



22ND CENTURY GROUP

INVESTOR OVERVIEW

October 2022

 Nasdaq XXII



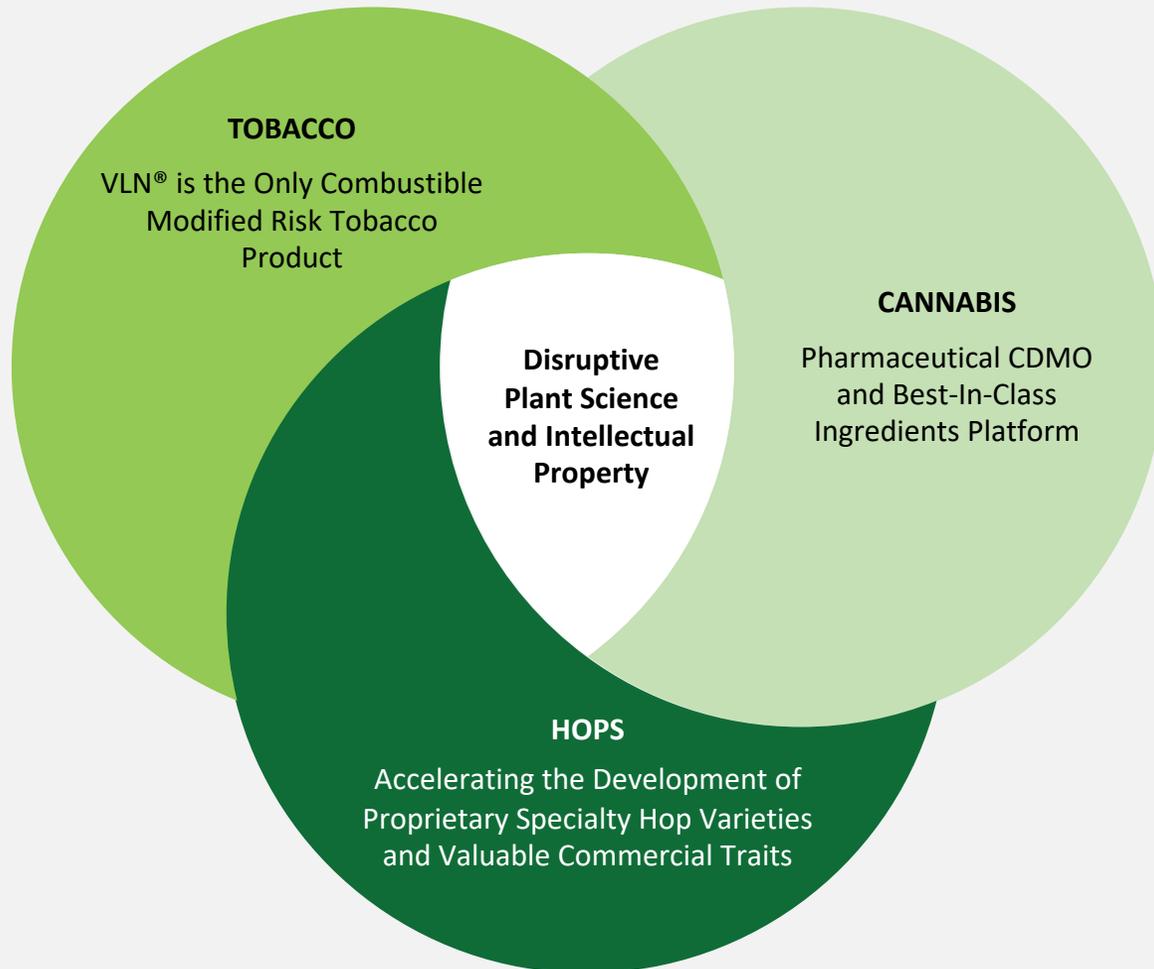
CAUTIONARY NOTE ON FORWARD-LOOKING STATEMENTS

This presentation contains forward-looking statements concerning our business operations, and financial performance and conditions, as well as our plans, objectives, and expectations for our business operations and financial performance and conditions that are subject to risks and uncertainties. All statements other than those of historical fact are forward-looking statements.

These types of statements typically contain words such as “aim,” “anticipate,” “assume,” “believe,” “could,” “due,” “estimate,” “expect,” “goal,” “intend,” “may,” “objective,” “plan,” “potential,” “positioned,” “predict,” “should,” “target,” “will,” “would” and other similar expressions that are predictions of or indicate future events and future trends. Forward-looking statements are based on current expectations, estimates, forecasts, and projections about our business, the industry in which we operate, and our management’s beliefs and assumptions.

These statements are not guarantees of future performance or development and involve known and unknown risks, uncertainties, and other factors that are in some cases beyond our control. All forward-looking statements are subject to risks and uncertainties that could cause actual results to differ materially from those estimated. The contents of this presentation should be considered in conjunction with the risk factors, warnings, and cautionary statements contained in the Company’s annual, quarterly, and other reports filed with the U.S. Securities and Exchange Commission. We undertake no obligation to publicly update or revise any forward-looking statement as a result of new information, future events, or otherwise, except as required by law.

EXECUTING FOR GROWTH IN 3 LARGE MARKETS



- **Strong VLN® Chicago pilot results driving expansion in the ~\$80 billion U.S. market¹ and +\$800 billion global market²**

 - Announced expansion in Illinois, accelerated entry into ~\$600 million Colorado market³, with favorable MRTTP tax status
 - Advancing additional U.S. and international markets to accelerate VLN® growth

- **GVB acquisition in May '22 doubled corporate revenue, accelerates path to profitability in the \$100 billion hemp/cannabis market⁴**

 - Prineville world-scale extraction facility >20,000 kg/month
 - Integrating XXII proprietary plant science
 - Expanding white-label customer penetration

- **Advancing hops plant science to deploy alkaloid technologies in a \$680 billion global brewing market⁵**

1. Grandview Research; <https://www.grandviewresearch.com/industry-analysis/us-tobacco-market#:~:text=The%20U.S.%20tobacco%20markets%20size%20was%20estimated%20at%20USD%2075.9%20billion%20in%202022>
 2. Foundation for a Smoke Free World; <https://www.smokefreeaworld.org/wp-content/uploads/2021/12/Global%20Trends%20in%20Nicotine%20Report%20December%202021.pdf>
 3. Smoker Incidence Studies / Industry Data / XXII Internal Research
 4. Grandview Research; <https://www.grandviewresearch.com/industry-analysis/legal-marijuana-market>
 5. Grandview Research; <https://www.grandviewresearch.com/industry-analysis/beer-market>

Tobacco

Hemp/Cannabis

Hops

Financials



TRANSFORMING TOBACCO WITH VLN[®]

60% of adult smokers indicate a likelihood to use VLN[®] based on perception studies¹.

Discernable Adult Smoker Benefits^{2,3}

- Reduced nicotine exposure and dependence
 - Fewer cigarettes smoked per day
 - Reduced withdrawal symptoms
 - Minimal or no compensatory smoking
 - Increased number of smoke-free days
 - Quit attempts doubled
 - No increase in adverse effects in persons with mental health disorders
-

VLN[®] is a UNIQUE 95% REDUCED NICOTINE CONTENT combustible cigarette alternative unlike any tobacco product available in the market today.

What is VLN[®]?

- Proprietary, combustible cigarette made with tobacco that contains 95% less nicotine than conventional cigarette alternatives
- Familiar combustible product format that replicates the conventional cigarette experience including the sensory and experiential elements of taste, scent, smell, and “hand-to-mouth” behavior

How VLN[®] Helps Adult Smokers

- VLN[®] contains 0.5 mg of nicotine per gram of tobacco, an amount cited by FDA, based on clinical studies, to be “minimally or non-addictive”.
- Lack of reward from nicotine creates a dissociation between the act of smoking and nicotine which helps adult smokers reduce the harm caused by smoking

Science-Backed Research from Clinical Trials

- Since 2011, 22nd Century’s reduced nicotine content cigarettes has been used in more than 50 independent scientific clinical studies conducted by universities and institutions.
- Studies have been largely funded by U.S. government agencies and are estimated to have cost over \$100M

1. Based on consumer perception studies conducted by 22nd Century Group.

2. Eric C. Donny, Ph.D., Rachel L. Denlinger, B.S., et al. “Randomized Trial of Reduced-Nicotine Standards for Cigarettes.” Oct. 2015.

3. Dorothy K. Hatsukami, PhD; Xianghua Luo, PhD, et al., “Effect of Immediate vs Gradual Reduction in Nicotine Content of Cigarettes on Biomarkers of Smoke Exposure.” Sept. 2018.

THE FIRST AND ONLY COMBUSTIBLE CIGARETTE AUTHORIZED BY THE FDA



America's Lowest Nicotine Cigarette

95% less nicotine.

VLN[®] contains 100% American Tobacco with 95% less nicotine. VLN[®] greatly reduces your nicotine consumption, and helps you smoke less.



- FDA authorized VLN[®] King and VLN[®] Menthol King Modified Risk Tobacco Product application (MRTPA) on December 23, 2021.
- FDA added the data-driven claim “Helps You Smoke Less” and authorized all requested claims
- Rather than just shifting smokers to another highly addictive, nicotine-laden product, we are focused on helping smokers reduce their nicotine consumption and smoke less.

“We know that three out of four adult smokers want to quit and the data on these products show they can help addicted adult smokers transition away from highly addictive combusted cigarettes.”

- Mitch Zeller
FDA Center for Tobacco Products

*Trade dress subject to change.

VLN[®] HAS MASSIVE GLOBAL MARKET OPPORTUNITY

“Although 34% of people trying to quit smoking use pharmaceutical aids, most are not successful.”

John P. Pierce,
PhD, Professor Emeritus at UC
San Diego School of Medicine⁴

\$ 853B

Global Tobacco
Market 2020¹



Other¹

16%

Combustible Cigarettes

84%

0%

50%

100%

\$ 717B

Combustible cigarettes account for about 85%
of the global tobacco market¹

~70%

Of adult cigarette
smokers want to quit²

<10%

Of adult smokers
successfully quit²

~30

Average number of quit
attempts before success³

1. Foundation for a Smoke Free World; <https://www.smokefreeworld.org/wp-content/uploads/2021/12/Global%20Trends%20in%20Nicotine%20Report%20December%202021.pdf>.

2. <https://www.hhs.gov/sites/default/files/2020-cessation-sgr-consumer-guide.pdf>.

3. Chaiton, Michael; Diemert, Lori, et al. “Estimating the number of quit attempts it takes to quit smoking successfully in a longitudinal cohort of smokers.” Jun. 2016.

4. <https://acsjournals.onlinelibrary.wiley.com/doi/pdf/10.1002/cncr.31388#:~:text=Although%2034%25%20of%20people%20trying,Medicine%20and%20Moore%20Cancer%20Center.>

SUCCESSFUL VLN[®] PILOT IN CHICAGO

Confirms consumer demand for VLN[®] and go-to-market strategies

Commenced sales in 150+ Circle K pilot stores on April 11th

Phase	Status
Phase 1: Initial launch, media support and general awareness	Exceeded internal expectations
Phase 2: Test marketing targeted offers to drive increased share through trial and repeat purchase	In process now
Phase 3: Build share and expand launch to additional markets and retailers across the convenience, grocery, and drug store channels	TBD



COLORADO MARKET LAUNCH

Decision to accelerate rollout to additional targeted markets based on success in Chicago pilot

Population

Total = 5.8MM (+1.0%)

Adults = 3.1MM

Adult Smokers = 568,000

Total Cigarette Market Opportunity

=~\$600 M

More than

3,000 targeted stores

VLN[®] Pricing

Premium pricing similar to Marlboro

Diverse Channel of Partners

combination of retail and distribution partnerships targeting, convenience, tobacco, drug and military stores

MRTP Tax Saving

= \$6.50 / carton



EXPANDED MANUFACTURING, VLN[®] GROWING PROGRAMS

Scaling manufacturing and growing programs

- Completing a **25% capacity expansion**, including a **new production line**

- Adding a second shift to **enhance production throughput**

- **Contracted largest VLN[®] tobacco crop ever**; plants tailored to be more disease resistant and generate higher yield

- Opportunities to grow through **further manufacturing expansion and licensing**



REGULATORY ENVIRONMENT FAVORS VLN®

- FDA continues to advance its proposed **menthol ban and reduced nicotine mandate**

- State and local governments **taking direct action**

- **Submitted public comments in support of the FDA's** proposed tobacco product standard for menthol in cigarettes

- **VLN® Menthol King cigarettes could be the only combustible menthol cigarette** on the market exempt from the menthol ban.

- The science shows a **reduced nicotine mandate would help all smokers more easily quit smoking or migrate to less toxic products.**



Tobacco

Hemp/Cannabis

Hops

Financials



MONETIZING OUR POSITION IN HEMP/CANNABIS BY ACCELERATING PLANT MODIFICATION



22nd Century has demonstrated its ability to monetize proprietary hemp/cannabis plant lines necessary to achieve its full commercial potential.

22nd Century Group optimizes hemp/cannabis plant genetics and creates disruptive, proprietary stable commercial plant lines that deliver higher crop yield.

- Plant lines with optimized genetics for commercial farming methodologies

- Option to grow at scale indoors and outdoors

- Improved disease and pest resistance

- Ability to control the expression of CBD, THC, CBG, CBN, terpenes, and other cannabinoids is critical to financial returns and quality metrics

GVB ACQUISITION COMPLETES 22ND CENTURY'S B2B CAPABILITIES

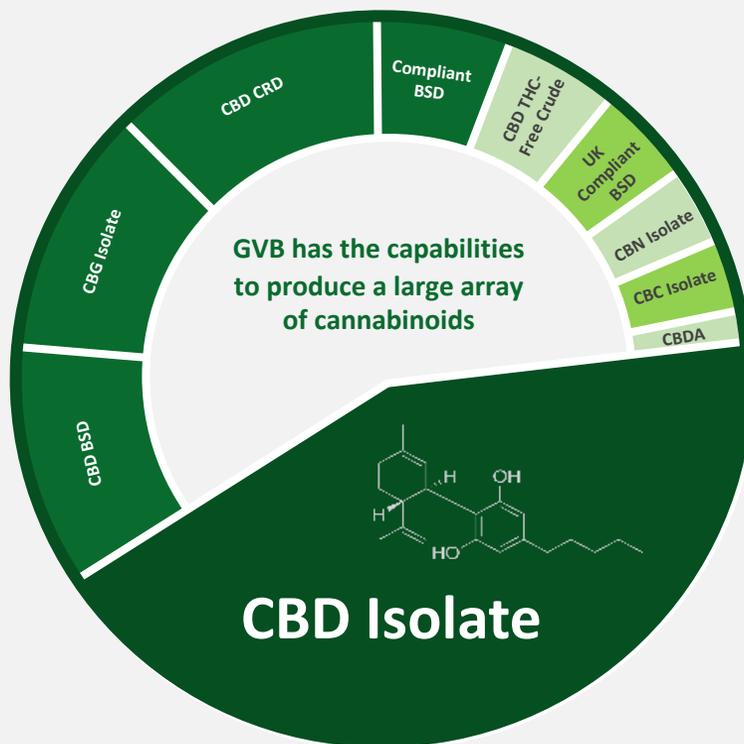
22nd Century now provides the most complete hemp/cannabis solution, from receptor science and transformative plant genetics, to finished ingredients and CDMO formulated products that meet the most exacting standards required by global consumer products and pharmaceutical companies.

	Plant Profile / Roadmap	Plant Biotechnology	Plant Breeding & Trials	Ingredient Extraction, Purification, and Finished Products	Commercial Partners
					
	<p>CannaMetrix's high-throughput proprietary, human cell-based assay technology serves as a roadmap for developing new plant lines with tailor-made profiles.</p>	<p>Established proprietary bioinformatics platform and cutting-edge molecular breeding platform in partnership with KeyGene; capabilities include genetic engineering and plant line development.</p>	<p>Multiple partnerships with top global breeders provide 22nd Century with both northern and southern hemisphere, indoor and outdoor, year-round plant breeding and trial capabilities.</p>	<p>Hemp-derived active ingredients extractor and finished products manufacturer providing customers with bulk ingredients and white label products</p>	<p>22nd Century offers an end-to-end, high-value add solution for leading nutraceutical, consumer products and pharmaceutical companies entering the ascendant cannabis market</p>
Number of Participants	Few	Dozens (Few are advanced)	Few	Dozens (Very few are reputable and with scale)	Thousands

GVB OFFERS A DIVERSE RANGE OF BEST-IN-CLASS QUALITY CANNABINOIDS AND CANNABINOID INFUSED PRODUCTS

GVB BIOPHARMA™
Key Cannabinoids

Cannabinoid	Abbreviation
Cannabidiol Isolate	CBD Isolate
Cannabidiol Broad Spectrum Distillate	CBD BSD
Cannabigerol Isolate	CBG Isolate
Cannabidiol Crystal Resistant Distillate	CBD CRD
Compliant Broad-Spectrum Distillate	Compliant BSD
Cannabidiol THC-Free Crude	CBD THC-Free Crude
UK Compliant Broad-Spectrum Distillate	UK Compliant BSD
Cannabinol Isolate	CBN Isolate
Cannabichromene Isolate	CBC Isolate
Cannabidiolic Acid	CBDA



White Label Contract Manufacturing Product Offering

Tinctures	Gel Capsules	Gummies	Mints	Tablets	Topical	Vape Pens
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WORLD-SCALE MANUFACTURING CAPACITY

GVB operates three primary manufacturing facilities, which have recently been invested in and have significant capacity to support growth with very limited additional capital expenditure.

The Company currently operates:

- **Grass Valley, Oregon:** 30,000 sq ft; refinement facility
- **Las Vegas, Nevada:** 40,000 sq ft; used for Private Label/Contract Manufacturing
- **Prineville, Oregon:** World-scale crude extraction capacity in excess of 20,000 kg/month

GVB sources hemp from trusted agricultural partners who adhere to GVB's rigorous quality parameters.

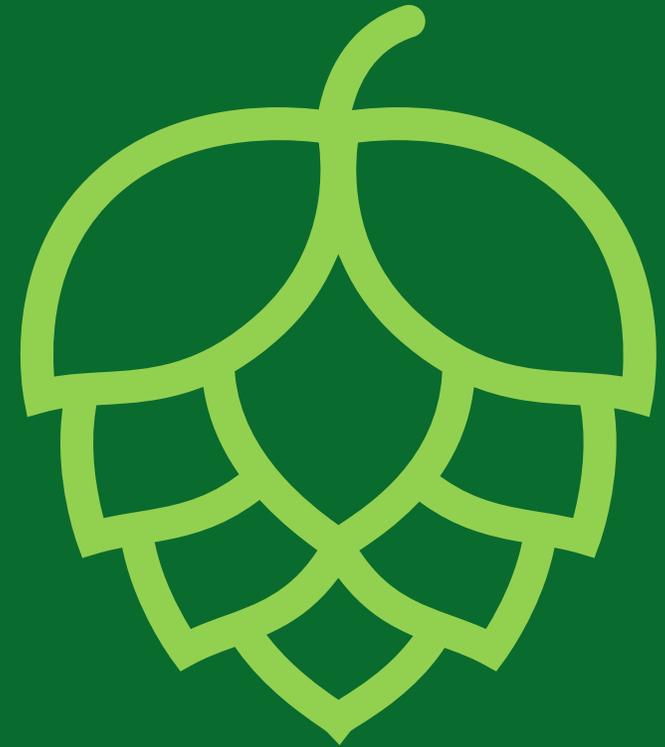


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22ND CENTURY'S HOPS VALUE PROPOSITION

22nd Century is leveraging its experience with tobacco and hemp/cannabis, a close hop relative, to accelerate the development of proprietary specialty hop varieties or valuable traits.

- 1 Introduce new agronomic traits to improve disease/pest resistance and plant architecture to increase crop yields in leading hop strains that are already well-accepted by the brewing industry

- 2 Increase hops content of hops active molecules that drive the beer industry, such as alpha and beta acids, plus new compounds like terpenoids and flavonoids not generally associated with hops to produce new, disruptive, unique, and proprietary aromatic hop flavor profiles

- 3 Increase hops content of active molecules with health and wellness applications as extracts/distillates in functional foods and beverages, nutraceuticals, and pharmaceuticals (Xanthohumol and 8-prenylnaringenin)

Hops Growers



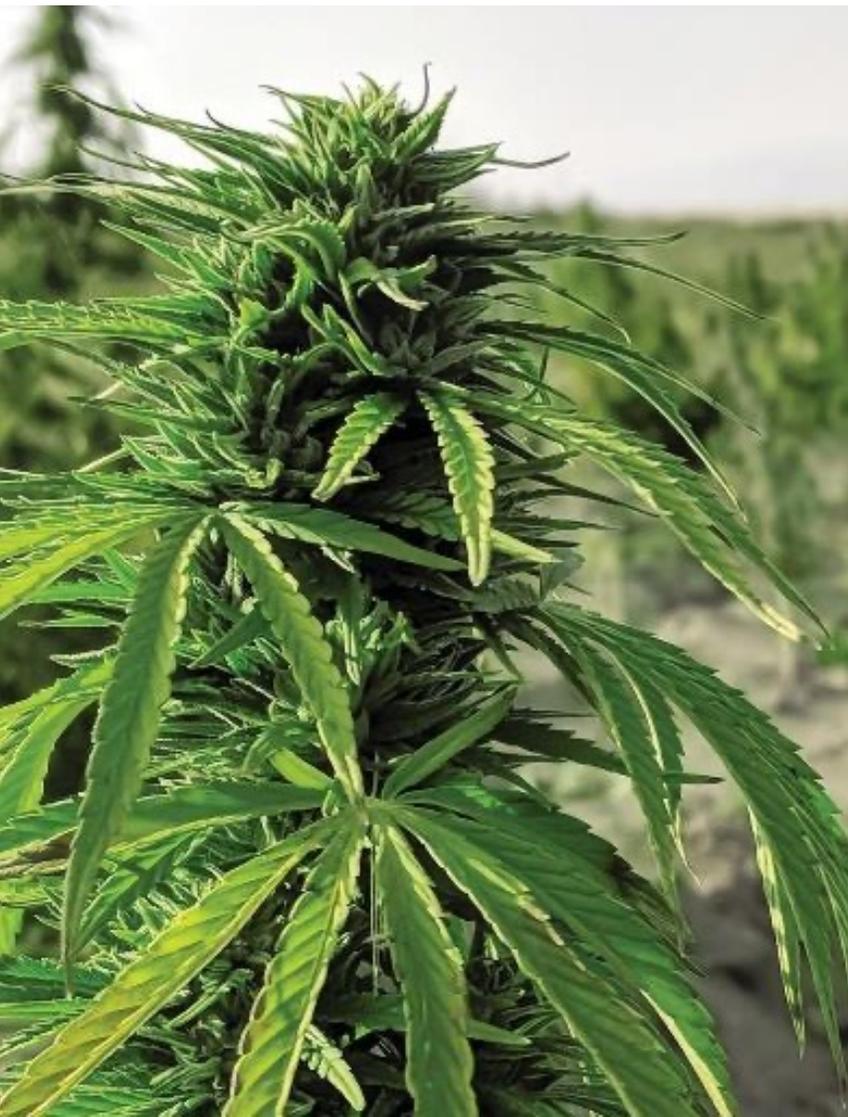
Industry Leadership



Consumer Goods and Nutraceutical Companies



KEY INITIAL HOPS OPPORTUNITIES



Application	Targeted Benefit
Agronomic traits/powdery mildew, downey mildew, fusarium, and wireworm (disease resistance/pest resistance)	Crop loss can be as much as 30% of the yield depending on region and year
Architecture traits/ratio cone/biomass and lupulin density	Success can generate 20-60% increase in yield
Consumer traits/Alpha and Beta acids beer are industry drivers	Stabilize the content and tailor to meet specific requirements from brewers
Terpenoids/flavonoids (oils) are new flavor drivers	This trait may have a more significant impact creating new disruptive, unique and proprietary aromatic hops flavor profiles for the brewing industry.
Xanthohumol and 8-prenylnaringenin potential nutraceuticals and pharmaceuticals	Addressing a broad range of opportunities including managing anxiety, inducing calm, addressing sleeping disorders, resolving stomach problems, and other wellness applications

22nd Century is actively engaged in discussions with multiple hops growers and consumer product partners to develop specific desired traits.

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SECOND QUARTER 2022 FINANCIAL HIGHLIGHTS

	Net Revenues	Gross Profit	Gross Profit Margin ¹	Operating Loss
2Q 2022	\$14.5M	\$892K	6.1%	\$(10.5)M
2Q 2021	\$8.4M	\$448K	5.3%	\$(6.6)M
<p>+73% QoQ Net Revenues; \$4.5M due to acquisition of GVB 80 BPS increase YoY gross profit margin</p>				

1. Gross profit margin is calculated by dividing net revenues by gross profit.

SECOND QUARTER 2022 FINANCIAL HIGHLIGHTS

	Tobacco			Hemp/Cannabis ²
	6/30/2022	6/30/2021	Change	6/30/2022
Net revenues	\$ 10.0M ¹	\$ 8.3M	19%	\$ 4.5M
Gross Profit	\$ 1.0M ²	\$ 0.5M	99%	\$(0.1M) ³
Gross Profit Margin	10.0%	5.3%	470 bps	(1.2%) ^{3, 4}

1. Revenue from tobacco related products was \$10.0 million, an increase of 19% from 2021.
2. Tobacco gross profit margin increase QoQ reflects favorable change in mix of tobacco contract manufacturing volumes.
3. Reflects operations of GVB for approximately half of the second quarter; prior period hemp/cannabis is nil.
4. Excluding the impact of the GVB acquisition, which included \$1.0 million of inventory step-up amortization, hemp/cannabis gross profit margin would have been approximately 22%.

**Acquisition of GVB
expected to double
consolidated revenues**

GVB ACQUISITION PRELIMINARY PURCHASE PRICE ALLOCATION*

Dollar amounts in millions	Acquisition Date May 13, 2022
Current assets, excluding inventory	\$ 3.4
Inventory	\$ 5.3
Other assets	\$ 1.1
Property, plant & equipment and ROU lease asset	\$ 8.9
Goodwill and intangibles*	\$44.2
Accounts payable and accrued expenses	(\$ 3.9)
Leases and other liabilities	(\$ 1.3)
Bridge loan	(\$ 4.3)
<i>Fair value of net assets acquired</i>	\$53.4

* Reflects provisionally estimated fair values for the assets purchased, liabilities assumed and purchase consideration as of the date of the acquisition. The determination of estimated fair value required management to make significant estimates and assumptions. The amounts reported are considered provisional as the Company is completing the valuations that are required to allocate the purchase price in areas such as property and equipment, intangible assets, deferred taxes and goodwill. As a result, the allocation of the provisional purchase price may change in the future, which could be material.

SUMMARY BALANCE SHEET ITEMS

Dollar amounts in millions	Balance sheet date as-of:	
	June 30, 2022	December 31, 2021
Cash and cash equivalents ¹	\$ 26.3*	\$ 48.7
Total assets ²	\$ 119.4	\$ 76.0
Total liabilities	\$ 20.0	\$ 9.9
Total shareholders' equity	\$ 99.4	\$ 66.1

1. Cash and cash equivalents includes short-term investment securities.

2. 2022 figure includes recognition of \$44.2m of goodwill and intangibles in connection with the acquisition of GVB

***Additional \$35M gross proceeds capital raise for growth from registered direct offering in July 2022**

CONTACT INFORMATION

INVESTOR RELATIONS CONTACT

Mei Kuo

22nd Century Group, Inc.

Director, Communications & Investor Relations

mkuo@xxiicentury.com

Matt Kreps

Darrow Associates Investor Relations

T: 214-597-8200

mkreps@darrowir.com