variables in devices and used patterns in determining risk; the effectiveness of e-cigs as a means to quit smoking; and does the use of e-cigs result lead to consumption of regular cigarettes.

Regarding the human health affects, the report concluded, “Taken together, the evidence reviewed by the committee suggests that e-cigarettes are not without physiological activity in humans, but the implications for long-term effects on morbidity and mortality are not yet clear. Use of e-cigarettes instead of combustible tobacco cigarettes by those with existing respiratory disease might be less harmful.” On initiation and cessation of smoking the report states, “Taken together the evidence suggests that while e-cigarettes might cause youth who use them to transition to use of combustible tobacco products, they might increase adult cessation of combustible tobacco cigarettes.”

This result could be troublesome to the FDA because it is highly sensitive to the public health impact of tobacco products. A product that causes more people to take up smoking than it helps quit may be determined to pose a public health burden.

Regarding IQOS, the report says heat-not-burn products “share many similarities to e-cigarettes,” and indicates further study is necessary on patterns of tobacco use. The FDA could rule on the IQOS MRTP soon. A negative ruling would leave the field open for XXII’s MRTP and a positive ruling could open a market for XXII’s proprietary technology that regulative nicotine in tobacco. An interesting aspect of the heat-not-burn market is tobacco will be used in the HeatSticks and the consumer will be demanding a certain amount of nicotine per session, similar to the amount of nicotine delivered in combustible cigarettes. We believe 22nd Century’s ownership of the genes that regulate nicotine in tobacco is an important technology for this product should it be approved by the FDA.

The centerpiece of the FDA's regulatory plan is lowering nicotine levels in combustible cigarettes. In our view, 22nd Century controls the technology that the FDA intends to utilize to reduce nicotine addiction for the two-thirds of smokers wanting to quit. This regulatory change will be a multi-year process, and there will be resistance by industry to these changes. However, we think the die is cast and significant changes are coming. With its recent \$54 million capital raise 22nd Century has the resources it needs for the coming multi-year process.

Of major import for 22nd Century, the FDA is placing nicotine and addiction "at the center" of its regulatory efforts. There are about 40 million smokers in the US, over 480,000 smoking-related deaths every year and more than 16 million Americans are living with a smoking-related disease. Studies suggest about half try to quit every year and over two-thirds would like to quit. That is, 22nd Century's technology addresses the largest segment of the market and the FDA recognizes the public health benefit by implementing a regulatory regime that places nicotine and addiction front and center. Also, our estimates and price target assume 22nd Century will capture some of the market for nicotine-reduced products, far below the two-thirds of the market that wants to quit. Secondary to nicotine reduction, the FDA is looking at allowing non-combustible products, which addresses the smaller segment of the market, smokers who don't want to quit. We believe there are considerable risks in gaining regulatory approval and market acceptance for these non-combustible products and placing too much faith in the timing and size of the product from a regulatory and market perspective could prove dangerous.

**Valuation:**

Our twelve-month price target of \$11.50 is based on the company garnering royalty revenue for its technology on 10% of the US market share in the next five years, discounted at a 20% annual rate.

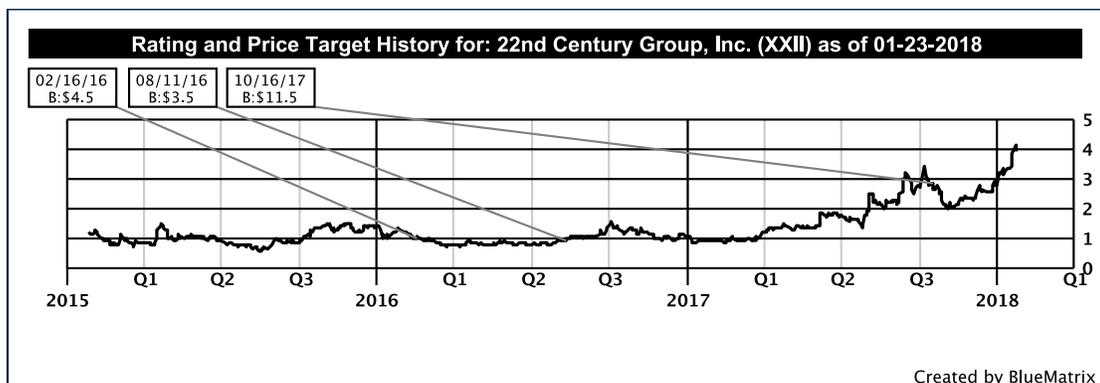
**Risks to achievement of target price:**

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.

## Important Research Disclosures



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Rating	Count	Percent	IB Serv./Past 12 Mos.	
			Count	Percent
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HOLD [NEUTRAL]	27	28.42	3	11.11
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NOT RATED [NR]	1	1.05	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.

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