



White Paper

Business Planning for Cannabis Greenhouses

October 15, 2016

Background

When developing a cannabis grow operation, preparing a business model is crucial to financial viability. Achieving significant profit levels can be challenging due to an increasingly competitive environment with turbulent price changes and rising costs. By focusing on a financial model, which emphasizes strong revenue growth, cost management, and optimum efficiency, the grow operation can generate sufficient profit and avoid the downside consequences of tightening economics in the cannabis industry.

With a System 420™ hybrid greenhouse from [Nexus](#), the grower can receive the privacy benefits of the indoor grow and the modern agricultural practices of the greenhouse. Cannabis crop efficiency, reduced operating costs, natural sunlight, and a healthier work atmosphere may be achieved in a hybrid greenhouse growing environment.

As a greenhouse manufacturer, [Nexus](#) designs high quality, commercial greenhouses for the traditional horticulture and the emerging cannabis markets. The company partners with supplemental equipment providers, and manages integrated greenhouse development. This white paper outlines several items to consider for increasing cannabis greenhouse financial viability.

Model

The model below contains assumptions and estimates generated by Nexus employees and outside vendors. The information is a starting point for further discussions with client accountants, attorneys, insurance brokers, and consultants, yet is not considered a turnkey model. Please perform your own due diligence prior to launching a new business venture.

Based on a 12,000 sf greenhouse + 3,936 sf of warehouse space = 15,936 overall project size

Assumptions

1 - 46 lbs./week x 52 weeks/year = 2,392 lbs./year x \$1,525 (wholesale, price-adjusted for excise tax) = \$3,647,800/12,000 = \$304/sf (www.cannabisbenchmarks.com/weekly-report.html)

2 - Cost of Goods Sold – Includes growing supplies (\$50,000), utilities (\$192,000), labor directly related to cultivation, \$206,880 including one head grower at \$30/hour (\$60,000), four assistant growers at \$17/hour (\$36,720). Social Security and Medicaid taxes at 7.5% (\$15,516) and employee benefits (\$51,720). Growing supplies are different types of fertilizers and growing nutrients including soils, potting materials, pest control, supplemental nutrients (www.generalcann.com/soil-soilless-grow-media)

3 – With an estimated overall construction cost of \$956,160 (greenhouse + warehouse) based on \$40/sf plus an additional \$20/sf for construction along with a financing assumption of 5 years at 12% interest. The figure in the model is 20% of the five-year cost.

4 – Overall non-greenhouse related equipment estimate of \$40,000 for office furnishings, vehicle, warehouses equipment average over five years.

5 – Two office assistants at \$17/hour (\$36,720), one maintenance worker at \$15/hour (\$32,700). Labor involved in growing is allocated to Cost of Goods Sold. (www.hightimes.com/culture/entry-level-bud-trimmers-work-their-way-up-to-high-salaries)

6 – Employer portion of Social Security & Medicaid = 7.5%

7 – Employee benefits including health insurance and other items at 25% of salaries

8 – Calculated by an Actual Value (\$956,160) x Assessment Rate (0.29) = Assessment Value (\$277,286) x Tax Rate (0.075541) = Taxes Due (\$20,946) <http://www.douglas.co.us/documents/property-valuation-and-taxation-for-businessindustry.pdf>

9 – Overall business insurance = structural, property, crop, and general liability (www.ahernagency.com)

10 – Compliance software at a flat rate of \$4,800 per year (www.mjfreeway.com)

11 – 4 hrs. per week at \$200/hr

12 – 2 hrs. per week at \$300/hr

13 – Based on a business metric of .65% of revenue as a wholesale company for a marketing budget

14– Lighting (\$8.00), Electricity – Other (\$2.00), Natural Gas (\$2.00), Water (\$2.00), Extra (\$2.00) The growing portion utility cost is \$192,000 (\$16/sf) and the non-growing utility portion is \$11,952 (\$3/sf)

15 – Estimated delivery mileage of 1,500 miles per month with a rate of \$1.67 per mile (www.dat.com)

16 – Consultants to assist with growing operations

17 – Contingency amount of \$20,000 for unexpected expenses (3% of total costs)

Table

Assumption	Driver	SF Basis	Total	Percentage
1	Revenue	240.00	3,647,800	100.00
2	Cost of Goods Sold	32.39	516,116	14.15
	Gross Revenue		3,131,684	85.85
3	Building Finance	16.03	255,240	7.00
4	Equipment	0.50	8,000	0.22
5	Non-Growing Labor	6.66	106,140	2.91
6	Payroll Taxes	0.50	7,961	0.22
7	Employee Benefits	1.67	26,535	0.73
8	Business Per. Prop. Tax	1.32	20,946	4.06
9	Business Insurance	0.88	14,060	0.39
10	Compliance	0.30	4,800	0.13
11	Accounting	2.61	41,600	1.14
12	Legal	1.96	31,200	0.86
13	Marketing	1.51	24,000	0.66
14	Non-Growing Utility	1.00	11,952	0.33
15	Freight	1.89	30,060	0.82
16	Consultant	1.88	30,000	0.82
17	Contingency	1.26	20,000	0.55
	Total Costs	39.96	632,494	20.82
	Net Income	200.04	2,499,191	65.03
	Taxes on Gross Profit	73.07	1,096,089	35.00
	After-Tax Profit	93.54	1,403,101	30.03

Key Financial Drivers

The business model for cannabis can be robust, yet managers seeking to generate a solid profit may want to keep an eye on certain financial drivers. Influential financial drivers include:

- Revenue
- Cost of Goods Sold
- Building Finance
- Labor (includes taxes & employee benefits)

A sharp focus on these areas will drive the overall financial health of the business operation. An inaccurate estimate for accounting or growing supply line items will have only a modest impact on the company's after-tax profit. However, inflated costs for the three largest cost drivers of building finance, labor, and cost of goods sold will substantially impact the bottom line. These three cost drivers add up to 76% (\$877,496) of the total cost figure (\$1,148,610). At the same time, under-performing revenue totals can significantly tighten the model especially as prices fall due to increased competition.

Building

One of the most important strategic business decisions is where to grow especially when deciding between a greenhouse and warehouse. With a turnkey figure of \$60 per sq. ft. for greenhouses compared to \$115 to \$140 for warehouses, the savings for the growing operation in a greenhouse can range from 48% to 59%. See a comparison below:

Greenhouse	Indoor
<ul style="list-style-type: none"> • Approximately \$20 - \$40 per sq. ft. for the greenhouse materials costs including structure, heating, cooling, environmental controls, light deprivation, supplemental lighting, and the additional greenhouse equipment. • The construction costs for the project will run approximately \$20 per sq. ft. • The overall turnkey costs for the greenhouse are \$40 - \$60 per sq. ft. depending upon the equipment selections made by the customer. • If the greenhouse will be built on undeveloped land 	<ul style="list-style-type: none"> • An indoor grower starts with a vacant warehouse • Estimated costs to retrofit the warehouse for growing capabilities and add the necessary equipment is \$100 to \$125 per sq. ft. • Warehouse purchase rates in the City of Denver are around \$100 per sq. ft. • Lease rates are near \$15 per sq. ft. per year.

<p>where water, electrical, and sewage lines do not exist, then an additional \$20-\$25 per sq. ft. may be needed.</p> <ul style="list-style-type: none"> • Purchase costs for land range from \$5,000 to \$10,000 per acre in rural areas with considerably higher costs in urban areas <p>www.landandfarm.com</p>	<p>www.yourgreencontractor.com</p>
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Labor

Staffing levels depend upon many factors, such as the specific crop output, number of customers, employee skills, and experience. A team of eight employees can operate a facility of 15,936 sf on a daily basis, and additional staff increases can be made when the grow operation expands. Since many employees are new to the industry, there will need to be an emphasis on training by outside consultants to ensure skill development goals are met.

Utilities

The management of utilities is the most important area of daily operations. Given the grow operation's size and energy consumption patterns, this area can significantly impact profit levels. Working inside a greenhouse with a lower need for artificial lighting reduces energy consumption up to 67% compared to a warehouse. To ensure this level of savings occurs, equipment and greenhouse maintenance work will need to be performed multiple times per year as well as on an as-needed basis. An effective environmental control system with a solid utilization effort can make the best use of greenhouse equipment, which will increase crop output and reduce energy costs.

Growing Supplies

A crucial cost line item is for growing supplies including fertilizers, and nutrients. Although not one of the high impact cost drivers, this consistently needed cost item is a vital part of the growing operation.

Consultants

In most new businesses, obtaining outsourced expertise is important to developing a competitive advantage and maintaining efficient operations. In the cannabis industry, sound growing knowledge is essential. Hiring a competent and ethical consultant can be one of the best decisions made by an emerging cannabis company.

At the same time, this industry has a surprisingly high number of opportunistic consultants, who are looking to generate their own quick profit at the expense of their customers. With the tightening economics of cannabis, hiring the wrong consultant can bring significant economic consequences.

Contingency

Setting aside financial reserves for unexpected expenses is usually a good idea. Forecasting every expense that will occur throughout the year is nearly impossible for a new business.

Percentage Metrics

In an unpredictable industry, one of the best ways to manage costs is through percentages. With a 35% tax rate on gross profit, there is added pressure to manage costs to preserve a strong overall profit (after-tax) level. To maintain a profit of 30%, total costs plus cost of goods sold should not exceed 35%. Since these percentages are all inter-connected, watching each percentage will keep the model in perspective.

Conclusion

The cannabis industry is a turbulent one. Unpredictable demand, increased competition among producers, falling prices, and changing laws brings a high degree of volatility. Although important to any business, a fluid business plan is essential in the cannabis industry. We highly recommend taking the time to develop a customized business plan. Our intention is to contribute to the planning process and make the preparation of the business plan an easier project to complete.

About Nexus

Nexus Corporation has served the greenhouse industry as a top US manufacturer since 1967. With a corporate office and production facility in Northglenn, CO along with an advanced manufacturing plant in Pana, IL, the company brings innovative designs, high quality products, and exceptional customer service to its [System 420™](#) hybrid greenhouse systems.

Nexus has a team of engineers (licensed in 49 states), sales, project management, customer service, and operations professionals dedicated to managing a greenhouse development project from start to finish. The team has expertise regarding the customized design components, efficiency features, and cost management strategies necessary to maximize crop yields and return-on-investment.

For more information on greenhouses from Nexus Corporation, [click here](#).

Sources

www.nexuscann.com

www.nexuscorp.com

www.medmj.info

www.medicinemandenver.com

www.ahernagency.com

www.cannalawblog.com

www.generalcann.com

www.cannabisbenchmarks.com

www.dat.com

www.landandfarm.com

www.yourgreencontractor.com

www.douglas.co.us

