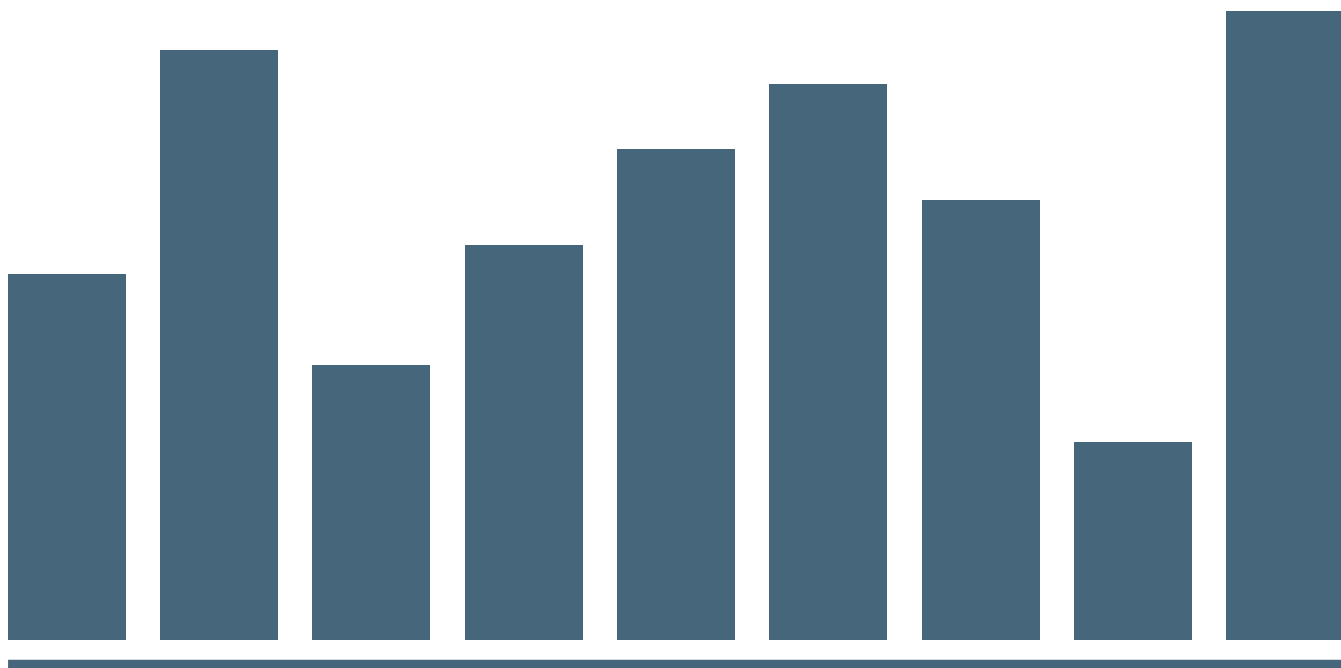


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# Marijuana Business Factbook 2016

Exclusive Financial Data For Cannabusinesses & Major Investors



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Business **Daily**<sup>™</sup>

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## **Marijuana Business Factbook 2016**

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# Table of Contents

<b>INTRODUCTION .....</b>	<b>xi</b>
From the Editor .....	xi
Introduction.....	xiii
5 Key Takeaways.....	xiv
Who's Behind This Factbook? .....	xvii
Executive Summary: 12 Key Charts.....	xviii
<b>Chapter 1: National Cannabis Industry Facts, Figures &amp; Trends .....</b>	<b>1</b>
Chart 1.01: U.S. Cannabis Sales Estimates: 2013-2020 .....	2
Chart 1.02: U.S. Cannabis Industry Total Economic Impact: 2013-2020.....	4
Chart 1.03: Cannabis Annual Sales Vs Other U.S. Industries & Goods .....	5
International Markets .....	6
Chart 1.04: Estimated Number Of Cannabis Businesses In The U.S.: 2016.....	7
Chart 1.05: Estimated Total Employment In The Cannabis Industry: 2016 .....	7
Chart 1.06: When Cannabis Businesses Were Founded.....	8
Chart 1.07: Portion Of Female Executives In The Cannabis Industry .....	8
Chart 1.08: Which States Have Open Medical Dispensaries And Recreational Stores?.....	9
Chart 1.09: Time Between Legalization/Regulation Of Medical Cannabis Sales To Opening Of First Dispensary: States That Came Online Since Jan. 1, 2015.....	10
Chart 1.10: Time Between Recreational Cannabis Legalization & First Store Opening.....	11
Chart 1.11: Nationwide MMJ Patient Counts: 2013-2016.....	12
Chart 1.12: Portion Of Cannabis Companies That Operate On A Not-For-Profit Basis.....	13
Chart 1.13: Portion Of Cannabis Businesses That Operate In More Than One U.S. State.....	14
CBD-Only States.....	15
<b>CANNABIS INDUSTRY SECTORS: KEY METRICS .....</b>	<b>16</b>
Chart 1.14: Typical Cannabis Company Startup Costs & Annual Operating Expenses By Sector.....	16
Chart 1.15: Cannabis Company Typical Net Profit Margin & Annual Revenue By Sector .....	17
Chart 1.16: Typical Number Of Full- And Part-Time Employees Per Cannabis Business, By Sector .....	17
Chart 1.17: Typical Cannabis Company Annual Revenue Per Full-Time Employee.....	18
Chart 1.18: Average Annual Revenue Per Square Foot: Cannabis Vs Other Retailers .....	18
Chart 1.19: Length Of Time To Break-Even/Profitability: Cannabis Companies .....	19
Chart 1.20: Portion Of Revenue-Generating Cannabis Businesses That Are Profitable .....	20
Market In Focus: Washington State Point-of-Sale Data .....	21
Chart 1.21: Quarterly Retail Cannabis Sales & Growth Rates: Washington State.....	21

Chart 1.22: Washington State Monthly Total Retail Cannabis Sales Vs Average Price Per Gram .....	22
Chart 1.23: Composition Of Quarterly Retail Cannabis Sales By Product Category: Washington State .....	23
Chart 1.24: Cannabis Sales Growth Rates By Product Category From Q3 2014 To Q3 2015: Washington State.....	24
THE BANKING CHALLENGE .....	25
Chart 1.25: Cannabis Companies' Access To Bank Accounts.....	25
Chart 1.26: Marijuana Suspicious Activity Reports Filed By Financial Institutions: February 2014-January 2015 .....	26
Marijuana As A Commodity: National Wholesale Pricing Insights .....	27
Chart 1.27: Current Average Wholesale Cannabis Prices By State.....	27
Chart 1.28: Weekly Wholesale Cannabis US Spot Index: April 2015-January 2016.....	28
Chart 1.29: Current Average Wholesale Cannabis Prices By State & Cultivation Method .....	29
Chart 1.30: Medical Vs Recreational Average Wholesale Cannabis Price: Colorado, Washington State & Oregon .....	30
Chart 1.31: Range Of Wholesale Cannabis Prices By State: August 2015 Through January 2016 .....	31
DOMESTIC CANNABIS INDUSTRY OUTLOOK.....	32
Chart 1.32: Top Challenges For Cannabis Businesses.....	32
Chart 1.33: Cannabis Entrepreneurs' Outlook For The Next 12 Months By Sector .....	33
Chart 1.34: Retailers, Infused Product Makers & Wholesale Cultivators That Predict A "Booming" Business For The Next 12 Months: 2014-2016.....	34
Regulatory Compliance At A Glance: Top Issues & Infractions.....	35
Chart 1.35: Top 7 Regulatory Compliance Infraction Types In Colorado: CO Medical & Recreational Businesses ...	35
Chart 1.36: Fastest Growing Areas Of Regulatory Noncompliance In Colorado: All Medical & Recreational Businesses.....	36
Chart 1.37: Most Common Regulatory Compliance Infraction Types From July 2015-December 2015: CO Medical & Recreational Retailers.....	36
Chart 1.38: Most Common Regulatory Compliance Infraction Types From July 2015-December 2015: CO Medical & Recreational Cultivators.....	37
Chart 1.39: Most Common Regulatory Compliance Infraction Types From July 2015-December 2015: Colorado Medical & Recreational Infused Product Makers.....	37
Chart 1.40: Change In Most Common Infraction Types Over Time: CO Medical & Recreational Retailers.....	38
Chart 1.41: Change In Most Common Infraction Types Over Time: CO Medical & Recreational Cultivators .....	39
Chart 1.42: Change In Most Common Infraction Types Over Time: CO Medical & Recreational Infused Product Makers .....	40
Chart 1.43: Average Regulatory Compliance Audit Scores In 2015: CO Medical & Recreational Retailers.....	41
Chart 1.44: Average Regulatory Compliance Audit Scores In 2015: CO Medical & Recreational Cultivators .....	42
Chart 1.45: Average Regulatory Compliance Audit Scores In 2015: CO Medical & Recreational Infused Product Makers .....	42
<b>Chapter 2: State-By-State: Legal Overview, Market Data and Outlook.....</b>	<b>45</b>
Table 2.1: State Stability and Opportunity Rankings .....	47
Map 2.1: US Marijuana Laws and Dispensary Numbers.....	48

ALASKA – Medical Marijuana .....	50
ALASKA – Recreational.....	51
ARIZONA – Medical Marijuana.....	53
CALIFORNIA – Medical Marijuana.....	55
COLORADO – Medical Marijuana.....	57
COLORADO – Recreational .....	59
CONNECTICUT – Medical Marijuana.....	61
DELAWARE – Medical Marijuana .....	63
HAWAII – Medical Marijuana .....	65
ILLINOIS – Medical Marijuana.....	67
MAINE – Medical Marijuana.....	69
MARYLAND – Medical Marijuana .....	71
MASSACHUSETTS – Medical Marijuana.....	73
MICHIGAN – Medical Marijuana.....	75
MINNESOTA – Medical Marijuana.....	77
MONTANA – Medical Marijuana.....	79
NEVADA – Medical Marijuana.....	81
NEW HAMPSHIRE – Medical Marijuana.....	83
NEW JERSEY – Medical Marijuana.....	85
NEW MEXICO – Medical Marijuana.....	87
NEW YORK – Medical Marijuana.....	89
OREGON – Medical Marijuana.....	91
OREGON – Recreational.....	93
RHODE ISLAND – Medical Marijuana.....	95
VERMONT – Medical Marijuana.....	97
WASHINGTON DC – Medical Marijuana.....	99
WASHINGTON DC – Recreational .....	100
WASHINGTON STATE – Medical Marijuana.....	101
WASHINGTON STATE – Recreational .....	103
CANADA – Medical Marijuana.....	105

### **Chapter 3: Financial & Operational Data: Medical Dispensaries, Recreational Stores & Wholesale Cultivators ..... 107**

RETAILERS: MEDICAL DISPENSARIES & RECREATIONAL STORES .....	107
Retailer Startup Costs & Operations.....	108
Chart 3.01: Sampling Of Retail Startup Costs.....	108
Chart 3.02: Sampling Of Retail Startup Costs By State.....	109
Chart 3.03: Retail Businesses By Year Launched .....	110
Chart 3.04: Typical Retailer Startup Costs For Businesses Launched In The Past Two Years.....	112
Chart 3.05: Breakdown Of Startup Costs For Medical & Recreational Retailers .....	113
Chart 3.06: What Portion Of Recreational Shops Were Built Off Existing MMJ Dispensaries? .....	114

Chart 3.07: Recreational Shops Built Off Existing MMJ Dispensaries: What Portion Are Co-Located? .....	115
Chart 3.08: What Portion Of Retail Businesses Are Generating Revenue? .....	115
Retailer Product Mix .....	116
Chart 3.09 (3.11): Retail Revenues By Product Type .....	116
Retailer Revenue Figures .....	117
Chart 3.17: Typical Annual Revenue Per Retail Location .....	117
Market In Focus: .....	118
Washington State Point-of-Sale Data .....	118
Chart 3.10: Change In Flower Dollar Sales Versus Average Price Per Gram In Washington State: 2014-2015 .....	118
Chart 3.11: Flower Sales By Genus In Washington State: Q3 2015 .....	119
Chart 3.12: Total Sales Of Top 10 Cannabis Strains In Washington State: Q3 2014 Through Q3 2015 .....	120
Chart 3.13: Change In Concentrate Dollar Sales Versus Average Price Per Gram In Washington State: 2014-2015 .....	120
Chart 3.14: Concentrate Sales By Sub-Category In Washington State: Q3 2015 .....	121
Chart 3.15: Change In Edible Dollar Sales Versus Average Price Per Unit In Washington State: 2014-2015 .....	122
Chart 3.16: Edible Sales By Sub-Category In Washington State: Q3 2015 .....	123
More Retailer Revenue Figures .....	124
Chart 3.18: Typical Annual Revenue Per Retail Location: Purchase Wholesale Vs Grow In-House .....	124
Chart 3.19: Sampling Of MMJ Dispensary Annual Revenue Per Location By State .....	125
Chart 3.20: Sampling Of Recreational Store Annual Revenue Per Location By State .....	125
Retailer Operational Data .....	126
Chart 3.21: Allocation Of Monthly Operating Expenses For Medical & Recreational Retailers .....	126
Chart 3.22: Marketing, Advertising & PR As Percent Of Retailers' Monthly Budget .....	127
Chart 3.23: Number Of Store Locations: Dispensary Vs Recreational Store .....	128
Chart 3.24: Retail Square Footage: Dispensary Vs Recreational Store .....	129
Chart 3.25: Typical Retailer Annual Revenue Per Retail Square Foot .....	130
Chart 3.26: Number Of Employees: Dispensaries & Recreational Stores .....	131
Chart 3.27: Customers Served Per Retail Location Per Day: Dispensary Vs Recreational Store .....	132
Chart 3.28: Transaction Amount Per Patient/Customer .....	132
Chart 3.29: Portion Of Retail Marijuana Businesses That Are Profitable .....	133
Chart 3.30: How Long Does It Take Retailers To Hit Profitability? .....	134
Chart 3.31: Sampling Of Average Profit Margin By Type Of Dispensary/Store .....	135
Chart 3.32: Markup Between Wholesale Cost & Price To Patient/Customer .....	136
Chart 3.33: Total Cultivation Square Footage: Retailers That Exclusively Or Partially Grow In-House .....	137
Chart 3.34: Number Of Strains Grown: Retailers That Exclusively Or Partially Grow In-House .....	138
Chart 3.35: Portion Of Cannabis Cultivated Organically: Retailers That Exclusively Or Partially Grow In-House .....	139
Chart 3.36: Retailer Year-Over-Year Profitability .....	140
WHOLESALE CULTIVATORS .....	140
Chart 3.37: Which Markets Do Wholesale Cultivators Serve? .....	141
Wholesale Cultivation Startup Costs .....	141

Chart 3.38: Typical Wholesale Cultivator Startup Costs Per Square Foot By Cultivation Type: 2014-2015.....	142
Chart 3.39: Typical Wholesale Cultivator Startup Costs Per Square Foot Based On The Market Served.....	143
Chart 3.40: Breakdown Of Wholesale Cultivator Startup Costs By Cultivation Type.....	144
Cultivation Methods & Technology .....	145
Chart 3.41: Where Do Wholesale Cultivators Grow Cannabis: Indoor, Outdoor, Greenhouse? .....	145
Chart 3.42: Combo Method Cultivators: What Portion Is Grown Indoors?.....	146
Chart 3.43: Combo Method Cultivators: What Portion Is Grown Outdoors? .....	147
Chart 3.44: Combo Method Cultivators: What Portion Is Grown In Greenhouses?.....	148
Chart 3.45: Which Lighting Technologies Do Indoor Wholesale Cultivators Use?.....	148
Wholesale Cultivator Revenue & Operations .....	149
Chart 3.46: What Portion Of Wholesale Cultivators Are Generating Revenue?.....	149
Chart 3.47: Typical Total Annual Revenue By Cultivation Method: Wholesale Cultivators .....	150
Chart 3.48: Wholesale Cultivator Typical Annual Revenue Per Square Foot By Cultivation Method.....	150
Chart 3.49: Allocation Of Monthly Operating Costs For Wholesale Cultivators By Cultivation Type.....	151
Chart 3.50: What Portion Of Wholesale Cultivators Lease Their Commercial Space? .....	152
Chart 3.51: Wholesale Cultivator Typical Monthly Operating Expenses Per Square Foot .....	152
Chart 3.52: Size Of Wholesale Cultivator Grow Space.....	153
Chart 3.53: Snapshot Of How Wholesale Cultivation Costs Relate To Cultivation Type & Size .....	154
Chart 3.54: Wholesale Cultivator Full- & Part-Time Staff Size.....	155
Chart 3.55: Typical Number Of Employees By Size Of Grow Space: Wholesale Cultivators .....	156
Chart 3.56: Average Number Of Strains Grown By Cultivation Method: Wholesale Cultivators.....	156
Chart 3.57: Portion Of Wholesale Cannabis Grown Organically: Wholesale Cultivators.....	157
Wholesale Cultivator Profitability .....	158
Chart 3.58: Portion Of Wholesale Cultivators That Are Profitable.....	158
Chart 3.59: Profitable Wholesale Cultivators: Net Profit Margin.....	159
Chart 3.60: How Long Does It Take Wholesale Cultivators To Hit Profitability, By Cultivation Type? .....	160
Chart 3.61: Wholesale Grower Profitability: 2013-2015.....	161

## **Chapter 4: Infused Product Makers, Testing Labs & Ancillary Firms..... 163**

INFUSED PRODUCT MANUFACTURERS.....	164
Chart 4.01: Which Markets Do Infused Product Manufacturers Serve? .....	164
Infused Product Manufacturer Startup Costs .....	165
Chart 4.02: Infused Product Manufacturer Startup Costs: Processing In-House Vs Purchasing From Third Parties.....	165
Chart 4.03: Breakdown Of Startup Costs For Infused Product Manufacturers .....	166
Chart 4.04: Typical Startup Costs Per Square Foot: Infused Product Manufacturers .....	167
Chart 4.05: Median Infused Product Maker Startup Costs: Colorado, Oregon, California & Washington State.....	167
Infused Product Manufacturer Operations & Revenue .....	168
Chart 4.06: Which Products Do Infused Manufacturers Typically Make?.....	168
Chart 4.07: Portion Of Edible & Topical Makers That Perform Processing/Extraction In-House .....	169



Chart 4.08: What Portion Of Infused Product Makers Are Generating Revenue? .....	169
Chart 4.09: Typical Annual Revenue By Operation Type: Infused Product Makers.....	170
Chart 4.10: Median Infused Product Maker Annual Revenue: Colorado, Oregon, California & Washington State.....	171
Chart 4.11: Infused Product Manufacturer Typical Annual Revenue Per Square Foot.....	171
Chart 4.12: Infused Product Maker Typical Annual Revenue By Number Of Products Offered.....	172
Chart 4.13: Portion Of Infused Product Manufacturers That Operate In More Than One U.S. State.....	173
Chart 4.14: Allocation Of Monthly Operating Expenses For Infused Product Makers.....	174
Chart 4.15: Typical Monthly Operating Expenses Per Square Foot: Infused Product Makers.....	174
Chart 4.16: What Portion Of Infused Product Manufacturers Lease Their Commercial Space?.....	175
Chart 4.17: Infused Product Maker Production Facility Size .....	176
Chart 4.18: Number Of Products Infused Companies Offer .....	177
Chart 4.19: Number Of Dispensaries/Stores In Which Products Are Sold: Infused Product Makers .....	178
Chart 4.20: Number Of Full- And Part-Time Employees: Infused Product Makers.....	179
Chart 4.21: Typical Number Of Full-Time Employees By Number Of Products Made: Infused Product Manufacturers.....	180
Infused Product Manufacturer Profitability .....	180
Chart 4.22: How Long Does It Take Infused Product Makers To Hit Profitability?.....	180
Chart 4.23: Profitability Breakdown: Infused Product Makers That Are Generating Revenue .....	181
Chart 4.24: Snapshot Of Net Profit Margin: Profitable Infused Product Manufacturers .....	182
Chart 4.25: Profit Margins Of Infused Product Makers Compared To Other Consumer Goods Industries .....	183
Chart 4.26: Infused Product Maker Profitability: 2013-2015.....	183
CANNABIS TESTING LABORATORIES .....	184
Chart 4.27: Which Markets Do Testing Labs Serve? .....	184
Chart 4.28: What Portion Of Testing Labs Are Generating Revenue? .....	185
Chart 4.29: Typical Startup Costs, Annual Operating Expenses & Annual Revenue Per Square Foot: Testing Labs .....	186
Example 1: DigiPath Income Statement For Last Three Fiscal Years (Which End Sept. 30).....	187
Example 2: Pazoo. Income Statement For Last Three Fiscal Years (Which End Dec. 31) .....	188
Chart 4.30: Testing Lab Facility Size.....	189
Chart 4.31: Cannabis Testing Method Primarily Used By Labs .....	189
Chart 4.32: Types Of Cannabis Testing Performed By Labs .....	190
Chart 4.33: Types Of Cannabis Testing Cultivators, Infused Product Makers & Retailers Demand .....	191
Chart 4.34: Number Of Cannabis Samples Tested Per Month Per Lab.....	191
Chart 4.35: Cannabis Sample Testing Time Turnaround.....	192
Chart 4.36: How Many Cannabis Clients Do Testing Labs Typically Serve? .....	193
Chart 4.37: Portion Of Cannabis That Is Lab-Tested: Retailers, Cultivators, Infused Companies.....	194
Chart 4.38: Why Cultivators, Infused Product Makers & Retailers Don't Offer Tested Cannabis .....	194
ANCILLARY COMPANIES .....	195
Chart 4.39: When Were Ancillary Cannabis Businesses Founded?.....	195
Chart 4.40: Portion Of Ancillary Businesses That Solely Serve The Cannabis Industry .....	196
Chart 4.41: Portion Of Ancillary Businesses That Are Generating Revenue.....	197
Chart 4.42: Top 10 States For Ancillary Company Headquarters.....	197

Chart 4.43: What Portion Of Ancillary Businesses Conduct Operations In More Than 1 U.S. State?.....	198
Ancillary Services Firms.....	198
Chart 4.44: Ancillary Services Firms: Breakdown Of Offerings.....	199
Chart 4.45: Average Number Of States Served By Service Type: Ancillary Services Firms.....	200
Chart 4.46: Ancillary Services Firms Active In Multiple States: Number Of States Served.....	201
Chart 4.47: Ancillary Services Firms That Serve Multiple Industries: Portion Of Revenue.....	201
Chart 4.48: Ancillary Services Firms: Number Of Marijuana Business Clients.....	202
Chart 4.49: Ancillary Services Firms: Typical Number Of Marijuana Business Clients By Service Type.....	203
Chart 4.50: Ancillary Services Firms: Typical Annual Revenue By Service Type & Number Of Cannabis Clients.....	203
Chart 4.51: Revenue-Generating Ancillary Services Firms: Profitability Breakdown.....	204
Chart 4.52: Profitable Ancillary Services Firms: Net Profit Margin.....	205
Ancillary Technology & Products Companies.....	205
Chart 4.53: Most Common Types Of Ancillary Technology & Product Offerings.....	206
Chart 4.54: Types Of Packaging Solutions Typically Offered By Packaging Companies.....	206
Chart 4.55: Ancillary Tech & Products Companies That Serve Multiple Industries: Portion Of Revenue Derived From Cannabis Sector.....	207
Chart 4.56: Ancillary Tech & Product Companies: Number Of Marijuana Business Clients Served.....	208
Chart 4.57: Ancillary Tech & Products Companies: Typical Number Of Marijuana Business Clients/Vendors By Product Type.....	209
Chart 4.58: Ancillary Tech & Products Companies: Typical Annual Revenue By Number Of Cannabis Clients.....	209
Chart 4.59: Revenue-Generating Ancillary Tech & Products Companies: Profitability Breakdown.....	210
Chart 4.60: Profitable Ancillary Tech & Products Companies: Net Profit Margin.....	211
<b>Chapter 5: Cannabis Business Funding &amp; Investing.....</b>	<b>213</b>
Chart 5.01: Source Of Capital To Launch: Operational Cannabis Businesses.....	213
Chart 5.02: Percent Of Marijuana Companies Backed By Founders' Savings & Personal Debt.....	214
THE INVESTMENT OPPORTUNITY: COMPANIES SEEKING FUNDING.....	214
Chart 5.03: Percent Of Existing Marijuana Businesses Actively Seeking Funding Or Planning To In 2016.....	215
Chart 5.04: Typical Marijuana Business Post-Launch Funding Sources.....	216
Chart 5.05: Portion Of Cannabis Businesses That Currently Need Loans.....	216
Chart 5.06: What Portion Of Cannabis Businesses Are Privately Held?.....	217
THE LANDSCAPE: INVESTORS FUNDING CANNABIS COMPANIES.....	217
Chart 5.07: How Long Active Investors Have Been Funding Marijuana Businesses.....	218
Chart 5.08: Funding Stages Targeted By Active & Potential Cannabis Investors.....	218
Chart 5.09: Portion Of Active Investors Who Exclusively Buy Public Stocks.....	219
Chart 5.10: Portion Of Active Investors In Private Companies Who Also Buy Cannabis Stocks.....	220
Chart 5.11: Types Of Investments Made By Active Investors/Targeted By Potential Investors.....	221
Chart 5.12: Typical Interest Rate Cannabis Investors Have Charged For A Loan.....	222
Chart 5.13: Typical Equity Portion Investors Receive For Investment.....	223
Chart 5.14: Typical Number Of Private Companies Active Investors Have Funded.....	224
Chart 5.15: Number Of Private Companies Investors Plan To Fund In 2016.....	224

Chart 5.16: Which Types Of Privately Held Marijuana Businesses Do Active Investors Prefer? .....	225
Chart 5.17: Typical Size Of Each Investment In A Privately Held Business: Active Investors .....	226
Chart 5.18: Total Investment To Date By Active Investors .....	227
Chart 5.19: How Much More Money Active Investors Plan To Invest In 2016 .....	227
Chart 5.20: How Much Potential Investors Plan To Invest in 2016 .....	228
Chart 5.21: Investments In Privately Held Cannabis Businesses: Typical Investor ROI .....	229
Chart 5.22: Performance Of 12 Marijuana Public Stocks In 2015 Vs Overall Market .....	230
Chart 5.23: Investments In Publicly Traded Cannabis Businesses: Typical Investor ROI .....	231
Chart 5.24: How Active Investors Find Private Cannabis Companies To Invest In .....	232
Chart 5.25: Active Investors' Primary Considerations When Evaluating Privately Held Cannabis Businesses .....	233
Chart 5.26: Top Mistakes Private Cannabis Businesses Make When Seeking Funding, According To Investors .....	233
THE REALITY: DEAL HIGHLIGHTS, WHAT CANNABIS COMPANIES NEED .....	234
Chart 5.27: Sampling Of Cannabis Company Single Capital Raises In 2015 .....	234
Chart 5.28: A Sampling Of How Much Money Businesses Are Currently Seeking .....	235
Chart 5.29: Cannabis Entrepreneurs Predict Their Business' Two-Year Valuation Increase .....	235
Chart 5.30: What Type Of Investments Have Cannabis Companies Offered To Angel Investors? .....	236
Chart 5.31: What Type Of Investments Have Cannabis Companies Offered To Venture Capital/Private Equity Investors? .....	237
Chart 5.32: Equity Portions Operational Cannabis Businesses Are Currently Offering In Exchange For Funding .....	237
Chart 5.33 (5.26): Interest Rates Operational Cannabis Businesses Are Currently Negotiating On Debt .....	238
Chart 5.34: Breakdown Of Planned Exit Strategies in the Cannabis Industry .....	239
Chart 5.35: What Primary Factor Would Cause Active Investors To Stop Funding Cannabis Businesses? .....	240

## Appendix

Methodology .....	241
Data Partners .....	246

# Introduction

## From the Editor

Welcome to the fourth edition of the Marijuana Business Factbook, produced by the research and editorial team at *Marijuana Business Daily*.

Four years ago, we set out to provide cannabis business executives, entrepreneurs and investors with an in-depth look at the marijuana industry, focusing on everything from national and state market projections to financial metrics for each sector. The inaugural Factbook was an instant success, meeting a deep need in an industry starved for data.

Since then, we've expanded the scope of our research, improved the quality of our data and delved into new areas of the cannabis industry – each and every year.

The popularity of the Factbook has grown along the way as well. It is now an indispensable tool for those running and investing in cannabis businesses as well as those hoping to get involved. In fact, we've heard from many executives who refer to it as “the cannabis bible” and carry around a dog-eared copy of the Factbook wherever they go.

If you own an older edition of the Factbook, please don't use it anymore. The marijuana industry has changed – to the tune of roughly a billion dollars in the past year alone.

Everything in this edition is new, from the charts to the data points to the state overviews to our retail sales estimates and projections. We re-researched and analyzed every bit of data. We revised our previous projections if warranted. And we've added a host of new information to help you make smart decisions, understand the market and identify opportunities.

Some of the new information you'll find within these pages:

- In-depth financial data for different operational models within each sector, such as infused products makers that perform all their own extractions vs. those that buy wholesale.
- Third-party data on wholesale cannabis pricing trends, regulatory and compliance issues, and point-of-sale transactions.

- New types of data, such as the average number of full-time vs. part-time employees, the number of states companies in each sector serve, typical mark-ups between retail and wholesale marijuana, and actual returns realized by cannabis investors.

Much of the operational data in this report stems from our annual online survey of cannabis professionals. This year's Factbook includes the responses of nearly 1,000 business owners, executives, entrepreneurs and investors. Their input helped give us a window into operational data for six key sectors of the industry: retail, cultivation, infused products, testing, ancillary technology/products and ancillary services. Additionally, survey responses serve as the backbone of an entire chapter on funding and investing.

As always, the 2016 Factbook also provides a detailed profile for each medical and recreational cannabis state (as well as Canada), covering everything from legal info and patient/customer stats to sales potential and our exclusive analysis of the business opportunities in each market.

We strive to provide realistic numbers grounded in reality, not make the industry appear bigger than it really is. We don't lobby, offer investments, provide consulting services or have any other reason to publish hype. So we present a conservative picture of the market and sales data.

As a result, our estimates for national and state-level retail marijuana revenues are often lower than many other projections out there. We believe a conservative approach will help you make sound business decisions, and we have a solid track record with our estimates despite the huge amount of uncertainty and lack of reliable data in general. In fact, most of our estimates from last year ended up being spot-on.

I'd like to thank our data analyst Becky Olson, the lead researcher/writer for the 2016 Factbook, as well as *Marijuana Business Daily* reporters John Schroyer and Omar Sacirbey for their contributions.

If you have any suggestions or want to provide feedback, please contact me at [chrisw@mjbizdaily.com](mailto:chrisw@mjbizdaily.com).

Best of luck with your cannabusiness endeavors,



A handwritten signature in black ink that reads "Chris Walsh". The signature is fluid and cursive, with the first name "Chris" written in a larger, more prominent script than the last name "Walsh".

Chris Walsh  
Managing Editor

**Note: Want to publish or use our charts and numbers somewhere else? The charts and tables in our Executive Summary are yours to use with proper attribution, as long as you don't alter them in any way. However, the rest of the 200 charts and tables in this Factbook are for your personal use only and may *not* be reproduced. We take copyright seriously – after all, it is our livelihood. Thank you for understanding.**

## INTRODUCTION

In most industries, business owners and investors have access to a wealth of financial information, benchmark data and in-depth market insight to help them make decisions, assess the competition, target new investments and tackle new opportunities. That unfortunately is not the case in the cannabis industry, where there's comparatively very little historical or market data.

Consider:

- Each state that has legalized medical or recreational marijuana tracks and reports information in different ways. Some only keep tabs on the number of registered patients, while others provide in-depth reports on tax revenues, number of licensed businesses and the amount of cannabis sold. Several states – particularly those with little or no regulations – don't track anything. No federal agencies oversee any aspect of the industry, meaning there's no official national data either. So getting any type of reliable information within and across state markets can be an immense challenge.
- Entrepreneurs can typically glean useful information by examining the filings and financial statements of publicly traded companies. However, the vast majority of cannabis companies are privately held, while most publicly traded marijuana firms are listed on the over-the-counter markets, where the reporting and disclosure requirements are light. While some insights can be gained from documents filed by publicly traded cannabis companies, these reports are generally unaudited and only represent a sliver of the marketplace.
- Tax returns for nonprofit organizations are in the public domain, and many medical dispensaries must operate in a not-for-profit manner. However, their status as such is not formally recognized by the IRS, and therefore their tax returns are not publicly available.

In short, basic metrics such as annual revenue, profit margins and monthly operating expenses for cannabis businesses are difficult to come by. This book provides exclusive data and insight into these areas, relying on information gleaned from our annual survey of cannabis professionals, our third-party data partners, and interviews with marijuana executives and experts (refer to the methodology section of the Appendix for details).

*Marijuana Business Daily* continuously evaluates opportunities to enhance the quality and accuracy of the data in this book. While our annual survey of cannabis executives still forms the backbone of the research, data-sharing partnerships with industry leaders afford the opportunity to gain detailed insights into the industry.

This year, exclusive data-sharing partnerships allowed us to provide an in-depth look at three major areas: point-of-sale transactions, wholesale cannabis pricing and regulatory compliance. *Marijuana Business Daily* would like to extend special gratitude to the following data partners for their contributions to this book:

- Adherence Compliance
- BDS Analytics
- Cannabis Benchmarks, a division of New Leaf Data Services LLC

Data from these partners is featured in chapters 1 and 3, and more information on each of these companies can be found in the Appendix.

Additionally, *Marijuana Business Daily* would like to thank the following individuals and organizations for their support in spreading the word about this year's survey of cannabis professionals and providing valuable market expertise: Kris Krane of 4Front Advisors, Beau Whitney of Golden Leaf Holdings, Denver Relief Consulting, Berkeley Patients Group, Dixie Brands, John Laub of the Las Vegas Medical Marijuana Association, MedMen and MJ Freeway.

## 5 Key Takeaways

This report is meant to serve as a detailed point of reference with specific data points and figures. However, there are larger trends and themes that emerge after sifting through the full data set of survey responses and performing the research for this book. Below is an overview of these key takeaways:

### #1 The investing floodgates are breaking

Fundraising has traditionally been extremely difficult for cannabis companies given the immense risks involved in the industry and the stigma attached to marijuana. The situation has improved markedly in recent years, however, and the dam finally appears to have burst in 2015. More outside capital than ever is now flowing to both plant-touching and ancillary businesses. The portion of new companies backed primarily with founders' own savings and debt is at its lowest point ever, 72%, while nearly half of investors in privately held companies plan to invest at least \$10 million each in 2016.

The landscape is highly competitive, and investors still have their pick of the litter. But by several indicators, the fundraising environment has improved for both cannabis companies and investors.

### #2 Shakeouts are starting to play out in certain states and sectors

As unbelievable as it may sound given how young the industry is overall, certain sectors in some states are already showing signs of approaching saturation, and winners and losers are being defined. Outdoor cultivators in particular are facing some major challenges, as only 57% of those businesses report operating at break-even or better, compared to over 80% of growers who cultivate indoors, in greenhouses or use a combination of methods.

Elsewhere, headline-grabbing, multi-state expansions by some of the industry's largest infused product makers have set the stage for the emergence of leading brands that can easily gobble up market share in new states. Twenty-four percent of infused product manufacturers already operate in at least two states. These companies will likely be the winners when the inevitable waves of consolidation eventually arrive. In other markets, fierce competition is squeezing margins and driving many businesses into loss territory, while the inevitable adoption of technology and the high cost of compliance have simply proven too much for some businesses to bear.

To be sure, the industry is still filled with many opportunities. But in some of the more mature markets, many businesses have burned big and bright, only to have already faded away.

### **#3 Demand for concentrates and edibles is reaching fever pitch**

Infused products haven't surpassed flower/dried herb in terms of sales yet from a national perspective, but they are becoming a bigger piece of the pie. At the same time, some individual retailers have already seen concentrates and edibles sales eclipse flower/dried herb revenue. On average, these products represent about 30% of total sales at present, and in some states they are posting large month-over-month increases.

It remains to be seen what portion of total sales these products will ultimately represent, but they are a critical part of the product mix for cannabis retailers, especially in recreational markets. By the same token, retailers in states that prohibit some or all of these types of products will most certainly be at a disadvantage as legalization spreads and introduces more consumers to these forms of cannabis.

### **#4 The costs to win licenses and establish operations continue to increase**

Gone are the days when plant-touching businesses could easily set up operations for \$25,000 or less. As legalization spreads to more states, the cost and complexity of doing business is increasing rapidly and doesn't show signs of letting up for now. Median total startup costs have risen for every sector in recent years, particularly on a square footage basis for retailers and wholesale cultivators.

In addition to a tendency for new states to levy increasingly large fees for operational licenses, fierce competition to win permits has also necessitated the involvement of consultants, lawyers and other expensive experts for a business to even have a shot at succeeding. But winning a license is only the first hurdle, as state regulatory requirements and restrictive local ordinances often result in large investments in land, commercial real estate, renovations, security/surveillance and other items before the business can even serve its first patient/customer. Add it all up, and you have startup costs that can easily stretch into the seven figures. Cannabis is and will continue to be one of the most highly regulated industries in the world, and the price to play is hefty.

### **#5 Existing medical/recreational states continue to tweak their programs, creating uncertainty for businesses and the industry as a whole**

Whether it's temporary regulations, tweaks to the tax structure, new rules, changes to production caps/limits, or local bans and moratoriums, operational businesses in established markets still face a high degree of volatility and uncertainty.

The reasons for these circumstances are largely a reflection of rapidly maturing markets that state and local governments are constantly trying to catch up with. In other cases, it's due to some states opting to treat medical/recreational marijuana as a "pilot" program or test case that needs to be rolled out in a slow and controlled manner. The net result is that in many states, a clear picture of what a fully functioning cannabis market looks like has not yet been able to emerge. On a

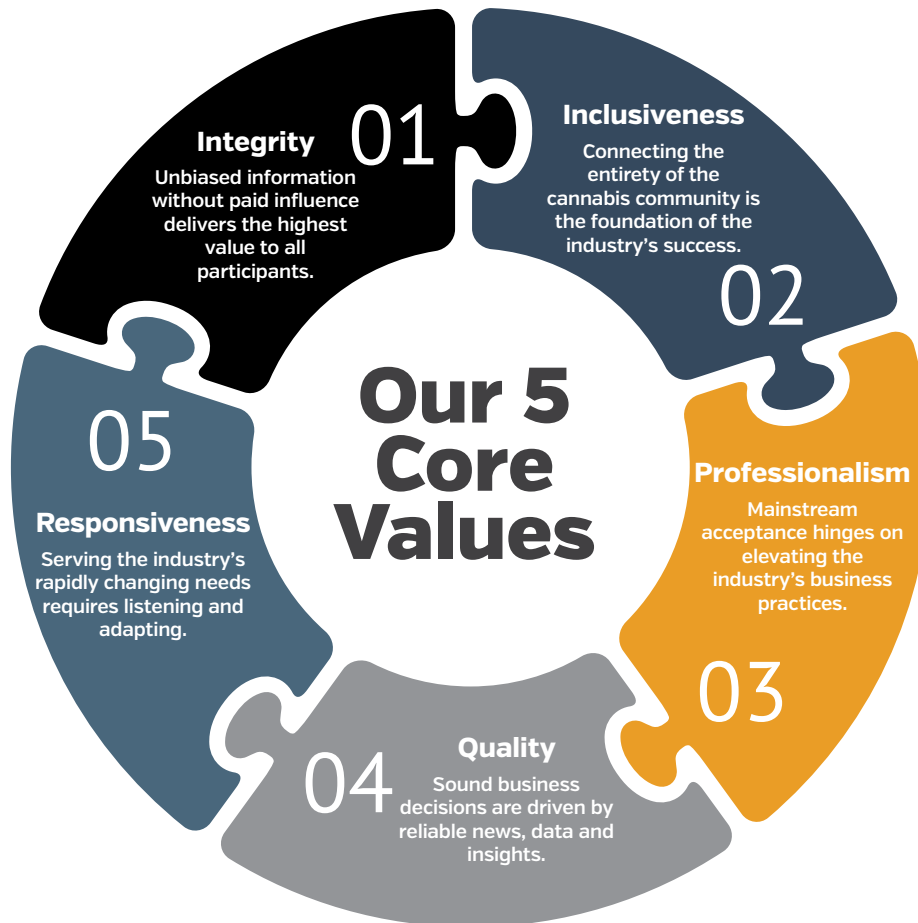


micro level, that creates operational and financial uncertainty for individual businesses, and on a macro level, it makes industry projections and comparisons extremely difficult.

In Chapter 2 of this report, we assign state-by-state rankings on a scale of A to F for the overall level of stability in a given market for this upcoming year. Of the 24 formally recognized MMJ/recreational state markets, 13 have been assigned a grade of C or below, demonstrating the high amount of uncertainty across the industry.

Entrepreneurs and investors evaluating new markets must be diligent about researching, understanding and staying on top of every single detailed rule, regulation and circumstance. The role cannabis businesses can and should play in informing the rulemaking process cannot be over-emphasized.

## Who's Behind This Factbook?



Founded in early 2011, *Marijuana Business Daily™* focuses solely on businesses and the investors who back them.

If you are leading or financing a cannabis-related company, we help you prosper via trusted information services and exceptional events.

Our publications have the highest business readership in the industry. Our events are sell-outs, year after year after year. And, we've been cited everywhere from

*Harvard Business Review* and the *Wall Street Journal* to *Forbes*, *Fortune* and *Fast Company*.

Do you need practical information, real-life data or industry connections to help your business grow? You'll find what you need in one of our publications, or at our national events.

We are here to help the multi-billion dollar cannabis industry prosper. Let us know how we can serve you.

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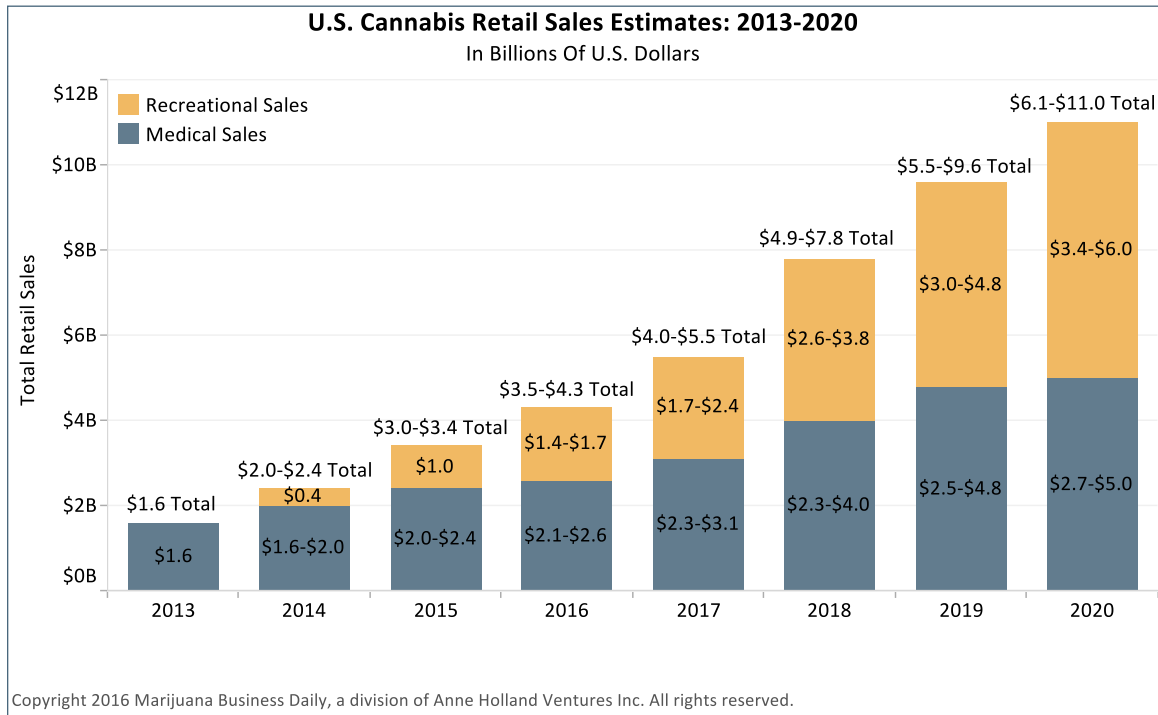
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## Executive Summary: 12 Key Charts

The U.S. marijuana industry is poised for another record-breaking year in 2016, and all signs point to massive growth in the foreseeable future.

Chart 1: U.S. Cannabis Retail Sales Estimates: 2013-2020



We estimate that retail sales of medical marijuana (MMJ) and recreational cannabis will hit between \$3.5 billion and \$4.3 billion in 2016, which amounts to year-over-year growth of 17% to 26%.

Some factors that will fuel growth this year:

- Recreational cannabis:** Sales of recreational (or “adult-use”) marijuana soared in Colorado and Washington State last year, and the trend is expected to continue in 2016. Oregon also will contribute heavily to an uptick in sales, as the state’s recreational marijuana industry is growing rapidly after its launch late in 2015. Recreational sales are still in their infancy, and at this point the sky is the limit.
- New markets:** Several states that started medical cannabis sales recently – most notably Illinois, Nevada, New York and Minnesota – will see sizable revenue spikes in 2016. A handful of new markets, including Hawaii and Maryland, also might come online late this year, helping boost industry retail revenues.
- Expansion of mature markets:** Many states that established medical cannabis programs years ago are going through a growth spurt, including Arizona, Connecticut and New Mexico. And despite chaos and uncertainty in California’s medical marijuana industry, sales could continue to grow in the nation’s single largest MMJ market.

This is just the tip of the iceberg. Total annual retail sales of medical and recreational cannabis could reach \$11 billion in 2020, posting double-digit growth each year along the way.

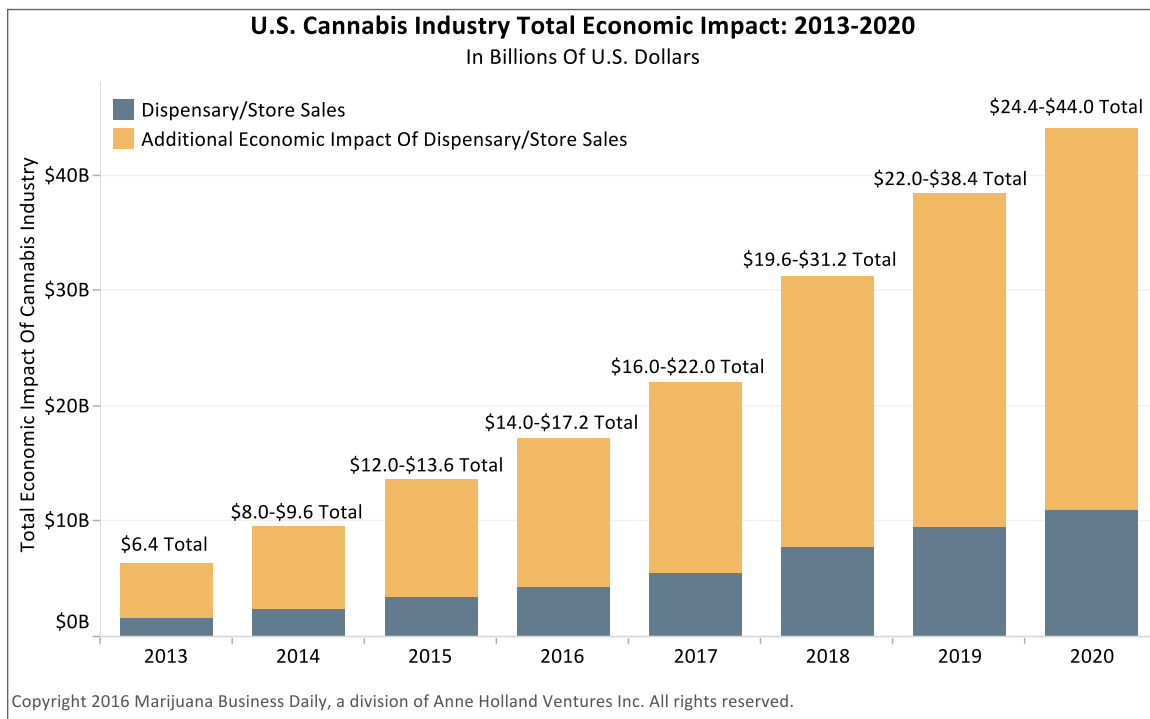
Sales of recreational cannabis could surpass those of medical marijuana as early as 2018, though MMJ revenues will continue to make up a big piece of the pie.

Note that our goal is to provide conservative, realistic financial forecasts that reflect the huge degree of uncertainty in the industry. Total cannabis sales in any given calendar year are highly dependent upon progress made, or not made, in each individual state. California in particular has a huge impact on overall sales, as it's the largest MMJ market in the country. So developments in that state can push industry revenues up or down considerably, even if the same trends aren't playing out elsewhere.

Additionally, California is the big wild card at present. The state doesn't track its medical cannabis industry closely, making it difficult to estimate how big the market is and whether it's growing or shrinking. As new information comes to light over time, it could change our estimates for California, and therefore the industry at large.

Be sure to check out Chapter 2 for a detailed analysis of each state's market and how it fits into the big picture.

Chart 2: U.S. Cannabis Industry Total Economic Impact: 2013-2020



Beyond cannabis sales at retail and the associated taxes that are collected, the industry's total economic impact is substantial.

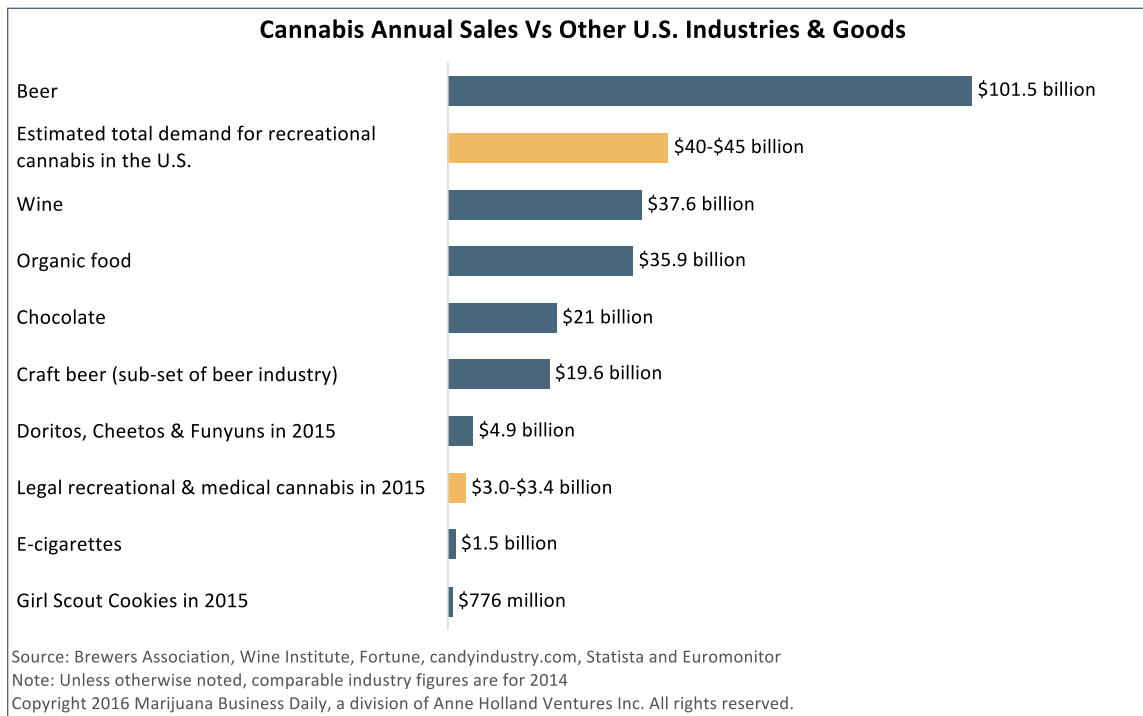
Using the concept of an economic multiplier that quantifies the "ripple effect" of an initial dollar spent at retail, we estimate the total impact of the industry on the U.S. economy based on

cannabis retail sales to be between \$14 billion and \$17.2 billion this year, and up to \$44 billion by the end of 2020.

Overall, for each dollar spent/earned by cannabis companies, an additional three dollars in economic benefit will be realized. For example, a cannabis dispensary/store makes a sale for \$100. The business then uses a portion of that money to pay an employee, who in turn uses a portion of that money to buy groceries at the local grocer, and so on – a process that creates a ripple of economic value, most of which remains in local communities. Another example: An infused products maker pays \$1,000 to a wholesale grow company, which then uses that money to buy supplies from a vendor, which then uses a portion of that money to pay employees, who then go out and spend their money in the community, etc.

This multiplier can be applied to any dollar amount of spend or revenue along the supply chain, and can also be used to demonstrate the economic contraction associated with a reduction in revenue or other expense or tax cut.

Chart 3: Cannabis Annual Sales Vs Other U.S. Industries & Goods



So how does the U.S. cannabis industry compare to other industries in terms of sales?

Last year, sales of medical and recreational cannabis (the latter of which was only legal for all of 2015 in two states) surpassed those of beloved Girl Scout Cookies, as well as domestic sales of e-cigarettes.

The total estimated annual demand for recreational cannabis alone in the United States is about \$40-\$45 billion, exceeding that of craft beer, wine and organic food. Currently, most of this value is realized on the black market and isn't taxed, hinting at the tremendous potential for this part of the industry in the future.

Chart 4: Estimated Number Of Cannabis Businesses In The U.S.: 2016

<b>Estimated Number Of Cannabis Businesses In The U.S.: 2016</b>	
Medical Dispensaries/Recreational Stores	3,400 - 4,700
Infused Product Manufacturers	900 - 1,300
Wholesale Cultivators	2,500 - 4,500
Testing Labs	90 - 120
Ancillary Services, Technology & Products Companies	14,000 - 22,000
<b>Plant-Touching Total: 7,000 - 11,000</b>	
<b>Industry Total: 21,000 - 33,000</b>	
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In another measure of the cannabis industry's tremendous economic contribution, the number of companies in the industry is now in the tens of thousands, proving marijuana's very real impact on the American economy.

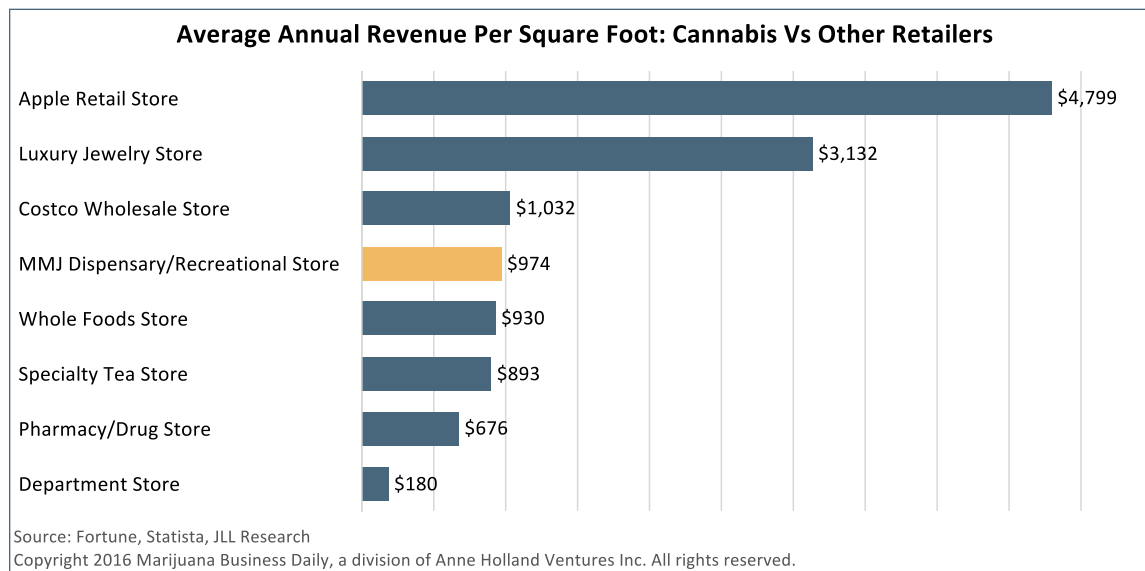
For sector-specific details on employment, look in Chapter 1. The figures in that section not only help cannabis entrepreneurs and interested observers quantify this aspect of the industry's impact, but they also provide critical benchmarks and targets for new and growing businesses.

## Data Snapshot By Sector

### Retailers

As the sector that interacts with patients and customers, medical and recreational retailers are truly the face of the industry. These businesses are at the end of the supply chain, so their financial performance is one of the more reliable indicators of demand, market size and future opportunities.

Chart 5: Average Annual Revenue Per Square Foot: Cannabis Vs Other Retailers



In large part because of rules and regulations, dispensaries and retail stores aren't packed with inventory, and each patient/customer has a one-on-one interaction with a sales associate (generally referred to as a "budtender").

Sales per square foot, therefore, are generally driven by increased customer traffic.

To that end, sales per square foot for cannabis retailers can be quite a bit higher than those for other businesses to which they are often compared, such as drug stores and department stores.

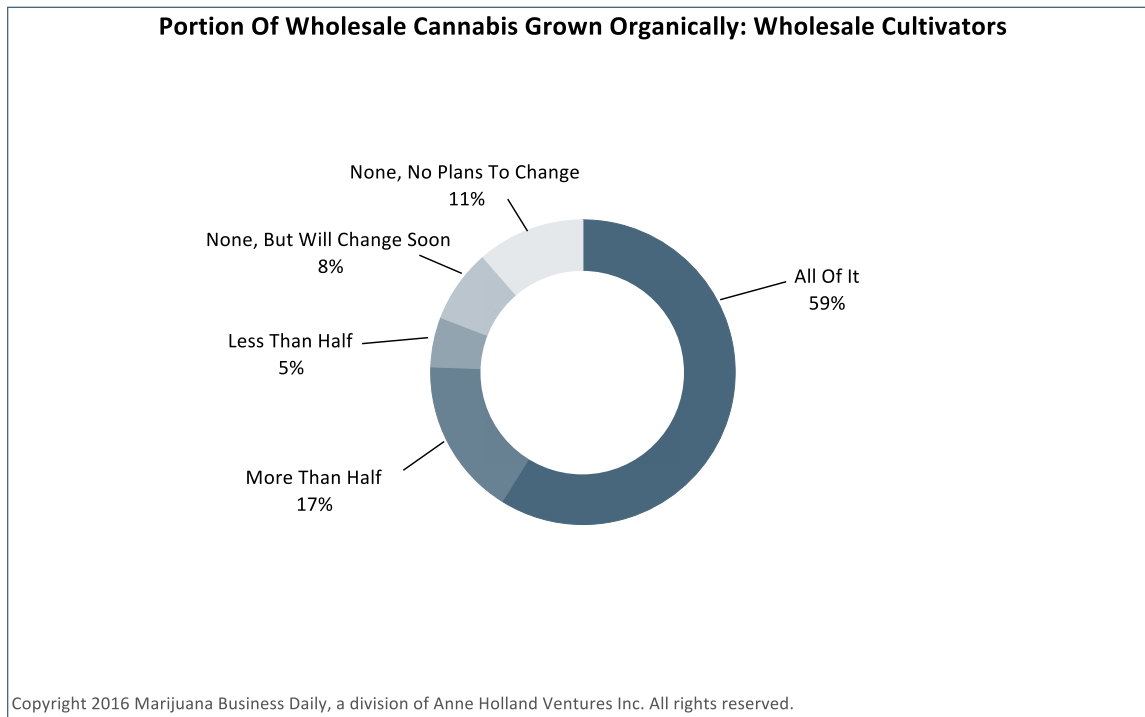
Interested in how large the typical retail space is for medical dispensaries and recreational stores? How about the portion of those businesses' monthly budgets dedicated to marketing and advertising to drive foot traffic? Find these details and more in Chapter 3.

## Cultivators

At the heart of the industry are the businesses that actually grow cannabis, whether that's vertically integrated dispensaries/stores or wholesale cultivators that sell to infused product makers and retailers.

One of the most widely discussed topics within the industry is the overall health and safety of the final product, which is almost entirely the result of cultivation practices. Use of pesticides, solvents and even nutrients with heavy metals are frequently the impetus for detailed and complex regulations.

Chart 6: Portion Of Cannabis Grown Organically: Wholesale Cultivators



So why haven't two out of five wholesale cultivators adopted all-organic growing practices? Does that affect these businesses' bottom line? What other technology and innovative practices do cannabis growers utilize, and what needs are presently unmet?

These insights (and many more related to cultivation) are in Chapter 3.

## Infused Products

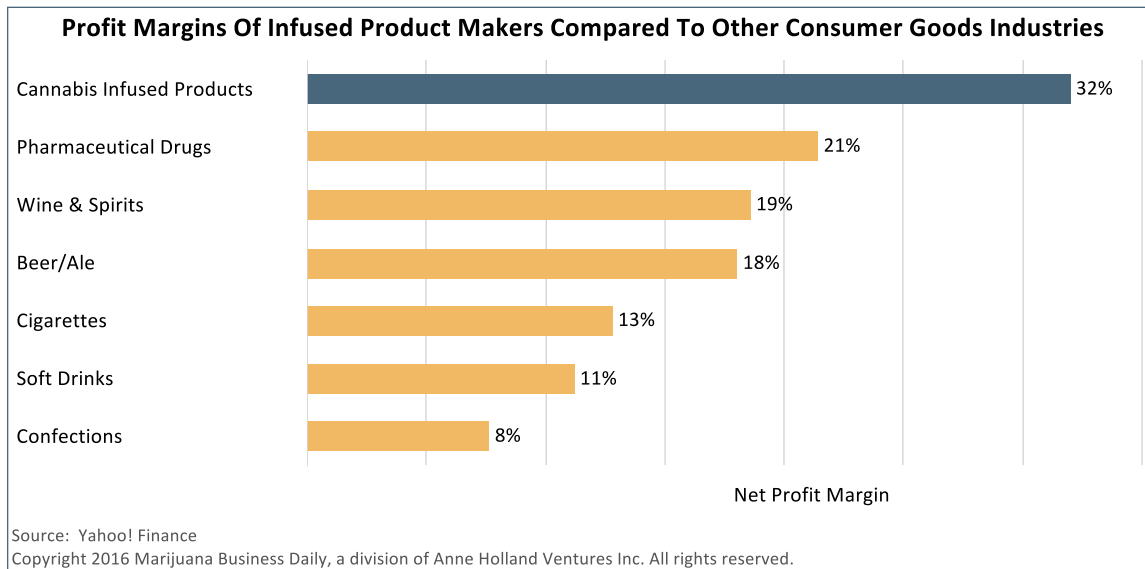
Cannabis infused products – which include concentrates, edibles and topicals – have proven immensely popular in states that allow them. Based on early data out of Colorado and Washington State, where both medical and recreational markets are operational, these products account for a growing portion of overall retail sales with each passing month.

So how are infused product manufacturers faring in terms of profitability?

Quite well.



Chart 7: Profit Margins Of Infused Product Makers Compared To Other Consumer Goods Industries



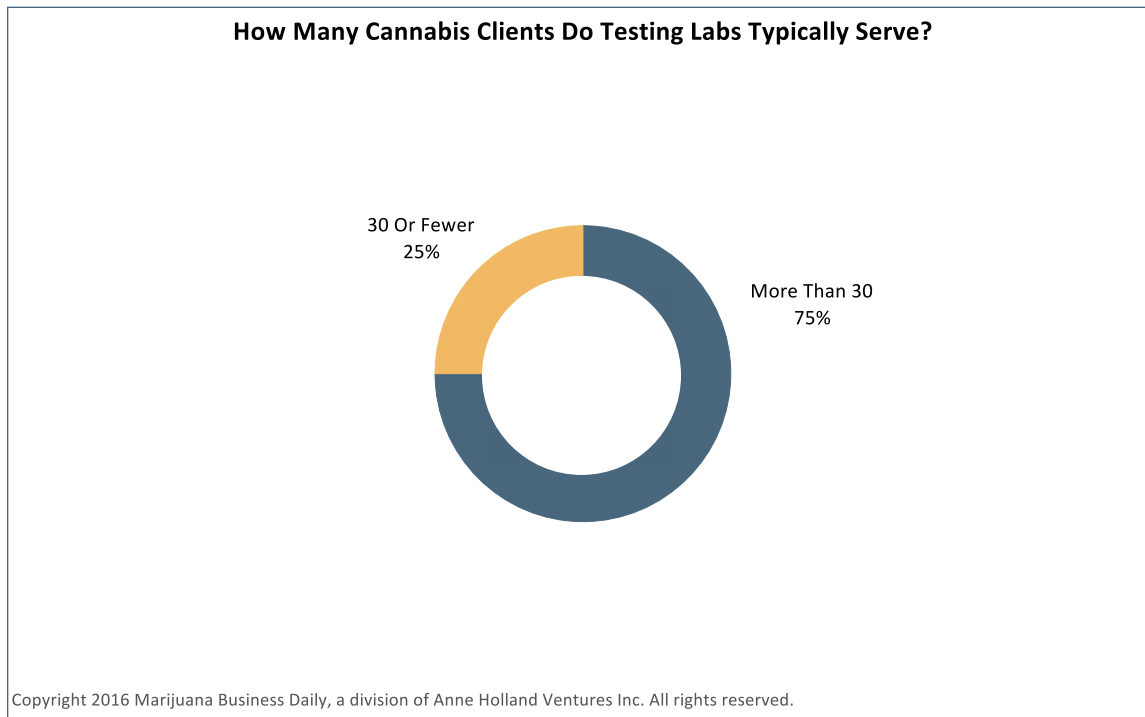
Though success and financial performance vary among states and individual companies – and certainly none yet exist on the scale of a Coors, Coca-Cola or Pfizer – infused product makers are well-positioned to build brand loyalty and expand across state lines. With profit margins like this, they also represent an area of tremendous opportunity within the industry.

Head over to Chapter 4 for detailed insights on startup costs, typical revenues, number of products manufactured and much more for businesses in this sector.

## Testing Labs

By sheer number of companies, testing labs represent the smallest major sector in the cannabis industry. However, they play a critical role both in protecting patients/consumers and furthering the legitimization of the industry. And as more states require mandatory testing (a relatively new phenomenon), labs are seeing their client lists swell.

Chart 8: How Many Cannabis Clients Do Testing Labs Typically Serve?



This sector is another area poised for rapid growth and expansion in the coming years as more states legalize medical and/or recreational cannabis and public officials increasingly tackle the health and safety considerations of commercial marijuana.

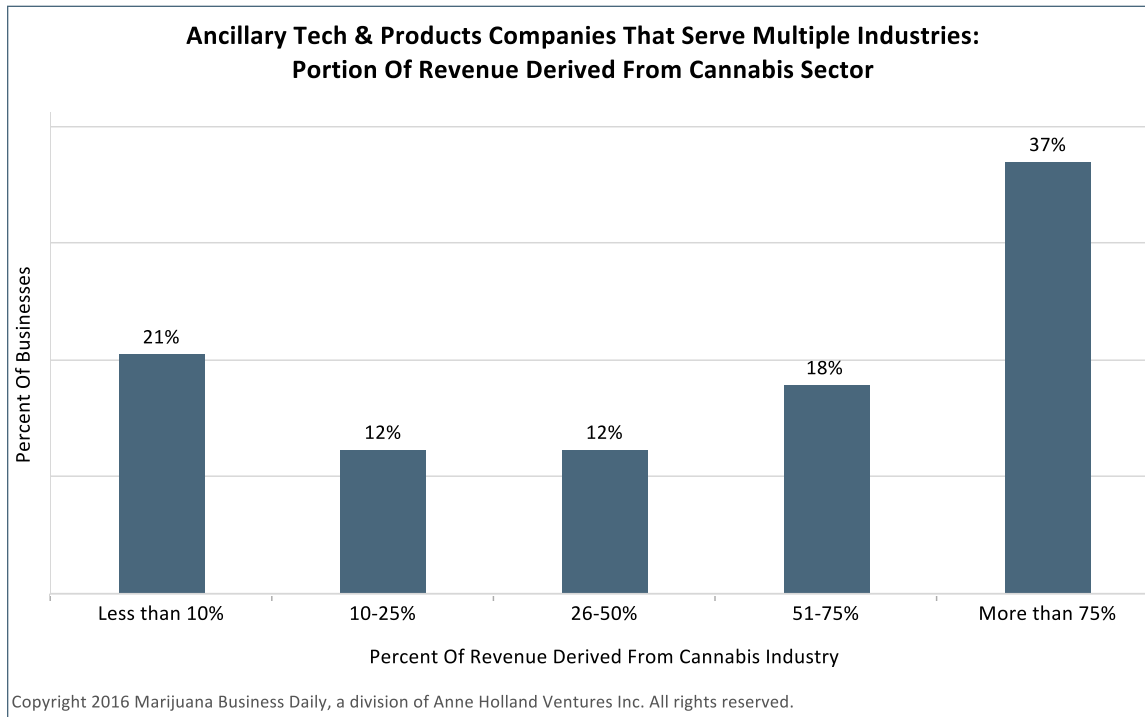
To learn more about some of the unique challenges this sector faces and get a glimpse into the financials of these businesses, be sure to check out Chapter 4.

## Ancillary Firms

Retail stores and cultivation sites often come to mind first when thinking about business opportunities in the marijuana space. But a massive part of the industry revolves around ancillary companies, which provide products, technology and services to other cannabis businesses and patients/consumers.

While many ancillary companies focus solely on the marijuana market, a growing number of businesses from other industries are also dipping their toes in the cannabis arena without abandoning other markets and revenue streams.

Chart 9: Ancillary Tech & Products Companies That Serve Multiple Industries: Portion Of Revenue Derived From Cannabis Industry



Curious what portion of ancillaries exclusively serve cannabis companies? How about what specific products, technology and services they provide and what their revenue looks like? Those details and more can be explored in Chapter 4.

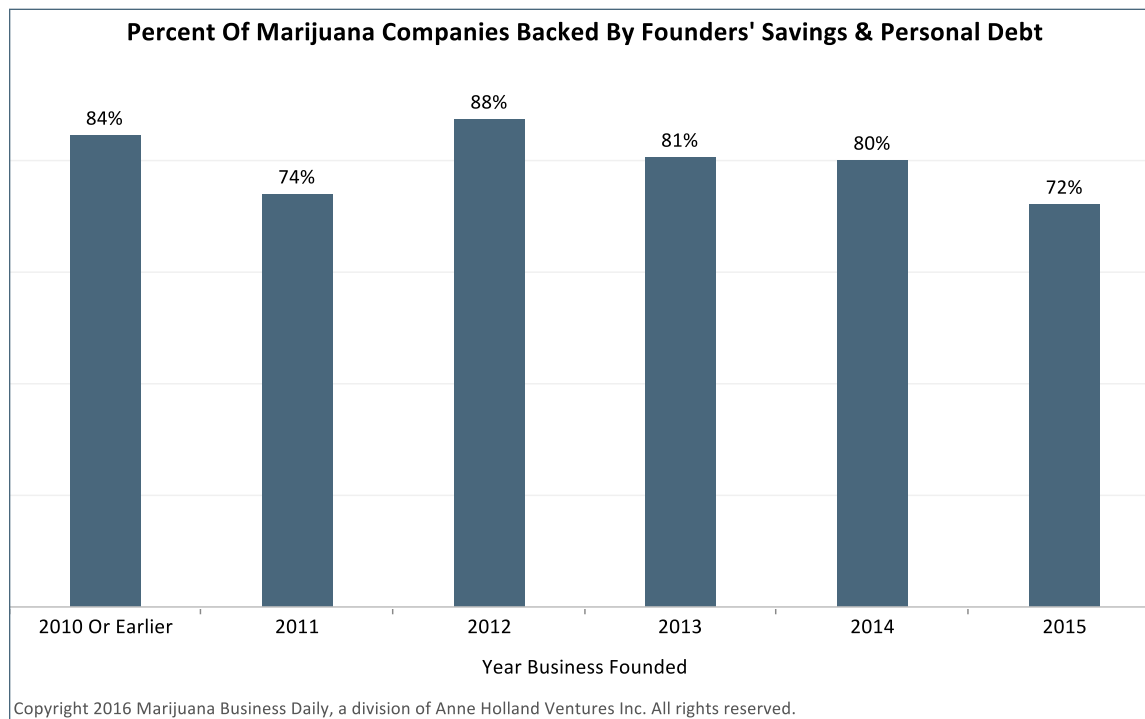
## Snapshot of Additional Data

### Financing

The cannabis industry simply would not have matured and grown so quickly without the support of the pioneering investors that have been willing to take on unprecedented levels of risk to fund marijuana companies. Still, most cannabis entrepreneurs had to bootstrap their companies, as the number of investors interested in the space was extremely low.

That's changing quickly.

Chart 10: Percent Of Marijuana Companies Backed By Founders' Savings &amp; Personal Debt



As more capital flows into the industry, fewer entrepreneurs need to rely solely on their own savings and personal debt to get started or expand.

To be sure, cannabis entrepreneurs certainly still face difficult and often debilitating hurdles in the realm of fundraising. But there's more money being pumped into the industry than ever before.

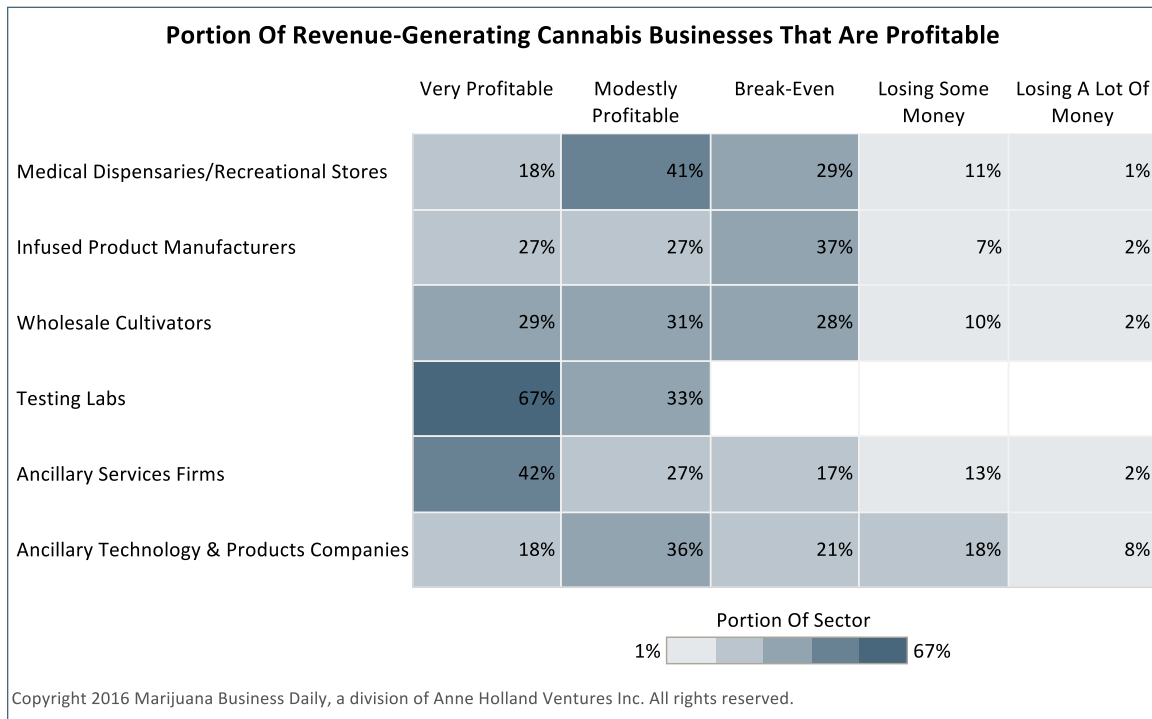
The good news for cannabis investors is that a healthy portion of marijuana businesses need external capital. Finding the true gems can be tricky, though, and at this point there's more investment capital waiting on the sidelines than great opportunities in which to deploy it. As a result, investors can still be picky for now.

Be sure to check out Chapter 5 for a complete run-down of current fundraising needs. You'll also find insight on whether cannabis investors have realized returns on that capital.

## Profitability

Despite the immense challenges and obstacles cannabis companies face every day, the underlying financials of most businesses currently generating revenue are strong. About 75% of companies in all major sectors are at least breaking even, and an impressive 20% of marijuana businesses are earning profits that would make owners in any industry envious.

Chart 11: Portion Of Revenue-Generating Cannabis Businesses That Are Profitable

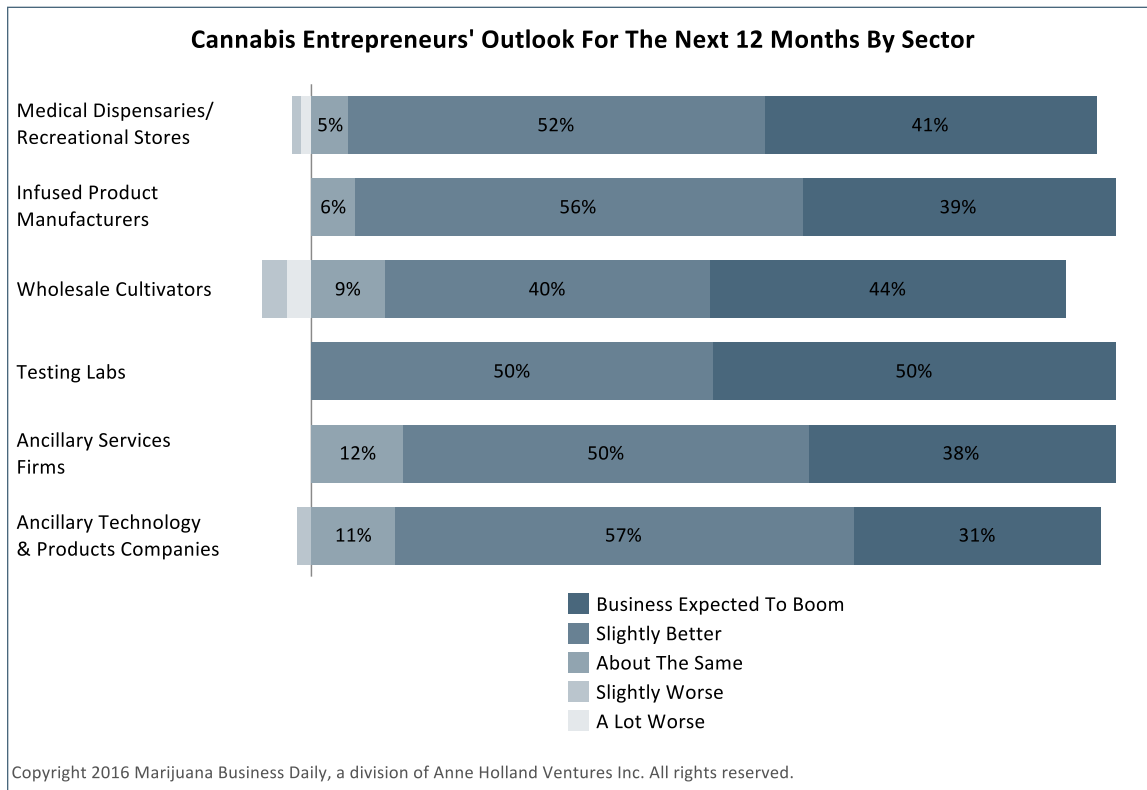


For insight on sector-specific performance and why businesses in some spaces are doing better than others, head over to chapters 3 and 4.

## Outlook

Maybe it's youthful energy, exuberance from being involved in a once-in-a-lifetime opportunity or even pure determination to succeed. Whatever the root cause, optimism abounds in this industry.

Chart 12: Cannabis Entrepreneurs' Outlook For The Next 12 Months By Sector



There is no better place or time right now for bold moves, big bets and paradigm-shifting innovation in the cannabis industry. By leading this social and economic experiment in free markets, civil rights and legitimization of a previously underground economy, these businesses are quite literally making history. This Factbook will help you navigate your own path through the industry.



# National Cannabis Industry Facts, Figures & Trends

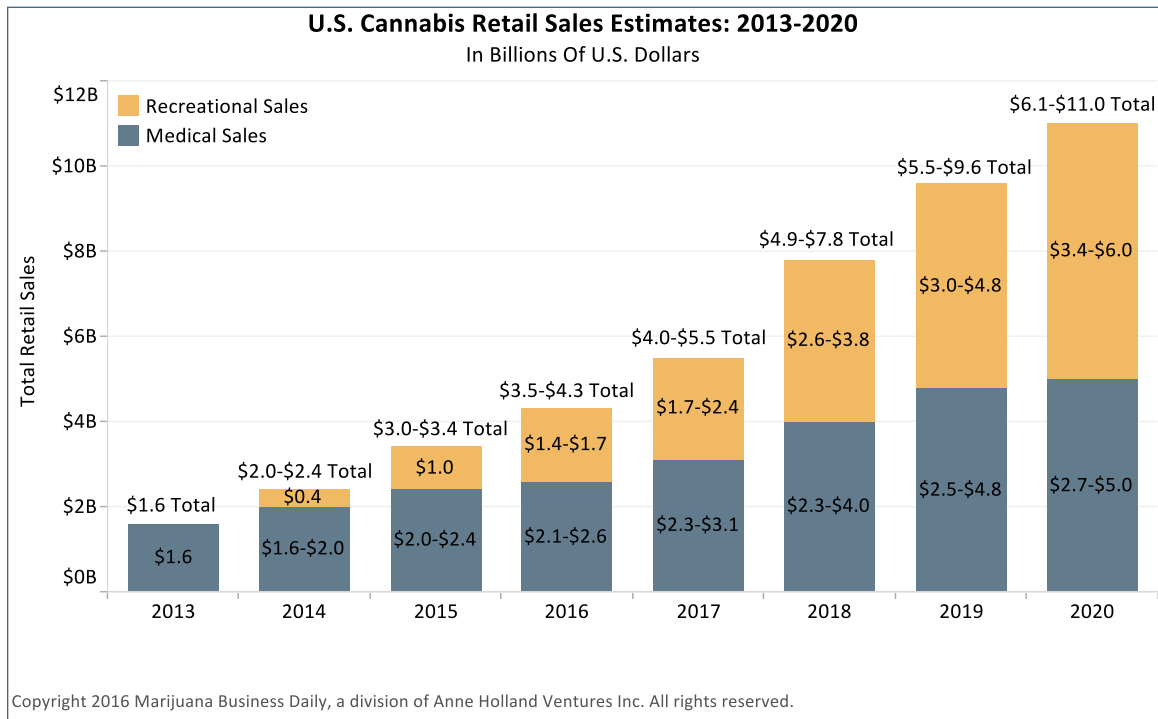
The cannabis industry has been on a tear over the past few years, with new business opportunities popping up at an accelerated pace in the United States and abroad. In 2015 alone, a half-dozen new markets came online, scores of marijuana businesses expanded across state lines, the nation's largest MMJ market (California) finally passed regulations, recreational marijuana sales grew by leaps and bounds, and tens of millions of investment dollars flooded into the industry. Mainstream professionals, business titans, former government officials and even celebrities are getting involved, while the stigma surrounding marijuana is evaporating in many parts of the country.

That's not to say everything is rosy. On the contrary, there are plenty of challenges, from banking to taxes to legal issues to people who still fight tooth and nail against the movement. But in general, the marijuana industry has had a great run as of late, and its future is exceedingly bright.

To get an idea of the industry's rapid growth – both historically and going forward – look to retail medical and recreational marijuana sales, which represent the core of the cannabis sector.



Chart 1.01: U.S. Cannabis Sales Estimates: 2013-2020



Sales of medical and recreational marijuana at the retail level hit an estimated \$3 billion-\$3.4 billion in 2015, up slightly from our initial projections early last year of \$2.7 billion-\$3.1 billion. The unexpected early start of Oregon recreational marijuana sales helped fuel growth, as did the expansion of many new and mature medical markets. Recreational cannabis sales in Colorado and Washington State ballooned, while the Los Angeles market didn't take quite as big of a hit from new regulations as expected. Add it all up, and it was an impressive year, with sales growing by an estimated 40-50% over 2014.

Note that the figures in this chart reflect estimated sales via storefront dispensaries and recreational shops in states where these businesses exist, even if they are unregulated or operate in violation of state law. We do not include delivery-only operations, sales by caregivers or black market data. See our methodology in the Appendix for an overview of how we calculate sales estimates.

Looking forward, sales are projected to increase by 17%-26% in 2016 to hit \$3.5-\$4.3 billion as fledgling markets – including Nevada, Illinois, Massachusetts and New York – grow and the recreational industry comes into its own. Several new states might come online too, most notably Hawaii and Maryland, though they likely won't help move the needle much in terms of overall industry sales until 2017.

This year might go down as one of the biggest in history on the legalization front. A handful of states are expected to legalize recreational marijuana in 2016, with some major potential markets such as California, Nevada and Massachusetts among the leading candidates. Additionally, Florida will likely legalize medical cannabis, and Ohio could as well.

In short, 2016 will be a major year for the industry's future, as it will set the stage for immense growth in 2018 and 2019, when states that legalize this year will likely come online and increase industry revenues by billions of dollars. It typically takes at least a year, and often two or three, to get an industry up and running after legalization. So we'll likely see an immense spike in sales a few years from now, with retail revenue soaring as high as \$7.8 billion in 2018 and \$9.6 billion in 2019.

Overall, retail cannabis sales could rise nearly fourfold from 2015 to 2020, and that's a conservative estimate.

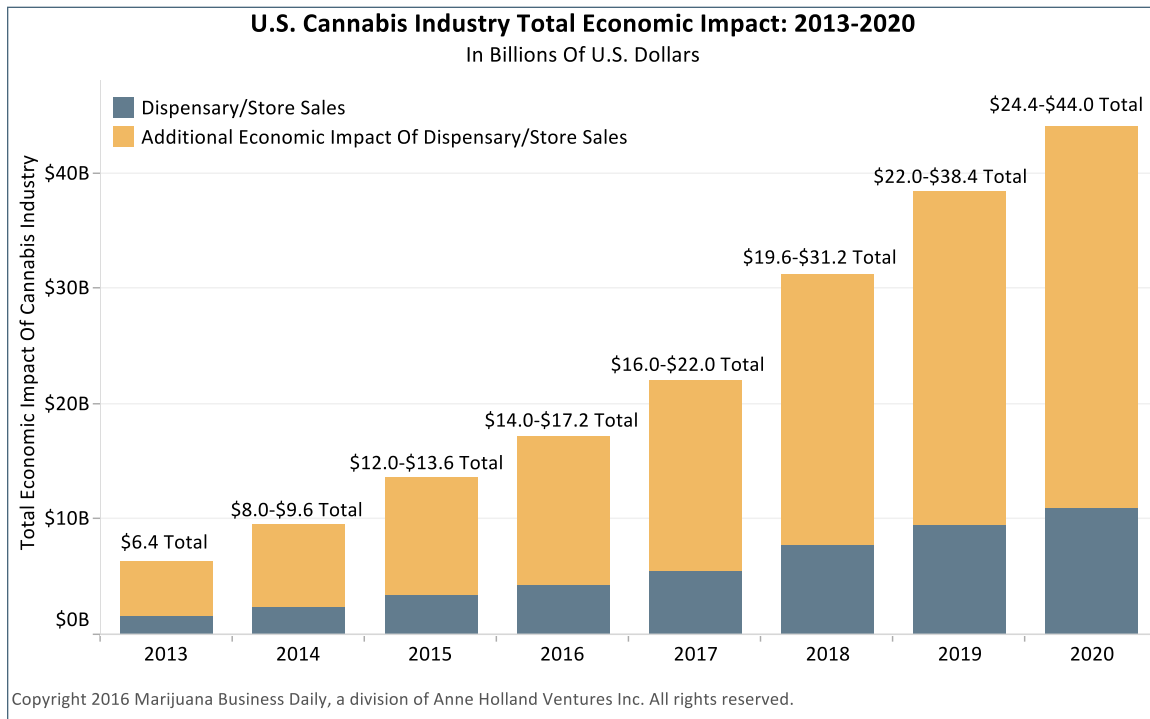
You'll notice large ranges of projected sales in future years, which reflects the massive amount of uncertainty around the industry's future. Looking out a few months, let alone a few years, is an immensely difficult task given that the climate often changes quickly. So we provide ranges rather than try to pinpoint an exact number, as doing so offers a much clearer picture of the possibilities going forward.

Circumstances that could affect growth include:

- **The impact of recreational legalization and sales on the medical markets:** Early data suggests MMJ sales tend to plateau and even start to diminish when recreational marijuana is also available in a state. Given that the rec industry is still so new, its long-term impact on the medical side of the industry is still unknown.
- **Legalization:** It's impossible to predict which states will legalize in the coming years, not to mention just in 2016. But new states obviously have a huge impact on sales in the future.
- **Timeline in new markets:** Legalizing medical or recreational cannabis production and sales in a state is just the first step, as program establishment, rule development and business licensing must follow before any sales ever commence. Some states have moved very quickly in the wake of legalization and see the opening of dispensaries/stores in a reasonable time frame, while other programs have taken many years to get off the ground. In many cases, significant revenues don't materialize for a while, but in the end it varies greatly by state and is hard to predict.
- **Local, state regulations:** States are always changing and tweaking their cannabis regulations, which impacts sales over the long run. And the full potential of a new market often isn't known until long after legalization when state officials set regulations. Caps on the number of businesses and a limited medical conditions list can hamper growth, while more liberal rules can accelerate it.

While retail sales offer a good benchmark for tracking the industry's growth and performance, it's also important to look at the bigger picture. What is the overall economic impact of the cannabis industry?

Chart 1.02: U.S. Cannabis Industry Total Economic Impact: 2013-2020



Economic multipliers are commonly used to illustrate the “trickle out” effect of a dollar spent within a market. For example, a consumer goes to the grocery store and spends \$100. The grocery store will then use a portion of that money to pay an employee, who in turn goes out and uses that money to pay their rent, and so on until the marginal additional dollars injected into the economy are virtually zero.

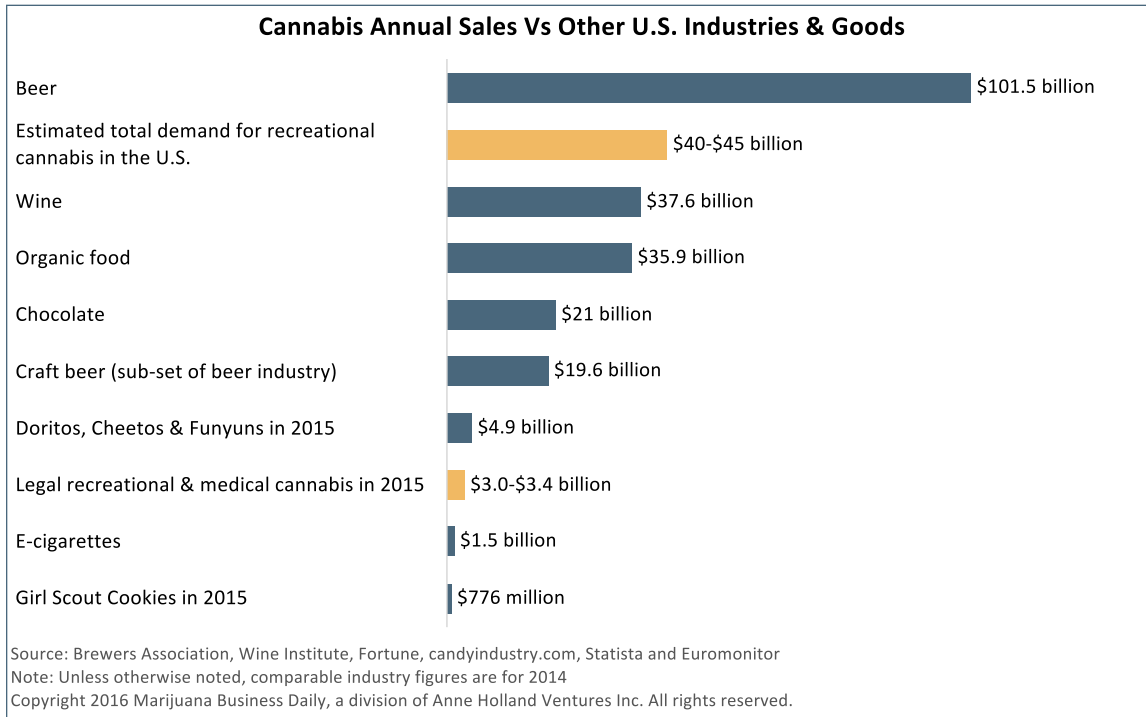
Traditional macroeconomic multipliers can range anywhere from 10 to 20 times the original dollar spent, while more specific values can be derived for particular industries, regions, etc. Through a series of calculations, in addition to consultation with a cannabis economist, we have settled on a standard multiplier of four for the marijuana industry.

In other words, for every \$1 consumers/patients spend at dispensaries/stores, an additional \$3 of economic value will be injected into the economy – much of it at the local level.

This is not the same metric as total revenues along the cannabis supply chain that can be used to approximate the “total size” of an industry. Rather, the economic multiplier paints a picture of the impact the cannabis industry as a whole has on the broader economy.

As you can see, the cannabis industry is a juggernaut in creating economic benefits, which could help boost legalization efforts down the road.

Chart 1.03: Cannabis Annual Sales Vs Other U.S. Industries & Goods



The cannabis industry is often compared to alcohol, natural foods and even e-cigarettes. However, revenue in most of these other industries far exceeds that of the nascent cannabis market at present. Consider, though, that almost all of the \$1 billion in recreational cannabis sales last year was generated in Colorado and Washington State (rec sales didn't begin in Oregon until the fourth quarter). You can therefore easily imagine the potential of this industry on a national scale.

Many economists and industry experts have estimated the total annual demand for recreational cannabis, both legal and illegal, in the U.S. to be in the range of \$40-\$45 billion. Given the impressive numbers posted in just the two legal rec markets at present, it's not hard to believe that kind of revenue could be realized nationwide if marijuana could be legally accessed by all American adults.

## International Markets

Nearly 20 countries have legalized cannabis possession and consumption to some degree (primarily for medical purposes), including Bangladesh, Canada, Colombia, Jamaica, Italy, Spain and Uruguay, to name a few.

Others have decriminalized marijuana. Unfortunately, there aren't very many legitimate international business opportunities for U.S. cannabis companies at this time.

Most laws create government-run industries, allow medical cannabis for research purposes only or limit cultivation to home growing. Well-regulated commercial systems for medical or recreational cannabis are rare.

Uruguay, for instance, made history in late 2013 when it became the first country to legalize recreational cannabis at a federal level. But the entire industry will be controlled by the government, leaving almost no room for plant-touching companies.

Even in Israel, which is known as a hub of MMJ research and exploration, there are still strict limits on who can grow cannabis and serve patients. But some businesses – particularly those providing ancillary services and products such as vaporizers, consulting and software – have started to make inroads abroad, and the floodgates could open in the coming years.

Canada could prove to be particularly attractive. While U.S. companies and several from other countries as well have already made inroads into the Canadian MMJ market, the real trophy will come down the road if the new prime minister follows through on his pledge to legalize recreational cannabis. If that happens, there will almost certainly be another Green Rush, but this one will be comprised of U.S. companies flocking north. Australia is another market many U.S. entrepreneurs are eyeing, as it has approved limited cannabis cultivation for research purposes and has indicated it could move forward with a full MMJ program in the near future.

Chart 1.04: Estimated Number Of Cannabis Businesses In The U.S.: 2016

<b>Estimated Number Of Cannabis Businesses In The U.S.: 2016</b>	
Medical Dispensaries/Recreational Stores	3,400 - 4,700
Infused Product Manufacturers	900 - 1,300
Wholesale Cultivators	2,500 - 4,500
Testing Labs	90 - 120
Ancillary Services, Technology & Products Companies	14,000 - 22,000
<b>Plant-Touching Total: 7,000 - 11,000</b>	
<b>Industry Total: 21,000 - 33,000</b>	
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Chart 1.05: Estimated Total Employment In The Cannabis Industry: 2016

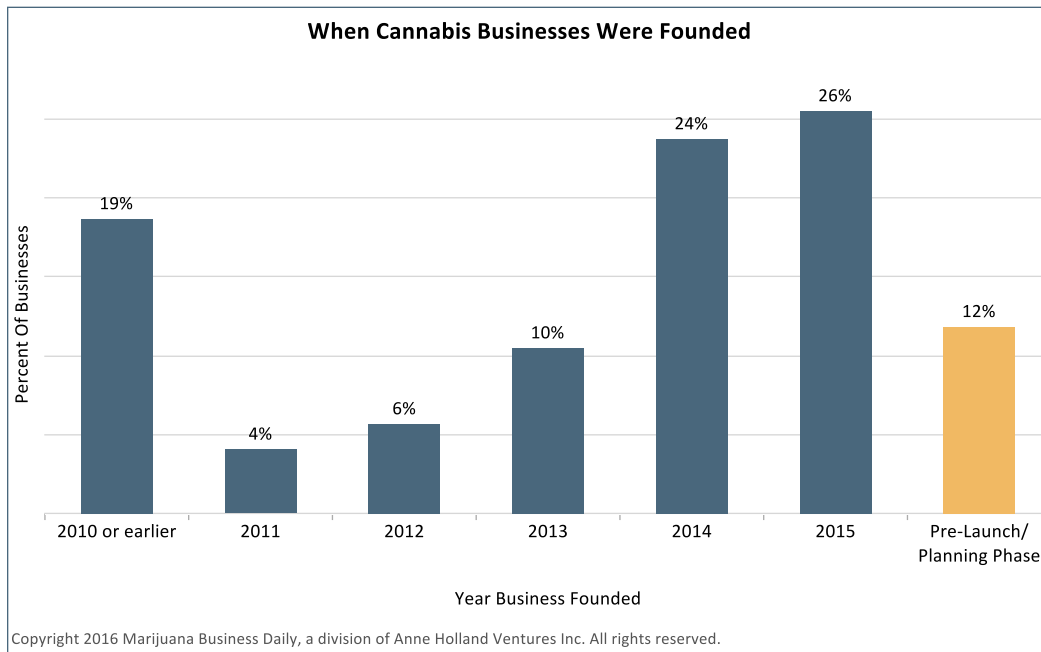
<b>Estimated Total Employment In The Cannabis Industry: 2016</b>	
Medical Dispensaries/Recreational Stores	37,000 - 52,000
Infused Product Manufacturers	5,500 - 8,000
Wholesale Cultivators	15,000 - 27,000
Testing Labs	990 - 1,300
Ancillary Services, Technology & Products Companies	42,000 - 66,000
<b>Plant-Touching Total: 58,000 - 88,000</b>	
<b>Industry Total: 101,000 - 154,000</b>	
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The estimated number of people working in the cannabis industry has skyrocketed over the past couple of years as more states have both legalized and/or welcomed their first dispensary/store sales, creating many more job opportunities at both plant-touching businesses and the ancillaries that support them.

At present, the total number of workers in the cannabis industry is similar to the number of people who worked in the following occupations/professions in 2014: meeting and event planners, insurance underwriters, web developers, database administrators, nurse practitioners and detectives/criminal investigators.

This demonstrates the significant impact legal cannabis is having on the broader workforce and the extent of the opportunities it provides to workers in those states.

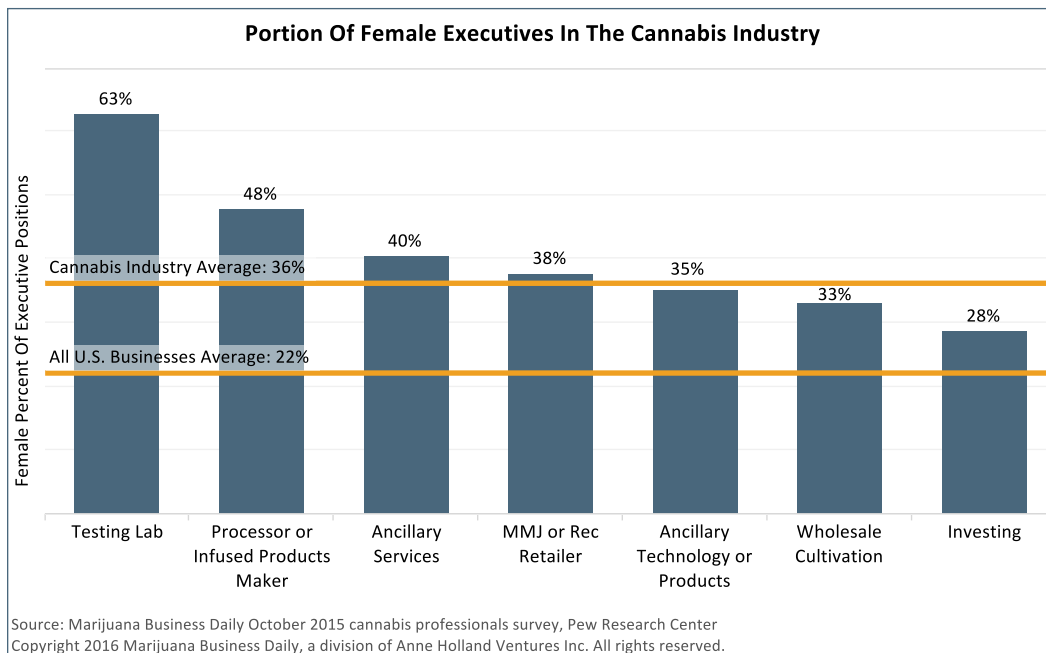
Chart 1.06: When Cannabis Businesses Were Founded



A full half of the companies in the nation’s fastest-growing industry were founded within the past two years. Remove pre-launch companies – a contingent that includes those that might still be looking to incorporate or develop business plans – from the mix, and the portion of companies founded within the past two years jumps to 56%.

Though saturation has been achieved in some states, these figures indicate overall interest in and opportunities within the industry abound, and that the Green Rush is still in its infancy.

Chart 1.07: Portion Of Female Executives In The Cannabis Industry

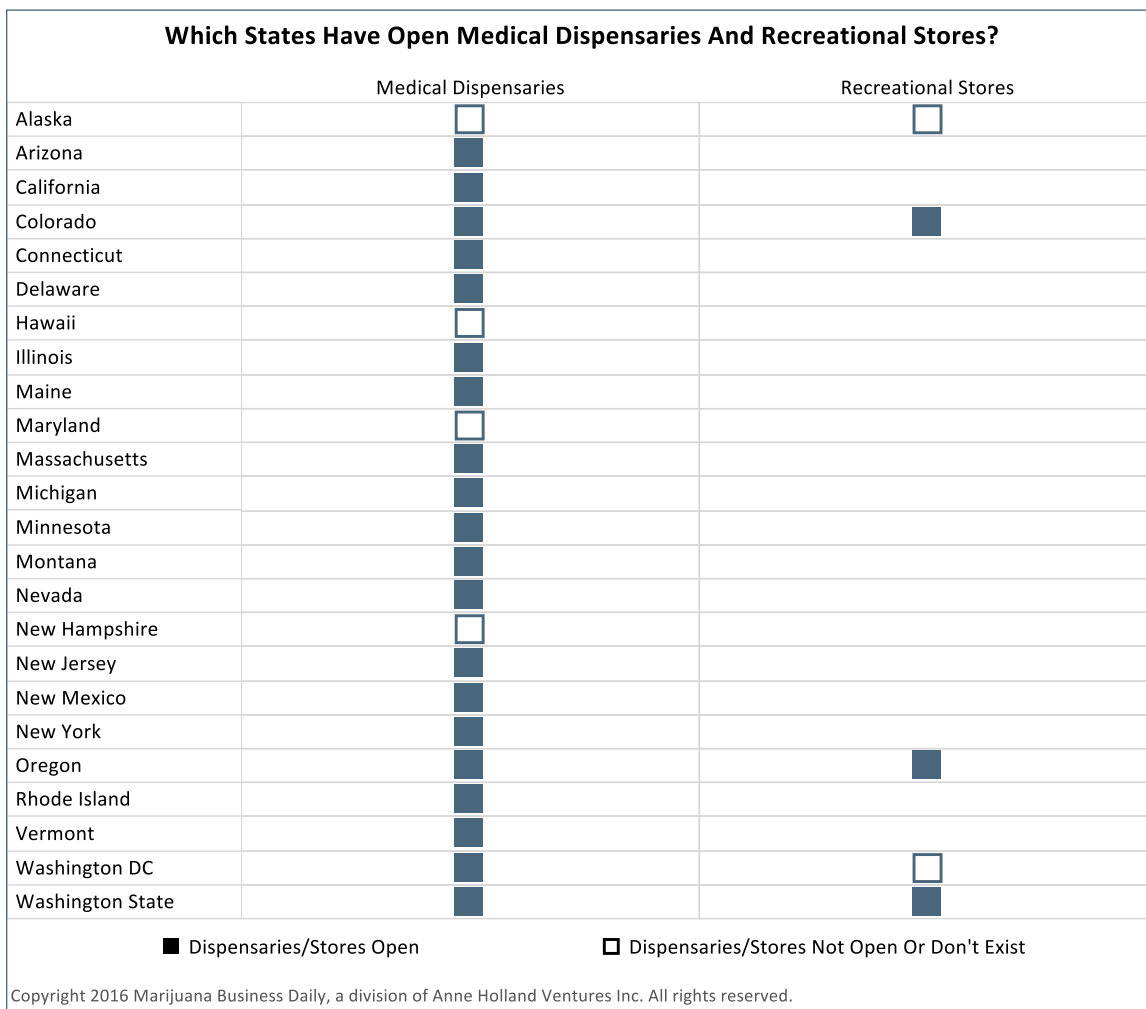


The cannabis industry hasn't exactly been very welcoming to women in the past. In the early days of the industry wet T-shirt contests, ads featuring women provocatively posing with buds and bong, and requests that female job candidates include photos with their resumes were a shocking norm. These circumstances contributed to a historical dearth of women starting and/or working at cannabis companies.

The good news is that the landscape is changing quickly. Women now make up a sizeable and growing portion of the executive ranks within the industry, according to a *Marijuana Business Daily* survey of cannabis professionals in October 2015. The results reveal women are more likely to hold executive positions in every major sector of the industry than in the general U.S. workforce.

The cannabis industry average for the portion of executive roles filled by women is 36%, whereas within the broader labor force it's only 22%. Though there is still much room for improvement, particularly in certain sectors, these figures reflect how the industry has rapidly matured and abandoned many of the practices that alienated women as both professionals and consumers.

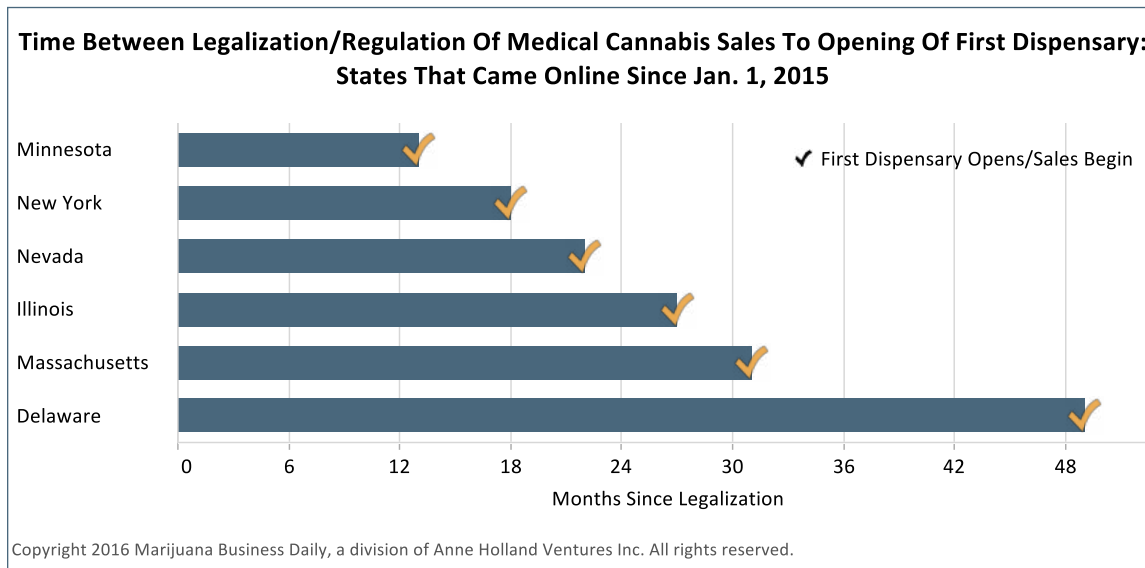
Chart 1.08: Which States Have Open Medical Dispensaries And Recreational Stores?





The previous chart looked quite different only a year ago, when 10 medical states didn't have dispensaries and recreational sales hadn't yet commenced in Oregon. Six states have welcomed their first dispensaries within the past 12 months: Delaware, Illinois, Massachusetts, Minnesota, New York and Nevada. Recreational cannabis also is now available to all adults in Oregon, bringing the count of adult-use marijuana states with operating stores to three. Legal access to both medical and recreational cannabis has significantly increased in just the past year.

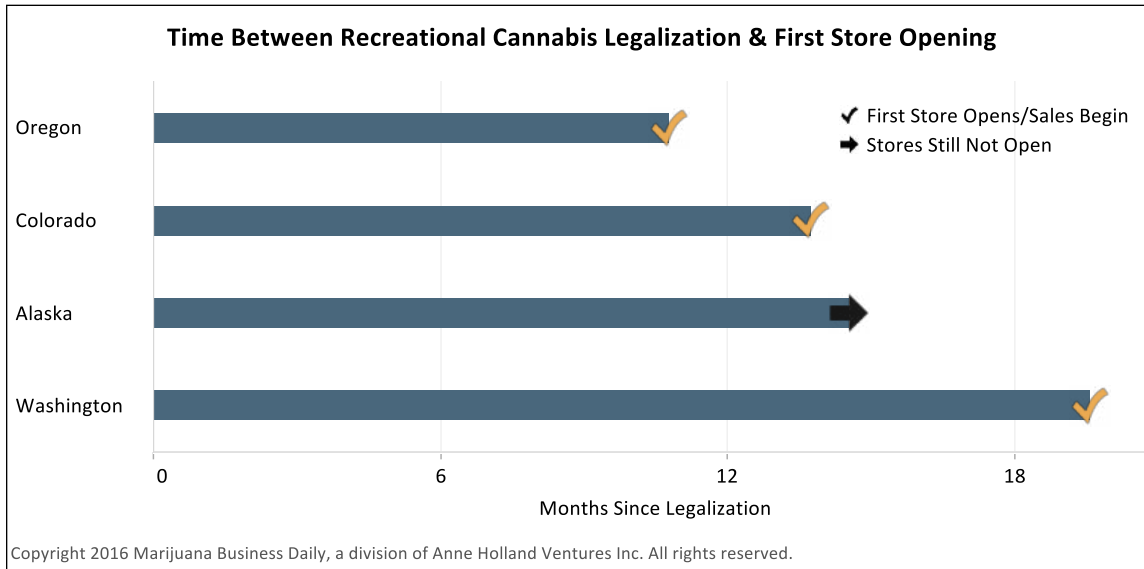
Chart 1.09: Time Between Legalization/Regulation Of Medical Cannabis Sales To Opening Of First Dispensary: States That Came Online Since Jan. 1, 2015



The average amount of time that elapsed between the legalization/regulation of medical marijuana sales and the opening of the first dispensaries in the six states that came online within the past year was 27 months. Minnesota and New York got their markets up and running in record time in the wake of legalization, while businesses in Massachusetts and Delaware – which legalized MMJ in 2012 and 2011, respectively – encountered severe delays.

It's quite common for individual companies or whole state programs to experience delays that can stretch for months or even years, particularly during the application, licensing and launch process. This demonstrates just some of the major challenges cannabis businesses can experience.

Chart 1.10: Time Between Recreational Cannabis Legalization & First Store Opening

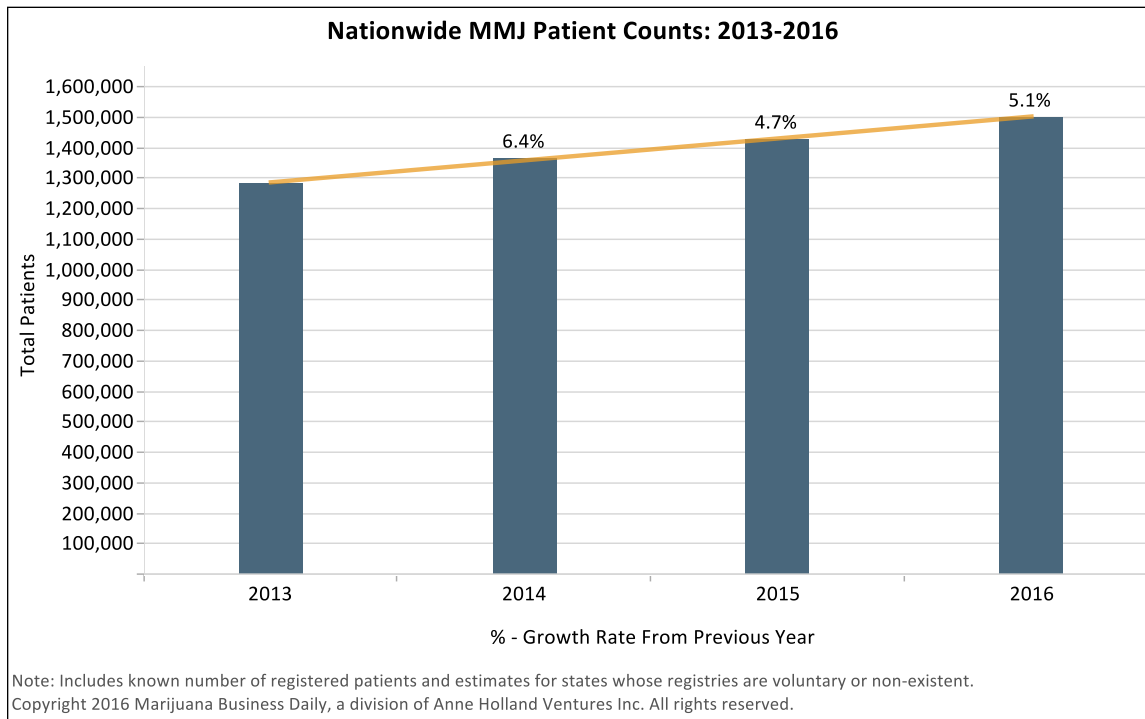


That being said, there are recent signs of industry maturation, and states are increasingly demonstrating an ability to efficiently and quickly establish regulatory frameworks following legalization.

This is particularly true on the rec side. The average amount of time that elapsed between voters approving recreational cannabis production and sales to the opening of the first stores in Colorado, Washington State and Oregon is an encouraging 15 months. Colorado and Oregon already had regulated medical cannabis systems in place, allowing them to start recreational sales fairly quickly.

Though these timelines will likely continue to shorten, particularly on the medical side, this isn't a fly-by-night industry, especially for companies that handle the plant. Launching a cannabis business is an expensive, time-consuming endeavor that only the most risk-tolerant entrepreneurs can stomach.

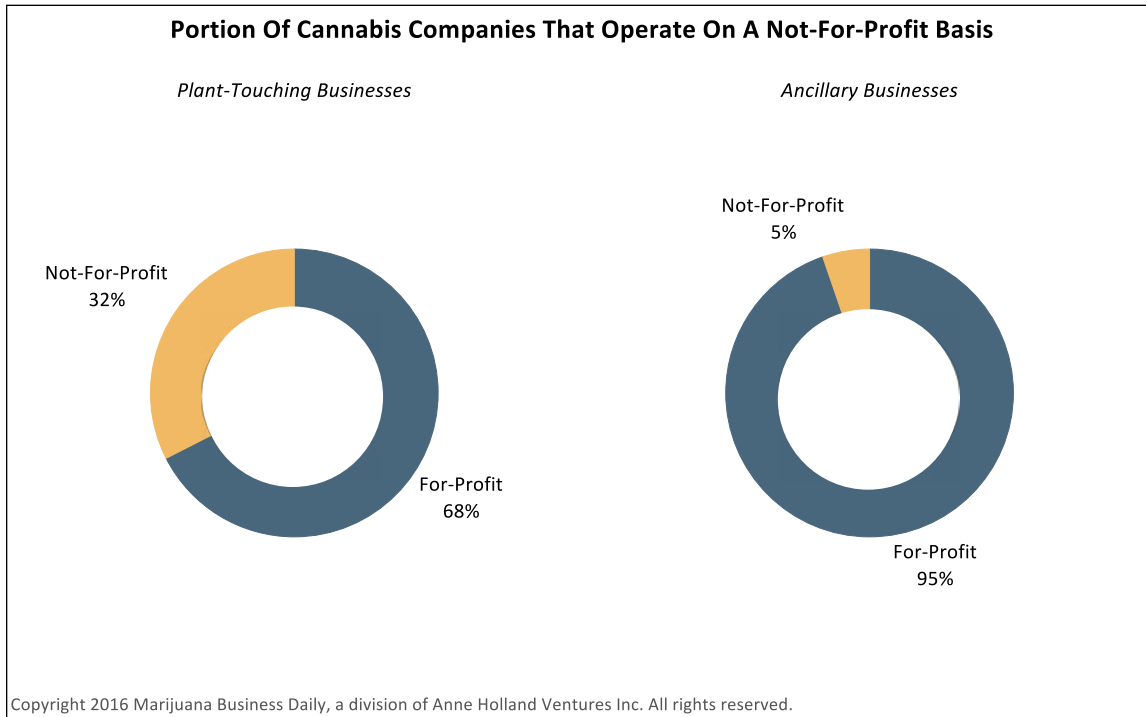
Chart 1.11: Nationwide MMJ Patient Counts: 2013-2016



The total number of medical cannabis patients in the U.S. has grown slowly but steadily over the past few years, currently standing at an estimated 1.5 million nationwide. Some states – most notably the largest medical market in the country, California – have voluntary patient registries. So the exact number of patients is unknown. But it’s possible to develop educated estimates for those states based on hard data from similar markets.

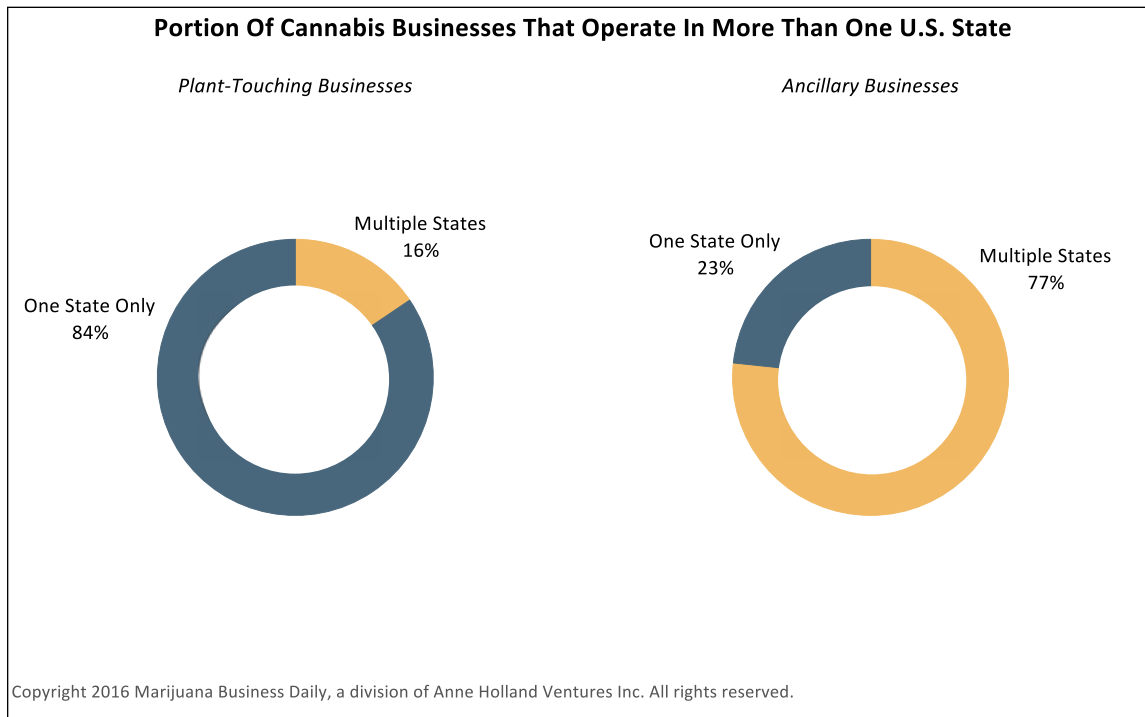
One trend to keep an eye on over the next couple of years is the impact of recreational legalization on medical patient counts. Early indicators in Colorado suggest a notable portion of existing or would-be medical patients will switch to purchasing on the recreational side when it’s available, as indicated by gradual declines in the state’s patient count and a plateauing of revenue from MMJ sales while the recreational market booms.

Chart 1.12: Portion Of Cannabis Companies That Operate On A Not-For-Profit Basis



Many states require medical dispensaries to operate in a not-for-profit manner, meaning they must sell medicine at or near the cost of production. While this model can work well in some medical markets, it will likely become a thing of the past in all but a few states over the next several years. Recreational legalization in particular is quickly putting an end to this model, and only time will reveal what happens to states’ medical markets in the wake of adult-use legalization.

Chart 1.13: Portion Of Cannabis Businesses That Operate In More Than One U.S. State



The disparity between plant-touching sectors and ancillary ones with regard to the number of companies that operate in multiple states is driven entirely by federal prohibition at present, which precludes interstate transfers of cannabis.

Ancillary services, technology and products companies don't handle the plant, so they can relatively easily expand across state lines to pursue business opportunities. The fact that over 75% of these companies have already done so demonstrates the truly national nature of the industry. If federal prohibition is repealed, the portion of plant-touching companies that will pursue multi-state expansions will likely more closely resemble the portion of ancillary businesses that serve multiple states.

### **Average Number Of U.S. States Served: Cannabis Companies In More Than One State**

**14**

## CBD-Only States

Sixteen "pseudo-medical marijuana" states have passed some sort of law allowing limited use of cannabidiol (CBD) oils and/or other extracts. CBD is one of the dozens of active cannabinoids in the cannabis plant. Unlike the more familiar THC (tetrahydrocannabinol), CBD is not psychoactive – meaning it doesn't provide the traditional high associated with marijuana – but has proven particularly effective at treating seizures, especially in children.

"CBD-only" is a bit of a misnomer though because these concentrates still contain very low levels of THC. The key distinction in calling something "CBD-only" or even "high-CBD" is the ratio of CBD to THC. A strain or extract is generally considered high-CBD if the ratio of CBD to THC is 2:1 or higher.

However, states with ultra-restrictive laws that only allow concentrated forms of CBD are not considered "official" medical marijuana states for two key reasons:

CBD is effective for just a handful of ailments, most notably seizures and other forms of intractable spasticity. So it's only beneficial for a minute portion of the patient community, whereas THC-heavy strains and products help with a wide range of illnesses. Because of the high operational costs associated with cannabis businesses, most companies simply can't turn a profit in markets with such small patient bases.

These laws typically create very few (and in most cases zero) business opportunities.

CBD-Only States	
Alabama	North Carolina
Florida	South Carolina
Iowa	Tennessee
Kentucky	Utah
Mississippi	Virginia
Missouri	Wisconsin
Georgia	Oklahoma
Texas	Wyoming

In most of these states, the law only allows the possession of CBD oils/extracts but doesn't permit cultivation and sales, leaving patients in the unenviable position of having to obtain these products elsewhere and then illegally cross state lines with them. This has naturally kept many would-be patients from attempting to obtain CBD oils and extracts.

Other states leave the fate of cultivating and/or supplying the oils and extracts in the hands of universities or private research firms, which has severely limited the interest in and ability to cultivate the plant and produce the extracts. Finally, laws that require physicians to "prescribe," rather than "recommend," CBD-derived medicines are viewed as completely ineffective and useless because it's illegal for physicians to prescribe a Schedule I substance – and therefore none are willing to risk their medical licenses, careers or even freedom to do so. Texas falls into this category.

These laws are usually mostly dead in the water and present virtually no business opportunities in these states. The main exception to this is in Florida, where the law allows a handful of companies to cultivate marijuana plants, synthesize the CBD extracts on-site and then distribute the resulting medicine to patients. The only other CBD state with business opportunities is Missouri, where two producers have been licensed to grow and manufacture hemp-based CBD medicine.

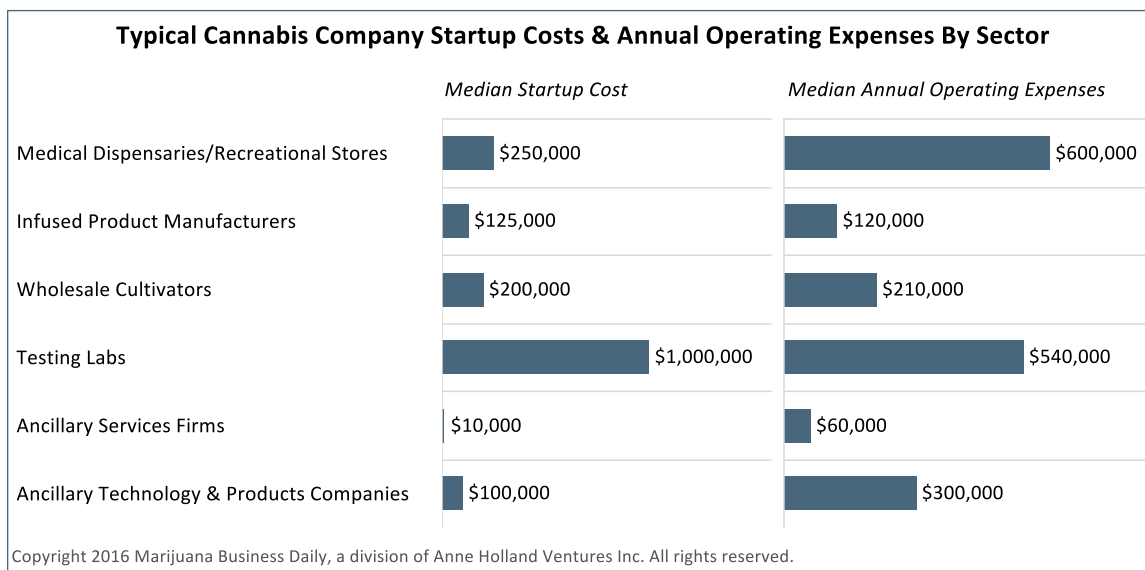
## CANNABIS INDUSTRY SECTORS: KEY METRICS

As with any industry, basic metrics for businesses such as startup costs, annual revenues, profit margins and operating expenses are the bare minimum entrepreneurs need when developing a business plan, making strategic decisions or pitching investors.

Due to a healthy disparity in the size of cannabis companies, competitive/market pressures and so on, median values are a closer approximation of a particular “typical” metric than simple or even weighted averages at present.

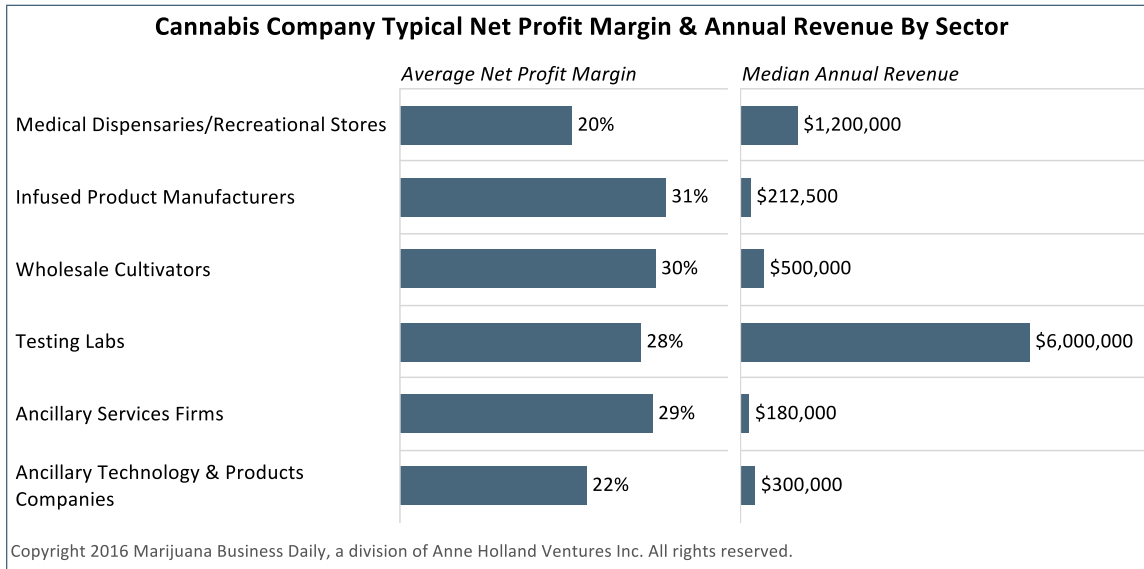
Following are key baseline financial figures for cannabis businesses, which are explored in depth by sector in chapters 3 and 4.

Chart 1.14: Typical Cannabis Company Startup Costs & Annual Operating Expenses By Sector



Typical startup costs and annual operating expenses vary widely by sector, and yet again by state. Generally, however, plant-touching businesses are more expensive to launch and operate. A notable exception with regard to operating expenses is ancillary technology and products companies, many of which have hefty ongoing costs tied to research, development and/or product support.

Chart 1.15: Cannabis Company Typical Net Profit Margin & Annual Revenue By Sector



One of the more widely discussed challenges for cannabis businesses is the detrimental effects of IRS tax code section 280E, which prevents any businesses engaged in the trafficking of illegal substances from deducting normal operating expenses from taxable revenue. This is a major thorn in the side of cannabis retailers in particular, and it helps explain why they have the lowest average profit margins in the industry. Other types of companies in the cannabis industry aren't affected by 280E to the same degree, or at all.

When it comes to the testing sector, most labs are very small operations at this time. But they are overshadowed by a handful of big businesses in the space, in large part because the total number of existing labs is still relatively small. As a result, the median revenue figure for labs in general is therefore somewhat skewed to the largest entities. Typical revenue for smaller labs is likely more in line with other sectors of the cannabis industry.

Chart 1.16: Typical Number Of Full- And Part-Time Employees Per Cannabis Business, By Sector

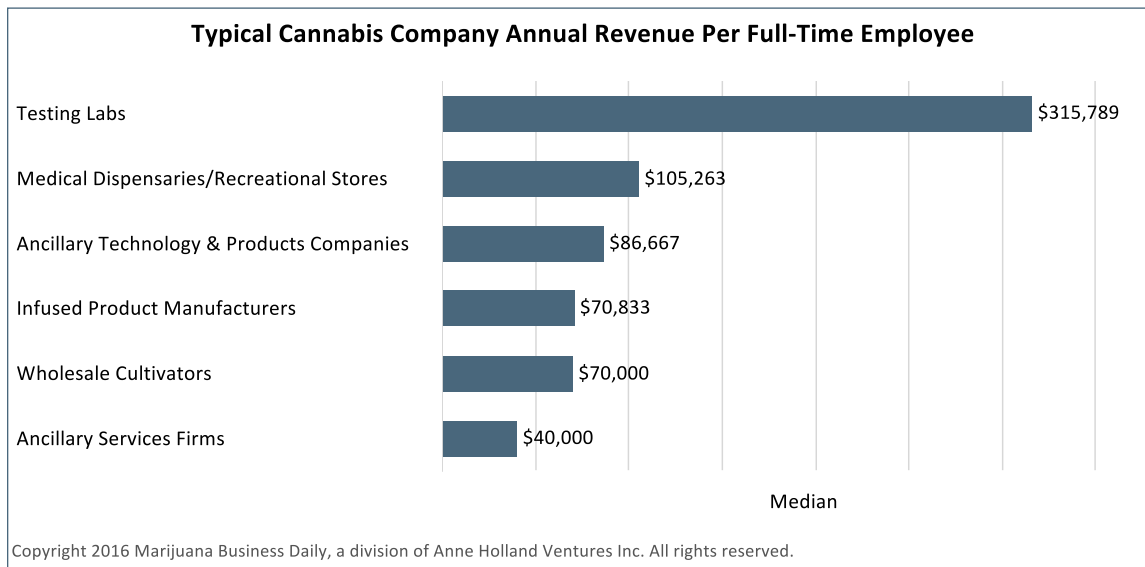
Typical Number Of Full- And Part-Time Employees Per Cannabis Business, By Sector		
	Full-Time Employees	Part-Time Employees
Medical Dispensaries/Recreational Stores	8	3
Infused Product Manufacturers	3	3
Wholesale Cultivators	3	3
Testing Labs	8	3
Ancillary Services Firms	3	3
Ancillary Technology & Products Companies	3	3
Median Number Of Employees		

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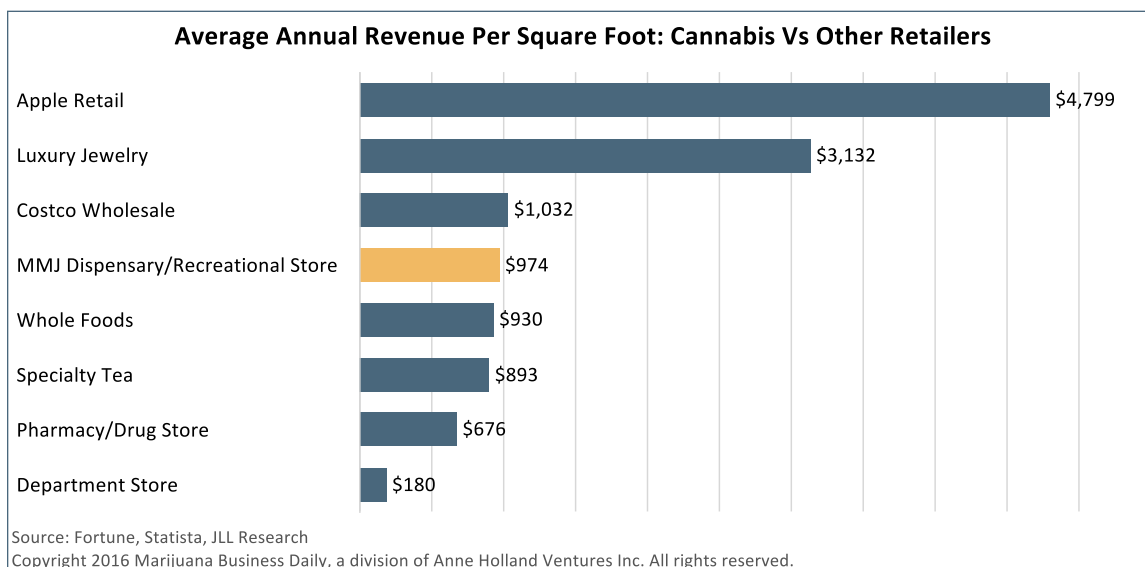
The vast majority of cannabis companies fit the Small Business Administration’s general guidelines for an official “small business” – both by revenue and number of employees. Though there are a handful of larger cannabis companies with 500 employees or more and revenue north of \$50 million, they are the extreme minority. Most cannabis companies have fewer than 10 full-time employees, with a couple of supporting permanent part-time positions.

Chart 1.17: Typical Cannabis Company Annual Revenue Per Full-Time Employee



Despite the academic pedigree required for most positions at cannabis testing labs – and therefore high salary/wage expense for these businesses – they generate the most revenue per full-time employee by a wide margin compared to the other industry sectors.

Chart 1.18: Average Annual Revenue Per Square Foot: Cannabis Vs Other Retailers



On the retail side of the cannabis business, medical dispensaries and recreational stores have admirable annual earnings per retail square foot of \$974. That’s higher than the average for

similar mainstream retail industries, such as natural grocers, department stores and drug stores. But it's still considerably less than typical revenue per square foot for retailers of high-end electronics and jewelry.

However, as with most other industries, cannabis companies can find success with both low-cost/high-volume and high-cost/low-volume business models. In that regard – and particularly for stores that sell recreational cannabis – this metric can and does vary among individual companies, ranging from about \$400 per square foot at medical dispensaries/recreational stores that purchase their cannabis wholesale, to nearly \$1,500 per square foot at stores that exclusively serve the adult-use market (regardless of whether cannabis is cultivated in-house or purchased wholesale).

Chart 1.19: Length Of Time To Break-Even/Profitability: Cannabis Companies

<b>Length Of Time To Break-Even/Profitability: Cannabis Companies</b>					
	Less than 6 months	6-12 months	1-2 years	2-3 years	More than 3 years
Medical Dispensaries/Recreational Stores	41%	26%	20%	10%	3%
Infused Product Manufacturers	32%	38%	14%	16%	
Wholesale Cultivators	25%	41%	32%	1%	
Testing Labs		50%	33%	17%	
Ancillary Services Firms	46%	23%	21%	7%	3%
Ancillary Technology & Products Companies	27%	25%	31%	10%	6%
Percent Of Sector					

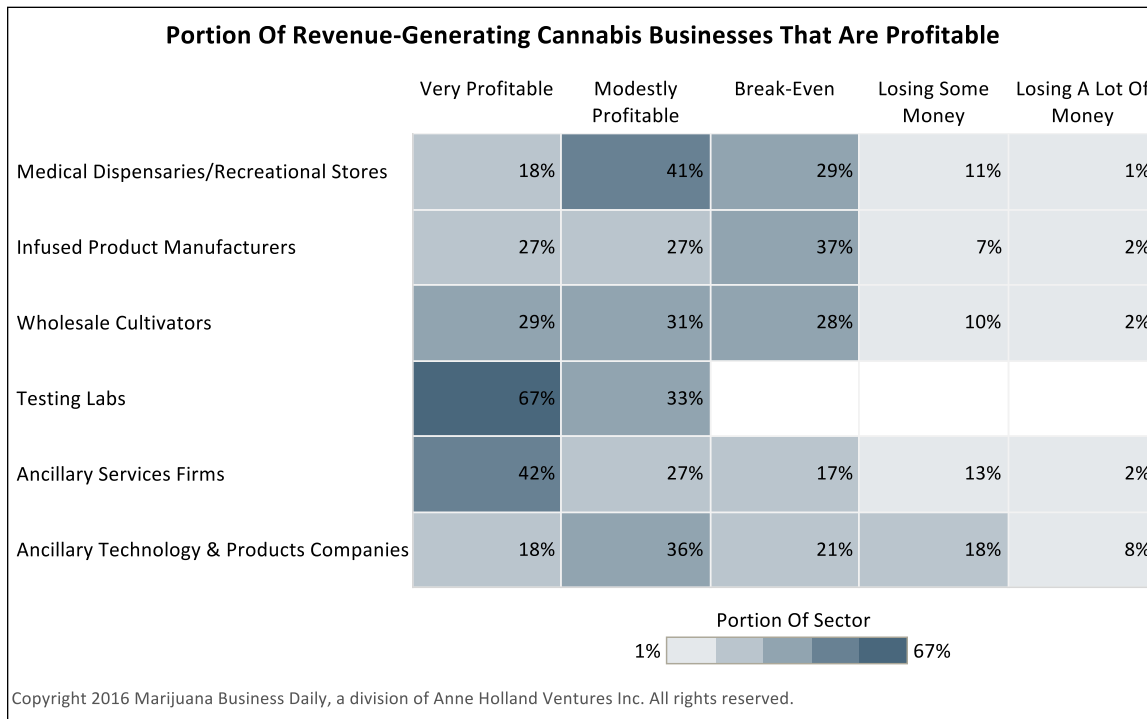
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Keeping in mind the delays cannabis businesses can and often do experience along the path to becoming operational, it's encouraging to note that half or more of the enterprises in every sector that have made it at least to break-even did so within a year's time.

### **Portion Of Profitable Cannabis Companies That Reached Break-Even/Profitability Within A Year:**

Medical Dispensaries/Recreational Stores	67%
Infused Product Manufacturers	70%
Wholesale Cultivators	66%
Testing Labs	50%
Ancillary Services Firms	69%
Ancillary Tech & Products Companies	52%

Chart 1.20: Portion Of Revenue-Generating Cannabis Businesses That Are Profitable



The picture isn't completely bright though: 15% of all cannabis companies are currently recording losses. Ancillary technology and products companies in particular seem to be experiencing some headwinds, with 26% experiencing losses, which could indicate saturation. Many of these companies could fold in the near future if they don't turn it around.

Still, the industry overall is relatively healthy from a profitability perspective.

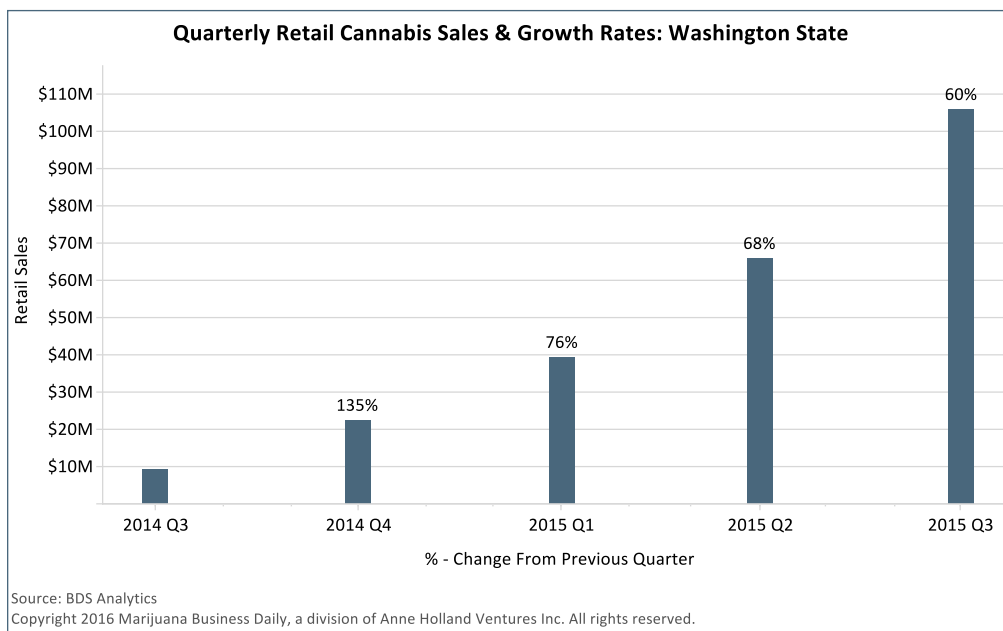
## Market In Focus: Washington State Point-of-Sale Data

One of the best ways to get quality market data and financial metrics in an industry is via point-of-sale data collected by retailers, which offers detailed insight into everything from transaction volume to popular products to overall customer preferences. Detailed product sales and other point-of-sale data are virtually nonexistent in the cannabis industry currently on the national level.

But there is some data on the state level, which provides cannabis entrepreneurs across the country with some valuable insights into sales, pricing trends and product preferences.

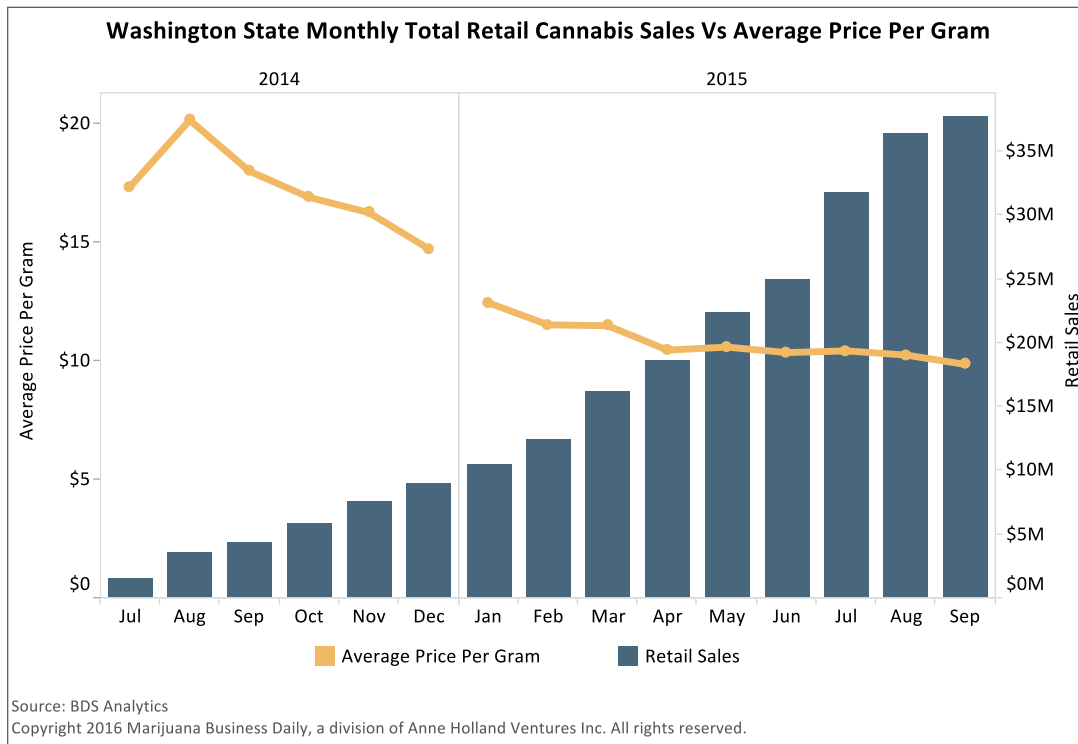
Here's a snapshot of point-of-sale data from Washington State's licensed rec shops.

Chart 1.21: Quarterly Retail Cannabis Sales & Growth Rates: Washington State



Early figures demonstrate the tremendous demand and growth potential in a state with legal recreational cannabis sales. Quarterly growth rates for total sales at retail have been in the high double-digits and even triple-digits for the past four calendar quarters, with total sales in the third quarter of 2015 totaling nearly \$106 million. This is even more impressive when taking into consideration the fact that sales via unlicensed medical cannabis dispensaries – which must obtain permits by July 2016 – are not currently represented in the data.

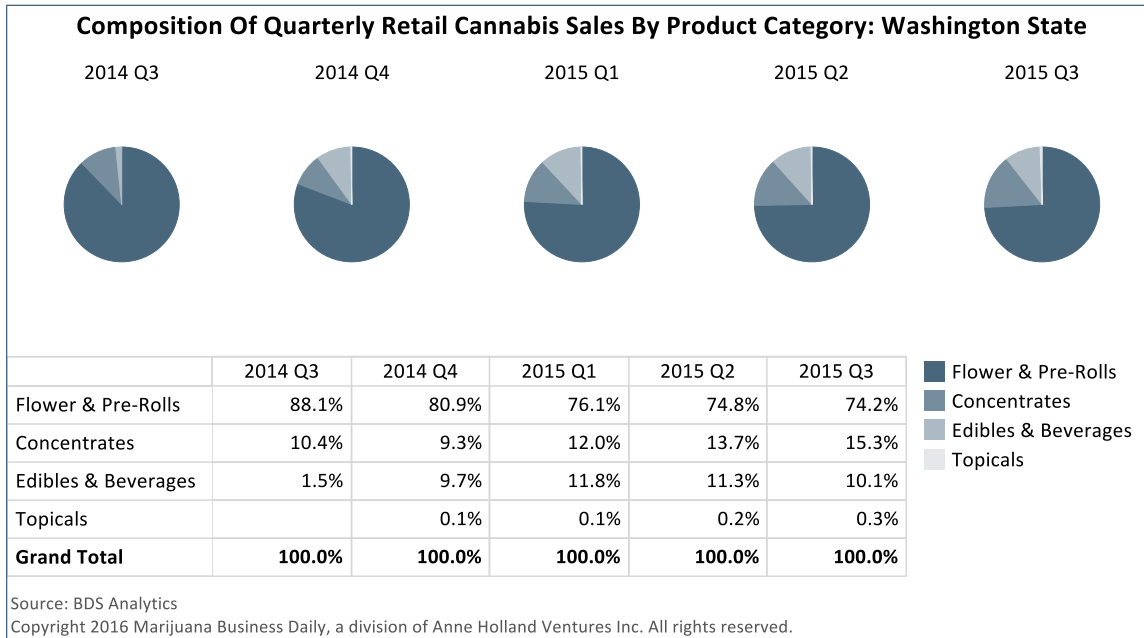
Chart 1.22: Washington State Monthly Total Retail Cannabis Sales Vs Average Price Per Gram



The trajectory of growth in month-over-month sales since the first licensed businesses began generating revenues in July 2014 is equally impressive. The \$38 million in sales posted in September 2015 was an astounding 850% higher than sales in that month one year prior.

The other important trend being observed in Washington State (and also in Colorado) is the immense downward pressure on prices. When recreational sales began, the average price per gram was \$17 and spiked even higher to \$20 in a short time, causing many people to believe that legal businesses would not be able to compete with the black market. However, as issues with cultivation capacity and retail store licensing have been sorted out, prices came down significantly to a much more reasonable \$10 per gram as of the end of the third quarter in 2015.

Chart 1.23: Composition Of Quarterly Retail Cannabis Sales By Product Category: Washington State

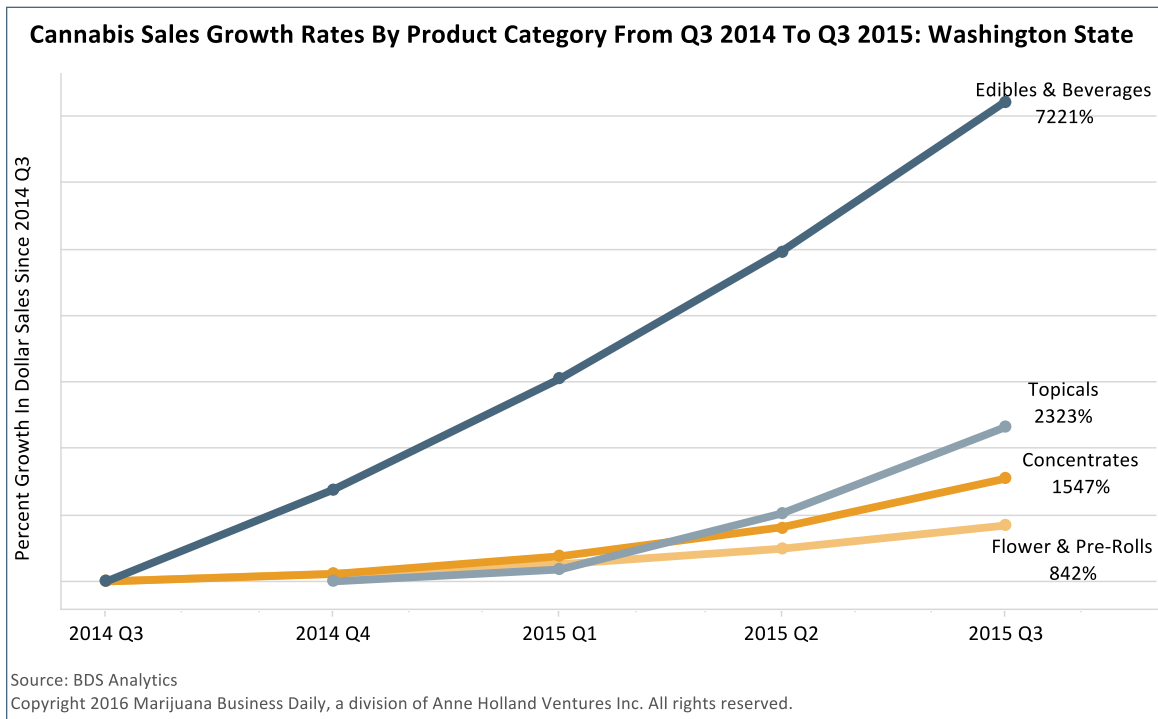


By many metrics, concentrates and edibles are absolutely exploding in popularity. This is partly due to their broad appeal among both medical and recreational consumers, as well as the wave of innovation legalization has afforded in this space. More than ever before, these products can be safely manufactured in commercial-grade environments, significantly reducing health and safety risks in doing so.

They're also finding broad appeal across all types of users, from inexperienced recreational users visiting states like Colorado and Washington to medical patients treating severe and chronic illnesses that require high dosages.

However, flower/dried herb is still the crowd favorite at present, and it accounts for a majority of dispensary/store revenue in states where this plant form is legal. Only time will tell whether the demand for flower eventually gives way to other products, but one thing is for sure: Demand for infused products and flower is strong. Businesses hoping to capture precious market share will be well positioned to do so by having a wide selection of infused products in addition to flower.

Chart 1.24: Cannabis Sales Growth Rates By Product Category From Q3 2014 To Q3 2015: Washington State



This view of the total growth in product sales by category really puts the industry's explosive expansion into perspective.

The growth rates will not hold up year after year as the market matures. But each of these categories is still poised to continue on an upward trend in Washington State as the industry fully moves from the shadows to the daylight.

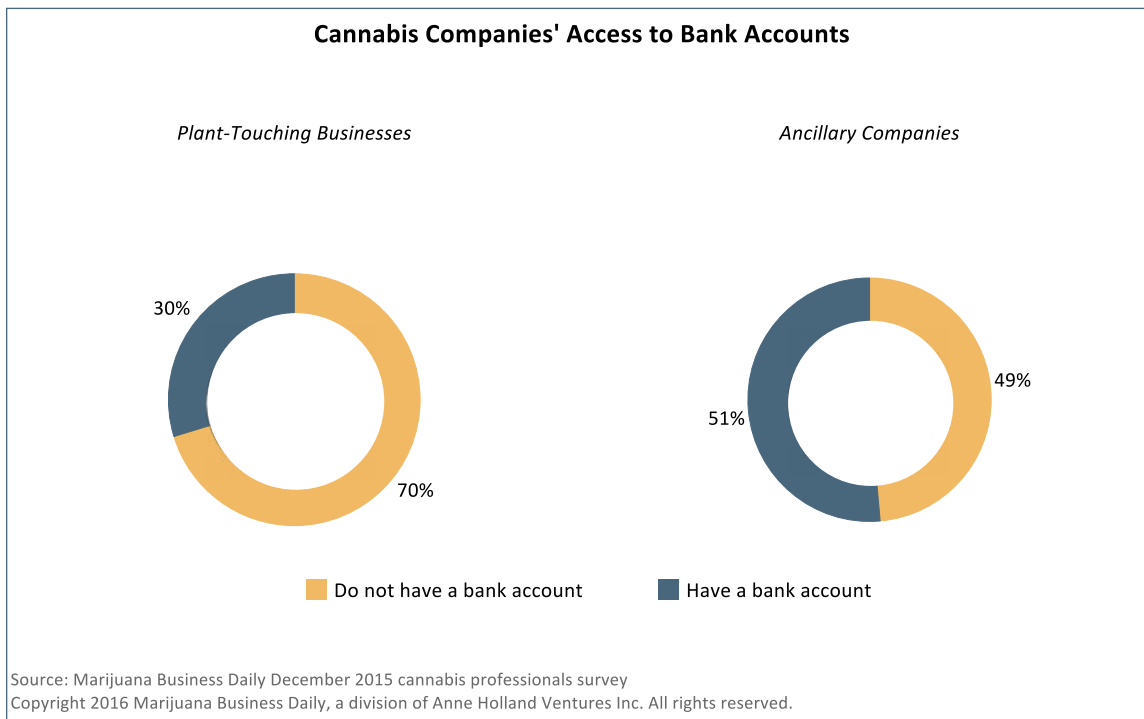
## THE BANKING CHALLENGE

One of the biggest ongoing operational obstacles in the cannabis industry is the extreme difficulties businesses face in obtaining and maintaining access to the banking system.

State legalization under the umbrella of federal prohibition creates an operating environment unlike that for any other industry in the world. Each day, cannabis entrepreneurs face the increasingly maddening paradox of operating legal enterprises in the eyes of the state, while remaining illegal drug traffickers in the federal government’s view.

One of the most problematic results of this circumstance is that the vast majority of banks, particularly federally chartered ones, won’t touch this industry. The risks of a mostly cash, federally illegal, nascent industry are simply too much for financial institutions to stomach, even among those with the most robust compliance programs.

Chart 1.25: Cannabis Companies’ Access To Bank Accounts



In that context, it’s perhaps encouraging to note that 30% and 51% of plant-touching and ancillary companies, respectively, have managed to forge the right relationships and jump through all of the hoops to obtain a basic business checking account, according to a *Marijuana Business Daily* survey of cannabis executives in December.

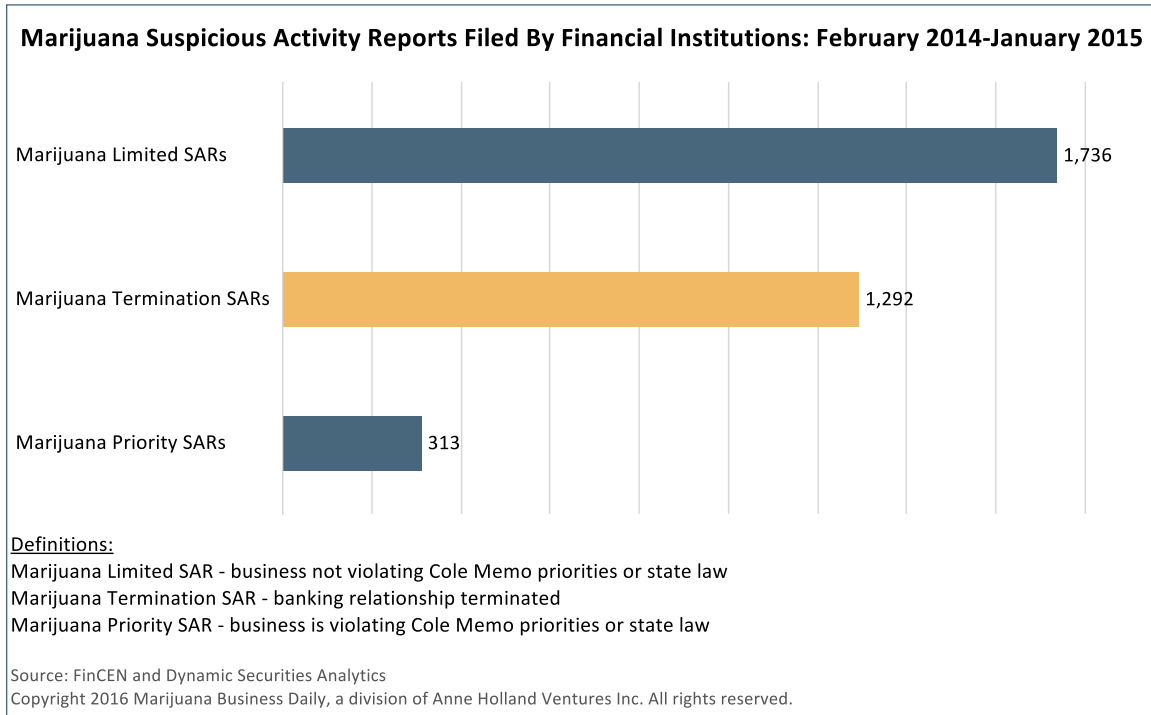
However, these businesses generally still don’t have and can’t get merchant accounts to process payments, nor can they get financing for things like equipment and commercial real estate. These figures are truly just cannabis companies that have managed to get a business checking account.

Among companies that currently have a checking account, 22% of them pay \$1,000 or more each month for the account, and 7% of all cannabis businesses have had three or more bank accounts closed by the financial institution.



These are very real hurdles to cannabis businesses that present ongoing threats of interruption to operations, loss of business, security risks, cash management issues and so on.

Chart 1.26: Marijuana Suspicious Activity Reports Filed By Financial Institutions: February 2014-January 2015



All financial institutions – banks, credit unions, money services businesses, etc. – are required to file forms called Suspicious Activity Reports (SARs) on individuals and companies that trigger certain compliance monitoring red flags. Thanks to guidance released by the federal government in 2014 with regard to enforcement priorities, financial institutions that do choose to serve cannabis businesses have some parameters within which they can do so.

One of the outcomes of that guidance was the recommended use of certain language when filing SARs on cannabis businesses. One such category, so-called “Marijuana Termination SARs,” represent instances where the bank had no reason to suspect a cannabis business was violating state law or other Department of Justice enforcement priorities, but elected to close the business account anyhow.

To that end, nearly 1,300 cannabis businesses had bank accounts closed between February 2014 and January 2015, a trend that continues through present.

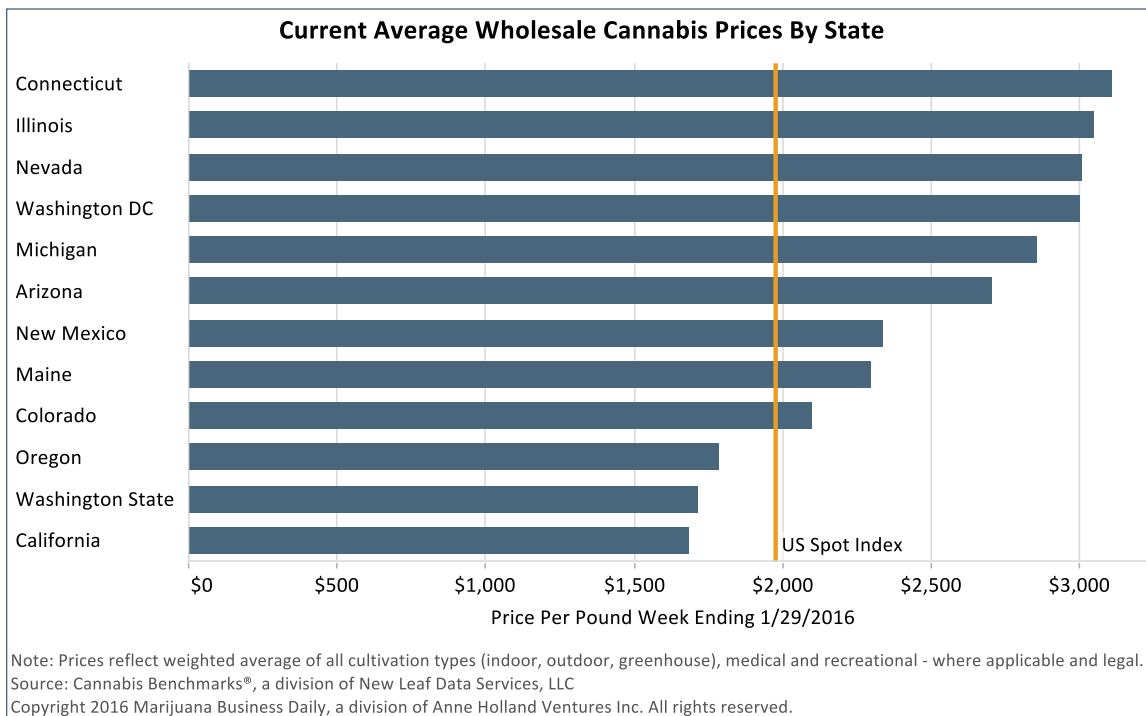
## Marijuana As A Commodity: National Wholesale Pricing Insights

Though many people may not immediately think of it in this manner, cannabis is ultimately an agricultural industry, subject to seasonality, price volatility and other factors.

As with any other commodity, a critical piece of a fully functioning marketplace is the transparency of settlement prices for all market participants. Changes to the wholesale price of cannabis in a given market can greatly impact revenue and margins for all plant-touching businesses in the supply chain. Marijuana entrepreneurs in states with wholesale cannabis markets need insight to current pricing and seasonal trends to develop budgets, manage cash flow and inventory and facilitate other operational decisions.

Following is a snapshot of cannabis wholesale price trends across the country. Unless otherwise noted, prices reflect settled transactions between legal market participants for both medical and recreational cannabis, where legal/applicable. Note: Sales of wholesale recreational cannabis are only legal in Colorado, Washington State and Oregon at present; wholesale medical marijuana is only legal in California, Colorado, Connecticut, Illinois, Nevada, New Mexico, Oregon, Washington DC and Washington State. The U.S. Spot Index price is the weighted average for the entire industry.

Chart 1.27: Current Average Wholesale Cannabis Prices By State



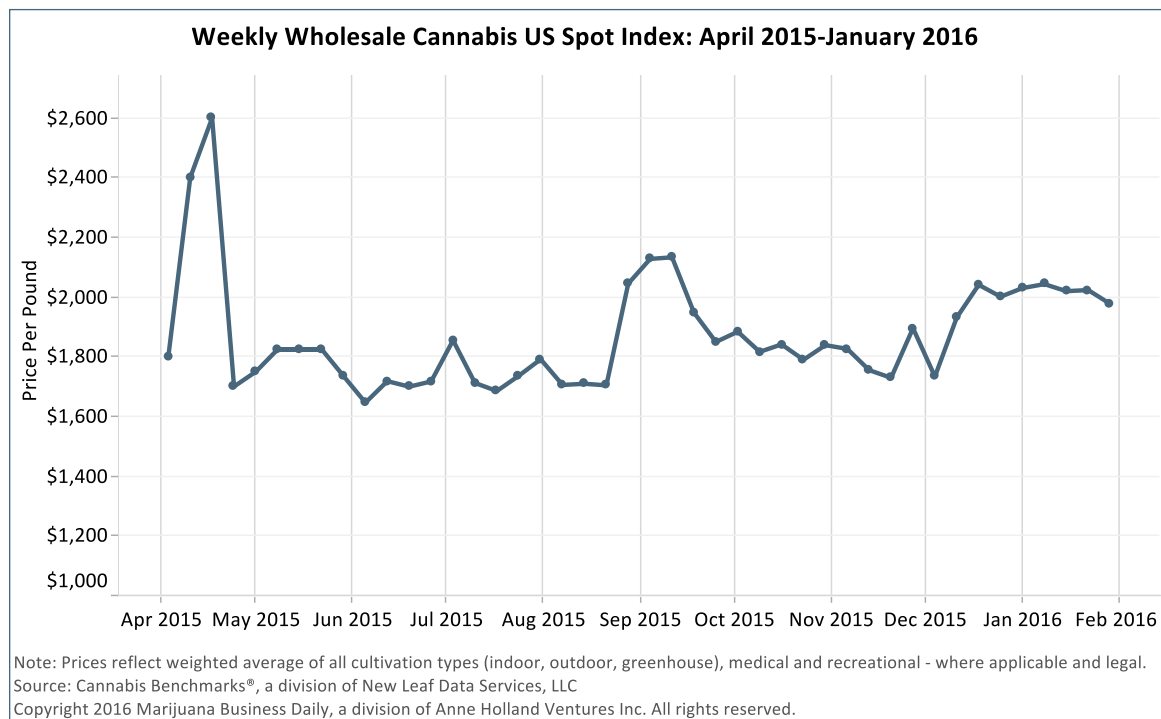
Though wholesale prices in individual states and among transactions vary throughout the year and across markets, this chart of the weighted average spot price per pound for a week in January illustrates the true range of pricing in the industry today.

California consistently has some of the lowest wholesale cannabis prices, primarily because of the largely unregulated nature of the market there at this time. In light of the passage of sweeping statewide regulations last year that will take effect by 2018, wholesale prices will almost surely increase in the future to reflect the increased cost of doing business.

In states like Washington, Oregon and Colorado, the downward pressure on prices that exists in robust markets with an abundance of buyers and sellers is evident.

On the other end of the spectrum, Nevada and Illinois are brand new markets and these prices will likely come down somewhat as the industries there mature and seek equilibrium. The overall weighted average price per pound of cannabis – the U.S. Spot price – at the end of January was \$1,977.

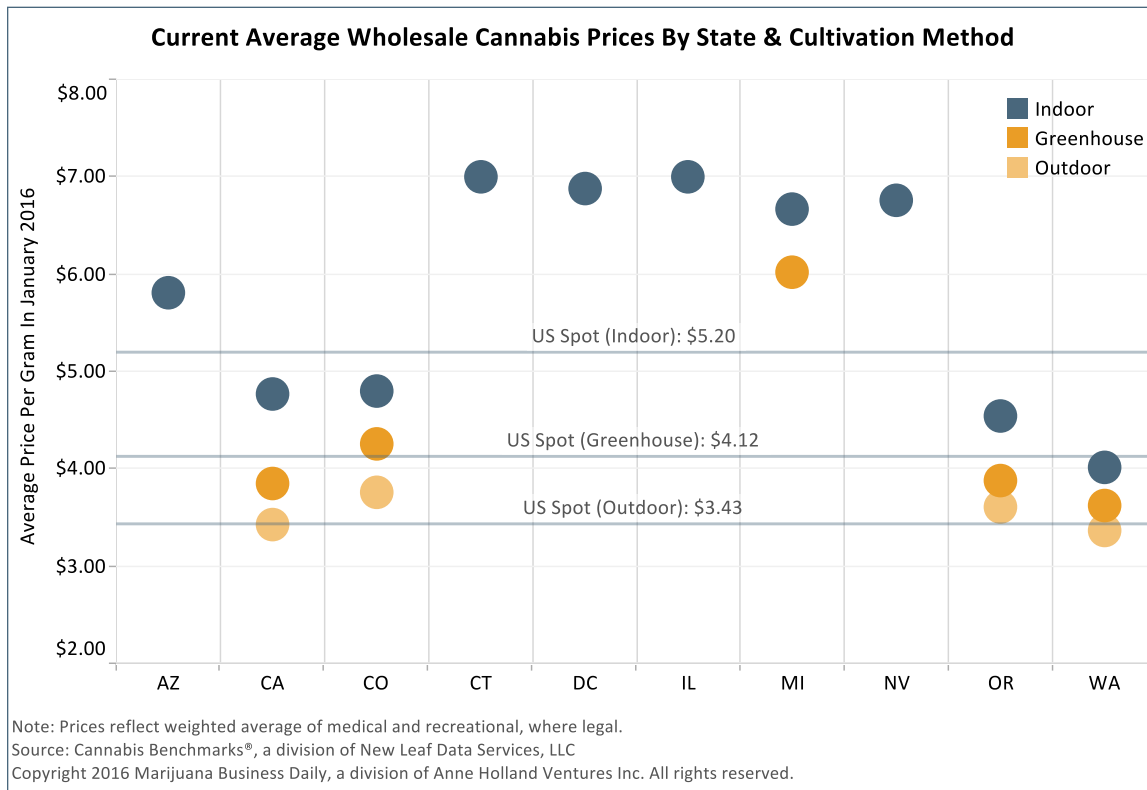
Chart 1.28: Weekly Wholesale Cannabis US Spot Index: April 2015-January 2016



Similar to events and holidays that result in spikes of alcohol sales, peaks and valleys have been observed in the demand for cannabis throughout the year. One of the busiest times of year for marijuana retailers, particularly those that serve the recreational market, is the unofficial cannabis holiday of April 20. As customer demand spiked in the weeks leading up to that date in 2015, wholesale prices increased in response to retailers' higher demand for inventory.

Other spikes can be observed to coincide with the Fourth of July and Christmas/New Year's holidays. In other cases, they are related to cycles within the industry itself, such as the increase observed in late summer as indoor cultivation costs rose in response to higher temperatures and harvests from earlier in the year are depleted.

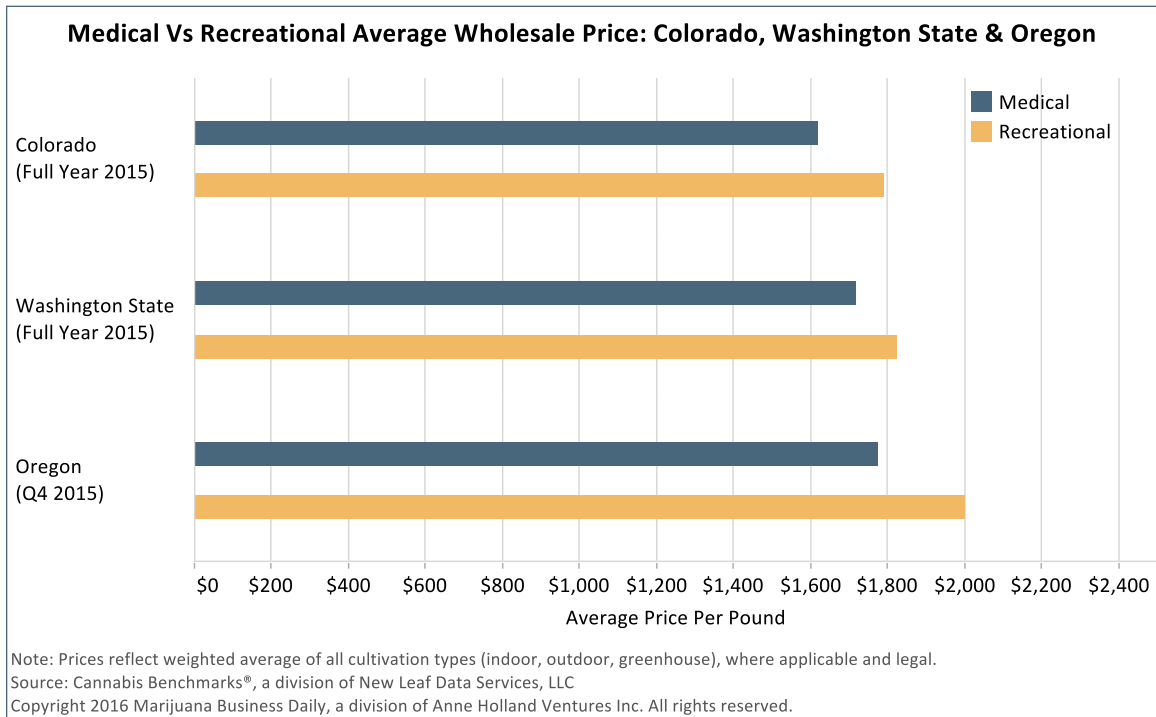
Chart 1.29: Current Average Wholesale Cannabis Prices By State & Cultivation Method



While most people know or can understand that wholesale pricing also differs based on whether the cannabis was cultivated indoors, outdoors or in a greenhouse, the actual degree to which those prices can vary may surprise some. On the whole, cannabis that’s grown indoors will always fetch higher prices than that grown outdoors or in greenhouses, primarily because of aesthetics rather than actual differences in quality or potency.

However, it’s interesting to observe that prices per gram in Washington State differ far less among cultivation methods than in California, where a larger premium is placed on marijuana grown indoors. Though all prices will fluctuate throughout the year, the relative price differences observed between cultivation methods within a given state will largely remain in place and would only change in response to either significant shifts in consumer demand and/or cultivation methods/technology that result in a material change to the quality of cannabis cultivated under a particular method.

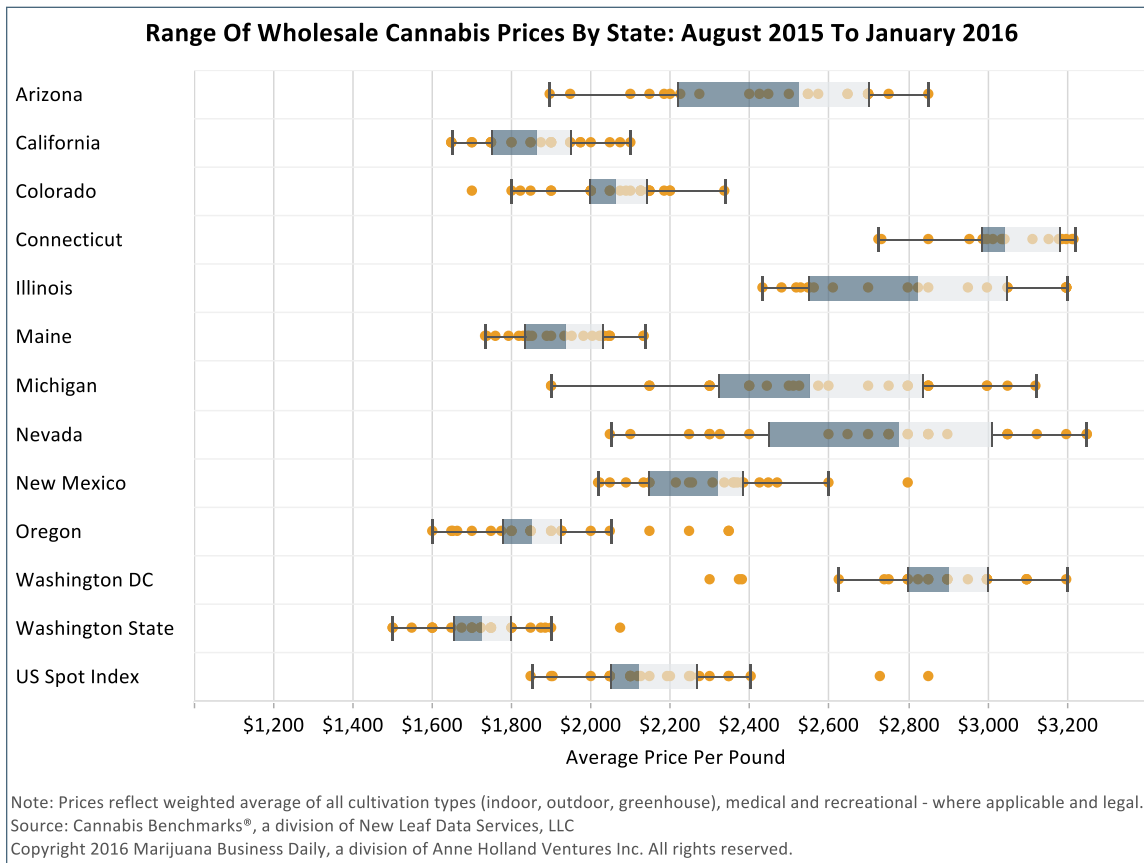
Chart 1.30: Medical Vs Recreational Average Wholesale Cannabis Price: Colorado, Washington State & Oregon



Wholesale cannabis bound for the recreational market fetches higher prices than marijuana headed to the medical market. This is driven in part by higher demand and a larger addressable customer base in recreational markets than medical ones. Disparate regulatory environments for the medical and rec industries in these states also factors into the equation.

It will be interesting to observe the relationship between medical and recreational cannabis prices in these markets as they continue to mature. In Washington State, medical dispensaries are not currently licensed and regulated by the state. However, that will no longer be the case as of July when all medical and recreational businesses will be subject to the exact same regulatory structure. By comparison, medical and recreational cannabis in Colorado are subject to different regulatory regimes, which will continue to be reflected in wholesale price differences as long as that circumstance persists.

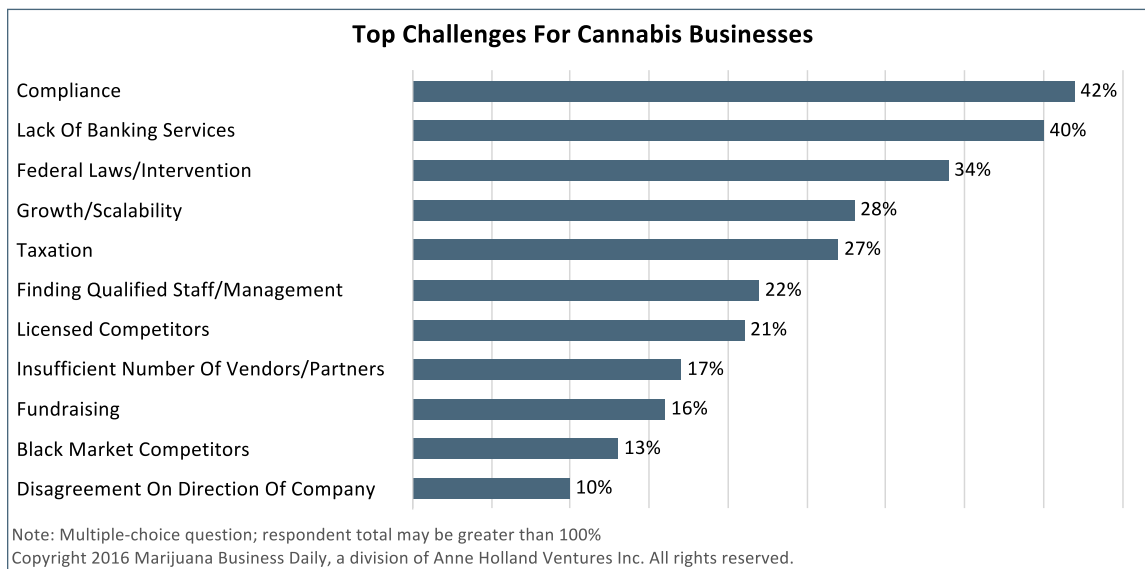
Chart 1.31: Range Of Wholesale Cannabis Prices By State: August 2015 Through January 2016



The ranges in wholesale prices observed in each state from August 2015 to January 2016 paint another picture of the varying levels of volatility. Despite the large difference in actual typical wholesale price per pound between California and Connecticut, for example, the range of price movements in each is small, indicating a relative degree of stability in those states. By contrast, the range of prices in Nevada is indicative of a market in the throes of uncertainty.

## DOMESTIC CANNABIS INDUSTRY OUTLOOK

Chart 1.32: Top Challenges For Cannabis Businesses

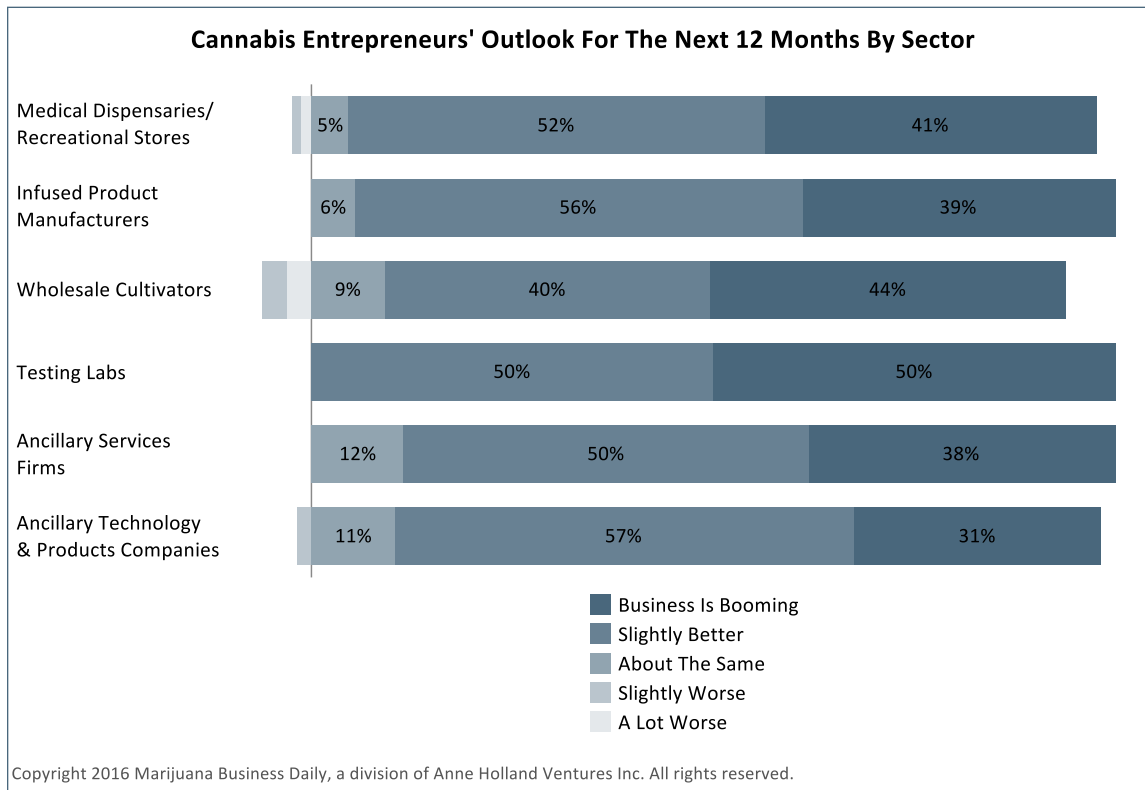


For the third year in a row now, the top challenge cannabis businesses report facing is achieving and maintaining compliance with local and state regulatory requirements. This will likely persist for the foreseeable future as new states legalize cannabis and come online, and older ones establish rules or implement more rigorous regulatory frameworks.

Right behind compliance in the number two spot is the more widely discussed issue of cannabis companies' general lack of access to banking services, as previously highlighted in this chapter.

Challenges managing growth and achieving scalability are on the rise and will be relevant for more companies over the coming years as the field of startups gives way to young companies in full expansion mode. Finally, it's promising to see that only about one out of ten companies are experiencing major competition from the black market, though this varies greatly by region and is a much bigger problem in certain areas than in others.

Chart 1.33: Cannabis Entrepreneurs' Outlook For The Next 12 Months By Sector

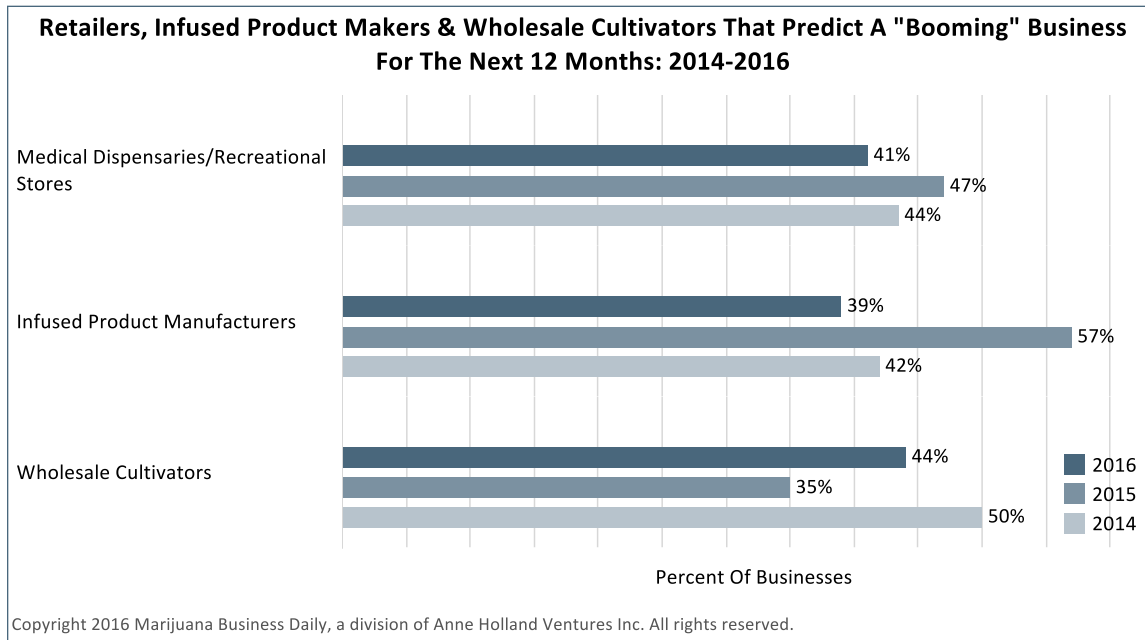


Despite the incredible challenges cannabis businesses face on a daily basis, optimism still abounds in this industry. None of this year’s survey respondents in the infused product manufacturing, testing lab or ancillary services sectors anticipated any sort of decline for their business in the next 12 months. Furthermore, the portion of businesses in the other sectors that anticipate worsening conditions over the next year is in the single digits.

That being said, trouble is brewing for some wholesale cultivators in certain markets, as big shakeouts are underway or shortly will be in large markets like Washington State, Oregon and California. What specific impact this will have on other businesses in those markets or for the industry as a whole remains to be seen, but this sector in particular will face a high degree of volatility in the near future.



Chart 1.34: Retailers, Infused Product Makers & Wholesale Cultivators That Predict A "Booming" Business For The Next 12 Months: 2014-2016



Wholesale cultivators in certain markets may be facing some tough times right now. Interestingly, this sector's optimism for the next 12 months has improved quite a bit from last year despite these challenges. However, the portion of these businesses that predicted a "booming" outlook over the year has remained below levels from two years ago, indicating this sector experienced a fair degree of difficulty over the past couple of years.

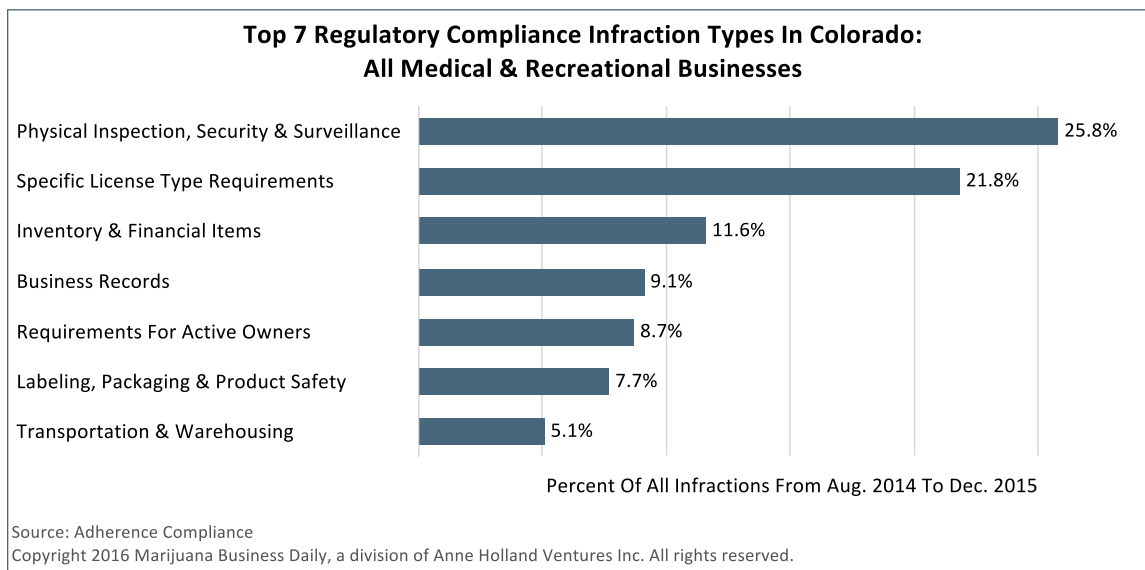
By comparison, retailers and infused product makers aren't as bullish on their prospects for the next 12 months as they have been over the past couple of years. There has been a tremendous amount of acceleration within and across the whole industry since late 2012, and this pullback on the part of retailers and infused product makers is likely due to that momentum merely abating after such a frenetic push forward. In that regard, over 90% of businesses in these two sectors still have a positive outlook for this year and anticipate at least modest gains.

## Regulatory Compliance At A Glance: Top Issues & Infractions

Achieving and maintaining compliance with all applicable local, state and federal laws is a monumental task for cannabis companies across the country, especially for those that have multiple locations in one state or operate in several markets.

Here's a look into the areas where medical and recreational retailers, infused product manufacturers and cultivators in Colorado are faring well or struggling to operate in a compliant manner, providing a look into similar issues that other marijuana businesses across the country are dealing with at present.

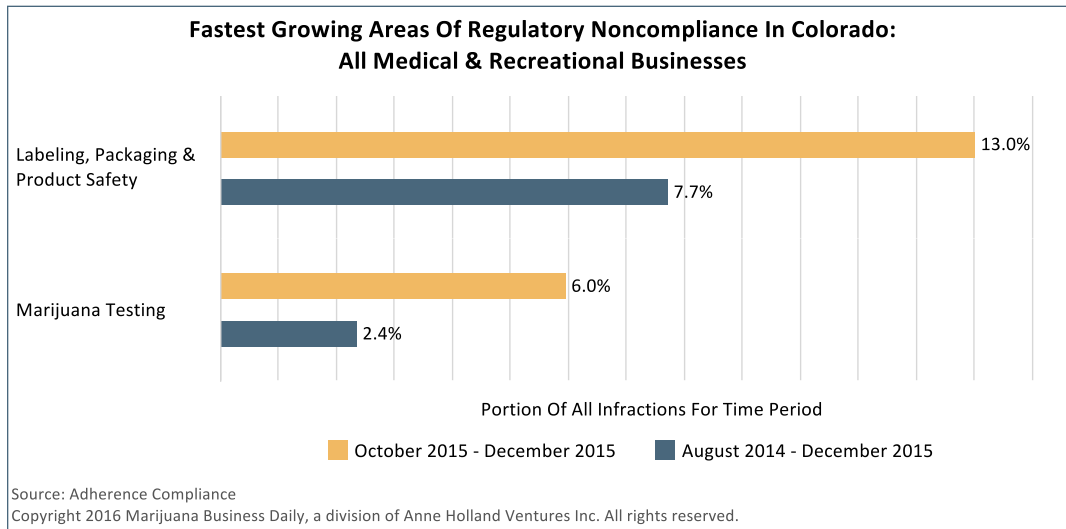
Chart 1.35: Top 7 Regulatory Compliance Infraction Types In Colorado: Medical & Recreational Businesses



By far, the most common infraction type for Colorado licensees is with regard to rules and regulations for security/surveillance of the licensed premise. Regardless of which time period is analyzed, this infraction category holds the top spot among all medical and recreational licensees in the state.

The second most common infraction category is requirements for a particular license type, such as medical cultivation, recreational store and so on. This is not surprising, as Colorado's rules are quite extensive. But this also demonstrates the degree of complexity these business owners face with regard to managing compliance. (Specific infractions in most of these categories are provided in the latter part of this section.)

Chart 1.36: Fastest Growing Areas Of Regulatory Noncompliance In Colorado: All Medical & Recreational Businesses



Largely in response to new rule promulgation, the fastest growing areas of noncompliance for Colorado cannabis businesses are in the areas of labeling, packaging and product safety, and lab testing – all of which are hot-button topics within the industry as a whole.

The portion of cannabis companies receiving infractions for requirements related to testing has nearly tripled when only looking at data from Q4 2015 compared to the whole August 2014 through December 2015 time frame.

Chart 1.37: Most Common Regulatory Compliance Infraction Types From July 2015-December 2015: Medical & Recreational Retailers

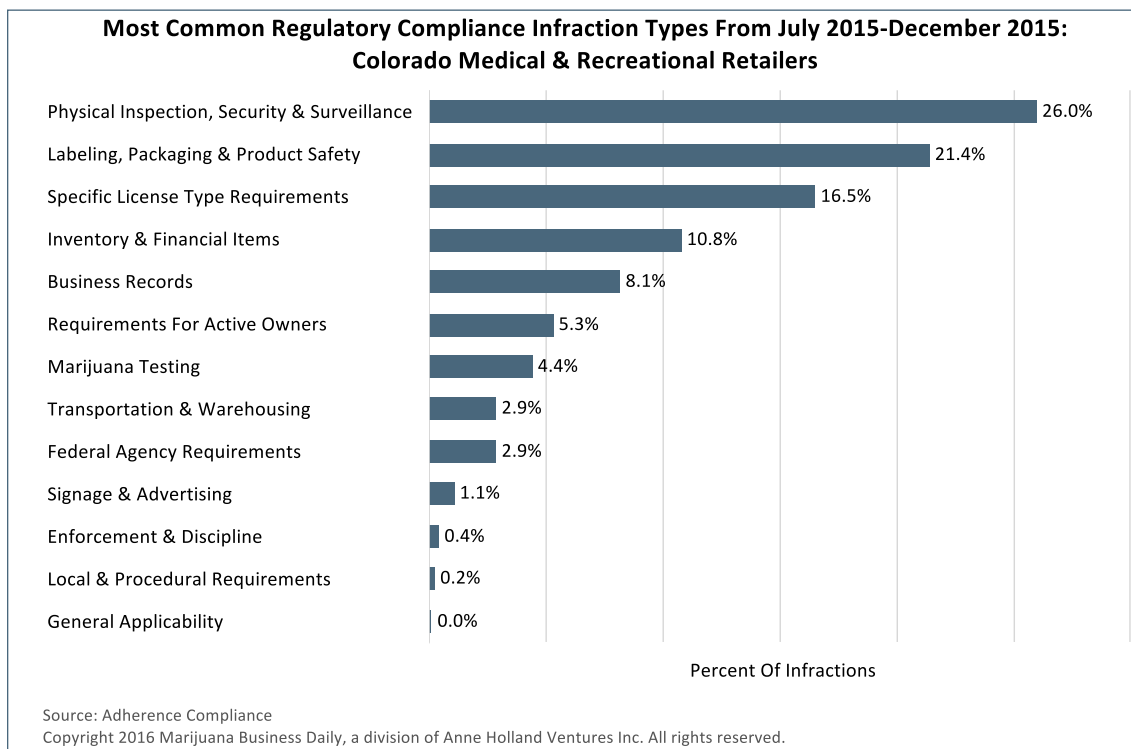


Chart 1.38: Most Common Regulatory Compliance Infraction Types From July 2015-December 2015: Medical & Recreational Cultivators

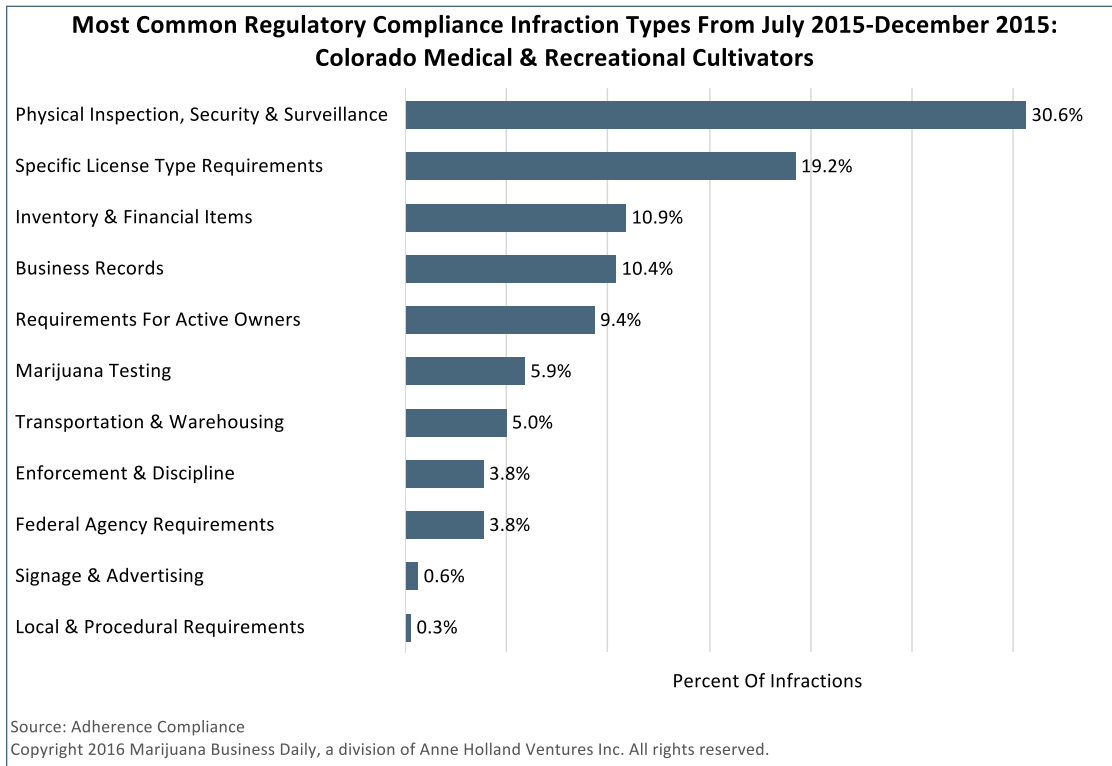
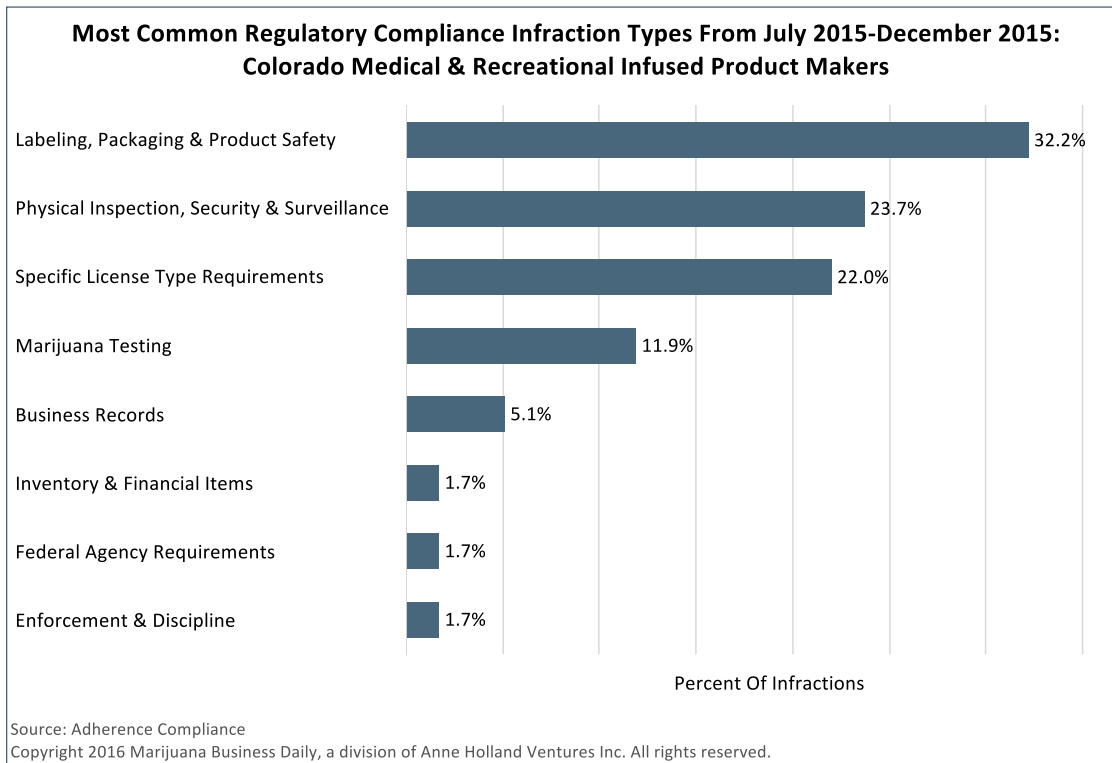


Chart 1.39: Most Common Regulatory Compliance Infraction Types From July 2015-December 2015: Colorado Medical & Recreational Infused Product Makers



In the second half of 2015, the top area of noncompliance for both Colorado retailers and cultivators were items noted during a physical inspection of the premises and reviews of security and surveillance requirements. As previously mentioned, this category also holds the all-time top spot among infractions for all medical and recreational business types, so it's not just certain businesses that struggle in this area.

The top five specific infractions in the physical inspection category – across all license types – are as follows:

1. Cameras do not cover all limited access areas, point-of-sale area, product displays, security rooms, in/egress and exterior of the licensed premise
2. The facility does not have a current list and log of all authorized employees and personnel with access to the surveillance system
3. The licensee does not maintain accurate and comprehensive records regarding waste disposal
4. All video surveillance records and recordings (DVR) are not stored in a secure area that is only accessible to a licensee's management staff
5. The facility does not make all marijuana and MIP (marijuana infused products) waste unusable and unrecognizable prior to leaving the licensed premise

Chart 1.40: Change In Most Common Infraction Types Over Time: Medical & Recreational Retailers

<b>Change In Most Common Infraction Types Over Time: Colorado Medical &amp; Recreational Retailers</b>			
<i>Infraction Type &amp; Rank For August 2014 Through December 2015</i>		<i>Infraction Type &amp; Rank For July 2015 Through December 2015</i>	
Physical Inspection, Security & Surveillance	1	Physical Inspection, Security & Surveillance	1
Specific License Type Requirements	2	Labeling, Packaging & Product Safety	2
Labeling, Packaging & Product Safety	3	Specific License Type Requirements	3
Inventory & Financial Items	4	Inventory & Financial Items	4
Requirements For Active Owners	5	Business Records	5
Business Records	6	Requirements For Active Owners	6
Federal Agency Requirements	7	Marijuana Testing	7
Transportation & Warehousing	8	Federal Agency Requirements	8
Marijuana Testing	9	Transportation & Warehousing	8
Signage & Advertising	10	Signage & Advertising	10
Enforcement & Discipline	11	Enforcement & Discipline	11
Local & Procedural Requirements	12	Local & Procedural Requirements	12
General Applicability	13	General Applicability	13

Source: Adherence Compliance  
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The top five specific infractions in the labeling, packaging and product safety category – across all license types – are as follows:

1. The required labeling on containers is obstructed and/or inconspicuous
2. Labeling on the packaging and containers is not larger than 1/16 of an inch
3. Missing statement: There may be additional health risks associated with the consumption of this product for women who are pregnant, breast-feeding, or planning on becoming pregnant
4. Missing statement: This product was produced without regulatory oversight for health, safety, or efficacy
5. All edibles do not carry a product expiration date, when the product will no longer be fit for consumption

Chart 1.41: Change In Most Common Infraction Types Over Time: Medical & Recreational Cultivators

<b>Change In Most Common Infraction Types Over Time: Colorado Medical &amp; Recreational Cultivators</b>			
<i>Infraction Type &amp; Rank For August 2014 Through December 2015</i>		<i>Infraction Type &amp; Rank For July 2015 Through December 2015</i>	
Physical Inspection, Security & Surveillance	1	Physical Inspection, Security & Surveillance	1
Specific License Type Requirements	2	Specific License Type Requirements	2
Inventory & Financial Items	3	Inventory & Financial Items	3
Business Records	4	Business Records	4
Requirements For Active Owners	5	Requirements For Active Owners	5
Transportation & Warehousing	6	Marijuana Testing	6
Federal Agency Requirements	7	Transportation & Warehousing	7
Enforcement & Discipline	8	Federal Agency Requirements	8
Marijuana Testing	9	Enforcement & Discipline	8
Labeling, Packaging & Product Safety	10	Signage & Advertising	10
Signage & Advertising	11	Local & Procedural Requirements	11
Local & Procedural Requirements	12	Labeling, Packaging & Product Safety	12
General Applicability	13	General Applicability	12

Source: Adherence Compliance  
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Meeting marijuana testing requirements has been a particularly challenging area for many of Colorado’s cultivators and infused product manufacturers. There were several large recalls on the part of these businesses last year, primarily due to failed test results because of the presence of pesticides.

The top five specific infractions in the marijuana testing category – across all license types – are as follows:

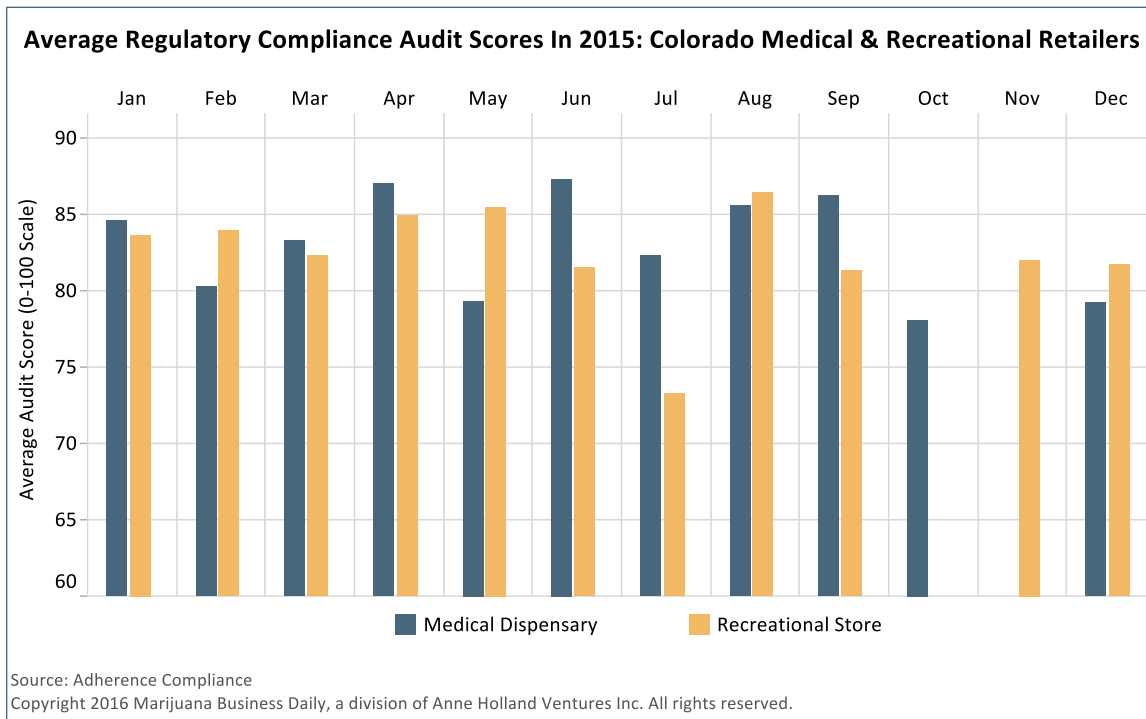
1. The facility does not maintain all testing results as part of its business books and records (on file)
2. The licensee has not previously submitted raw cannabis or infused products for contaminant testing
3. The licensee has not submitted adequate harvest/production batches for testing
4. The licensee has not passed all previous harvest batch testing and has had one or more product recalls
5. The licensee has not passed all previous product batch testing and has had one or more product recalls

Chart 1.42: Change In Most Common Infraction Types Over Time: Colorado Medical & Recreational Infused Product Makers

<b>Change In Most Common Infraction Types Over Time: Colorado Medical &amp; Recreational Infused Product Makers</b>			
<i>Infraction Type &amp; Rank For August 2014 Through December 2015</i>		<i>Infraction Type &amp; Rank For July 2015 Through December 2015</i>	
Physical Inspection, Security & Surveillance	1	Labeling, Packaging & Product Safety	1
Specific License Type Requirements	2	Physical Inspection, Security & Surveillance	2
Labeling, Packaging & Product Safety	3	Specific License Type Requirements	3
Inventory & Financial Items	4	Marijuana Testing	4
Requirements For Active Owners	5	Business Records	5
Business Records	6	Inventory & Financial Items	6
Federal Agency Requirements	7	Federal Agency Requirements	6
Marijuana Testing	7	Enforcement & Discipline	6
Transportation & Warehousing	9	Requirements For Active Owners	9
Enforcement & Discipline	9	Transportation & Warehousing	9
Signage & Advertising	11	Signage & Advertising	9
Local & Procedural Requirements	11	Local & Procedural Requirements	9
General Applicability	13	General Applicability	9

Source: Adherence Compliance  
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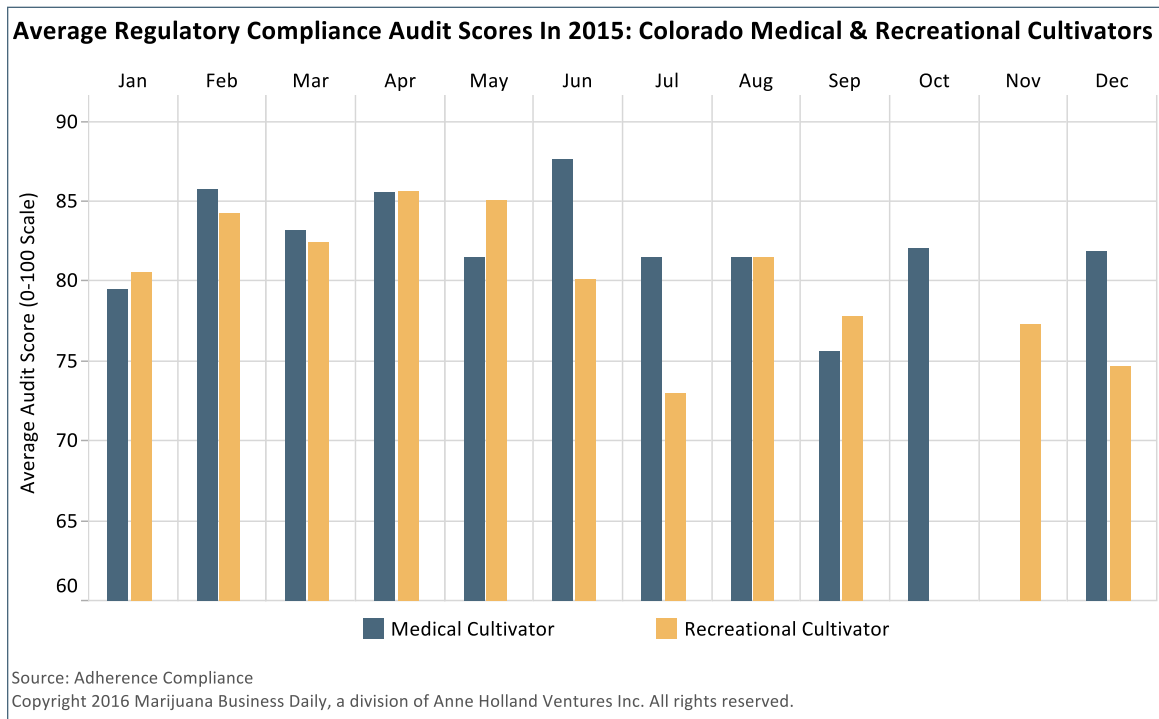
Chart 1.43: Average Regulatory Compliance Audit Scores In 2015: Medical & Recreational Retailers



Upon completion of an audit by Adherence Compliance, licensees’ compliance is boiled down to a single risk score, which is similar to a FICO score for assessing consumer credit worthiness, and where a higher number means a lower risk profile. Though many individual retailers have certainly made improvements in their overall level of compliance, it’s interesting to note there is no current trend toward increased levels of compliance for retail businesses in Colorado at present, demonstrating how much of a challenge compliance risk management really presents for these businesses.

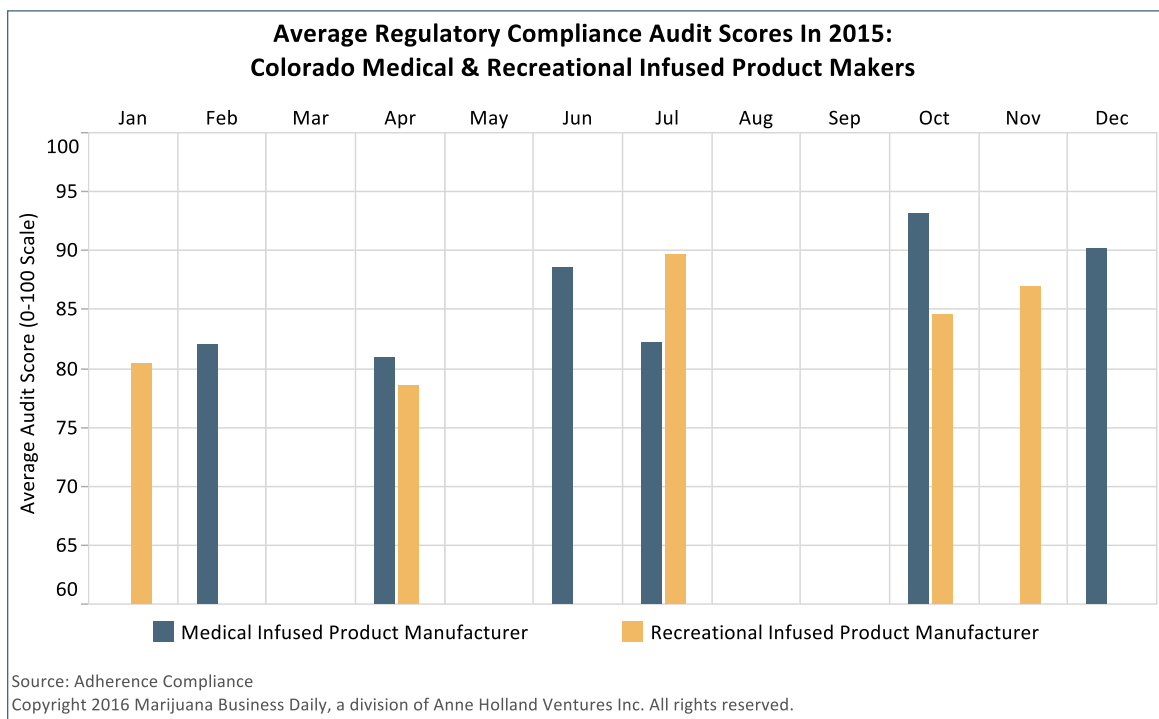


Chart 1.44: Average Regulatory Compliance Audit Scores In 2015: Medical & Recreational Cultivators



By comparison, Colorado’s wholesale cultivators appear to be struggling to maintain compliance recently, with noticeable downward trends in the average compliance scores in the second half of last year for both medical and recreational growers.

Chart 1.45: Average Regulatory Compliance Audit Scores In 2015: Colorado Medical & Recreational Infused Product Makers



The figures for Colorado's licensed cannabis businesses reflect the tumultuous nature of the state's medical and recreational markets, where new rules continue to be rolled out, moratoriums on businesses are implemented or extended, and companies are generally still working to gain a foothold with the voluminous rules and regulations.

Similar circumstances are playing out in other cannabis markets around the country as the industry faces the long road of legitimization. Cannabis companies in most states will continue to face a high degree of operational uncertainty for many years to come.



# State-By-State: Legal Overview, Market Data and Outlook

Unlike most industries in the U.S., the cannabis business varies significantly by state, county and even city. Each market has distinct and often widely varying laws and regulations that define the operational environment and associated business opportunities (or lack thereof).

For example:

- Most states' medical marijuana laws allow commercial production and sales via dispensaries and require these businesses to obtain licenses, though in some states the law is unclear or deems these businesses illegal.
- In many states, dispensaries are permitted to operate as for-profits, but in others they are mandated to operate on a not-for-profit basis.
- Home/personal cultivation is allowed in most medical and recreational cannabis markets, but some states ban it or have implemented strict limits that preclude a majority of patients/consumers.
- There has been a tendency in new recreational markets to limit the potential license applicant pool to pre-existing medical dispensary operators, at least on an interim/temporary basis.
- Some of the newer medical cannabis states completely ban sales of flower/dried herb, which still accounts for a majority of dispensary/store sales in markets where this product is permitted.

Aside from these disparate rules, there is also a large discrepancy in the degree to which each state provides data related to its medical and/or recreational markets. Some states provide robust data on patients, sales figures, product mix, tax revenue and other key data points on a regular basis, while others don't track or report any information at all. Without these key figures, it's incredibly difficult to get an idea of how big the market – and therefore business opportunities – are in any given state.

That's where this chapter comes in. The following pages offer a concise state-by-state overview of the country's convoluted medical and recreational cannabis laws as well as exclusive market data, sales estimates and patient counts. This serves as a handy one-stop resource for information about each state and helps put some numbers around the size of the market and its overall potential. We've also included a page on Canada at the end, as many U.S. businesses are involved in the country's cannabis market or hope to be soon.

**Exclusive:** In each state profile, we've included a Business Stability Rank and a Business Opportunity Rank. These are exclusive rankings that sum up the overall business climate for cannabis companies and provide an idea of the expected level of volatility. The ratings take into account the status and limitations of the state's cannabis program, recent/expected developments that affect the industry, local support for and resistance to cannabis businesses and laws, and other factors.

**New This Year:** New details on whether there are limitations on permitted products/consumption methods have been added to each state profile. Our initial 2015 sales projections from last year have been updated when necessary to reflect official year-end data or new factors that influenced the figures. This chapter includes projections and updated data for all the new states that came online in 2015, including Delaware, Illinois, Massachusetts, Minnesota, New York and Nevada, as well as Oregon's rec market. Finally, we also now provide estimates for up-and-coming markets such as Alaska (recreational) and Maryland, New Hampshire and Hawaii (medical).

We strive to provide the most up-to-date information, so we incorporate current trends, major developments that have or could affect the industry, and other factors. All information is as current as possible, but be aware that figures and facts change quickly in this industry. Additionally, there is a lag time between the research for this report and its publication. Most information in this chapter is current as of early February.

**Important:** Sales estimates are for dispensaries/stores only and do not include private transactions between caregivers and patients, wholesale transactions, black market activity or delivery-only services. Unless otherwise noted, business licenses are required to be renewed annually.

More information on our methodology can be found in the Appendix.

**Note:** This chapter highlights some markets where medical dispensaries currently exist, even if they operate in a gray area legally, aren't subject to statewide regulations or are outright banned. Dispensaries in these states are highly subject to the whims of local jurisprudence and law enforcement. In other cases, these businesses have not popped up at all because state law forbids them.

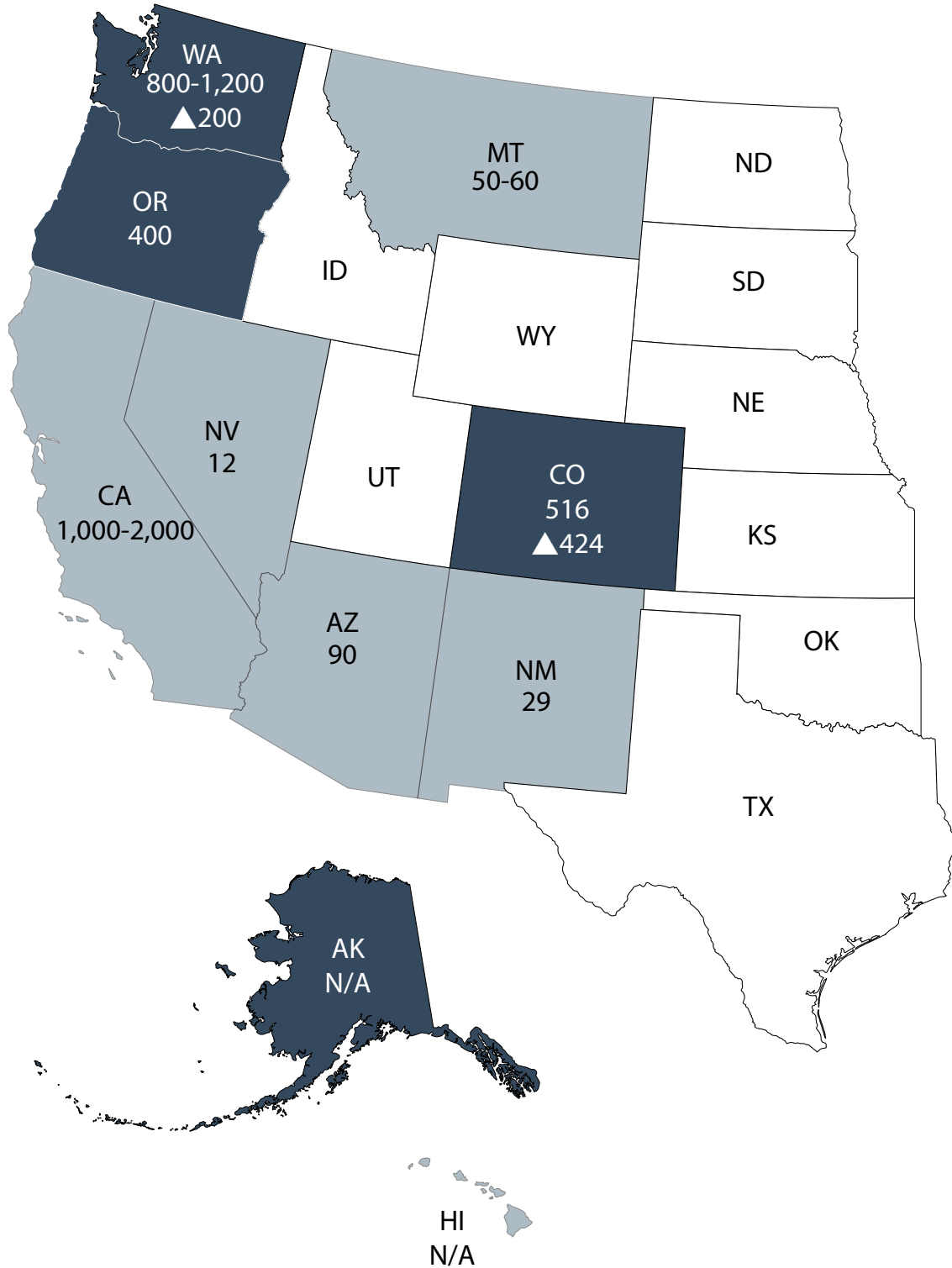
There are only a handful of states that have legalized medical marijuana but haven't yet regulated the industry. Featuring all of the medical and recreational states presents a clearer picture of the national marijuana market and the level of business opportunities across the country.

Table 2.1: State Stability and Opportunity Rankings

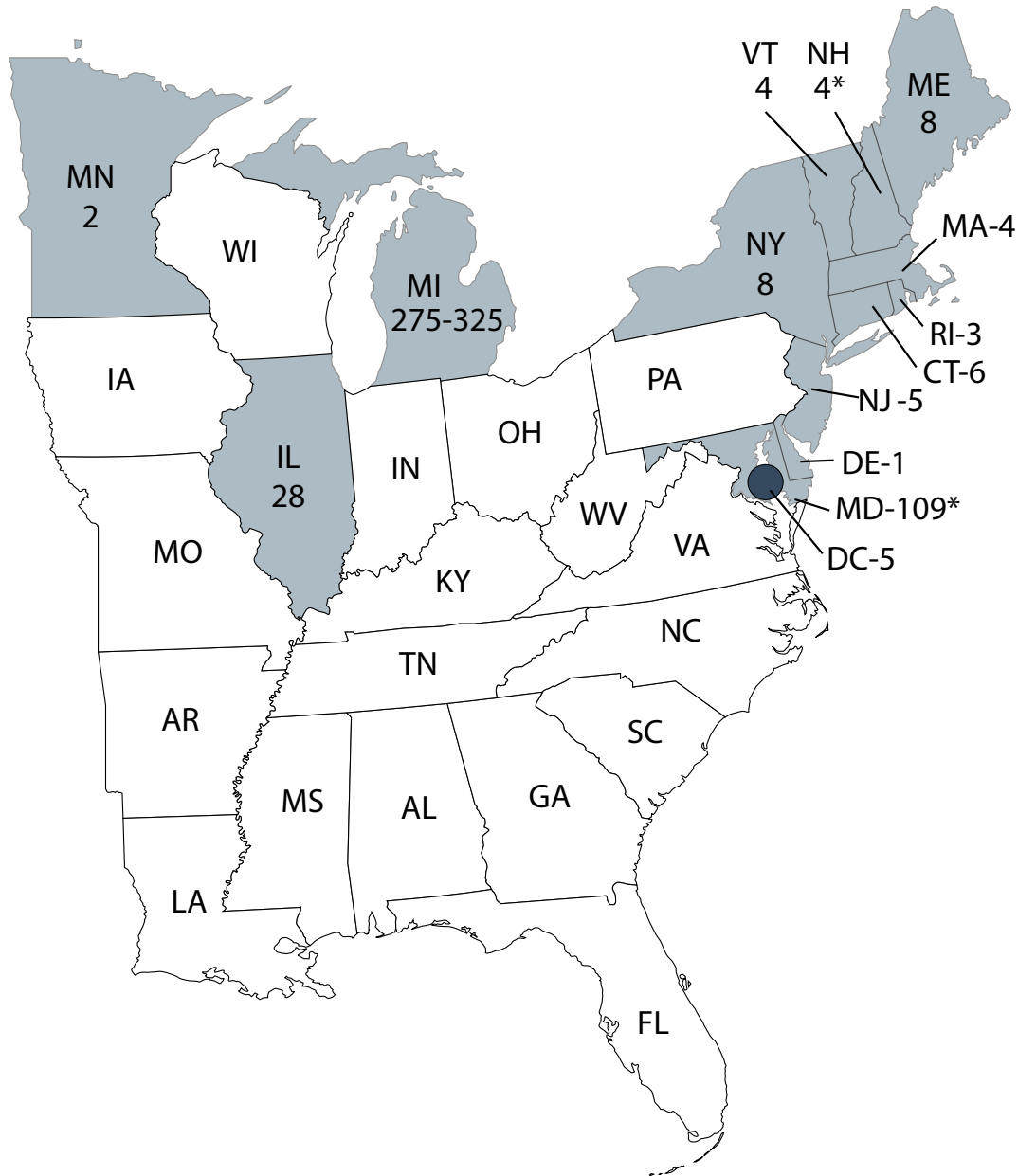
	<b>Stability</b>	<b>Opportunity</b>	<b>Estimated 2016 Marijuana Sales</b> (includes both rec and medical in states where applicable)
Alaska	B	A	\$25 million-\$50 million in first 12 months after rec stores open
Arizona	B	B	\$200 million-\$250 million
California	D	C	\$900 million-\$1.2 billion
Colorado	B-	B+	\$1.1 billion-\$1.3 billion
Connecticut	B+	C	\$16 million-\$20 million
Delaware	B	C-	\$1.5 million-\$2 million
Hawaii	C	B	\$15 million-\$30 million in first full 12 months after dispensaries open
Illinois	D	B	\$20 million-\$30 million
Maine	A-	C	\$30 million-\$35 million
Maryland	C	A	\$20 million-\$40 million in first full 12 months after dispensaries open
Massachusetts	C+	B-	\$25 million-\$35 million
Michigan	C	C	\$140 million-\$180 million
Minnesota	D+	D	\$5 million-\$10 million
Montana	F	F	\$1 million-\$3 million
Nevada	B	A	\$25 million-\$35 million
New Hampshire	C+	C	\$2 million-\$5 million in first full 12 months after dispensaries open
New Jersey	B-	D+	\$12 million-\$18 million
New Mexico	C+	A-	\$40 million-\$50 million
New York	C	C	\$5 million-\$15 million
Oregon	C	A+	\$275 million-\$350 million
Rhode Island	B+	C	\$20 million-\$25 million
Vermont	A-	C	\$2.5 million-\$5 million
Washington DC	B	B-	\$6 million-\$10 million
Washington State	D+	A	\$650 million-\$800 million

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Map 2.1: US Marijuana Laws and Dispensary Numbers



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- - States that have passed medical marijuana laws
- - States that have passed both medical marijuana & recreational cannabis laws
- # - Estimated number of dispensaries in each state
- ▲ - Number of recreational shops
- \* - Total number of dispensaries/shops allowed; if none are open yet

**Note:** Oregon is allowing existing MMJ dispensaries to sell adult-use cannabis until it awards licenses specifically for recreational stores. As of late February 2016, 284 dispensaries had received permission to sell recreational cannabis.



# ALASKA - Medical Marijuana

## Overview of Law

<b>Main measure</b>	Measure 8
<b>Type of measure</b>	Ballot initiative
<b>Year passed</b>	1998
<b>Margin of victory</b>	59% to 41%
<b>Possession limit</b>	1 ounce of usable marijuana
<b>Patient registry</b>	Mandatory - patients must have a written recommendation from a physician
<b>Accepts patients registered with other states?</b>	No
<b>Home cultivation</b>	Yes
<b>Qualifying medical conditions</b>	Cancer, glaucoma and HIV/AIDS, as well as conditions that produce - or whose treatment produces - cachexia/wasting syndrome, persistent muscle spasms, seizures, severe nausea or severe pain
<b>MMJ business regulations</b>	N/A - dispensaries and cultivation operations are not permitted
<b>Number of registered patients</b>	1,127 (down from 1,826 in early 2015)

# ALASKA - Recreational

## Overview of Law

Main measure	Measure 2
Type of measure	Ballot initiative
Year passed	2014
Margin of victory	53% to 47%
Possession limit	1 ounce of flower, 7 grams of concentrates or 5,600 milligrams of THC
Home cultivation	Yes
Restrictions on type of marijuana allowed to be sold?	Yes - manufacturers are not permitted to make anything that "closely resembles" familiar products or beverages, including candy
Business regulations	Heavy. Though the number of licenses is not restricted statewide, final rules adopted by the Marijuana Control Board are extensive. They address all aspects of operations at all levels of the supply chain, including everything from seed-to-sale tracking and transportation to labeling, record-keeping, testing and advertising.
Retail store structure	For-profit allowed
Sampling of state fees	
Application	All license types - \$1,000 (new), \$600 (renewal)
License	Retail Store - \$5,000 Cultivation - \$1,000 (limited cultivation facility), \$5,000 (cultivation facility) Product Manufacturing - \$1,000 (extract-only), \$5,000 (product manufacturing) Testing - \$1,000
Tax requirements	\$50 excise tax per ounce sold from wholesale to retail
Number of retail stores allowed	No statewide limits, though local municipalities may impose them or institute bans
Number of retail stores operating in early 2016	None - first stores expected to open late in the year or in early 2017
Estimated number of in-state customers	Approximately 67,000 (same as early 2015)
Estimated 2016 recreational marijuana sales via retail stores	\$25 million-\$50 million in first 12 months after rec stores open
What to watch in 2016	The Marijuana Control Board began accepting recreational business applications in late February and expects to start awarding licenses in May. Alaska is also the first rec state to allow on-site consumption at cannabis stores, which will add a new, potentially profitable dynamic to running a marijuana shop.

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**Marijuana Business  
Stability Rank for 2016**

**B** The adoption of final recreational cannabis rules has provided significant clarity around how the market will operate once businesses are licensed and operational. As with every new market, however, there is the potential for unexpected delays and hiccups in the licensing process. Additionally, officials could tweak rules along the way, as has happened in other recreational states. Alaska's medical cannabis program only permits personal cultivation and consumption, which will remain unchanged with the introduction of recreational marijuana.

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**Marijuana Business  
Opportunity Rank for 2016**

**A** Though the opportunities won't be as great as in other rec markets given Alaska's small population and remoteness, the state is still building an entirely new industry from the ground up (especially considering that it doesn't have an existing MMJ industry). So there will be plenty of ways for entrepreneurs to get involved, especially considering that there are no caps on the number of business licenses that will be granted. One caveat: Strict residency requirements - if upheld - will limit most plant-touching opportunities to Alaska residents. But that means more possibilities for local entrepreneurs. There will also be plenty of opportunities for ancillary service and product companies, including those located in other states.

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# ARIZONA - Medical Marijuana

## Overview of Law

<b>Main measure</b>	Proposition 203
<b>Type of measure</b>	Ballot initiative
<b>Year passed</b>	2010
<b>Margin of victory</b>	50.1% to 49.9% (it won by just 4,341 votes out of nearly 1.7 million cast)
<b>Possession limit</b>	2.5 ounces every 14-day period
<b>Patient registry</b>	Mandatory - patients must have a written recommendation from a physician
<b>Accepts patients registered with other states?</b>	No
<b>Home cultivation</b>	Yes, but only by patients (or their caregivers) who live more than 25 miles from a registered dispensary
<b>Restrictions on type of marijuana allowed to be sold?</b>	No
<b>Qualifying medical conditions</b>	ALS, agitation of Alzheimer's disease, cancer, Crohn's disease, glaucoma, hepatitis C, HIV/AIDS and other conditions or diseases that cause - or treatment of such conditions and diseases causes - cachexia/wasting syndrome, severe and chronic pain, severe nausea, seizures and severe or persistent muscle spasms
<b>MMJ business regulations</b>	Heavy. Applicants must go through an extensive application and licensing process, and businesses are subject to the regulation of all aspects of operations. Stand-alone, wholesale cultivation operations are prohibited. Dispensaries must grow their own medical cannabis, although they are permitted to transfer excess marijuana to another licensed dispensary. Stand-alone, wholesale infused products manufacturing is also prohibited. The state limits the total number of licenses available, most of which have already been awarded. Officials periodically assess whether the license limit needs to be amended.
<b>Dispensary structure</b>	Not-for-profit only
<b>Sampling of state dispensary fees</b>	
<b>Registration certificate</b>	\$5,000
<b>License renewal</b>	\$1,000
<b>Change location</b>	\$2,500
<b>Working capital/escrow bond requirements</b>	\$150,000 in working capital
<b>Tax requirements</b>	5.6% state sales tax plus local taxes, where applicable
<b>Number of dispensaries allowed</b>	126

Estimated number of dispensaries operating in early 2016	90
Number of registered patients	87,733 (up from 65,740 in early 2015)
Estimated 2016 MMJ sales via dispensaries	\$200 million-\$250 million (up from a revised \$175 million-\$200 million in 2015)
What to watch in 2016	A proposed bill to prohibit naturopaths and homeopaths from recommending MMJ recently died in the legislature. The initiative would have severely restricted patient access and could have been disastrous for Arizona's medical cannabis industry, so business owners breathed a sigh of relief when it fizzled out. However, lawmakers have put forth other proposals that have drawn heavy criticism from both MMJ businesses and patient advocates, so there is a chance the state will limit and/or rein in the industry.
MMJ Business Stability Rank for 2016	<b>B</b> Though the market has mostly stabilized and sales and patient counts have shown strong growth, a few pending legislative bills and forthcoming new/clarified rules present an ongoing degree of uncertainty for Arizona's businesses.
MMJ Business Opportunity Rank for 2016	<b>B</b> There aren't many opportunities for entrepreneurs who want to open new dispensaries, as the state has already awarded the majority of available business licenses. Most of the licenses left are earmarked for rural areas with few residents, and therefore they are not attractive to entrepreneurs. However, Arizona's medical marijuana industry is growing rapidly, and while the pace might slow down, the general upward trendline should continue throughout 2016. Existing businesses still have plenty of opportunity to grow, as do ancillary businesses providing products and services to the industry and patients. Arizona also is a strong candidate to legalize recreational cannabis at the ballot box in 2016, which would usher in scores of new business opportunities.

# CALIFORNIA - Medical Marijuana

## Overview of Law

<b>Main measures</b>	Proposition 215 (possession and use); Assembly Bills 243 & 266 and Senate Bill 643 (authority to license and regulate businesses)
<b>Type of measures</b>	Prop 215: 1996; AB 243, AB 266 & SB 643: 2015
<b>Years passed</b>	Prop 215: 1996; AB 243, AB 266 & SB 643: 2015
<b>Margin of victory</b>	Prop 215: 56% to 44%; AB 243: 60-13 in the House, 30-8 in the Senate; AB 266: 59-14 in the House, 30-9 in the Senate; SB 643: 58-13 in the House, 30-9 in the Senate
<b>Possession limit</b>	8 ounces (qualified physician can recommend more if deemed necessary)
<b>Patient registry</b>	Voluntary - patients are required to obtain a recommendation from a qualifying physician to purchase and possess medical cannabis, but they are not required to register with the state (no change to this under the new regulatory framework)
<b>Accepts patients registered with other states?</b>	No
<b>Home cultivation</b>	Yes
<b>Restrictions on type of marijuana allowed to be sold?</b>	No
<b>Qualifying medical conditions</b>	AIDS, anorexia, arthritis, cachexia/wasting syndrome, cancer, chronic pain, glaucoma, migraines, persistent muscle spasms, seizures and severe nausea
<b>MMJ business regulations</b>	Regulation of California MMJ businesses has historically varied greatly by town/county due to a lack of statewide rules. However, a trio of bills passed in 2015 establishes a regulatory and licensing framework. California will create at least 17 distinct types of business licenses, and multiple state departments will be charged with regulatory oversight and rulemaking responsibilities. The full new framework won't be operational until 2018, and specific rules have not yet been developed. The final rules, however, will be detailed and extensive, addressing all aspects of operations at all levels of the supply chain.
<b>Dispensary structure</b>	Currently not-for-profit, but for-profit will be allowed under the new regulatory framework
<b>Sampling of state fees</b>	Fees for each of the 17 distinct license types have not yet been established by the primary rulemaking entities (Department of Consumer Affairs, Department of Food & Agriculture and the Department of Public Health.)
<b>Tax requirements</b>	7.5% state sales and use tax on all marijuana transactions + up to 1.5% in additional local taxes

<b>Number of dispensaries allowed</b>	No statewide limits. Note: California's MMJ industry currently is still unregulated at the state level, so it does not grant business licenses. In some cities, however, dispensaries and other MMJ businesses must get local licenses. And many towns and cities have enacted moratoriums, bans and caps. The situation will change in 2018, when California will implement its new statewide regulations. It remains to be seen if there will be statewide caps or local limitations on the number of licenses.
<b>Estimated number of dispensaries operating in early 2016</b>	1,000-2,000 (vs. a revised estimate of 1,000-1,600 in early 2015). Note - California currently doesn't track the number of operating dispensaries, so estimates vary widely.
<b>Estimated number of patients</b>	775,000-875,000 (up from an estimated 750,000-850,000 in early 2014). Note - many patients do not have access to dispensaries because of local bans and therefore likely buy on the black market.
<b>Estimated 2016 marijuana sales via dispensaries</b>	\$900 million-\$1.2 billion (vs. a revised estimate of \$800 million-\$1.1 billion in 2015)
<b>What to watch in 2016</b>	California will continue to hammer out specifics of its new regulatory plan, which will provide more clarity in how the market will operate. Many cities are still struggling to determine the best course with MMJ businesses, and hundreds have enacted bans and moratoriums - a trend that could continue in 2016. The situation in Los Angeles in particular is highly volatile, as the city recently limited the number of dispensaries but has struggled to enforce the new law. California is also a leading candidate to legalize recreational marijuana in 2016, which would bring tremendous new business opportunities to the state over the next few years.
<b>MMJ Business Stability Rank for 2016</b>	<b>D</b> California's medical cannabis industry is about to undergo a tremendous upheaval as various rolling deadlines for the new statewide regulatory framework approach. Some experts estimate up to 70% of existing dispensaries, wholesale grows and infused products companies won't be able to comply with the new rules, meaning thousands of them could go out of business in the coming years. Though the transition will be tough, the general consensus is that the new framework will bring much-needed clarity, transparency and - eventually - stability to the largest MMJ market in the country.
<b>MMJ Business Opportunity Rank for 2016</b>	<b>C</b> Given all the uncertainty and volatility ahead, now might not be the best time to start an MMJ business in California. The entire industry will change drastically in the coming years, and businesses will have to adapt to many unforeseen challenges. However, entrepreneurs who prepare for a regulated market now might come out on top when the state awards licenses in a few years. And existing companies that can weather the turmoil will have a sizable market to tap. The new regulatory framework gives California's market a level of legitimacy, so the opportunities will undoubtedly increase exponentially in a few years. Additionally, California is considered to be a strong contender to pass some form of recreational legalization this November, which would open up a whole new market in the country's most populous state.

# COLORADO - Medical Marijuana

## Overview of Law

<b>Main measures</b>	Amendment 20 (possession and use), House Bill 10-1284 (authority to license and regulate businesses)
<b>Type of measures</b>	Amendment 20: Ballot initiative HB 10-1284: Legislative bill
<b>Years passed</b>	Amendment 20: 2000 HB 1284: 2010
<b>Margins of victory</b>	Amendment 20: 54% to 46% HB 10-1284: 39-23 in the House, 26-9 in the Senate
<b>Possession limit</b>	2 ounces of usable marijuana
<b>Patient registry</b>	Mandatory - patients must get a written recommendation from a qualified physician, who must also be available for follow up care
<b>Accepts patients registered with other states?</b>	No
<b>Home cultivation</b>	Yes
<b>Restrictions on type of marijuana allowed to be sold?</b>	No
<b>Qualifying medical conditions</b>	Cancer, glaucoma and HIV/AIDS, as well as conditions that produce - or whose treatment produces - cachexia/wasting syndrome, persistent muscle spasms, seizures, severe nausea or severe pain
<b>MMJ business regulations</b>	Moderately heavy. Businesses must go through an extensive licensing and approval process, though the associated fees are some of the lowest in the country. Operational regulations are quite extensive and address all aspects of the supply chain, including cultivation, processing, seed-to-sale inventory tracking, plant counts, security, record-keeping and the transport of cannabis.
<b>Dispensary structure</b>	For-profit allowed
<b>Sampling of state fees</b>	
<b>Application</b>	Dispensary - \$6,000 to \$14,000 depending on number of patients Cultivation - \$1,000 Infused Products Maker - \$1,000 Testing lab - \$1,000
<b>License</b>	Dispensary - \$3,000 to \$11,000 depending on number of patients (same fees for renewal, plus \$300) Cultivation - \$2,200 (same fee for renewal, plus \$300) Infused Products Maker - \$2,200 (same fee for renewal, plus \$300) Testing lab - \$2,200 (same fee for renewal, plus \$300)
<b>Change of location</b>	\$500
<b>Tax requirements</b>	2.9% state sales tax on all marijuana transactions + city taxes in some areas



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<b>Number of dispensaries and cultivators allowed</b>	No statewide limits, though some towns and cities have enacted moratoriums or bans
<b>Number of dispensaries and cultivators operating in early 2016</b>	Dispensaries - 516 Cultivators - 751
<b>Number of registered patients</b>	107,534 (down from 114,290 in early 2015)
<b>Estimated 2016 marijuana sales via dispensaries</b>	\$400 million-\$425 million (vs. \$408 million in 2015)

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# COLORADO - Recreational

## Overview of Law

<b>Main measure</b>	Amendment 64
<b>Type of measure</b>	Ballot initiative
<b>Year passed</b>	2012
<b>Margin of victory</b>	55% to 45%
<b>Possession limit</b>	Adults 21 and over can possess up to an ounce of marijuana (out-of-state visitors can only buy up to a quarter of an ounce at a time)
<b>Home cultivation</b>	Yes
<b>Restrictions on type of marijuana allowed to be sold?</b>	No
<b>Business regulations</b>	Heavy. Though the number of licenses is not restricted statewide, some cities have banned recreational marijuana businesses. The state has also changed or updated rules numerous times, specifically those related to infused products. Regulations address all aspects of operations at all levels of the supply chain. They include everything from seed-to-sale tracking, transportation and labeling to record-keeping, testing, packaging and advertising.
<b>Retail store structure</b>	For-profit allowed
<b>Sampling of state fees</b>	
<b>Application</b>	Retail Store - \$2,500 (new), \$250 (conversion from med to rec), \$250 (current med adding rec) Cultivation - \$2,500 Infused Product Manufacturing - \$2,500 Testing lab - \$500
<b>License</b>	Retail Store - \$3,000 (new rec only), \$3,000 to \$4,000 depending on plant count (current med adding rec), \$3,000 (renewal) Cultivation - \$2,200 (new rec only), \$2,200 (current med adding rec), \$2,200 to \$8,000 depending on plant count up to 13,800, then \$1,000 additional per 3,600 additional plants Infused Product Manufacturing - \$2,200 (both new and current med adding rec, same price for renewal) Testing lab - \$2,200 (new and renewal)
<b>Tax requirements</b>	15% wholesale excise tax, 10% special sales tax, state sales tax of 2.9%, plus local taxes where applicable
<b>Number of retail stores and cultivators allowed</b>	No statewide limits, though local municipalities can and have implemented bans or moratoriums on some or all types of businesses
<b>Number of retail stores and cultivators operating in early 2016</b>	Retail Stores - 424 Cultivators - 514

Estimated number of in-state customers	575,000-625,000
Estimated 2016 recreational marijuana sales via retail stores	\$700 million-\$850 million (up from \$588 million in 2015)
<b>OVERALL 2016 MARIJUANA MARKET</b>	\$1.1 billion-\$1.3 billion (up from \$996 million in 2015)
<b>What to watch in 2016</b>	Colorado's cannabis business environment is constantly evolving, and the state continues to tweak rules for both recreational and medical marijuana businesses along the way. One of these changes involves requiring infused product makers to adopt a universal symbol on food products by Oct. 1, which is a challenge for businesses both operationally and financially. Also, Denver - the largest marijuana market in the state - has a moratorium on new rec businesses that is set to expire on May 1, though it could be extended. The city could also extend a provision that only allows pre-existing medical businesses to apply for recreational licenses.
<b>MMJ Business Stability Rank for 2016</b>	<b>B-</b> While medical marijuana sales and patient counts have tapered off - creating concerns over the future of the market - the recreational cannabis industry is stronger than ever. The state also continues to roll out new rules, particularly related to packaging and labeling on the rec side. Additionally, there have been several notable incidents involving pesticide use that have resulted in plant quarantines and product recalls, which could lead to more changes. Denver has also started to investigate ways to alleviate the clustering of cannabis businesses in low-income areas. So there's more uncertainty - and therefore the potential for instability - as Colorado feels its way along.
<b>MMJ Business Opportunity Rank for 2016</b>	<b>B+</b> The state's two largest cities - Denver and Colorado Springs - have implemented or extended moratoriums on new medical and recreational businesses (Colorado Springs has never allowed rec businesses, and still doesn't). This significantly limits opportunities for new players to get involved. Some areas of the state, and niches of the industry, also appear to be nearing saturation. Yet opportunities still exist, particularly for existing businesses and ancillary firms. Colorado is a hub for cannabis businesses in general, so it remains an attractive market. And Denver could lift its moratoriums on new MMJ and rec businesses this year.

# CONNECTICUT - Medical Marijuana

## Overview of Law

<b>Main measure</b>	House Bill 5389
<b>Type of measure</b>	Legislative bill
<b>Year passed</b>	2012
<b>Margin of victory</b>	96-51 in the House, 21-13 in the Senate
<b>Possession limit</b>	2.5 ounces per month
<b>Patient registry</b>	Mandatory - patients must have a written recommendation from a physician
<b>Accepts patients registered with other states?</b>	No
<b>Home cultivation</b>	No
<b>Restrictions on type of marijuana allowed to be sold?</b>	Yes - while most forms of the plant are allowed (flower, oils, tinctures, topicals, edibles, etc.), edibles are restricted to baked goods. Beverages and other "confectionaries" are prohibited.
<b>Qualifying medical conditions</b>	Cachexia, cancer, Crohn's disease, epilepsy, glaucoma, HIV/AIDS, multiple sclerosis, Parkinson's disease, PTSD, spinal cord injury/damage and wasting syndrome
<b>MMJ business regulations</b>	Heavy. Producers and dispensaries are separately licensed and may not be integrated. The number of available licenses is capped low and tightly controlled. Licensing fees and bond/escrow requirements for producers are some of the highest in the country. Regulations on operations are detailed and extensive, covering everything from location and security to transportation and advertising. Only a licensed pharmacist can apply for a dispensary license, and only the pharmacist or individuals who have held a pharmacy technician registration within the last five years may sell medical marijuana.
<b>Dispensary structure</b>	For-profit allowed
<b>Sampling of state fees</b>	
<b>Application</b>	Dispensary - \$1,000 Producer - \$25,000
<b>License</b>	Dispensary - \$5,000 (new and renewal - dispensary licenses are valid for two years) Producer - \$75,000 (new and renewal - producer licenses are valid for five years)
<b>Change of location</b>	Dispensary - \$1,000 to apply, additional \$1,500 if approved Producer - \$3,500 to apply, additional \$1,500 if approved
<b>Working capital/escrow/bond requirements</b>	Producer only - \$2 million bond/escrow for facility construction, another \$1.5 million bond/escrow for facility operation
<b>Tax requirements</b>	6.35% state sales tax. No additional local taxes are imposed.

<b>Number of dispensaries and cultivators allowed</b>	Dispensaries - 9 currently, but this periodically can be and has been adjusted by the state Producers/Cultivators - 10
<b>Number of dispensaries and cultivators operating in early 2016</b>	Dispensaries - 6 Producers/Cultivators - 4
<b>Number of registered patients</b>	8,201 (up from 3,027 in early 2015)
<b>Estimated 2016 marijuana sales via dispensaries</b>	\$16 million-\$20 million (up from \$8 million-\$12 million)
<b>What to watch in 2016</b>	Three new dispensaries are scheduled to open mid-year, which will provide a big boost to the market. The move will expand access for the estimated 20% of patients who currently live in areas of Connecticut without operating dispensaries, but it will also lead to more competition for existing businesses. Meanwhile, ongoing efforts to educate physicians - and in turn boost the number of doctors who recommend medical marijuana - appear to have been moderately successful, though the overall effect on patient count remains to be seen.
<b>MMJ Business Stability Rank for 2016</b>	<b>B+</b> Connecticut's strict rules have remained relatively unchanged since they were first promulgated, reducing operational uncertainty. However, the addition of three new dispensaries later this year will certainly increase competitive pressure for existing businesses.
<b>MMJ Business Opportunity Rank for 2016</b>	<b>C</b> Compared to other states, current business opportunities in Connecticut are minimal - even with the addition of three more dispensaries (the state has already awarded the new licenses). Still, the state hasn't doled out all of its cultivation licenses. There are also limited opportunities for ancillary companies, while existing licensed businesses will benefit from continued growth. It's also possible the state will further increase the number of dispensary licenses in 2016 if demand keeps rising.

# DELAWARE - Medical Marijuana

## Overview of Law

Main measure	Senate Bill 17
Type of measure	Legislative bill
Year passed	2011
Margin of victory	27-14 in the House, 17-4 in the Senate
Possession limit	6 ounces at a time, or purchase of 3 ounces every 14 days
Patient registry	Mandatory - patients must have a written recommendation from a physician
Accepts patients registered with other states?	No
Home cultivation	No
Restrictions on type of marijuana allowed to be sold?	Not for adult patients, but there are restrictions on oils sold to/used by minors
Qualifying medical conditions	ALS, Alzheimer's disease, cancer, hepatitis C, HIV/AIDS, multiple sclerosis and the physical manifestations of PTSD, as well as conditions that cause intractable nausea, intractable seizures, severe pain or wasting syndrome
MMJ business regulations	Heavy. The state has a cap on the number of dispensaries allowed, and each must cultivate its own cannabis and test it as well. All pesticides are prohibited in cultivation, and the state has implemented strict limits on plant count and total usable cannabis dispensaries can have on hand at any given time. Other operational regulations cover everything from hiring and training to security, record-keeping and transportation.
Dispensary structure	Not-for-profit
Sampling of state dispensary fees	
Application	\$5,000
License	\$40,000 (license valid for two years)
Tax requirements	Less than 1% of gross receipts tax, after first \$1.2 million in revenues
Number of dispensaries allowed	3
Number of dispensaries operating in early 2016	1
Number of registered patients	776 (up from 168 in early 2015)
Estimated 2016 MMJ sales via dispensaries	\$1.5 million-\$2 million (up from \$400,000-\$600,000 in 2015)

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**What to watch in 2016**

Acknowledging the growth in MMJ demand and the patient base, the state will approve two new dispensaries this year. Applications are due by March 30, and winners are expected to be announced by Aug. 1. In 2015, Delaware officials added intractable epilepsy to the list of MMJ conditions and approved the sale of cannabis-derived oils to minors - which will help grow the market in 2016. The state is also now considering adding autism to the MMJ conditions list as well.

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**MMJ Business Stability Rank for 2016**

**B**  
The addition of two new dispensaries will no doubt create some uncertainty and necessitate an operational pivot on the part of the single licensed MMJ business currently operating. However, the overall climate is stable, and the fact that Delaware is awarding two more licenses is a positive sign.

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**MMJ Business Opportunity Rank for 2016**

**C-**  
Delaware is an extremely tiny market, so there aren't many ways for businesses to get involved. Still, the state's decision to award two additional MMJ licenses creates at least some business opportunities - for the companies that win the licenses as well as for firms that provide products and services that dispensaries and grows need to start up and operate.

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# HAWAII - Medical Marijuana

## Overview of Law

<b>Main measures</b>	Senate Bill 862 (possession and use) and House Bill 321 (authority to license and regulate businesses)
<b>Type of measures</b>	Legislative bills
<b>Years passed</b>	SB 862: 2000 HB 321: 2015
<b>Margin of victory</b>	SB 862: 32-18 in the House, 13-12 in the Senate HB 321: 38-13 in the House, 24-0 in the Senate
<b>Possession limit</b>	4 ounces of usable marijuana every 15 days
<b>Patient registry</b>	Mandatory - patients must have a written recommendation from a physician
<b>Accepts patients registered with other states?</b>	Not initially, but starting on Jan. 1, 2018, out-of-state patients with a valid registration card may both possess cannabis and purchase it from dispensaries
<b>Home cultivation</b>	Yes. Note - On Jan. 1, 2019, caregivers will be prohibited from growing marijuana for patients, with limited exceptions for minors, adults lacking legal capacity and patients on islands where there aren't any dispensaries. Caregivers will still be permitted to purchase cannabis from licensed dispensaries on behalf of patients after that date.
<b>Restrictions on type of marijuana allowed to be sold?</b>	Yes - edibles such as candies, baked goods and beverages are prohibited, but flower, lozenges, tinctures, oils, pills, lotions and so on are permitted
<b>Qualifying medical conditions</b>	Cancer, glaucoma, HIV/AIDS and PTSD, as well as conditions that produce - or whose treatment produces - cachexia/wasting syndrome, severe and persistent muscle spasms, seizures/epilepsy, severe nausea or severe pain
<b>MMJ business regulations</b>	Heavy. The state has a cap on MMJ business licenses and the number of dispensaries each company can operate. Licensing fees are relatively high and include requirements for minimum working capital/funds in escrow, and dispensaries must grow their own cannabis. Initial dispensary rules cover all aspects of operations including hiring, security, seed-to-sale inventory tracking, record-keeping, transportation, advertising, cultivation, processing and lab testing. Businesses are also subject to inspections and are required to submit audited financial statements to the state each year.
<b>Dispensary structure</b>	For-profit permitted
<b>Sampling of state dispensary fees</b>	
<b>Application</b>	Dispensary - \$5,000 Testing lab - \$3,000
<b>License</b>	Dispensary - \$75,000 (new); \$50,000 (annual renewal) Testing lab - no additional cost, but must be renewed annually for \$3,000
<b>Working capital/escrow/bond requirements</b>	\$1 million in working capital or escrow for each license, plus \$100,000 for each retail dispensing location permitted under the license



<b>Tax requirements</b>	Not defined under the new regulations
<b>Number of dispensaries allowed</b>	16 - the state will license eight companies, each of which can open two dispensaries in addition to their cultivation sites
<b>Number of dispensaries operating in early 2016</b>	None - first dispensaries estimated to open as early as July, but it will likely be longer
<b>Number of registered patients</b>	13,150 (up from nearly 13,000 in early 2015)
<b>Estimated 2016 MMJ sales via dispensaries</b>	\$15 million-\$30 million (in first full 12 months after dispensaries open)
<b>What to watch in 2016</b>	Hawaii will announce the winners of the eight available licenses in mid-April, and dispensaries can begin selling MMJ on July 1. Dispensaries likely won't open until later in the year though, as it will take time to get their operations set up and wait for their first harvest. On the regulatory front, the Department of Health must still establish testing standards.
<b>MMJ Business Stability Rank for 2016</b>	<b>C</b> As in any new market, it's hard to know what to expect in Hawaii as the state prepares to award licenses and start its MMJ industry. There's always the potential for unexpected delays and challenges that can bog down the process, and the state still has some regulatory wrinkles to iron out. However, the uncertainty is due to positive circumstances, and the development of a full-blown commercial medical marijuana industry is immensely positive. Over time, stability will improve.
<b>MMJ Business Opportunity Rank for 2016</b>	<b>B</b> Since the passage last year of a licensing and regulatory framework for medical cannabis, Hawaii's program has made fairly rapid and steady progress getting its industry set up. Although the state will only issue eight licenses, there are still ample opportunities for entrepreneurs, including those who want to develop ancillary products and services. There's a lot of excitement in the business community about Hawaii's market and long-term potential.

# ILLINOIS - Medical Marijuana

## Overview of Law

<b>Main measure</b>	House Bill 1
<b>Type of measure</b>	Legislative bill
<b>Year passed</b>	2013
<b>Margin of victory</b>	61-57 in the House, 35-21 in the Senate
<b>Possession limit</b>	2.5 ounces every 14 days
<b>Patient registry</b>	Mandatory - a recommendation from a physician is required, and patients are required to submit fingerprints and undergo a background check
<b>Accepts patients registered with other states?</b>	No
<b>Home cultivation</b>	No
<b>Restrictions on type of marijuana allowed to be sold?</b>	Generally no, though edibles or other infused products that require refrigeration or "hot-handling" are prohibited
<b>Qualifying medical conditions</b>	ALS, Alzheimer's disease, Arnold Chiari malformation, arthritis, cachexia/wasting syndrome, cancer, causalgia, Crohn's disease, CRPS, dystonia, severe fibromyalgia, fibrous dysplasia, glaucoma, hepatitis C, HIV/AIDS, hydrocephalus, hydromyelia, interstitial cystitis, lupus, multiple sclerosis, muscular dystrophy, myasthenia gravis, myoclonus, nail patella syndrome, neurofibromatosis, neuropathy, Parkinson's disease, residual limb pain, RSD, seizures/epilepsy, Sjogren's syndrome, spinal cord disease/damage, spinocerebellar ataxia, syringomyelia, Tarlov cysts, Tourette's syndrome, traumatic brain injury/post-concussion syndrome
<b>MMJ business regulations</b>	Heavy. Illinois is a very complex market to navigate for businesses. The state has implemented caps on the number of dispensaries and cultivation sites allowed to operate, and licensing fees are pricey. Strict rules govern nearly all aspects of business operations, including location, security, inventory tracking and testing. Illinois also only authorized the program initially for four years, so it remains to be seen if it will continue in the long run.
<b>Dispensary structure</b>	For-profit allowed
<b>Sampling of state fees</b>	
<b>Application</b>	Dispensaries - \$5,000 Cultivators - \$25,000
<b>License</b>	Dispensaries - \$30,000 (new), \$25,000 (renewal) Cultivators - \$200,000 (new), \$100,000 (renewal)
<b>Escrow/bond requirements</b>	Dispensaries - \$50,000 Cultivators - \$2,000,000 (can be reduced to \$500,000 upon achievement of certain milestones)

<b>Tax requirements</b>	1% retailer occupation tax on dispensary sales plus applicable local taxes; 6.25% tax on sales of paraphernalia; 7% excise tax on cultivators
<b>Number of dispensaries and cultivators allowed</b>	Dispensaries - 60 Cultivators - 22
<b>Number of dispensaries and cultivators operating in early 2016</b>	Dispensaries - 28 Cultivators - 17
<b>Number of registered patients</b>	4,400 (up from none in early 2015, as the registry hadn't yet been established)
<b>Estimated 2016 MMJ sales via dispensaries</b>	\$20 million-\$30 million (up from \$1.7 million in 2015)
<b>What to watch in 2016</b>	The first dispensaries that opened in November 2015 generated solid sales. But as more open in 2016, they might not have enough business to go around. Medical cannabis businesses are deeply concerned about the state's relatively low patient count so far, which puts the viability of the program in doubt. That being said, the state's producers started shipping edibles to dispensaries, which have proven popular with medical patients. New conditions are also under consideration - including chronic pain and PTSD - which would be a huge boost for the market.
<b>MMJ Business Stability Rank for 2016</b>	<b>D</b> Many businesses are questioning the viability of Illinois' program right now, as current patient counts and demand are lower than many expected. This is even more worrisome since the program can be repealed after 2017 if it's not deemed a success. That being said, the recent introduction of edibles is a step in the right direction. And there's still hope that officials will add medical conditions to the program in 2016. The situation could stabilize fairly quickly if that happens, but for now the market is highly unstable.
<b>MMJ Business Opportunity Rank for 2016</b>	<b>B</b> Despite the instability of the market, there are still many business opportunities for both plant-touching companies and ancillary firms. And if the state authorizes more medical conditions, the market could grow by leaps and bounds. However, the end of the pilot program is uncomfortably close, which doesn't leave much time for a market to develop and mature before it could be prematurely killed entirely.

# MAINE - Medical Marijuana

## Overview of Law

<b>Main measures</b>	Ballot Question 2 (cultivation and possession); Question 5 (nonprofit dispensaries and voluntary registry)
<b>Type of measures</b>	Ballot initiatives
<b>Years passed</b>	Question 2: 1999 Question 5: 2009
<b>Margin of victory</b>	Question 2: 61% to 39% Question 5: 59% to 41%
<b>Possession limit</b>	2.5 ounces every 15 days
<b>Patient registry</b>	Voluntary, but patients who do not register must still obtain a written recommendation from an in-state physician and otherwise abide by the program rules in order to be protected under the law
<b>Accepts patients registered with other states?</b>	Yes - patients registered in other states can buy from dispensaries for up to 30 days after entering the state if certain conditions are met
<b>Home cultivation</b>	Yes
<b>Restrictions on type of marijuana allowed to be sold?</b>	No
<b>Qualifying medical conditions</b>	ALS, Alzheimer's disease, cancer, Crohn's disease, glaucoma, hepatitis C, HIV/AIDS, nail-patella syndrome and PTSD, as well as conditions causing cachexia/wasting syndrome, intractable pain, seizures, severe/persistent muscle spasms or severe nausea
<b>MMJ business regulations</b>	Heavy. The state strictly limits the number of permitted dispensaries to one in each of eight predefined geographic areas. Dispensaries must also obtain several other types of permits and licenses and cultivate their own cannabis. The state has implemented production caps as well. Regulations cover all conceivable aspects of operations, and dispensaries are subject to inspections by the state. Of note is Maine's large number of caregivers, many of whom make a living off of growing a limited number of plants for patients. Caregivers are not required to register with the state.
<b>Dispensary structure</b>	Not-for-profit
<b>Sampling of state dispensary fees</b>	
<b>Application</b>	\$15,000
<b>License</b>	\$12,000
<b>Change of location</b>	\$4,000
<b>Tax requirements</b>	5% state sales tax on all marijuana transactions at dispensaries and 8% for edibles + local taxes in some areas

Number of dispensaries allowed	8
Number of dispensaries operating in early 2016	8
Estimated number of patients	20,000 (up from about 15,000 in early 2015)
Estimated 2016 MMJ sales via dispensaries	\$30 million-\$35 million (up from \$24 million in 2015)
What to watch in 2016	<p>Maine - which allows registered patients from other states to buy MMJ - could see a temporary boost in medical cannabis sales to visitors from New Hampshire in early 2016. New Hampshire has started issuing cards to MMJ patients, but dispensaries aren't expected to open until the spring of this year. Some of them might therefore cross into Maine to stock up on medical cannabis. Efforts to crack down on Maine's large caregiver population could also drive increased traffic to dispensaries. Additionally, efforts are underway to get a recreational legalization measure on the November ballot.</p>
MMJ Business Stability Rank for 2016	<p><b>A-</b></p> <p>Maine's medical marijuana industry has long been one of the most stable in the nation, and it should continue to be on solid footing in 2016. If the state legalizes recreational cannabis in November, though, MMJ businesses would face many uncertainties going forward and potential changes in the years to come.</p>
MMJ Business Opportunity Rank for 2016	<p><b>C</b></p> <p>The state has already awarded all of its MMJ business licenses, so there aren't many opportunities for new players - even on the ancillary side. But the market continues to grow, which is good news for existing businesses, and many caregivers are able to make a living growing and selling to patients. Maine also could legalize recreational marijuana in the November elections, which would open the door for countless business opportunities in the future.</p>

# MARYLAND - Medical Marijuana

## Overview of Law

<b>Main measure</b>	Senate Bill 923 and House Bill 881 (the identical measures replace House Bill 1101, a 2013 law that proved unworkable)
<b>Type of measures</b>	Legislative bills
<b>Year passed</b>	2014 (both)
<b>Margin of victory</b>	SB 923: 127-9 in the House, 44-2 in the Senate HB 881: 125-11 in the House, 44-2 in the Senate
<b>Possession limit</b>	4.23 ounces (120 grams) of flower and/or 36 grams of THC in infused products every 30 days
<b>Patient registry</b>	Mandatory - written recommendation from a physician certified to recommend cannabis is required
<b>Accepts patients registered with other states?</b>	No
<b>Home cultivation</b>	No
<b>Restrictions on type of marijuana allowed to be sold?</b>	Yes, edibles are prohibited, though patients and/or caregivers may use extracts purchased from dispensaries to make their own edibles. Non-edible infused products (such as creams and patches) are permitted, as are tinctures, capsules and suppositories.
<b>Qualifying medical conditions</b>	Glaucoma, hospice patients or those receiving palliative care, PTSD and any other condition that produces - or whose treatment produces - anorexia, cachexia/wasting syndrome, chronic pain, seizures, severe or persistent muscle spasms, severe nausea or severe pain
<b>MMJ business regulations</b>	Heavy. The state has set caps on the number of dispensaries and growers allowed, and licensing costs are some of the highest in the nation. Regulations govern all aspects of grower, processor and dispensary operations, from location, transportation, testing and security to record-keeping and packaging.
<b>Dispensary structure</b>	For-profit allowed
<b>Sampling of state fees</b>	
<b>Application</b>	Dispensary - \$5,000 Cultivator - \$6,000 Cultivator/Dispensary - \$11,000 Processor - \$6,000 Testing lab - \$100
<b>License</b>	Dispensary - \$40,000 each year (new licenses good for four years, renewals for two years) Cultivator - \$125,000 (renewed annually) Cultivator/Dispensary - \$165,000 (renewed annually) Processor - \$40,000 each year (new licenses good for four years, renewals for two years) Testing lab - \$100 (registration valid for two years)

<b>Change in ownership or location</b>	Dispensaries, Cultivators and Processors - \$7,000
<b>Tax requirements</b>	Tax requirements had not yet been finalized as of early 2016. The state is still studying the issue and will make recommendations on the taxation of medical marijuana.
<b>Number of dispensaries and cultivators allowed</b>	Dispensaries - 94 (stand-alone) Cultivators - 15 (cultivators may also operate a single dispensary, or operate as a stand-alone wholesaler)
<b>Number of dispensaries and cultivators operating in early 2016</b>	None - the first dispensaries are expected to open late in 2016 or early in 2017
<b>Number of registered patients</b>	None - a registry is still being established. Patient count could hit an estimated 20,000-40,000 in first full year of program.
<b>Estimated 2016 MMJ sales via dispensaries</b>	\$20 million-\$40 million (in first full 12 months after dispensaries open)
<b>What to watch in 2016</b>	The state pushed back the announcement of dispensary license winners but has not released a new target date. It could be in the spring or summer. Officials have previously said they plan to award licenses for cultivators and processors by mid-year. The first dispensaries are expected to open late in 2016 or early in 2017. There will also be forthcoming testing specifications and guidelines for labs.
<b>MMJ Business Stability Rank for 2016</b>	<b>C</b> A deluge of applications for MMJ business licenses has caused some unexpected turbulence, as Maryland officials have pushed back the announcement of winners by months. This adds uncertainty to the licensing process and to the timeline of the industry's launch. The state also could tweak regulations along the way, which is common in a new market.
<b>MMJ Business Opportunity Rank for 2016</b>	<b>A</b> Maryland will allow more than 100 dispensaries to operate and grant 15 grower licenses, while there is no cap on the number of processors licensed in the state. The relatively large number of licenses will create ample opportunities, both for plant-touching companies and ancillary firms such as accountants, consultants and lawyers. Maryland could be one of the biggest new medical cannabis markets in a long time.

# MASSACHUSETTS - Medical Marijuana

## Overview of Law

Main measure	Question 3
Type of measure	Ballot initiative
Year passed	2012
Margin of victory	63% to 37%
Possession limit	10 ounces every 60 days
Patient registry	Mandatory - electronic recommendation from a qualified physician or certified nurse practitioner is required
Accepts patients registered with other states?	No
Home cultivation	Yes, but limited only to caregivers serving patients who have demonstrated financial hardship, who have a physical incapacity that prevents them from getting to a dispensary, or who live beyond a reasonable distance from an MMJ center
Restrictions on type of marijuana allowed to be sold?	No
Qualifying medical conditions	ALS, cancer, Crohn's disease, glaucoma, hepatitis C, HIV/AIDS, multiple sclerosis and Parkinson's disease. The presence of one or more of the following associated with the qualifying conditions or their treatment must also be present: cachexia/wasting syndrome, impaired strength or ability, intractable pain, nausea or weakness.
MMJ business regulations	Heavy. Dispensary applicants must go through an extensive, expensive three-phase application process and meet a host of regulations covering everything from security and advertising to seed-to-sale tracking systems and testing. The state has also capped the number of dispensaries. Dispensaries are required to cultivate most of the cannabis they sell – no separate, stand-alone grow operations are allowed – but they can buy limited amounts of marijuana from other dispensaries.
Dispensary structure	Not-for-profit
Sampling of state fees	
Application	\$31,500
License	\$50,000 (new and renewal)
Working capital requirement	\$500,000
Tax requirements	No MMJ-specific taxes defined.
Number of dispensaries allowed	No limits (an initial cap of 35 expired)



Number of dispensaries operating in early 2016	4
Number of registered patients	19,000 (up from 5,000 in early 2015)
Estimated 2016 MMJ sales via dispensaries	\$25 million-\$35 million (up from \$4 million-\$6 million in 2015)
What to watch in 2016	The state's MMJ industry has moved forward at a sluggish pace, beset by delays across the board. Only a handful of dispensaries opened by early 2016, but roughly a dozen more could launch as the year progresses. There is also a strong possibility that a recreational marijuana legalization measure will be on the state ballot when voters go to the polls in November.
MMJ Business Stability Rank for 2016	<b>C+</b> The climate for MMJ businesses in Massachusetts could - and should - finally start to stabilize in 2016. But it's difficult to determine what to expect in the state, as there seems to be challenges and delays around every corner. The industry is still finding its footing, and pockets of resistance to cannabis businesses remain. The possibility of recreational marijuana legalization in the fall adds to the uncertainty.
MMJ Business Opportunity Rank for 2016	<b>B-</b> Massachusetts lifted its initial cap on marijuana business licenses and is now accepting applications on a rolling basis. Some observers say the state could award more than 100 licenses, which would create additional opportunities for ancillary firms. But the licensing process moves at a sluggish pace, and many professionals are pessimistic the state will speed up the process. If recreational legalization succeeds, the opportunities will be immensely greater.

# MICHIGAN - Medical Marijuana

## Overview of Law

Main measure	Proposal 1
Type of measure	Ballot initiative
Year passed	2008
Margin of victory	63% to 37%
Possession limit	2.5 ounces
Patient registry	Mandatory - written recommendation from a qualifying physician required
Accepts patients registered with other states?	Yes, in some cases. Michigan's law allows visiting patients to use MMJ while in the state. While there are no statewide regulations on the medical cannabis industry, many dispensaries will sell to patients who have cards from other states.
Home cultivation	Yes
Restrictions on type of marijuana allowed to be sold?	No - Michigan does not have statewide regulations on the industry
Qualifying medical conditions	ALS, Alzheimer's disease, cancer, Crohn's disease, glaucoma, hepatitis C, HIV/AIDS, nail patella syndrome and PTSD, as well as conditions that cause, or whose treatment causes, cachexia/wasting syndrome, seizures/epilepsy, severe and chronic pain (must be characterized as both), severe and persistent muscle spasms and severe nausea
MMJ business regulations	Varied. Michigan never set up a dispensary program because it deems these operations illegal, but businesses have popped up around the state regardless. Some cities and counties have enacted their own rules on the MMJ industry, and the regulations are typically light. Other cities have no regulations, so dispensaries, grow sites and edibles companies in those areas are largely unregulated.
Dispensary structure	For-profit allowed
Sampling of state fees	N/A
Tax requirements	6% sales tax
Number of dispensaries allowed	None - dispensaries are technically illegal at the state level, even though they exist
Estimated number of dispensaries operating in early 2016	275-325 (up from estimated 150-250 in early 2015)
Number of registered patients	179,000 (up from about 175,000 in early 2015)
Estimated 2016 MMJ sales via dispensaries	\$140 million-\$180 million (down from estimated \$180 million-\$220 million in 2015)

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**What to watch in 2016**

The state legislature could finally pass regulations on the medical marijuana industry, which would be a game-changer for cannabis businesses. Michigan is one of the last remaining states in the country that has legalized medical marijuana but not established regulations on the industry. Cities around the state continue to set up their own rules. Detroit recently passed medical marijuana regulations, which will bring legitimacy to businesses there. But 50% of the city's dispensaries might have to shut down or relocate, which will lower patient access and industry revenues. Meanwhile, three separate ballot measures for recreational legalization are gathering signatures, so Michigan could be a state to watch during the November elections.

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**MMJ Business Stability Rank for 2016****C**

Although dispensaries remain technically illegal, Michigan's medical cannabis industry has been surprisingly stable over the past year. Many businesses are operating with the blessing of local governments. And aside from an occasional raid - mostly tied to criminal activity - the state itself has not cracked down on the industry in a major way for quite some time. It's unclear how long this period of relative stability will continue, though. Additionally, big changes will be in store if Michigan establishes regulations on the industry - as some expect it will do this year - or legalizes recreational marijuana.

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**MMJ Business Opportunity Rank for 2016****C**

Dispensaries continue to sprout up across the state, and more will likely open if law enforcement continues its hands-off approach. However, Detroit's move to regulate the industry will lower opportunities in the near-term. The establishment of statewide regulations would lead to some near-term chaos as well but ultimately create many opportunities, as would the legalization of recreational marijuana.

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# MINNESOTA - Medical Marijuana

## Overview of Law

Main measure	Senate File 2470
Type of measure	Legislative bill
Year passed	2014
Margin of victory	89-40 in the House, 46-16 in the Senate
Possession limit	30-day supply (actual quantity determined by the certifying physician)
Patient registry	Mandatory - written recommendation from a qualifying healthcare practitioner is required
Accepts patients registered with other states?	No
Home cultivation	No
Restrictions on type of marijuana allowed to be sold?	Yes - flower/dried herb and edibles are prohibited. Only concentrates and non-edible infused products are permitted.
Qualifying medical conditions	ALS, cancer (must be accompanied by cachexia/wasting syndrome, nausea, severe or chronic pain or severe vomiting), Crohn's disease, glaucoma, HIV/AIDS, intractable pain (that can't otherwise be treated or removed), seizures, severe and persistent muscle spasms, terminal illness (if life expectancy is less than a year and cachexia/wasting syndrome, nausea, severe or chronic pain or severe vomiting are present) and Tourette's syndrome
MMJ business regulations	Heavy. The state allows just two cultivators to produce all marijuana in the state, and only these companies can open dispensaries. The businesses - which each must open four dispensaries to serve patients - are subject to rules and regulations governing location, storage, tracking, record-keeping, advertising, distribution, hiring, testing, and other areas. Dispensary employees that provide patients with MMJ must be licensed pharmacists.
Dispensary structure	For-profit allowed
Sampling of state fees	
Application	\$20,000
License	\$20,000
Tax requirements	Medical marijuana itself is not subject to sales tax, but any services rendered to recommend MMJ and/or devices required to administer medication are subject to applicable taxes
Number of dispensaries allowed	8
Number of dispensaries operating in early 2016	2

<b>Number of registered patients</b>	996 (up from none in early 2015 when the registry was still being established)
<b>Estimated 2016 MMJ sales via dispensaries</b>	\$5 million-\$10 million (up from estimated \$1 million-\$3 million in 2015)
<b>What to watch in 2016</b>	Minnesota's nascent industry has struggled with high prices and a woefully low patient count since dispensaries opened in the summer of 2015. Fortunately, the state added intractable pain as a qualifying condition, which will help boost the patient count dramatically when it's officially added to the list in mid-2016. However, a requirement that all eight dispensaries allowed by the law must open by July 1 could prove disastrous unless the patient count increases dramatically by then.
<b>MMJ Business Stability Rank for 2016</b>	<b>D+</b> Minnesota's two licensees have struggled financially, and both have delayed plans to launch additional locations. The lack of access coupled with high prices has driven many patients back to the black market and/or illegal home cultivation. The success of the state's program is very much on the line as both regulators and licensees grapple with ways to achieve sustainability.
<b>MMJ Business Opportunity Rank for 2016</b>	<b>D</b> With only two MMJ business licenses allowed, there aren't many business opportunities for plant-touching companies. There are still some opportunities for ancillary firms, however. And once intractable pain is officially added to the conditions list, there will be even more opportunities - both for ancillary companies and the two businesses licensed to serve the market.

# MONTANA - Medical Marijuana

## Overview of Law

Main measure	Initiative 148
Type of measure	Ballot initiative
Year passed	2004
Margin of victory	62% to 38%
Possession limit	Up to an ounce of usable marijuana, but that doesn't include extracts, edibles or infused products made with extracts
Patient registry	Mandatory - a written recommendation from a physician is required
Accepts patients registered with other states?	No
Home cultivation	Yes
Restrictions on type of marijuana allowed to be sold?	No - Montana does not have statewide regulations on the industry
Qualifying medical conditions	Cachexia/wasting syndrome, cancer, chronic/intractable spasticity or muscle spasms, Crohn's disease, epilepsy/seizures, glaucoma, HIV/AIDS, hospice patients, intractable nausea/vomiting, multiple sclerosis, painful neuropathy, and severe chronic pain (with demonstrable etiology or confirming diagnosis by a second physician)
MMJ business regulations	Low. There are no statewide regulations on dispensaries, but some local municipalities regulate these businesses.
Dispensary structure	Law does not allow dispensaries, but both nonprofit and for-profit dispensaries existed as of early 2016.
Sampling of state fees	Not applicable for dispensaries; Marijuana Infused Products Provider licenses (only available for caregivers) are \$50
Tax requirements	None
Number of dispensaries allowed	Montana does not have a dispensary program, and therefore it does not issue business licenses. Dispensaries still existed anyway in early 2016, but a damning state Supreme Court ruling in late February will likely wipe out Montana's entire MMJ industry. Individuals can register as caregivers, and those who wish to infuse cannabis into edibles for their patients must obtain a specific license.
Number of dispensaries operating in early 2016	50-60 (about the same as in early 2015)
Number of registered patients	13,200 (up from 10,268 in early 2015)
Estimated 2016 MMJ sales via dispensaries	\$1 million-\$3 million

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**What to watch in 2016**

A state Supreme Court decision in late February is widely believed to be the death knell of the MMJ industry in Montana. The decision in effect legislates dispensaries out of existence. Some insiders are holding out hope the decision could be reversed and/or that a potential ballot measure in November could resolve the issue. Some dispensaries might also continue operating and hope enforcement is lax. But the development is a massive setback for the industry. All existing dispensaries in Montana could very well be out of business by mid-year.

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**MMJ Business Stability Rank for 2016**

**F**  
With the state's medical dispensaries facing almost certain closure, Montana's MMJ market has been turned completely on its head.

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**MMJ Business Opportunity Rank for 2016**

**F**  
Unless efforts to overturn the state Supreme Court's decision or to get a measure on the ballot this November to fix the issue are successful - which are Hail Marys at this point - there will be no MMJ industry or business opportunities in Montana after this year. The tide could always turn again in the future, but as of now, Montana's MMJ market has effectively been nullified.

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# NEVADA - Medical Marijuana

## Overview of Law

<b>Main measures</b>	Question 9 (possession and use); Senate Bill 374 (authority to license and regulate businesses)
<b>Type of measures</b>	Question 9: Ballot initiative; SB 374: Legislative bill
<b>Years passed</b>	Question 9: 2000; SB 374: 2013
<b>Margin of victory</b>	Question 9: 65% to 35%; SB 374: 32-18 in the Assembly, 13-12 in the Senate
<b>Possession limit</b>	2.5 ounces every 14 days. Defined limits for infused products forthcoming from the health department
<b>Patient registry</b>	Mandatory - patients must get a written recommendation from a qualifying physician
<b>Accepts patients registered with other states?</b>	Yes - out-of-state patients with a valid registration card may both possess cannabis and purchase it from dispensaries
<b>Restrictions on type of marijuana allowed to be sold?</b>	No
<b>Home cultivation</b>	Yes, but only if patient lives more than 25 miles from a dispensary, cannot reasonably travel to a dispensary or is not able to find nearby dispensaries that have the strains they need
<b>Qualifying medical conditions</b>	AIDS, cancer, glaucoma, PTSD and conditions that cause - or whose treatment causes - persistent muscle spasms (including multiple sclerosis), seizures, severe nausea or severe pain
<b>MMJ business regulations</b>	Heavy. Rules are comprehensive, detailed and strict. The state caps the number of dispensaries allowed, and businesses have to meet a host of requirements covering everything from security and testing to operational and logistical regulations. Officials are also developing additional rules on labeling, packaging, dosing, testing and other areas.
<b>Dispensary structure</b>	For-profit allowed
<b>Sampling of state fees</b>	
<b>Application</b>	All licenses - \$5,000
<b>License</b>	Dispensary - \$30,000 (new); \$5,000 (renewal) Cultivation - \$3,000 (new); \$1,000 (renewal) Infused Products Manufacturing - \$3,000 (new); \$1,000 (renewal) Testing lab - \$5,000 (new); \$3,000 (renewal)
<b>Capital requirements</b>	Applicants for any license type must provide proof of at least \$250,000 in liquid assets
<b>Tax requirements</b>	6.85% state sales tax, plus other local taxes where applicable and a special 2% excise tax on all wholesale and retail sales of MMJ and MMJ products



<b>Number of dispensaries allowed</b>	Roughly 60, based on county populations and ratio to licensed pharmacies
<b>Number of dispensaries operating in early 2016</b>	12
<b>Number of registered patients</b>	13,561 (up from 8,888 in early 2015)
<b>Estimated 2016 MMJ sales via dispensaries</b>	\$25 million-\$35 million (up from \$4 million-\$6 million in 2015)
<b>What to watch in 2016</b>	The bulk of dispensaries and cultivation sites are slated to open in 2016, so this will be a big year for Nevada's MMJ industry. The state is also considering rule changes on everything from labeling, packaging and dosages to testing and physical weight equivalencies for concentrates and edibles. If the rules are adopted, businesses would have to make many adjustments, which will introduce operational and financial hurdles. Additionally, a measure to legalize recreational marijuana has been approved for the November ballot.
<b>MMJ Business Stability Rank for 2016</b>	<b>B</b> Now that businesses are operational, a degree of stability has found its way to Nevada's market. Cannabis companies continue to open, serve patients and create competitive pressure that will drive prices to relative equilibrium. Forthcoming rule changes will pose some operational challenges and changes, as will the implementation of the state's seed-to-sale tracking software. If the state legalizes recreational cannabis, there could be big changes for MMJ companies, though.
<b>MMJ Business Opportunity Rank for 2016</b>	<b>A</b> Nevada's MMJ market is poised for tremendous growth. The patient base will likely continue to balloon, while the ability for out-of-state patients to purchase MMJ from dispensaries could provide a huge boost to sales. The opportunities for both plant-touching and ancillary companies are abundant, and the possibilities are endless if Nevada legalizes recreational marijuana in the fall.

# NEW HAMPSHIRE - Medical Marijuana

## Overview of Law

Main measure	House Bill 573
Type of measure	Legislative bill
Year passed	2013
Margin of victory	284-66 in the House, 18-6 in the Senate
Possession limit	2 ounces every 10 days. Patients must register with a dispensary and can only purchase MMJ from a single dispensary at any given time.
Patient registry	Mandatory - recommendation from qualified physician or registered nurse required
Accepts patients registered with other states?	No
Home cultivation	No
Restrictions on type of marijuana allowed to be sold?	No
Qualifying medical conditions	ALS, Alzheimer's disease, cancer, chronic pancreatitis, Crohn's disease, epilepsy, glaucoma, hepatitis C (if undergoing treatment), HIV/AIDS, lupus, multiple sclerosis, muscular dystrophy, Parkinson's disease, spinal cord injury or disease and traumatic brain injury. The presence of one or more of the following associated with the qualifying conditions or their treatment must also be present: anorexia from chemotherapy, cachexia/wasting syndrome, seizures, severe and persistent muscle spasms or severe pain
MMJ business regulations	Heavy. Dispensaries are subject to rules and regulations governing location, hours of operation, inventory tracking, record-keeping, sanitation, security, disposal of cannabis, hiring/training, packaging/labeling, signage/advertising, testing, etc. The state has also set a cap on the number of dispensaries, and they must grow their own cannabis (separate, stand-alone wholesale cultivation operations are not allowed).
Dispensary structure	Not-for-profit
Sampling of state fees	
Application	\$3,000
License	\$40,000 - \$80,000 (new and renewal, depending on geographic area)
Change of location	\$15,000 - \$30,000 (depending on geographic area)
Tax requirements	None
Number of dispensaries allowed	4
Number of dispensaries operating in early 2016	None - the first ones are expected to open in spring 2016

<b>Number of registered patients</b>	The state began issuing patient cards at the end of 2015 and hadn't released numbers as of mid-February 2016.
<b>Estimated 2016 MMJ sales via dispensaries</b>	\$2 million-\$5 million (in first full 12 months after dispensaries open)
<b>What to watch in 2016</b>	The first dispensaries are expected to start opening in the first half of 2016. But delays are always possible. Some patients have reportedly been saying that their doctors won't recommend MMJ, which could create huge problems and limit the size of the market - as it has in other states.
<b>MMJ Business Stability Rank for 2016</b>	<b>C+</b> New Hampshire's market has experienced delays in the past, and it's possible some dispensary openings could be pushed back if there are unexpected bumps in the road. The overall regulatory climate, however, seems fairly stable. The bigger question mark is tied to the size of the patient base. If it starts out low and patients continue to encounter difficulties getting doctor recommendations, businesses could struggle at first.
<b>MMJ Business Opportunity Rank for 2016</b>	<b>C</b> All available licenses have been awarded, so companies that didn't win one won't have an opportunity to get involved in the plant-touching side of the industry. But with dispensaries slated to launch in the spring, there should be some ancillary opportunities as the market becomes operational.

# NEW JERSEY - Medical Marijuana

## Overview of Law

<b>Main measure</b>	Senate Bill 119
<b>Type of measure</b>	Legislative bill
<b>Year passed</b>	2010
<b>Margin of victory</b>	48-14 in the House, 25-13 in the Senate
<b>Possession limit</b>	2 ounces every 30 days, though a physician decides exactly how much each patient receives up to that maximum
<b>Patient registry</b>	Mandatory - patients must get a written recommendation from a doctor and must register with one dispensary at a time (and may not purchase from the others)
<b>Accepts patients registered with other states?</b>	No
<b>Home cultivation</b>	No
<b>Restrictions on type of marijuana allowed to be sold?</b>	Yes - oils/waxes are prohibited, as are edibles (except for patients who are minors). Only "dried herb, oral lozenges and topical formulations" are allowed. Additionally, products - including flower - are restricted to no more than 10% THC.
<b>Qualifying medical conditions</b>	ALS, Crohn's disease, inflammatory bowel disease, multiple sclerosis, muscular dystrophy, terminal cancer and terminal illnesses with a prognosis of less than 12 months of life; and epilepsy, glaucoma, intractable spasticity and seizures if patient is resistant/intolerant to conventional treatment; and HIV/AIDS and non-terminal cancer if cachexia/wasting syndrome, chronic pain, severe nausea or vomiting or severe pain are present
<b>MMJ business regulations</b>	Heavy. Only six dispensaries are allowed initially under state law, and the health department will review the program every two years to determine whether more should be approved. Dispensaries undergo an intensive application and registration process and are subject to numerous regulations, including those covering record-keeping, cultivation limits, security and hours of operation. Dispensaries must grow their own cannabis - separate stand-alone wholesale cultivation operations are not allowed. The limits on allowable forms or marijuana are some of the most restrictive in the country, and the requirement that all products contain no more than 10% THC is considered overly restrictive and onerous.
<b>Dispensary structure</b>	First six must be not-for-profit; if more are approved they can be either not-for-profit or for-profit
<b>Sampling of state fees:</b>	
<b>Application</b>	\$20,000
<b>License</b>	\$200,000

Change of location	\$10,000
Tax requirements	7% state sales tax on medical marijuana transactions + city taxes in some areas
Number of dispensaries allowed	6
Number of dispensaries operating in early 2016	5
Number of registered patients	6,354 (up from 3,500 in early 2015)
Estimated 2016 MMJ sales via dispensaries	\$12 million-\$18 million (up from estimated \$7 million-\$9 million in 2015)
What to watch in 2016	The sixth and final dispensary currently allowed under the law is set to open in 2016 - more than five years after New Jersey legalized medical cannabis. With some of the highest prices in the country, prohibition of home cultivation and only a handful of dispensaries, New Jersey's market has undoubtedly struggled to tamp out the black market, though that could change somewhat once the final dispensary opens if prices come down and patient access increases.
MMJ Business Stability Rank for 2016	<b>B-</b> The recent opening of the fourth and fifth dispensaries in 2015, coupled with the sixth expected to launch in the near future, will shake up a landscape that had remained largely unchanged for two years. The regulatory climate appears fairly stable as of late. But New Jersey's program has moved forward slowly, and some elected officials - including the state's governor - and lawmakers have been less than supportive.
MMJ Business Opportunity Rank for 2016	<b>D+</b> The growth in patient numbers is encouraging for existing businesses and could lead to more ancillary opportunities. But in general, there aren't many opportunities, especially since all six licenses have been awarded.

# NEW MEXICO - Medical Marijuana

## Overview of Law

Main measure	Senate Bill 523
Type of measure	Legislative bill
Year passed	2007
Margin of victory	36-31 in the House, 32-3 in the Senate
Possession limit	8 ounces - or the equivalent in THC for infused products - every 90 days
Patient registry	Mandatory - patients must get a written recommendation from a healthcare professional licensed to prescribe drugs in the state
Accepts patients registered with other states?	No
Restrictions on type of marijuana allowed to be sold?	Generally no, though concentrates are restricted to a maximum THC content of 70%
Home cultivation	Yes
Qualifying medical conditions	ALS, anorexia/cachexia, arthritis, cancer, cervical dystonia, chronic pain, Crohn's disease, epilepsy, glaucoma, hepatitis C, HIV/AIDS, hospice patients, Huntington's disease, inclusion body myositis, multiple sclerosis, painful neuropathy, Parkinson's disease, PTSD, severe nausea, severe pain, spinal cord damage with intractable spasticity and ulcerative colitis
MMJ business regulations	Heavy. The state limits the number of MMJ business licenses based on medical cannabis availability to the patient base, though there are no caps on the number of dispensaries each company can open. Businesses must go through a rigorous application and approval process and are subject to various rules and regulations, including strict plant limits, testing, security and record-keeping.
Dispensary structure	Not-for-profit
Sampling of state fees	
Application	Producer/Dispensary - \$10,000 Manufacturer - \$1,000 Testing lab - \$2,200
License	Producer/Dispensary - \$30,000 for first 150 plants; \$10,000 for each additional 50 plants up to 450 total
Tax requirements	7%-9% gross receipts tax
Number of dispensaries and cultivators allowed	Dispensaries - No limit Cultivators - 35
Number of dispensaries and cultivators operating in early 2016	Dispensaries - 29 Cultivators - 23

<b>Number of registered patients</b>	19,629 (up from 13,310 in early 2015)
<b>Estimated 2016 MMJ sales via dispensaries</b>	\$40 million-\$50 million (up from estimated \$25 million-\$30 million in 2015)
<b>What to watch in 2016</b>	The Department of Health's decision to license an additional 12 producers will shake up the existing market and provide new competition. The timeline in which these new producers will be online is uncertain at this time, but most are expected to open this year. Though the plant count for producers was increased late last year, reports from both insiders and media show that this is still not enough to meet the demand of the state's nearly 20,000 patients. As a result, the black market continues to thrive, presenting ongoing challenges for New Mexico's legal medical cannabis marketplace.
<b>MMJ Business Stability Rank for 2016</b>	<b>C+</b> The new producers opening up in 2016 will certainly shake up the landscape in New Mexico's market this year. But it seems there is still plenty of unmet demand, so there might not be a huge immediate impact on existing companies. The effect of increased legal production and access on the state's still-thriving black market remains to be seen though as the market still struggles to tamp out illicit competitors, creating long-term uncertainty at this time.
<b>MMJ Business Opportunity Rank for 2016</b>	<b>A-</b> While the addition of new producers and their dispensaries will increase competitive pressure, it will also create new opportunities for both existing and new producers to differentiate themselves and capture market share. Consultants and other ancillary service providers will also have opportunities to help new businesses navigate the regulatory landscape, and the state's sizable patient population still presents many opportunities for ancillary businesses that target them and their needs.

# NEW YORK - Medical Marijuana

## Overview of Law

<b>Main measure</b>	House Bill 6357
<b>Type of measure</b>	Legislative bill
<b>Year passed</b>	2014
<b>Margin of victory</b>	117-13 in the House, 49-10 in the Senate
<b>Possession limit</b>	30-day supply (actual quantity determined by the certifying physician)
<b>Patient registry</b>	Mandatory - recommendation from a physician who has registered with the state and completed a training course is required
<b>Accepts patients registered with other states?</b>	No
<b>Home cultivation</b>	No
<b>Restrictions on type of marijuana allowed to be sold?</b>	Yes - New York has one of the most restrictive programs in terms of allowable product forms. Both flower and edibles are prohibited, leaving patients with concentrates to vaporize, tinctures and pills/capsules.
<b>Qualifying medical conditions</b>	ALS, cancer, epilepsy, HIV/AIDS, Huntington's disease, inflammatory bowel disease, multiple sclerosis, neuropathy, Parkinson's disease and spinal cord injury or disease if accompanied by intractable spasticity
<b>MMJ business regulations</b>	Heavy. The state awarded just five business licenses. Dispensaries and growers must be integrated, and the rules on these companies are onerous. In addition to some of the highest licensing fees in the country and a detailed application process, operational regulations established extensive rules for everything from testing, security, inventory tracking and record-keeping to packaging/labeling and advertising. New York also limits the types of strains that can be grown. Prices are not set by the businesses, but rather by the program commissioner. A registered pharmacist is required to be on the premises of dispensaries during all hours of operation.
<b>Dispensary structure</b>	For-profit allowed (with limitations - state approval of all pricing is required)
<b>Sampling of state fees</b>	
<b>Application</b>	Producer/Dispensary - \$210,000 (\$200,000 of which is refundable if entity not awarded a license, new and renewal)
<b>License</b>	Producer/Dispensary - \$200,000 (submitted with application, check cashed if selected. New and renewal. Licenses are valid for two years.)
<b>Tax requirements</b>	Patients pay normal state sales tax of 4%, plus local sales taxes. Producers/dispensaries pay a 7% excise tax on the gross receipts from sales to patients.
<b>Number of dispensaries allowed</b>	20 - the state allows five licensed companies, each of which must operate four dispensaries in addition to their cultivation site



<b>Number of dispensaries and cultivators operating in early 2016</b>	Dispensaries - 8 Cultivators - 5
<b>Number of registered patients</b>	805
<b>Estimated 2016 MMJ sales via dispensaries</b>	\$5 million-\$15 million
<b>What to watch in 2016</b>	The first dispensaries opened in New York in January, but some didn't even serve a single patient. This will be a big year to prove the viability of the market and help determine whether licensed companies can survive. The state will have to find ways to increase the patient pool quickly.
<b>MMJ Business Stability Rank for 2016</b>	<b>C</b> Unlike many other states, New York got its MMJ program up and running rather quickly, and there were few hiccups. However, initial sales and patient counts are extremely low, leading to huge concerns about the stability of the program. It's hard to imagine the state implementing onerous rules that would impact businesses negatively given the fragile nature of the industry. But it's always a possibility. With prices set by the state for two years and heavy restrictions on advertising, this will be a critical year in New York's program as its long-term viability is tested.
<b>MMJ Business Opportunity Rank for 2016</b>	<b>C</b> Opportunities for new plant-touching companies are no longer available at this time, but there should continue to be avenues for ancillary companies - especially if the market reaches its full potential. The state's five licensees have plenty of room to grow too as they navigate the new landscape and refine their business models.

# OREGON - Medical Marijuana

## Overview of Law

<b>Main measures</b>	Ballot Measure 67 (possession and use), House Bill 3460 (authority to license and regulate businesses), House Bill 3400 (unified med and rec framework, established requirements for testing, packaging, labeling, etc.)
<b>Type of measures</b>	Measure 67: Ballot initiative HB 3460 and HB3400: Legislative bills
<b>Years passed</b>	Measure 67: 1998 HB 3460: 2013 HB 3400: 2015
<b>Margin of victory</b>	Measure 67: 55% to 45% HB 3460: 31-27 in the House, 18-12 in the Senate HB 3400: 52-4 in the House, 24-4 in the Senate
<b>Possession limit</b>	Patients can possess up to 24 ounces of marijuana
<b>Patient registry</b>	Mandatory - patients must get a recommendation from their primary doctor
<b>Accepts patients registered with other states?</b>	No
<b>Home cultivation</b>	Yes
<b>Restrictions on type of marijuana allowed to be sold?</b>	No
<b>Qualifying medical conditions</b>	Alzheimer's disease, cancer, glaucoma, HIV/AIDS and PTSD, plus conditions that produce - or whose treatment produces - cachexia/wasting syndrome, seizures, severe or persistent muscle spasms, severe nausea or severe pain
<b>MMJ business regulations</b>	Heavy. Growers, processors and dispensaries must apply for and obtain licenses to operate and abide by a host of requirements covering everything from location and residency to inventory, security and testing. They will also be subject to new rules that take effect throughout 2016 that apply to both medical and recreational businesses. Those rules involve lab testing, use of pesticides, packaging and labeling.
<b>Dispensary structure</b>	Not-for-profit
<b>Sampling of state fees</b>	
<b>Application</b>	Cultivator - \$200 Processor - \$500 (new and renewal) Dispensary - \$500 (new and renewal)
<b>License</b>	Cultivator - \$200 Processor - \$3,500 (new and renewal) Dispensary - \$3,500 (new and renewal)
<b>Tax requirements</b>	None

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<b>Number of dispensaries allowed</b>	No statewide limits
<b>Estimated number of dispensaries operating in early 2016</b>	400 (up from 174 in early 2015)
<b>Number of registered patients</b>	77,620 (up from 71,000 in early 2015)
<b>Estimated 2016 MMJ sales via dispensaries</b>	\$100 million-\$130 million (up from \$95 million-\$120 million in 2015)

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# OREGON - Recreational

## Overview of Law

<b>Main measures</b>	Measure 91 (authority to license and regulate businesses) and House Bill 3400 (unified med and rec framework, established requirements for testing, packaging, labeling, etc.)
<b>Type of measures</b>	Measure 91: Ballot initiative HB 3400: Legislative bill
<b>Years passed</b>	Measure 91: 2014 HB 3400: 2015
<b>Margin of victory</b>	Measure 91: 56% to 44% HB 3400: 52-4 in the House, 24-4 in the Senate
<b>Possession limit</b>	8 ounces flower/16 ounces of "cannabinoid products" in solid form/72 ounces of "cannabinoid products" in liquid form/ an ounce of extracts for adults 21 and older
<b>Home cultivation?</b>	Yes
<b>Restrictions on type of marijuana allowed to be sold?</b>	No
<b>Business regulations</b>	Heavy. Pre-existing medical dispensaries were permitted to begin limited sales of recreational cannabis in October 2015, and applications for new recreational shops were accepted starting in January 2016. Temporary rules are in effect for early sales by dispensaries, and proposed permanent rules have been published. Both the temporary and proposed permanent rules are extensive, covering all aspects of operations for all licensees, from use of pesticides, extraction methods and transportation, to lab testing, hiring, security, record-keeping, packaging, labeling and advertising.
<b>Retail store structure</b>	For-profit allowed
<b>Sampling of state fees</b>	
<b>Application</b>	\$250 (producer, processor, wholesaler, retailer and lab)
<b>License</b>	Producer - \$3,750 (Tier I), \$5,750 (Tier II) Processor - \$4,750 Wholesaler - \$4,750 Retailer - \$4,750 Testing lab - \$4,750
<b>Tax requirements</b>	Assessed on producers: \$35/ounce on flower, \$10/ounce on leaves, \$5/immature plant Customers currently pay 25% sales tax at point of sale (which will decrease to 17% when newly licensed businesses open and the permanent rules take effect)

<b>Number of retail stores allowed</b>	No statewide limits, though some towns and cities have enacted moratoriums or bans on any/all license types. Producers are additionally limited to allowable square footage (for indoor cultivation) and canopy size (for outdoor cultivation). The state will evaluate supply and demand on an annual basis and is permitted to amend rules and restrict producers as it deems necessary.
<b>Number of retail stores operating in early 2016</b>	As of early 2016, 284 medical marijuana dispensaries (out of about 400 total) registered as participating in early rec sales, which they are permitted to do until Dec. 31, 2016. No licenses have yet been granted under the new recreational marijuana framework, and thus no businesses licensed specifically for recreational are yet operational - but they are expected to be later in 2016.
<b>Estimated number of in-state customers</b>	Approximately 450,000
<b>Estimated 2016 recreational marijuana sales via retail stores</b>	\$180 million-\$220 million (up from \$75 million-\$125 million in 2015)
<b>OVERALL 2016 MARIJUANA MARKET</b>	\$280 million-\$350 million (up from \$170 million-\$245 million in 2015)
<b>What to watch in 2016</b>	Oregon has started the application process for MMJ businesses and will take a "supply chain" approach to issuing permits, starting first with growers then working its way to retailers. The first licensed rec cannabis stores are expected to open as early as October. Until then, licensed medical marijuana dispensaries can sell recreational cannabis.
<b>Marijuana Business Stability Rank for 2016</b>	<b>C</b> The state has developed the general framework under which medical and recreational businesses will operate going forward. But there is and will continue to be a high degree of uncertainty and volatility this year as temporary rules give way to permanent ones, new taxes are introduced and the first recreational businesses work through the licensing process and open their doors.
<b>Marijuana Business Opportunity Rank for 2016</b>	<b>A+</b> With early adult-use sales starting in the fall of 2015 via dispensaries and the first licensed rec business slated to open soon, the opportunities for both plant-touching and ancillary businesses are abundant. The big question mark - as in any new rec state - is what will happen to the medical side of the industry over the long run.

# RHODE ISLAND - Medical Marijuana

## Overview of Law

Main measure	Senate Bill 710
Type of measure	Legislative bill
Year passed	2005 (Senate and House passed measure, governor vetoed it and then Senate and House overrode the veto in 2006)
Margin of victory	51-10 in the House, 33-1 in the Senate
Possession limit	2.5 ounces every 15 days
Patient registry	Mandatory - patients must have a written recommendation from a physician licensed in Rhode Island, Massachusetts or Connecticut
Accepts patients registered with other states?	No
Home cultivation	Yes
Restrictions on type of marijuana allowed to be sold?	No
Qualifying medical conditions	Alzheimer's disease, cancer, glaucoma, hepatitis C and HIV/AIDS, as well as conditions that produce - or whose treatment produces - cachexia/wasting syndrome, seizures, severe and chronic pain, severe and persistent muscle spasms or severe nausea
MMJ business regulations	Moderate. Though the state's program only allows for three fully vertically integrated dispensaries, the rules around business operations are far less extensive and detailed than in other MMJ programs. That may change going forward, but for now, Rhode Island has a relatively easily navigable and achievable regulatory framework.
Dispensary structure	Not-for-profit
Sampling of state fees	
Application	Dispensaries (only license type) - \$250
License	Dispensaries (only license type) - \$5,000 (valid for two years)
Tax requirements	7% sales tax plus 4% dispensary surcharge on revenues and local taxes in some areas
Number of dispensaries allowed	3
Number of dispensaries operating in early 2016	3
Number of registered patients	12,815 (up from 10,706 in early 2015)

Estimated 2016 MMJ sales via dispensaries	\$20 million-\$25 million (up from estimated \$15 million-\$20 million in 2015)
What to watch in 2016	Rhode Island is one of two states (the other being Vermont) that is widely expected to legalize recreational cannabis in 2016 via its legislature. If that happens, Rhode Island could wind up bursting with business opportunities, depending on how the legislation is written and if there are limits to the number of business licenses.
MMJ Business Stability Rank for 2016	<p><b>B+</b></p> <p>Rhode Island's well-defined laws governing the industry have made the regulatory climate easy to navigate for all three of the licensed businesses in operation there. The customer base has grown steadily and will likely continue to expand in the future. If the state legalizes recreational marijuana this year, however, medical cannabis businesses could see some big changes.</p>
MMJ Business Opportunity Rank for 2016	<p><b>C</b></p> <p>Although there are few opportunities in the medical sector for cannabis entrepreneurs, the big future potential lies with recreational legalization. If the legislature does legalize, it could mean a big window for new entrants, depending on how it comes about.</p>

# VERMONT - Medical Marijuana

## Overview of Law

<b>Main measures</b>	Senate Bill 76, House Bill 645 (both established authority to license and regulate businesses)
<b>Type of measures</b>	Legislative bills
<b>Year passed</b>	2004
<b>Margin of victory</b>	82-59 in the House, 22-7 in the Senate
<b>Possession limit</b>	2 ounces every 30 days
<b>Patient registry</b>	Mandatory - patients must get a recommendation from a health care provider (such as a physician, physician's assistant or advanced practice registered nurse) licensed in Vermont, Massachusetts, New Hampshire or New York
<b>Accepts patients registered with other states?</b>	No
<b>Restrictions on type of marijuana allowed to be sold?</b>	No
<b>Home cultivation</b>	Yes
<b>Qualifying medical conditions</b>	Cancer, HIV/AIDS and multiple sclerosis (any of these must be accompanied by "severe, persistent, and intractable symptoms"), as well as conditions that produce - or whose treatment produces - cachexia/wasting syndrome, seizures, severe nausea or severe pain
<b>MMJ business regulations</b>	Heavy. Dispensaries must go through a competitive application process and are subject to regulations covering security, record-keeping, inventory, packaging and labeling, among other areas. The state also has a cap on the number of MMJ dispensaries, which must grow their own cannabis. Separate, stand-alone wholesale cultivation operations are not allowed, though dispensaries can donate cannabis to each other for no fee.
<b>Dispensary structure</b>	Not-for-profit
<b>Sampling of state fees</b>	
<b>Application</b>	\$2,500
<b>License</b>	\$20,000 (new), \$25,000 (renewal)
<b>Tax requirements</b>	None currently
<b>Number of dispensaries allowed</b>	4
<b>Number of dispensaries operating in early 2016</b>	4



<b>Number of registered patients</b>	2,477 (up from 1,700 in early 2015)
<b>Estimated 2016 MMJ sales via dispensaries</b>	\$2.5 million-\$5 million (up from an estimated \$2 million-\$4 million in 2015)
<b>What to watch in 2016</b>	Vermont is one of two states (the other being Rhode Island) that is widely expected to legalize recreational cannabis in 2016 via its legislature. Two bills to do so had been introduced as of early February.
<b>MMJ Business Stability Rank for 2016</b>	<b>A-</b> Vermont's small but solid MMJ industry isn't going anywhere anytime soon, and its patient count has been slowly growing, giving more assurance to those already in business. If the state legalizes recreational marijuana this year, however, medical cannabis businesses could see some big changes.
<b>MMJ Business Opportunity Rank for 2016</b>	<b>C</b> There aren't many opportunities in the state's medical marijuana industry, besides organic growth for licensed companies and perhaps a few openings for ancillary firms. But the possibility of recreational marijuana legalization is enticing. One of the two recreational legalization bills in the state legislature would allow for hundreds of new business opportunities should it become law, while the other bill would also create plenty of openings. Vermont could become the first state to legalize cannabis consumption lounges as well, which would lead to a new type of business opportunity

# WASHINGTON DC - Medical Marijuana

## Overview of Law

<b>Main measure</b>	Amendment Act B18-622 (Washington DC residents voted to legalize medical marijuana in 1998, but the law never took effect and local lawmakers eventually approved rewritten legislation)
<b>Type of measure</b>	Council bill
<b>Year passed</b>	2010
<b>Margin of victory</b>	13-0 in the Council of the District of Columbia (the law went into effect after the United States Congress declined to overrule the bill, and the mayor then signed it into law)
<b>Possession limit</b>	2 ounces per month (or equivalent amount in other forms)
<b>Patient registry</b>	Mandatory - patients must get a recommendation from a qualifying physician
<b>Accepts patients registered with other states?</b>	No
<b>Home cultivation</b>	Yes - although home cultivation had previously been banned for medical patients, that changed under the recreational marijuana legalization measure approved by voters in November 2014
<b>Restrictions on type of marijuana allowed to be sold?</b>	No
<b>Qualifying medical conditions</b>	Cancer, glaucoma, HIV/AIDS, and severe and persistent muscle spasms, or patients undergoing the following types of treatments: chemotherapy, radiotherapy or are using azidothymidine or protease inhibitors
<b>MMJ business regulations</b>	Heavy. Dispensaries and cultivation operations must undergo an intensive application and registration process and are subject to regulations covering everything from location and hours to signage and labeling. The law also includes caps on the number of dispensaries and grow sites as well as on plant counts.
<b>Dispensary structure</b>	For-profit allowed
<b>Sampling of state fees</b>	
<b>Application</b>	Cultivation Site and Dispensary - \$5,000 (new), \$3,000 (renewal)
<b>License</b>	Cultivator - \$5,000; Dispensary - \$10,000
<b>Tax requirements</b>	6% sales tax on marijuana transactions, 5.75% on accessories
<b>Number of dispensaries and cultivators allowed</b>	Dispensaries - 5 (the mayor has the discretion to increase to 8); Cultivators - 10
<b>Number of dispensaries and cultivators operating in early 2016</b>	Dispensaries - 5 Cultivators - 7
<b>Number of registered patients</b>	3,577 (up from 2,606 in early 2015)
<b>Estimated 2016 marijuana sales via dispensaries</b>	\$6 million-\$10 million (up from estimated \$5 million-\$7 million in 2015)

# WASHINGTON DC - Recreational

## Overview of Law

Main measure	Initiative 71
Type of measure	Ballot initiative
Year passed	2014
Margin of victory	70% to 30%
Possession limit	2 ounces, 3 plants
Home cultivation?	Yes
Business regulations	Sales and purchases are not permitted under the current law. Adults are allowed to grow and possess cannabis for personal use, and they may share with other adults (up to possession limits) for no compensation in return.
Estimated number of consumers in the district	Approximately 79,000
What to watch in 2016	Lawmakers are considering allowing a ban on smoking in public and at businesses to expire, which would present a host of new business opportunities in the market. It's also possible the city will push for recreational sales, setting up a showdown with the federal government (which previously blocked recreational marijuana commerce in the nation's capital).
MMJ Stability Rank for 2016	<b>B</b> Washington DC's medical marijuana industry struggled for a while soon after it launched, but it found solid footing in 2015 as the patient base grew by leaps and bounds. It's unclear if that trend will continue in 2016, however. Many patients appear to have let their cards expire and decided to cultivate their own cannabis - now legal under DC's rec measure - while some likely turned to the black market in search of lower prices.
MMJ Business Opportunity Rank for 2016	<b>B-</b> With all five of the allowed dispensaries up and running, and recreational cannabis limited to personal cultivation and consumption, there is not an abundance of opportunities at this time. However, the potential expiration of a ban on smoking in public spaces and private businesses could create some opportunities to develop clubs, lounges, hotels and other venues that allow onsite consumption but don't actually sell the plant.

# WASHINGTON STATE - Medical Marijuana

## Overview of Law

<b>Main measure</b>	Initiative 692 (possession and use) and Senate Bill 5052 (unified med and rec framework, established authority to license and regulate businesses)
<b>Type of measure</b>	I-692: Ballot initiative SB 5052: legislative bill
<b>Year passed</b>	I-692: 1998 SB 5052: 2015
<b>Margin of victory</b>	59% to 41% (I-692); 60-36 in the House, 40-8 in the Senate (SB 5052)
<b>Possession limit</b>	24 ounces. As of July 1, registered patients may purchase up to three times the recreational possession limit (one ounce) in a single purchase from licensed retail stores that have a "medical marijuana endorsement."
<b>Patient registry</b>	Voluntary - in the past it was nonexistent and as long as patients had a valid recommendation from a qualifying healthcare provider, they were able to purchase and grow MMJ and were afforded some legal protection. Starting July 1, there will be a patient database that is maintained. Patients will not have to register, but those that don't will be subject to recreational possession limits and taxes.
<b>Accepts patients from other states?</b>	No, but under Washington's recreational cannabis law, visitors 21 and older may purchase recreational cannabis from any licensed store
<b>Home cultivation</b>	Yes - patients are permitted to form collective gardens, with certain stipulations and conditions. Unregistered patients may not form collectives (or continue to operate them) after July 1.
<b>Restrictions on type of marijuana allowed to be sold?</b>	No
<b>Qualifying medical conditions</b>	Cachexia/wasting syndrome, cancer, Crohn's disease, epilepsy/intractable spasticity/seizures, glaucoma, hepatitis C, HIV, multiple sclerosis, PTSD, severe nausea/vomiting and traumatic brain injury
<b>MMJ business regulations</b>	Heavy. Washington is the first state that has legalized medical and recreational cannabis to bring both markets under a single regulatory framework. Medical dispensaries had previously not been subject to licensure requirements or statewide rules. Starting July 1, all medical businesses are required to be licensed under the rec program. All businesses will be subject to extensive and strict rules covering all aspects of operations including, but not limited to: production controls, use of pesticides, transportation, extraction, packaging/labeling, lab testing, hiring, security, inventory controls and advertising.
<b>Dispensary structure</b>	For-profit allowed
<b>Sampling of state fees</b>	
<b>Application</b>	Producer, Processor and Retailer - \$266
<b>License</b>	Producer, Processor and Retailer - \$1,062 (new and renewal)

<b>Tax requirements</b>	6.5 % state sales tax on marijuana transactions plus .47% business and occupation tax as well as local taxes in some areas, though the state offers a sales tax exemption through June 30, 2016, if certain conditions are met
<b>Number of dispensaries allowed</b>	The state never set up regulations on medical marijuana businesses, though hundreds of dispensaries exist. Washington is allowing these existing dispensaries to apply for recreational licenses and get a "medical endorsement" if they choose to, which will allow them to sell MMJ to patients and not charge recreational taxes. Those that don't win a license by July 1 will have to close.
<b>Number of dispensaries operating in early 2016</b>	800-1,200 (vs. a revised estimate of 1,200-1800 in early 2015). Note - This figure is for unlicensed dispensaries, which all must get permits under the recreational program by July 2016. They can apply for a medical endorsement to continue selling MMJ to registered patients, or they can simply transition to the rec market.
<b>Estimated number of patients</b>	100,000 to 125,000 (same as in early 2015)
<b>Estimated 2016 marijuana sales via dispensaries</b>	\$100 million-\$150 million (down from a revised estimate of \$200 million-\$250 million in 2015). Note - The decrease is due to the new licensing requirements for dispensaries, which will put many of these operations out of business. Others will simply obtain licenses and only sell rec cannabis.

# WASHINGTON STATE - Recreational

## Overview of Law

<b>Main measure</b>	Initiative 502 (established authority to license and regulate businesses) and Senate Bill 5052 (unified med and rec framework)
<b>Type of measure</b>	I-502: Ballot initiative SB 5052: Legislative bill
<b>Year passed</b>	I-502: 2012 SB 5052: 2015
<b>Margin of victory</b>	56% to 44% (I-502); 60-36 in the House, 41-8 in the Senate (SB 5052)
<b>Possession limit</b>	1 ounce/7 grams of concentrate/16 ounces of infused product in solid form/72 ounces of infused product in liquid form
<b>Home cultivation?</b>	No
<b>Restrictions on type of marijuana allowed to be sold?</b>	No
<b>Business regulations</b>	Heavy. All businesses are subject to extensive and strict rules covering all aspects of operations including, but not limited to: production controls, use of pesticides, transportation, extraction, packaging/labeling, lab testing, hiring, security, inventory controls and advertising. The state also has caps on the number of retail stores allowed and overall cultivation limits.
<b>Retail store structure</b>	For-profit allowed
<b>Sampling of state fees</b>	
<b>Application</b>	Producer, Processor and Retailer - \$266
<b>License</b>	Producer, Processor and Retailer - \$1,062 (new and renewal)
<b>Tax requirements</b>	37% excise tax payable by the customer at point of sale. The previous tax structure of a 25% excise tax each time the product changes hands down the supply chain was revoked and the 37% excise tax at point of sale replaced it.
<b>Number of rec stores and cultivators allowed</b>	Stores - 556 Cultivators - The number of licenses is not limited, but the maximum canopy space allowed under each license type is, and the state is attempting to cap total production in the state at a level commensurate with demand.
<b>Number of stores and cultivators operating in early 2016</b>	Stores - 200 Cultivators - 724
<b>Estimated number of in-state customers</b>	775,000-825,000
<b>Estimated 2016 recreational marijuana sales via retail stores</b>	\$550 million-\$650 million (up from \$323 million in 2015)

<b>OVERALL 2016 MARIJUANA MARKET</b>	\$650 million-\$800 million (up from \$523 million-\$573 million)
<b>What to watch in 2016</b>	All medical cannabis businesses must be licensed under the recreational program by July 1, at which time new unified rules take full effect. Retail stores may apply for a "medical marijuana endorsement" if they wish to specifically serve the MMJ patient base in addition to rec customers. The city of Seattle is also considering zoning changes that would expand operational areas for businesses.
<b>MMJ Stability Rank for 2016</b>	<p><b>D+</b></p> <p>Merging the state's existing medical cannabis businesses into Washington's rec program is proving bumpy at best. Ongoing issues of cultivator over-supply, complaints of far too few retail outlets in which to distribute the abundant product, the highest MJ sales taxes in the country and the shared border with Oregon (which permits medical and recreational cannabis) have led to one of the most volatile markets in in the country.</p>
<b>MMJ Business Opportunity Rank for 2016</b>	<p><b>A</b></p> <p>Despite the high degree of uncertainty right now, Washington is nevertheless one of only a handful of states that permits the legal production and sale of cannabis to all adults, making it a very attractive market with an abundance of opportunities to serve everyone from medical patients to in-state customers and tourists. With approximately 1.7 million more residents than Colorado and a shared border with Canada (which only permits MMJ currently), Washington's combined medical and recreational market still has a lot of room for growth.</p>

# CANADA - Medical Marijuana

## Overview of Law

<b>Main measure</b>	Marihuana for Medical Purposes Regulations (MMPR)
<b>Year passed</b>	Canada initially legalized medical marijuana at the federal level in 2001, but lawmakers passed a sweeping set of new regulations in 2014 that overhauled the structure of the country's MMJ program. These regulations were last updated in June 2015.
<b>Possession limit</b>	The lesser of 30 times the daily dose as defined by the patient's physician, or 150 grams.
<b>Patient registry</b>	Mandatory. Patients must register with a licensed producer and provide proof of a physician recommendation. The burden is on the producers to verify the physician is currently licensed in the province in which they saw the patient, as well as to ensure the physician hasn't been sanctioned.
<b>Home cultivation?</b>	No
<b>Restrictions on type of marijuana allowed to be sold?</b>	Yes - only dried herb is allowed to be produced and sold
<b>Qualifying medical conditions</b>	ADD/ADHD, Alzheimer's disease, anxiety, arthritis, auto accident(s), back & neck problems, brain injury, cancer, chronic nausea, chronic pain, colitis, Crohn's disease, depression, eating disorders, epilepsy, fibromyalgia, gastrointestinal disorders, hepatitis C, HIV/AIDS, irritable bowel syndrome, kidney failure/dialysis, migraines, multiple sclerosis, muscle spasms, muscular dystrophy, Parkinson's disease, post-traumatic stress disorder, sleep disorders, spinal cord injury/disease and sexual dysfunction
<b>MMJ business regulations</b>	Heavy. Producers and cultivators are licensed with Health Canada and are subject to rules and regulations governing all aspects of operations, cultivation, transportation, security, record-keeping, reporting, packaging/labeling and shipping.
<b>Dispensary structure</b>	Storefront dispensaries are not allowed, but producers are permitted to sell marijuana directly to registered patients via the mail and can operate on a for-profit basis. Scores of illegal dispensaries do exist, however, and they operate as for-profits.
<b>Tax requirements</b>	None stated in the law, and medicine is generally exempt from sales tax in Canada. But a judge ruled in late 2014 that MMJ should not be afforded this exemption and the topic is still unsettled as of early 2016. New Prime Minister Justin Trudeau promises to design a new system of marijuana sales and distribution that would include federal and provincial excise taxes.
<b>Number of dispensaries and cultivators allowed</b>	Dispensaries are illegal, and there are no caps on the number of producer/cultivator licenses



<b>Number of operational dispensaries and cultivators in early 2016</b>	Dispensaries - 150-200 (although dispensaries are illegal, they still exist in cities such as Vancouver and Toronto) Cultivators/Producers - 27 licenses have been granted
<b>Number of registered patients</b>	36,594 (Health Canada did not have hard numbers in early 2015)
<b>Estimated 2016 marijuana sales via licensed producers and unlicensed dispensaries</b>	\$50 million-\$80 million (up from estimated \$40 million-\$60 million in 2015)
<b>What to watch in 2016</b>	New Prime Minister Justin Trudeau made waves last fall when he included legalization of recreational marijuana in his campaign platform and subsequently won the election. He is now pursuing legalization and hopes to make big strides on that end in 2016, but there are many challenges ahead, and the timeline is unclear. If he is successful, it will drastically change the global landscape when it comes to this issue. On the medical side, some Canadian producers could continue to struggle, as demand isn't quite at the levels they thought it would be. And the proliferation of illegal dispensaries continues to be an issue.
<b>MMJ Stability Rank for 2016</b>	<b>D</b> Despite the fact that dispensaries are illegal, there has been a tremendous proliferation of them in larger cities - which undermined the legal MMJ program and hurts licensed companies. This is already creating a tension point between the federal government and local governments, some of which are establishing regulations on dispensaries. The potential for recreational legalization also raises many questions with regard to how that would affect existing medical businesses. So volatility could rear its head in many forms.
<b>MMJ Business Opportunity Rank for 2016</b>	<b>D</b> Due to the nature of Canada's MMJ law, there are very limited remaining legal business opportunities for companies that touch the plant, as well as ancillaries. There may be opportunities for consumption device manufacturers and other businesses that target patients though. Many entrepreneurs are defying federal law and opening up dispensaries, but that's a risky proposition. Additionally, with no concrete details on what recreational legalization would look like, it's hard to identify what the future opportunities might be. Regardless, any recreational cannabis opportunities won't materialize in 2016.

# Financial & Operational Data: Medical Dispensaries, Recreational Stores & Wholesale Cultivators

Medical cannabis dispensaries, recreational stores and wholesale cultivators make up the backbone of the marijuana industry. With the exception of personal or caregiver cultivation in some states, all legal cannabis production takes place at one of these three types of businesses, cementing their position as the nuclei around which the rest of the industry revolves. This chapter explores key and operational financial metrics for these businesses, from revenue and profit data to product mix and methods of cultivation.

## RETAILERS: MEDICAL DISPENSARIES & RECREATIONAL STORES

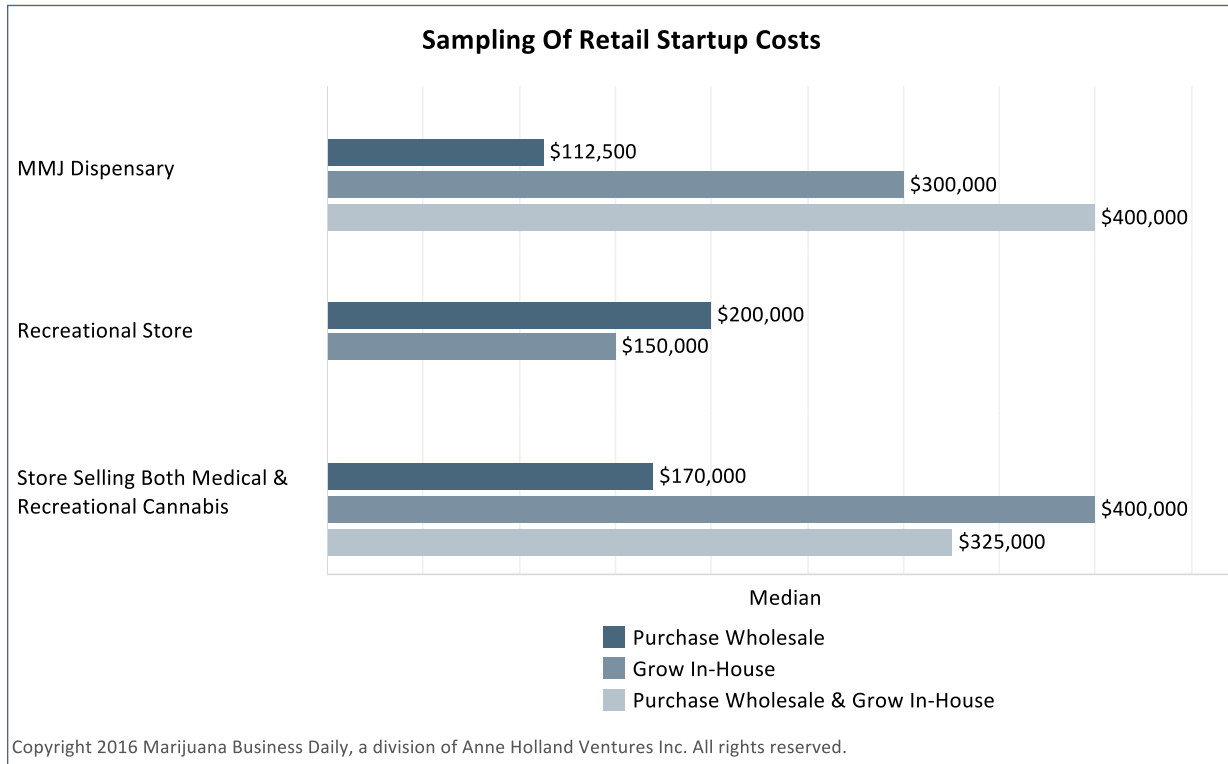
Medical cannabis dispensaries and recreational stores – collectively referred to as retailers – are often viewed as the face of the industry, as they are on the front lines of interacting directly with patients and customers. These businesses are also at the end of the supply chain, so their financial performance is therefore one of the more reliable indicators of demand, market size and future opportunities.

Retail businesses operate very much in silos, given that they are subject to widely different rules and regulations at the state and local levels. Still, there are two main areas in which comparisons can be made: whether the business serves the medical market, the recreational market or both; and whether the dispensary/store grows cannabis in-house or purchases it wholesale from third parties.

## Retailer Startup Costs & Operations

Regardless of which market is served, startup costs for retailers that buy cannabis wholesale are significantly less than those for businesses that choose to grow their own marijuana. The reason is simple: It costs a lot more to build out a cultivation site than to open a retail store and purchase inventory from wholesalers.

Chart 3.01: Sampling Of Retail Startup Costs



### Median Retail Startup Costs

MMJ Dispensary	\$200,000
Recreational Store	\$200,000
Medical/Recreational Store	\$342,500

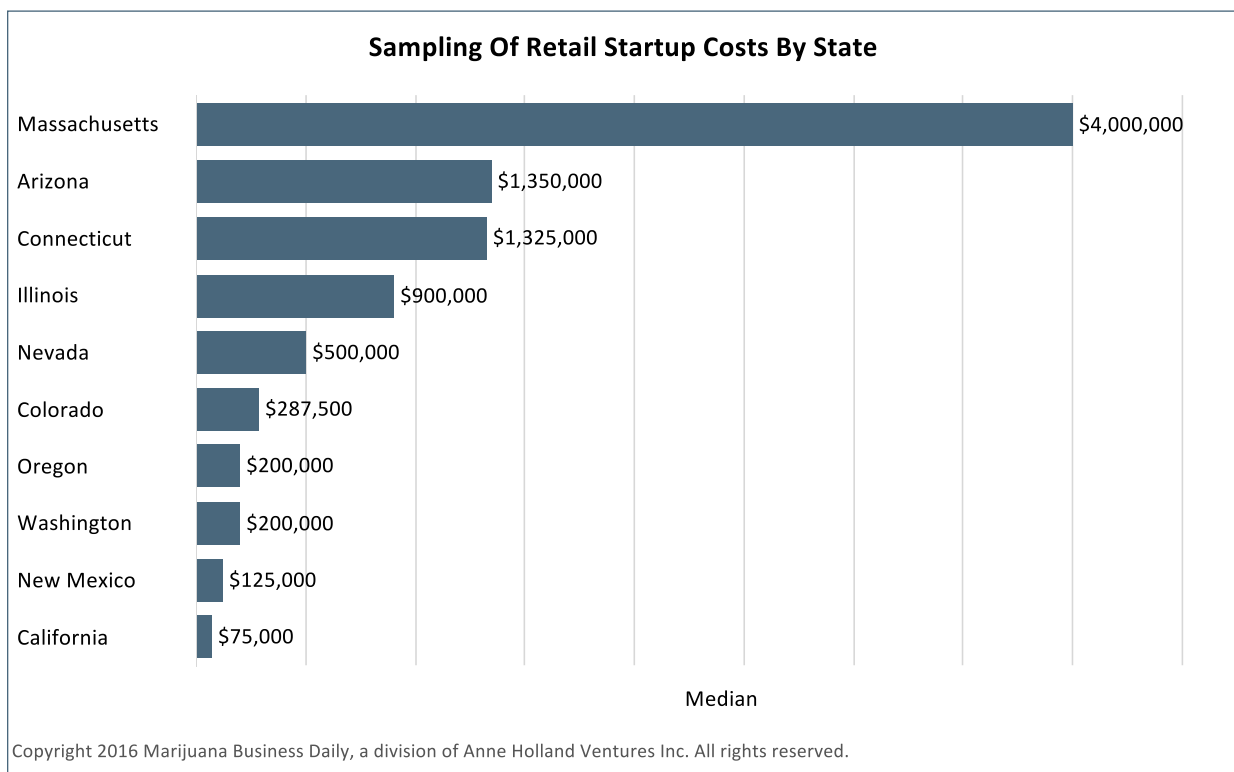
As of early 2016, 47% of medical and recreational retailers purchase wholesale, while 28% grow in-house and the remaining quarter do some combination of both.

When looking at retail startup costs by type of market served, stores that sell both medical and recreational marijuana report the highest overall financial requirements to launch among cannabis retailers. These hybrid stores only currently exist in Colorado, Washington State and Oregon, where both recreational and medical cannabis markets are operational. (Alaska's adult-

use industry will come online down the road). All of these types of businesses previously existed as medical dispensaries though, so startup costs may be slightly skewed by factors ranging from the time between when the store started as medical-only and when it began making recreational sales, to survey respondents' interpretation of what constituted "startup costs" for these entities.

The reason startup costs are higher for this group is largely due to the fact that Colorado and Oregon treat medical and recreational cannabis as completely separate markets (Washington State is folding its unregulated MMJ market into its recreational program). As a result, there are separate rules and regulations on businesses in each market, which can mean twice the cultivation space, inventory, equipment, special renovations to physically separate spaces and other expenses for companies that want to sell both medical and recreational cannabis.

Chart 3.02: Sampling Of Retail Startup Costs By State



### Median Recreational-Only & Combo Store Startup Costs By State

Colorado	\$275,000
Washington State	\$200,000
Oregon	\$300,000

When looking at retailers by state, it's important to remember the regulatory climate differs greatly across the country, which in turn affects everything from startup costs to revenue.

Most states license and heavily regulate retail outlets, though they all have different frameworks for doing so. In some states such as Massachusetts and Connecticut, licensing fees are hefty – which in turns boosts startup costs. In other states the fees are relatively low.

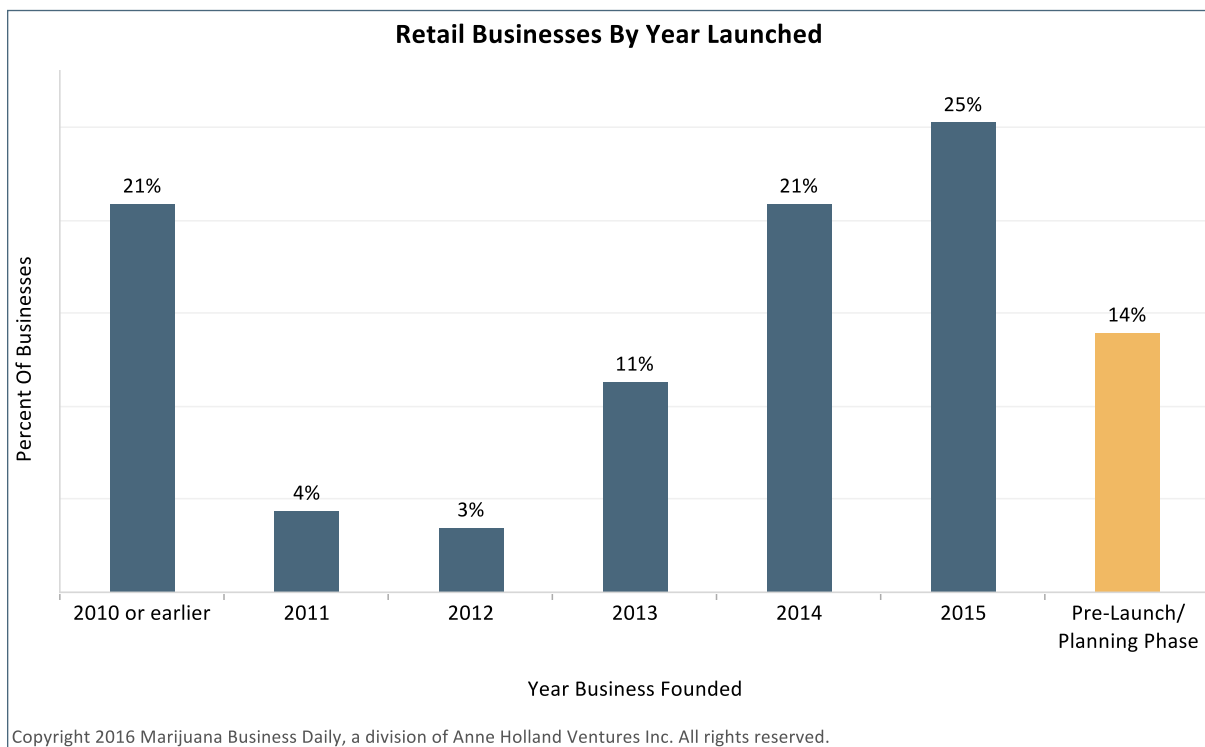
A handful of states don't regulate the industry at all. In Michigan and Montana, dispensaries are considered illegal – though they exist anyway, often with the blessing of local officials. Given the lack of regulations and licensing requirements, it's no surprise both states have some of the lowest startup costs in the nation for dispensaries.

Startup costs are also low in California, the oldest MMJ market in the country, and traditionally have been in Washington State. Dispensaries in California have operated without regulatory oversight for two decades, but the state is in the process of setting up strict rules on the industry that will be implemented in the coming years, so startup costs will certainly rise. Same goes for Washington State, where dispensaries have operated for years in an unregulated environment and are only now being forced to obtain licenses and meet strict rules.

On the recreational side of the equation, stores in Colorado, Washington State and Oregon are fully regulated at the state level, and Alaska is setting up a similar structure for its adult-use industry.

The overall trend in both the medical and recreational sides of the industry is heavier restrictions and regulations. So if you're hoping to start a retail cannabis operation in the coming years or want to open more locations, expect the financial burden to be even higher than it is now.

Chart 3.03: Retail Businesses By Year Launched



About 20% of dispensaries (including those that eventually converted to the recreational market) launched in 2010 or earlier. These businesses are the true pioneers of the industry, and the fact that they are still operational today is a great feat given the risk and uncertainty they've faced.

Startup activity was particularly strong in 2009, when the Department of Justice sent out a memo indicating the federal government would put a low priority on prosecuting people who buy and sell medical marijuana in states with MMJ laws. While not explicitly giving the go-ahead to medical cannabis operations, the government essentially said it would look the other way. The move created the first Green Rush, as scores of medical marijuana dispensaries opened in states that had previously legalized MMJ.

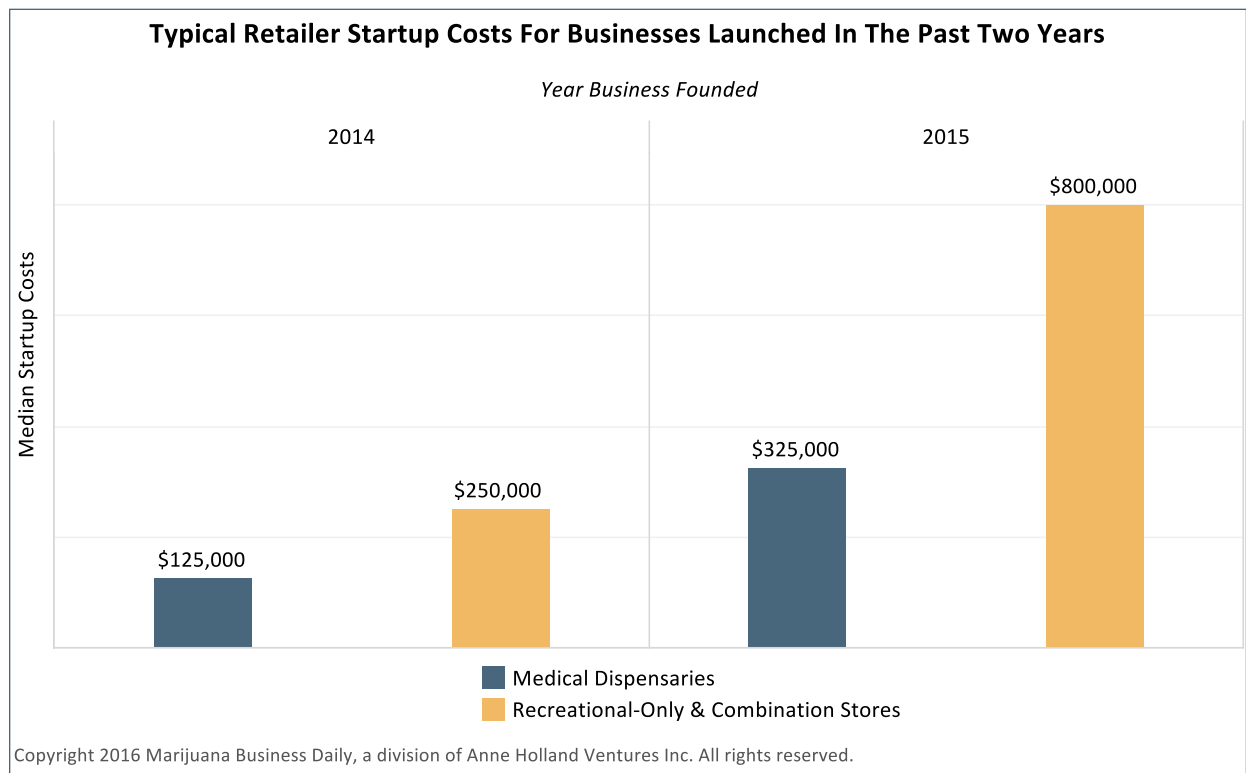
But the climate changed quickly, as district attorneys in some states – particularly California – seemingly went against the guidance and cracked down on the industry. As a result, 2011 and 2012 were brutal years to be in the marijuana business. Hundreds of companies were forced to close, while hundreds more simply went out of business because of the volatility, uncertainty and risks involved. Startup activity ground to a halt, as few companies started up these two years.

Fortunately, the momentum started to swing the other way again in 2013, when the federal government issued new guidance that lowered the risks immensely for cannabis businesses – both medical and recreational – operating in states with strict regulations on the industry.

Startup activity has spiked since then, and today newbies dominate the landscape. Nearly half of retail cannabis businesses in existence today were founded just within the past two years, while an additional 14% are in a pre-launch planning phase and will likely become operational this year. Those in the pre-launch planning phase may still be looking to incorporate, develop business plans and financial models, or win licenses. While many of the entrepreneurs in this category may likely never actually launch a cannabis company, the figure provides some insight to the general level of interest in the industry.

Last year was a particularly good one for startup activity, which is no surprise given that several new markets came online (including Nevada and Illinois), the nation's first rec markets gained steam, and optimism over the industry's future reached all-time highs.

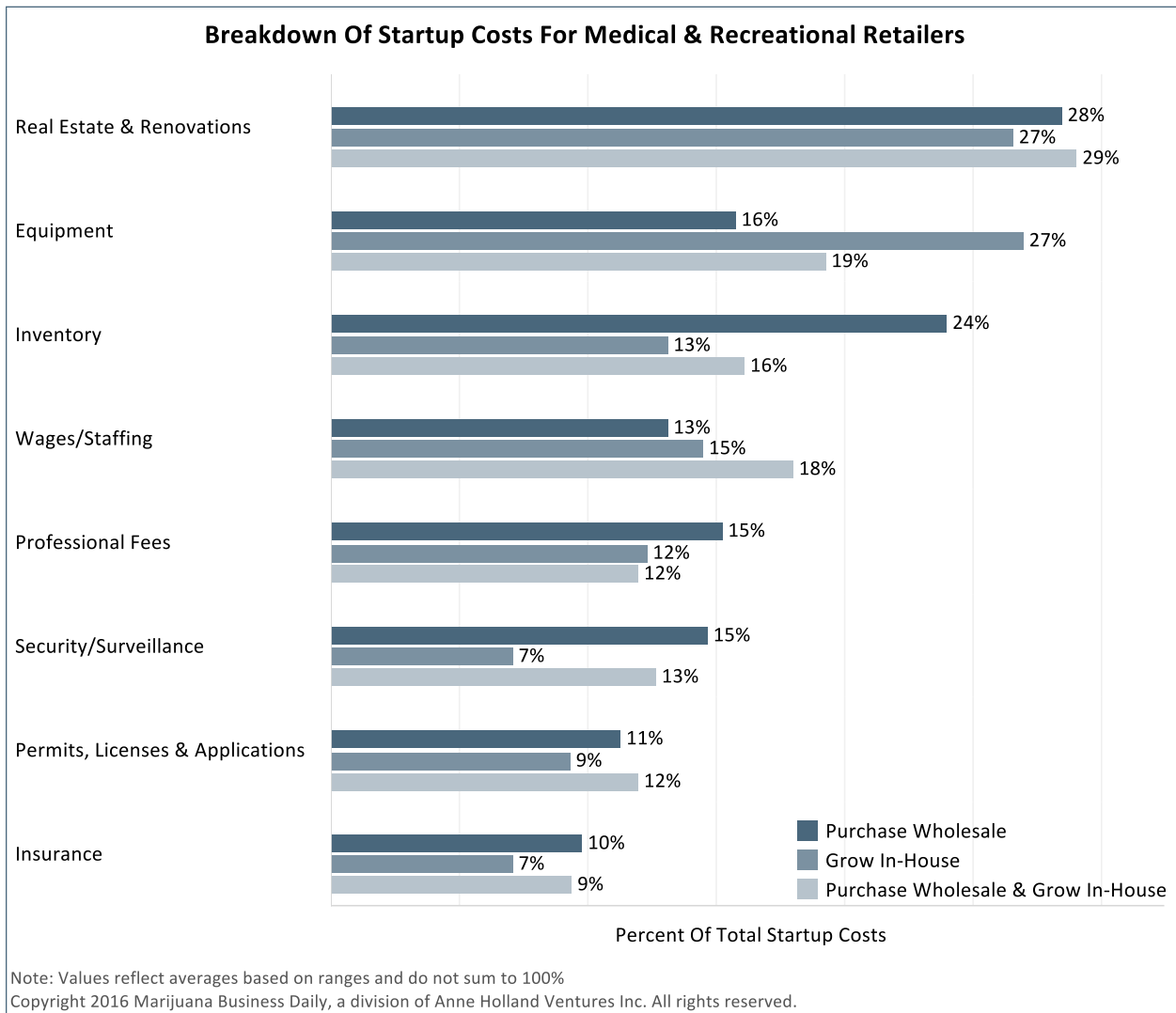
Chart 3.04: Typical Retailer Startup Costs For Businesses Launched In The Past Two Years



As more states legalize medical and/or recreational marijuana and the industry moves toward full regulation and legitimization, the costs of starting a retail operation have increased dramatically. It can cost tens of thousands of dollars – or even hundreds of thousands – to apply for and renew licenses. Meeting security requirements, operational rules and other regulations can increase startup expenses substantially. In some states, such as New York, businesses have to spend millions of dollars just to get started.

In the few states where recreational businesses are operational, startup costs for retailers that want to partially or exclusively serve recreational consumers are noticeably higher than for dispensaries solely serving the medical market. This is due to the fact that rec markets have only come online within the past two years. Similar to the trend that plays out in new MMJ markets, in rec states there's a definite trend toward increasingly robust regulation. Entrepreneurs considering an entrance to a future state's recreational market should look to states like Colorado and Washington for examples of the minutiae of the applicable rules and regulations they can expect.

Chart 3.05: Breakdown Of Startup Costs For Medical & Recreational Retailers

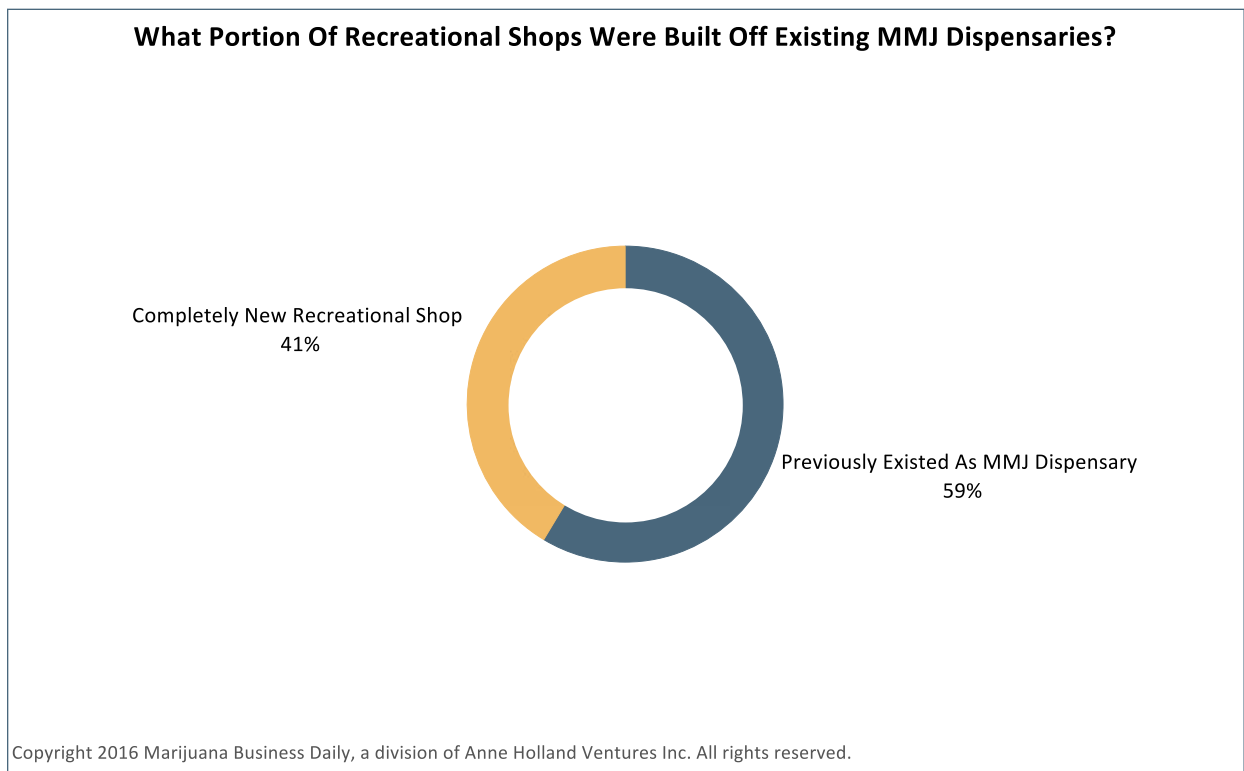


Real estate is often the biggest startup expense for a cannabis retailer. Procuring commercial space that’s properly zoned and then performing all necessary renovations to build or retrofit a retail space – and even a cultivation site if the business is vertically integrated – is pricey.

From there, inventory and investments in equipment are generally among the largest expenses, though the actual dollar amount required will greatly depend on whether the business is cultivating in-house or purchasing wholesale cannabis, which will also heavily influence necessary staff size.



Chart 3.06: What Portion Of Recreational Shops Were Built Off Existing MMJ Dispensaries?



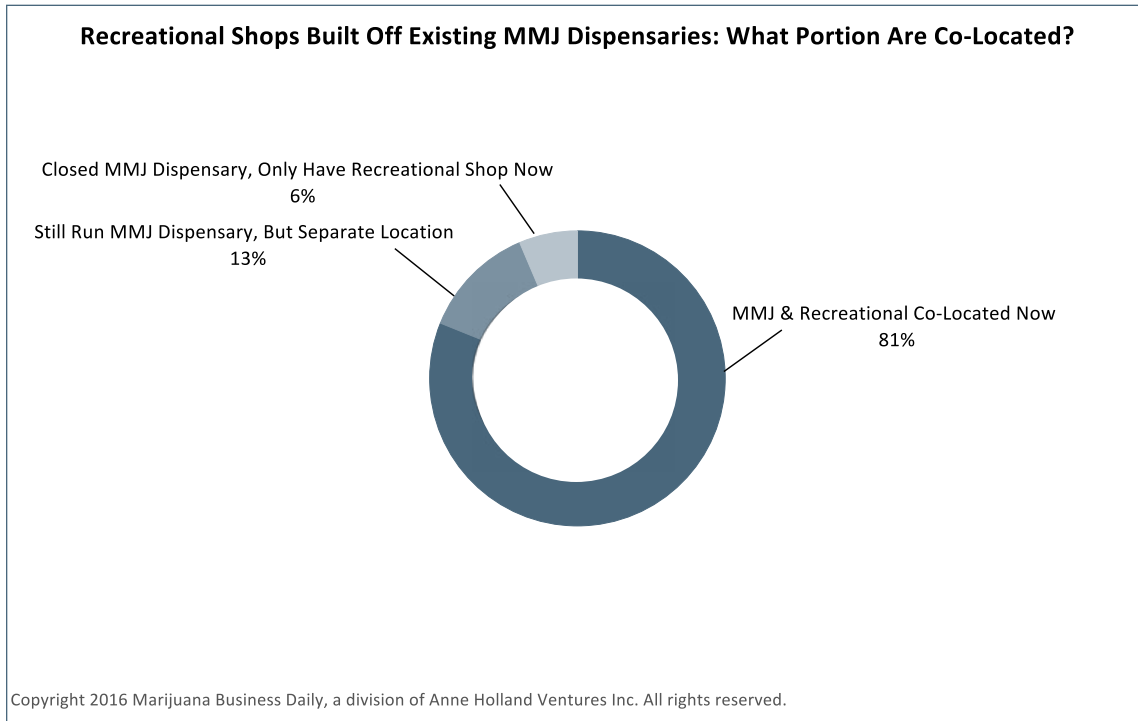
Nearly three out of five recreational stores were built off of previously existing medical dispensaries, which reflects state and local regulations. In Colorado, for example, there was an initial statewide requirement that only existing dispensaries could apply for recreational cannabis licenses. While this has since expired at the state level, Denver (where most of the state's cannabis businesses are located) recently elected to extend that provision. In a state where many municipalities elected to ban any type of medical and/or recreational business, this significantly reduces the business opportunities for new entrants to the recreational cannabis space.

Oregon has taken a similar approach by initially allowing only existing medical dispensaries to sell recreational cannabis to adults. Officials are setting up a separate recreational program but wanted to start sales early to stamp out the black market. So, as in Colorado, every business selling recreational cannabis in Oregon at the start of 2016 is also a medical dispensary.

Washington State, on the other hand, allowed new, stand-alone recreational businesses. Most rec shops in Washington are therefore brand new businesses. The state is now in the process of granting permits to existing unlicensed dispensaries, so the breakdown in this area will shift.

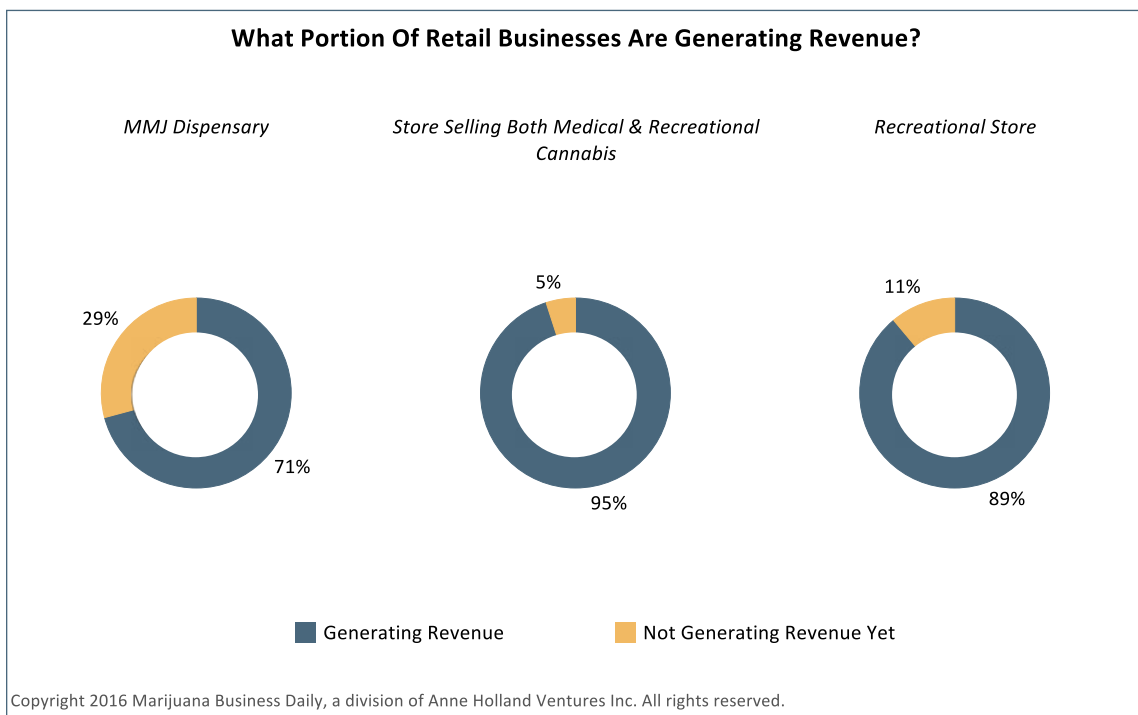
Other states that legalize recreational cannabis down the road may or may not require businesses to initially have medical cannabis licenses, which will of course impact the percentage of rec shops across the industry that were built off existing dispensaries.

Chart 3.07: Recreational Shops Built Off Existing MMJ Dispensaries: What Portion Are Co-Located?



In light of the many challenges and often lengthy timelines to procure commercial space, obtain permits, perform renovations and complete all of the other tasks required to set up a new retail business, it’s no surprise four out of five stores that sell both medical and recreational cannabis elected to co-locate these services in a single outlet.

Chart 3.08: What Portion Of Retail Businesses Are Generating Revenue?

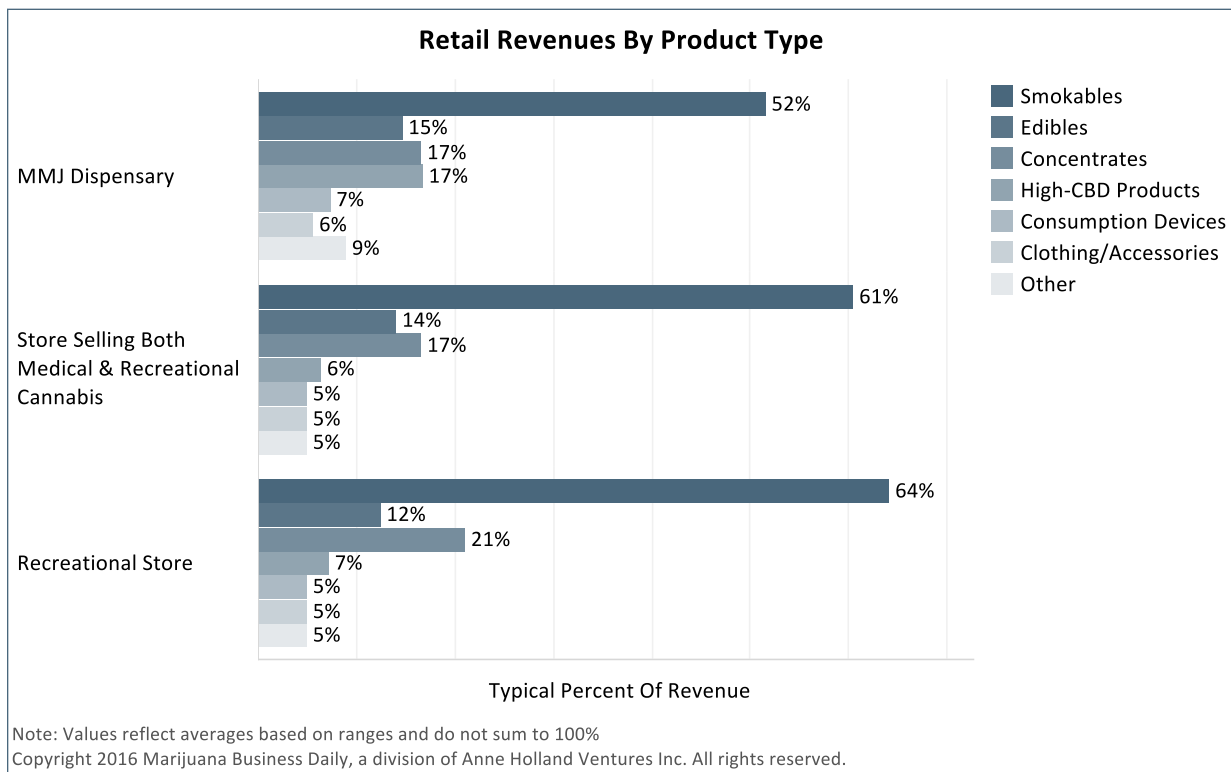


Establishing operations is no simple or quick feat for either medical or recreational retailers. Several state medical and recreational cannabis programs have experienced severe delays in the application and licensing phases as well as rule promulgation, while in other cases businesses have struggled to procure investment capital and real estate/commercial space or simply ran into issues trying to meet regulations.

Whatever the reasons, it's not uncommon for there to be substantial delays between when retail businesses are launched and when they actually start serving patients/customers and generate revenue. To that end, many dispensaries and rec stores are still waiting to open their doors. It's worth noting that most dispensaries still working their way through the startup phase (and therefore not serving patients yet) are mostly concentrated in newer MMJ markets such as Nevada, Illinois and Massachusetts.

## Retailer Product Mix

Chart 3.09 (3.11): Retail Revenues By Product Type



The majority of both medical patients and recreational consumers report flower as their preferred product, according to *What Cannabis Patients & Consumers Want*, a market research report also released by *Marijuana Business Daily*. The breakdown of retail revenue by type of product backs that up. Dried herb accounts for just over half of all sales at the average dispensary and nearly two-thirds of overall revenues for rec shops. Given the continued popularity of flower, businesses that operate in Minnesota and New York - where smokables are not permitted - might face headwinds.

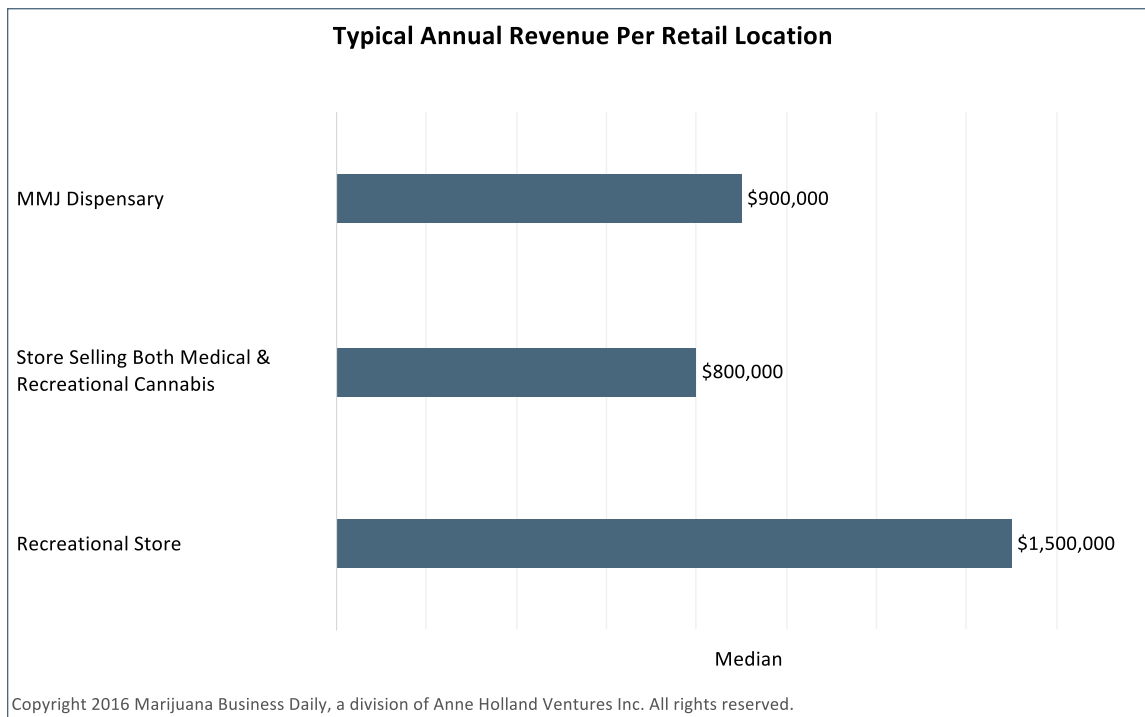
But edibles and concentrates are gaining steam in general, accounting for more than 30% of total sales at dispensaries, rec shops and stores selling both medical and adult-use cannabis. And in some states infused products aren't widely available, or the selection is minimal. So there's plenty of room for growth. High-CBD products are also a growing part of sales for dispensaries, as more patients are looking for pain relief without getting high.

Retailers in both the medical and recreational markets should therefore have a diverse mix of products on hand. While in the past offering an ample selection might have primarily been a competitive advantage, in the future it will likely be a necessity for survival.

### Retailer Revenue Figures

Recreational stores have a much larger addressable market (including visitors from across the world) than medical dispensaries, so they have a much bigger opportunity to drive up revenues. Shops that only sell recreational cannabis typically bring in 66% more revenue annually than dispensaries focused only on medical marijuana.

Chart 3.17: Typical Annual Revenue Per Retail Location



Stores selling both medical and recreational cannabis generate the lowest annual revenue, but that's largely due to temporary factors related to the current situation in Oregon, where existing dispensaries were allowed to begin selling limited quantities of recreational cannabis starting in October 2015. These businesses therefore haven't yet had a full year of adult-use sales at full possession limits. The first businesses specifically licensed as recreational stores won't open until the fall of 2016.

## Market In Focus:

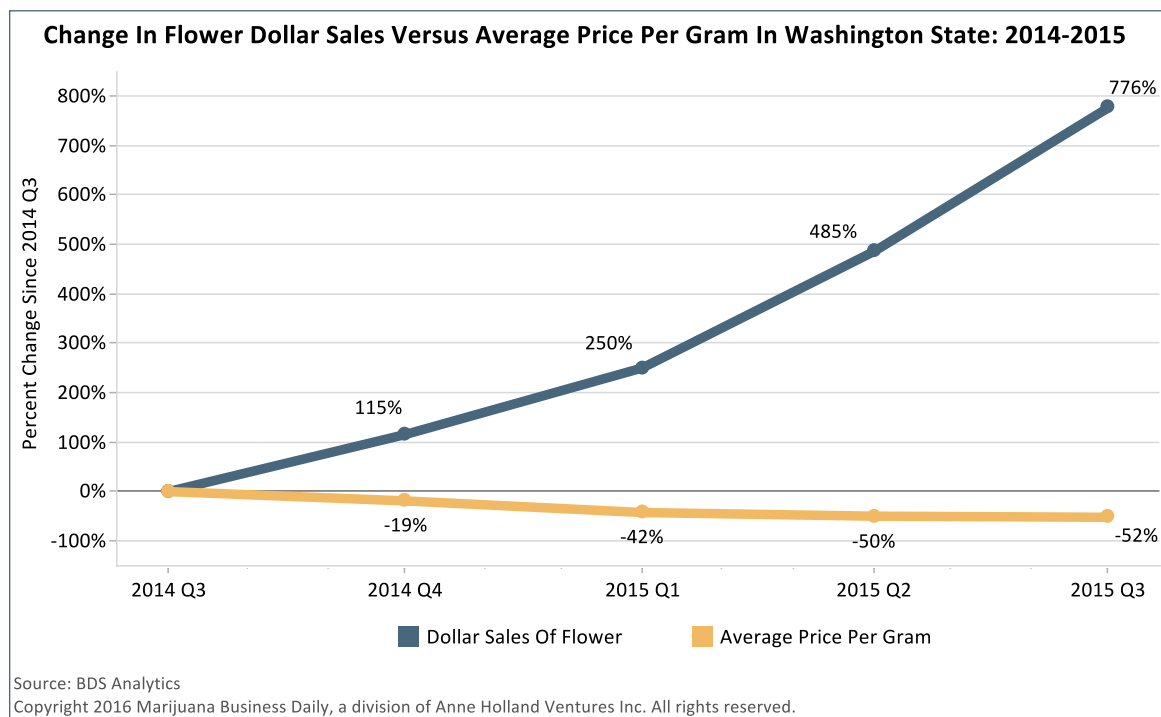
### Washington State Point-of-Sale Data From BDS Analytics

One of the best ways to get quality market data and financial metrics in an industry is via point-of-sale data collected by retailers, which offers detailed insight into everything from transaction volume to popular products to overall customer purchasing patterns. Detailed product sales and other point-of-sale data are virtually non-existent in the cannabis industry currently. However, BDS Analytics captures and analyzes millions of transactions from dispensary/store point-of-sale systems, providing critical insight into what's actually happening in a given market.

Though the data is only available for Washington State's licensed rec shops currently, the figures provide a window into sales, pricing trends and product preferences in a state with both medical and recreational cannabis businesses. The charts and figures below pertain to cannabis sales via stores licensed under Washington's recreational cannabis program (this does not include unlicensed dispensaries currently serving medical cannabis patients).

Here's a snapshot of that data.

Chart 3.10: Change In Flower Dollar Sales Versus Average Price Per Gram In Washington State: 2014-2015

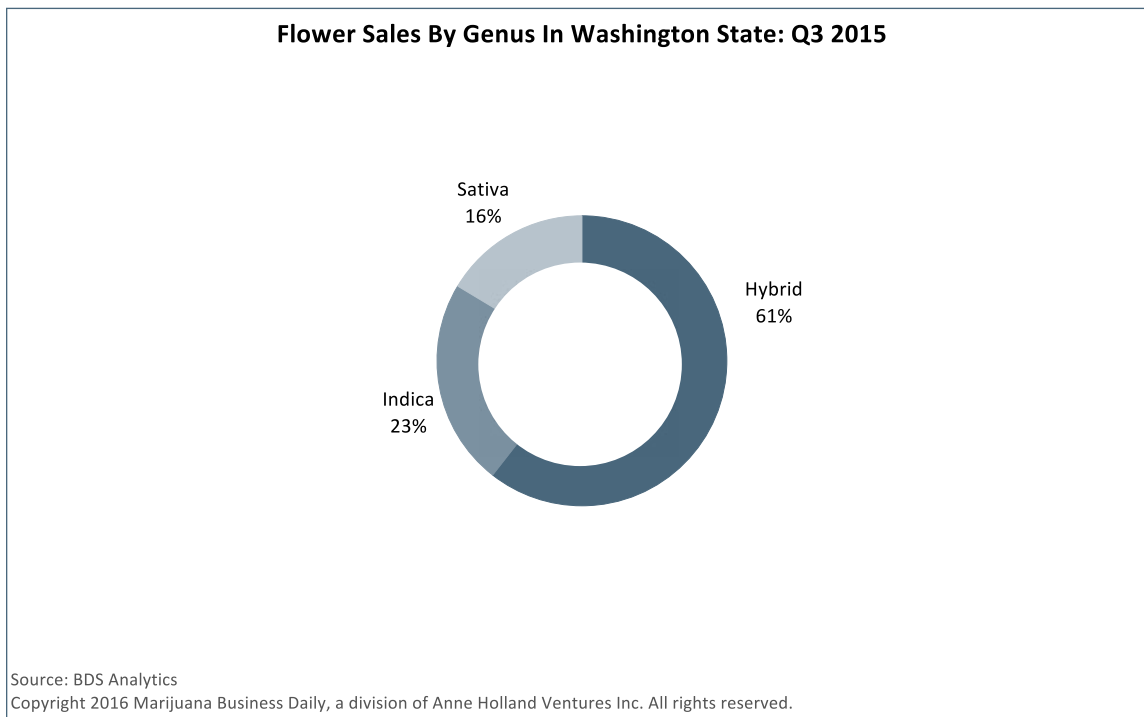


Wholesale cannabis prices (and therefore retail prices) in Washington State have been some of the most volatile in the country since sales at licensed shops began in July 2014. At that time, grams of flower were going for \$18-\$20 at retail, but prices have rapidly decreased to a much more reasonable \$8-\$10 per gram as flower sales have taken off,

additional retail outlets have opened, and total production has caught up with demand. By the third quarter of 2015, dollar sales of flower had increased 776% and dried herb prices per gram had come down by more than 50% when compared to a year earlier, when sales via rec shops first started.

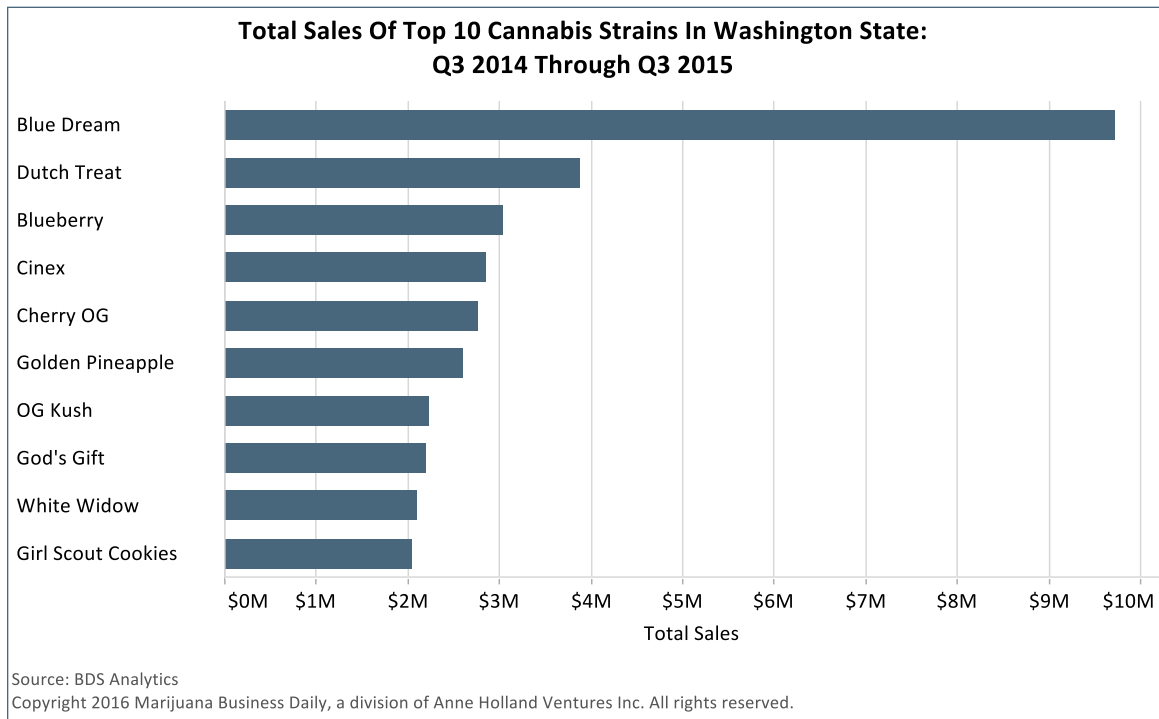
Despite the growth in sales of flower, this product actually comprised a smaller portion of total sales in the third quarter of 2015 than it did a year earlier. In the third quarter of 2015, flower accounted for 69% of total sales, down significantly from 88% a year earlier – a testament to the growing demand for other products.

Chart 3.11: Flower Sales By Genus In Washington State: Q3 2015



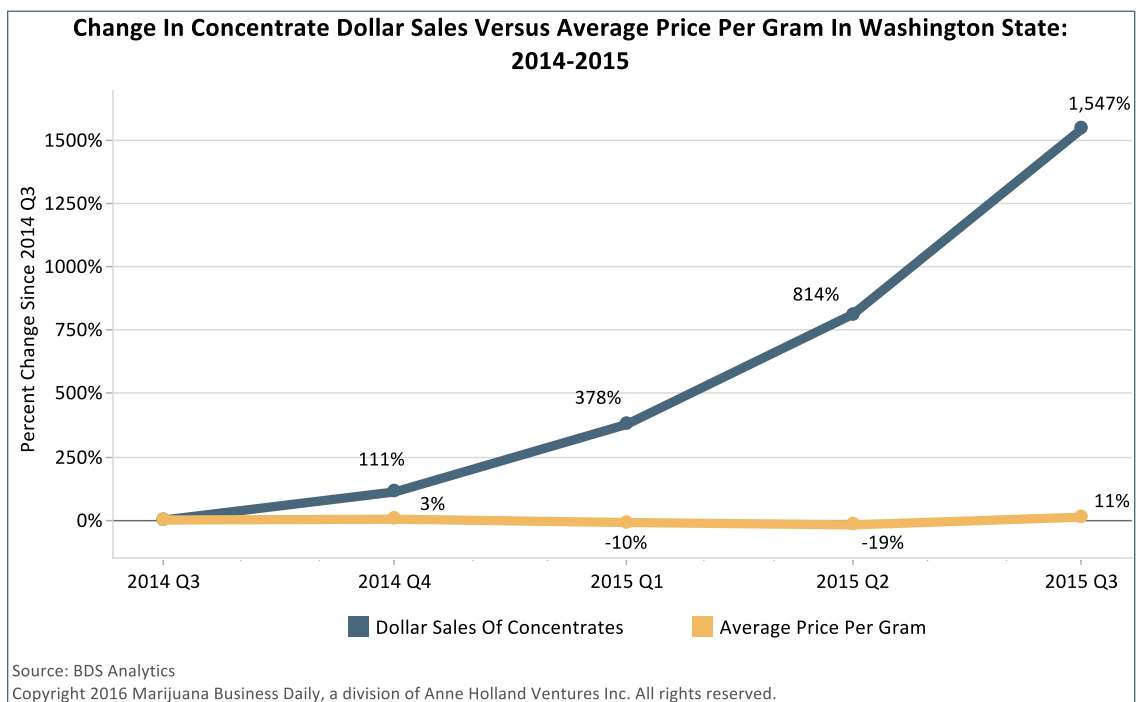
Since very few strains are actually pure indicas or sativas, it's not surprising that the majority of flower sales by genus are attributable to hybrid strains. That being said, there is clearly still strong demand for many strains across the spectrum.

Chart 3.12: Total Sales Of Top 10 Cannabis Strains In Washington State: Q3 2014 Through Q3 2015



It's worth noting, however, that despite the proliferation of specific strains – which easily number into the hundreds – certain ones are easier for cultivators to come by and/or grow, while others are clear favorites among users. These 10 strains account for about 20% of total flower sales in Washington State currently.

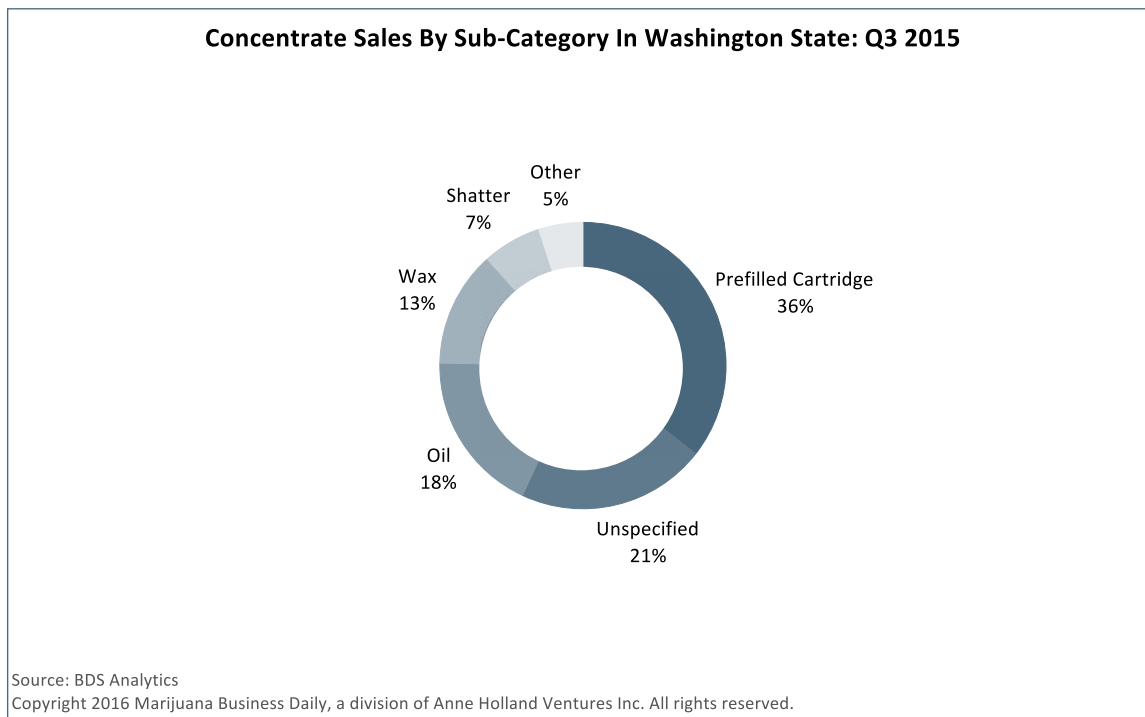
Chart 3.13: Change In Concentrate Dollar Sales Versus Average Price Per Gram In Washington State: 2014-2015



Sales of concentrates such as oil, wax and pre-filled cartridges grew at a much faster rate than revenues derived from flower, rising nearly 16-fold from the third quarter of 2014 to the same period in 2015. Concentrates accounted for 15% of total retail sales in the third quarter of 2015, up from 10% a year earlier.

Concentrate prices per gram have been a bit more volatile and haven't steadily dropped in tandem with rising sales as flower prices have. After decreasing noticeably in the first part of 2015, the cost per gram of concentrates ticked back up in the third quarter. More time will have to elapse before prices in this product category stabilize and adequately reflect supply and demand.

Chart 3.14: Concentrate Sales By Sub-Category In Washington State: Q3 2015

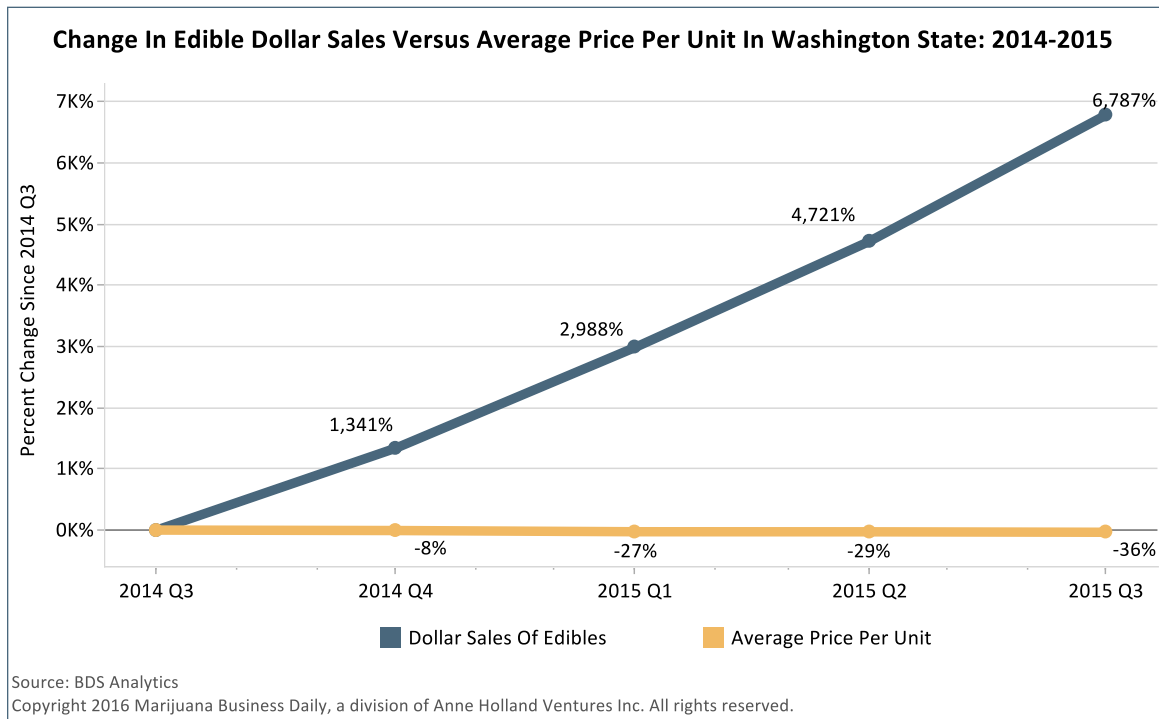


Pre-filled vape pen cartridges dominate sales of all other concentrate sub-categories by large margins in Washington State. Though data at this level of detail is not currently available in other states, anecdotal evidence certainly bears out the popularity of pre-filled cartridges across the country as well.

The 21% of sales currently categorized as unspecified concentrates are tied to a particular vendor, but details on what the specific product is are unavailable at this time. As more data is collected, these products will be properly classified and could hold even more insights about demand for concentrates.

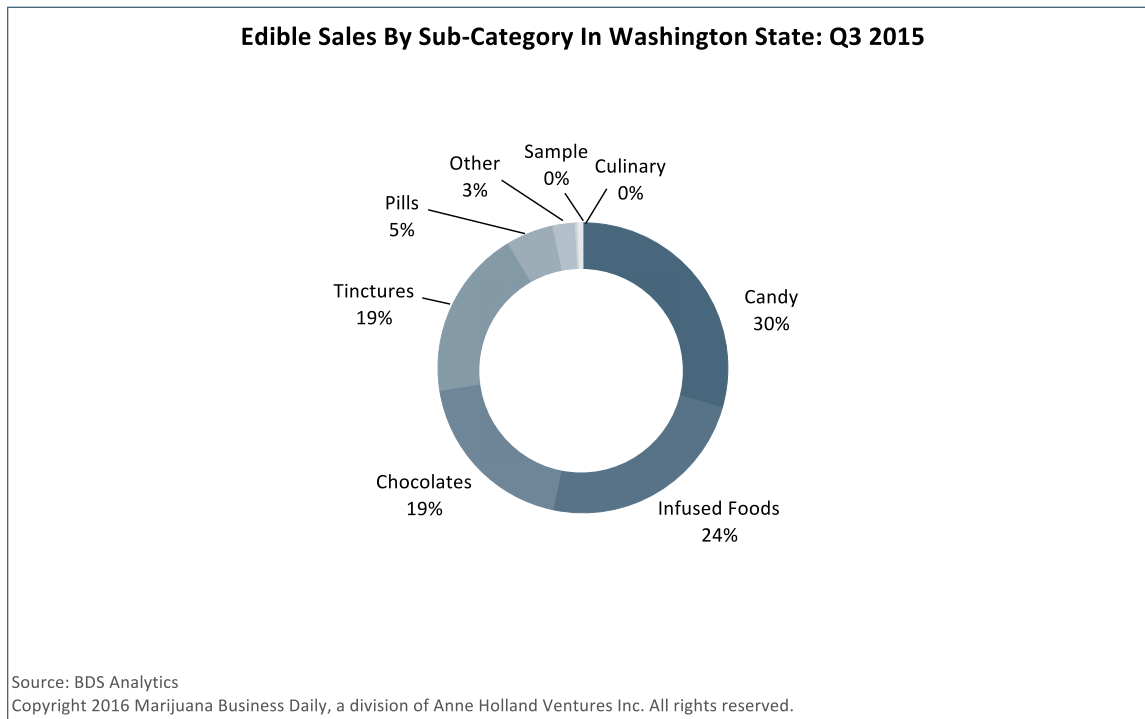


Chart 3.15: Change In Edible Dollar Sales Versus Average Price Per Unit In Washington State: 2014-2015



The headline news in Washington State is the undeniably strong and growing demand for edibles such as candy, tinctures and pills. In the 12 months following the launch of Washington’s rec industry in July 2014, dollar sales of these products soared by almost 6,800%. Their portion of total sales has increased from 1.5% in the third quarter of 2014 to 9.5% in the third quarter of 2015. Similar to flower, average prices per edible have commensurately decreased by 36%, which is likely attributable to things settling down in the state’s wholesale market and bringing the cost of that production input down.

Chart 3.16: Edible Sales By Sub-Category In Washington State: Q3 2015

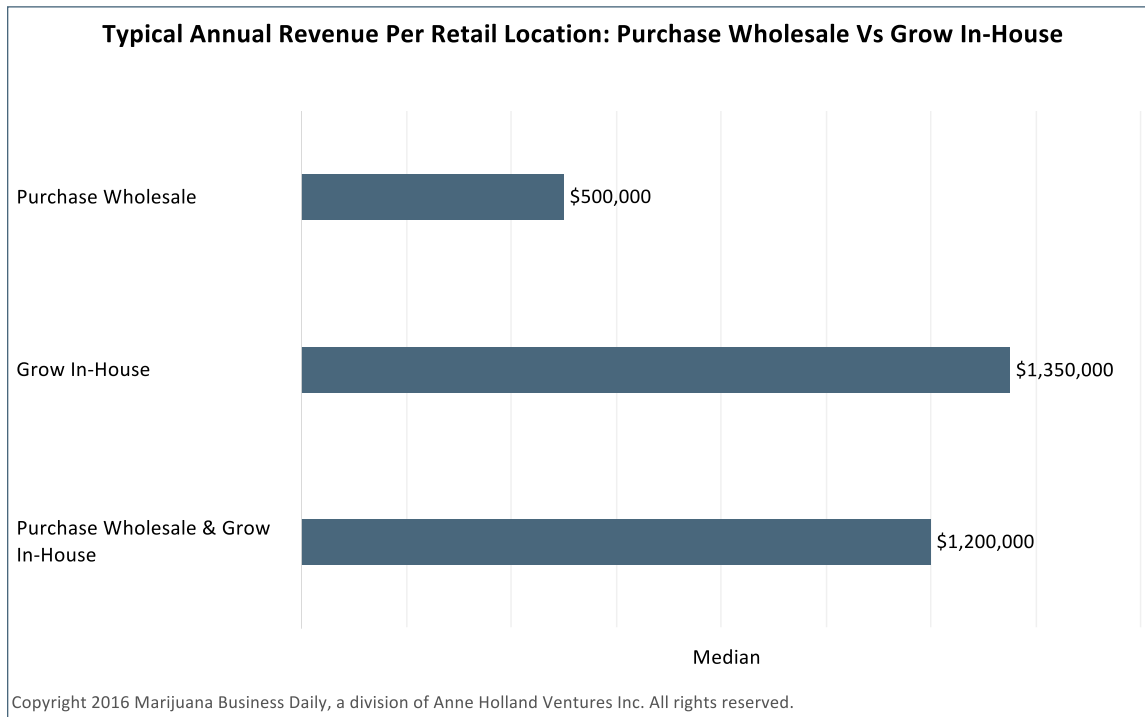


As seen in other markets, sweet infused treats continue to be the most popular among all edible types. Candy and chocolates account for almost half of all edibles sales in Washington State. An additional 24% of edibles sales involve other types of sweet infused foods, such as brownies, cookies and cupcakes. The remaining quarter is almost entirely comprised of pills and tinctures, which tend to be more popular with medicinal users.

The "sample" sub-category refers to promotional, single-serving or other items given away for free or at a substantial discount. Items in the "culinary" sub-category include butters, fats and cooking oils used to make other food, which don't appear to be very popular at this time. That will likely change, however, as cannabis becomes more mainstream and people become more comfortable with making their own infused foods.

## More Retailer Revenue Figures

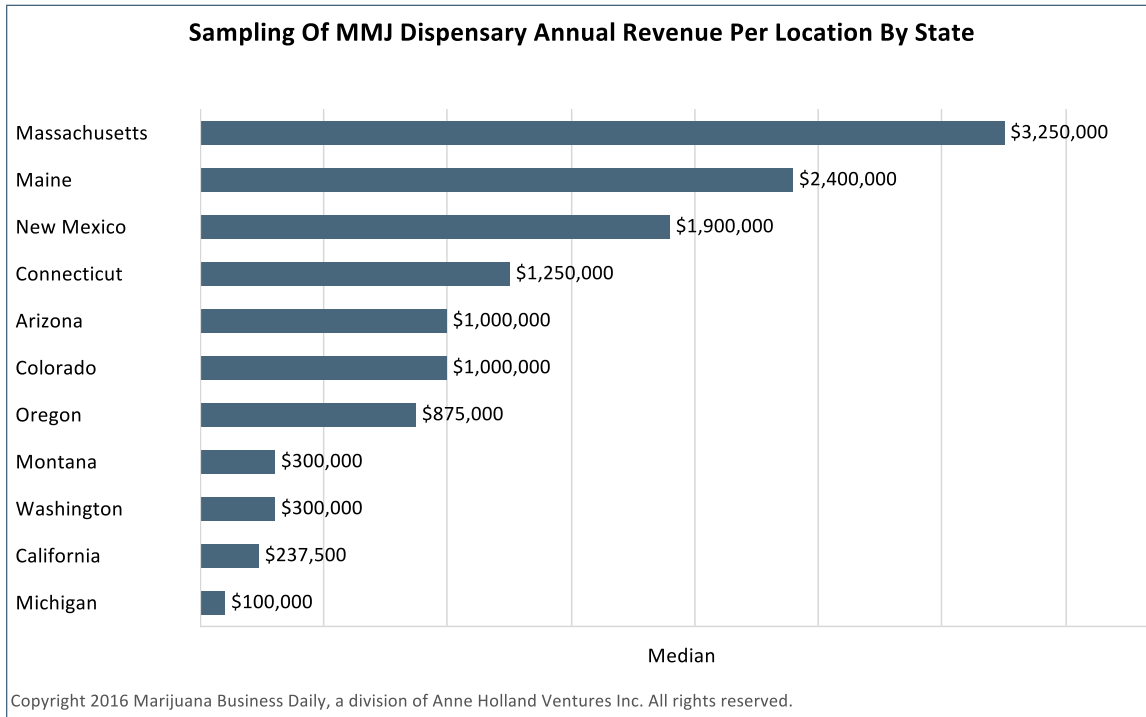
Chart 3.18: Typical Annual Revenue Per Retail Location: Purchase Wholesale Vs Grow In-House



Many states have required medical and/or recreational retailers to be vertically integrated, meaning they must grow all or most of their own supply. In these states, the wholesale market is either minimal or nonexistent. In many states where this is true, businesses often only have a single retail outlet – again because of legal requirements or simple logistics – which drives up the annual revenue on a per-store basis. Additionally, revenue potential varies greatly depending on whether or not there are caps on retailers. In states that limit the number of retail licenses, stores can capture more of the market. In states without caps, the competition is higher and sales are spread among more retailers, which can drive down average revenues.

It's important to keep these additional constraints in mind when evaluating the revenue potential of a single store.

Chart 3.19: Sampling Of MMJ Dispensary Annual Revenue Per Location By State



In small medical markets where the number of dispensaries is very low - such as Massachusetts, Maine and Connecticut – many licensees have only a single outlet. In other cases, particularly in newer markets, existing businesses may be capturing a portion of market share that will eventually decrease as more competitors come online. This is reflected in higher revenue per location when compared to states like Washington and California, where dispensaries/stores abound, retailers have been operational for quite some time and competition is fierce.

Chart 3.20: Sampling Of Recreational Store Annual Revenue Per Location By State



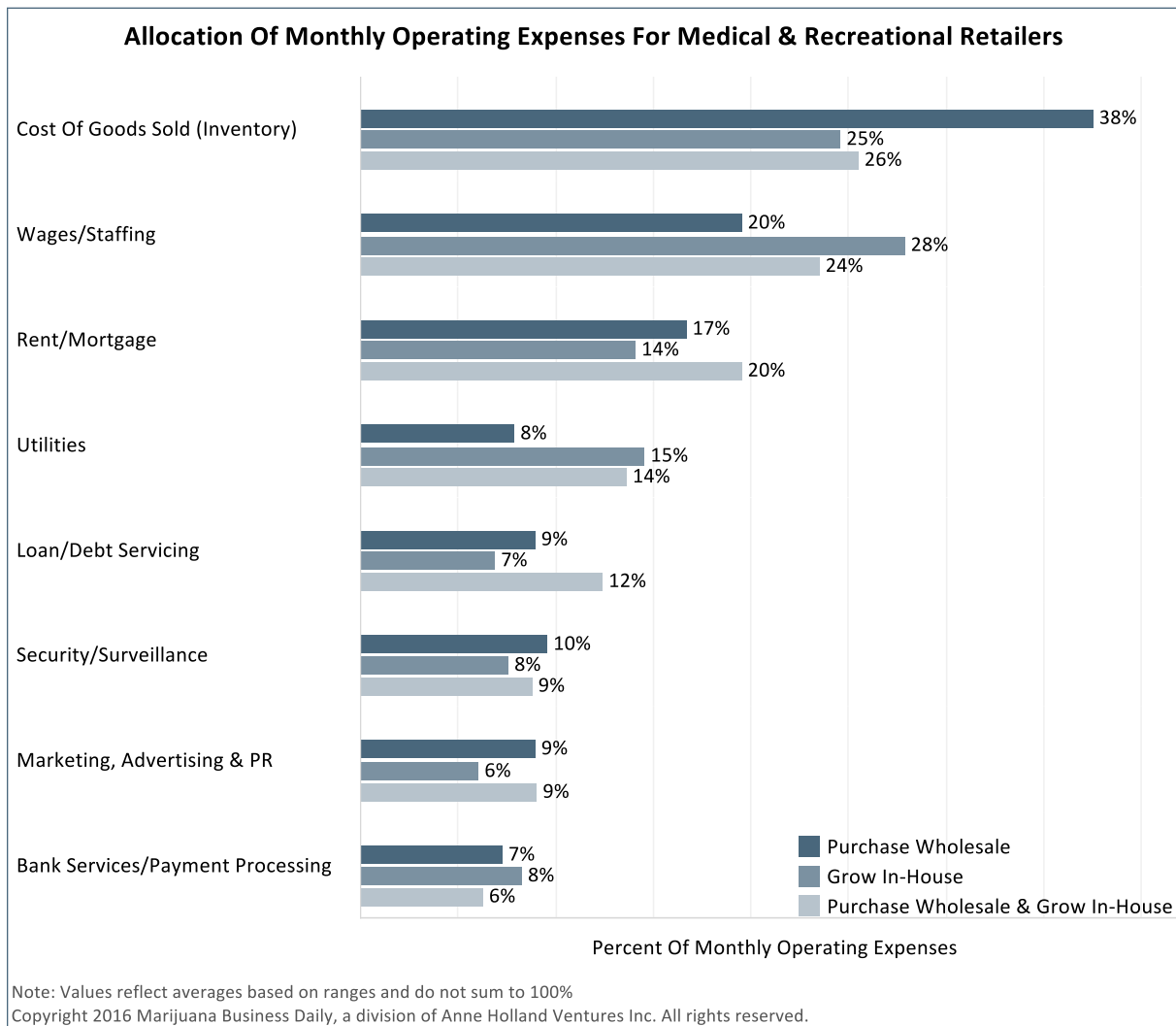
The portion of adults in Colorado and Washington State who regularly consume cannabis is nearly identical. So why would stores in Colorado command higher revenues than those in Washington?

At the beginning of 2014, Colorado was the first state in the country to begin selling recreational cannabis to all adults – a historic circumstance that uniquely positioned it as both the “Napa Valley” of recreational cannabis enthusiasts and as a beacon of hope for many patients who could not obtain legal access to MMJ in their home states. It is still benefitting from being “first” to this day.

While this preeminent position will surely diminish as more states legalize recreational cannabis, Colorado does retain one key advantage: geography. Colorado is located near the center of the country, making it a perfect vacation spot for cannatourists.

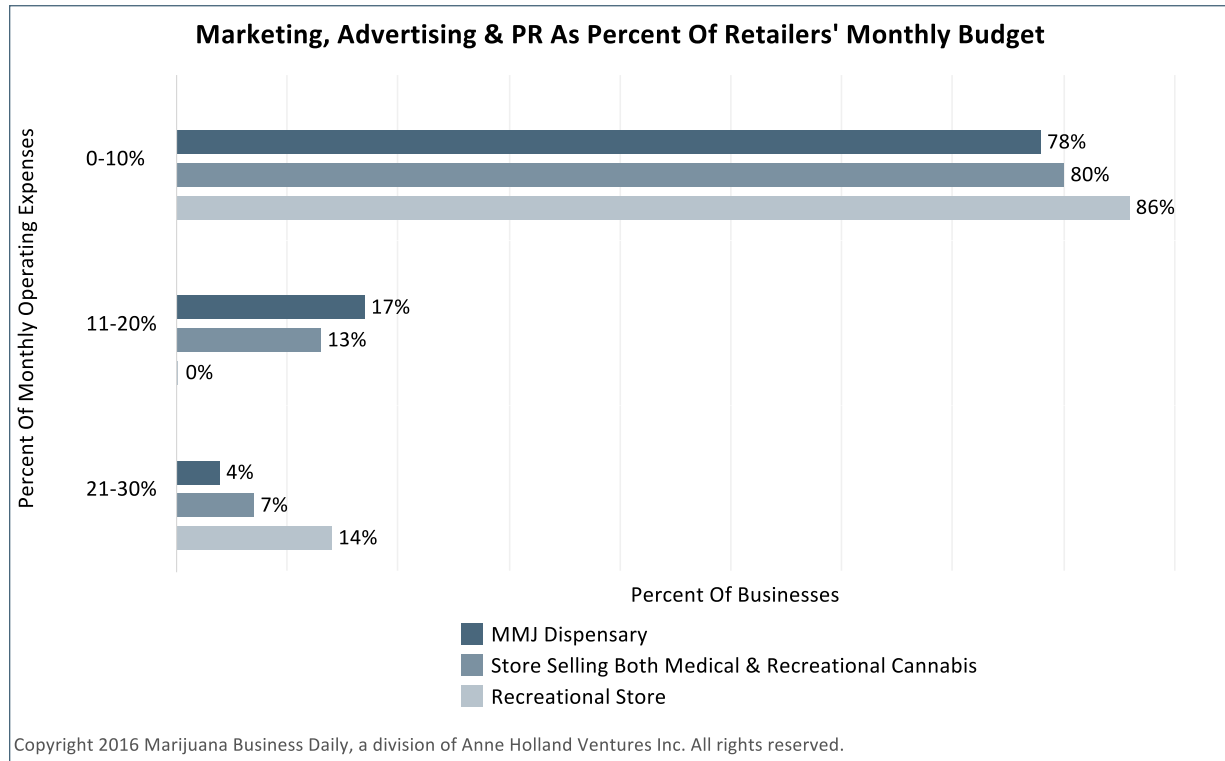
## Retailer Operational Data

Chart 3.21: Allocation Of Monthly Operating Expenses For Medical & Recreational Retailers



The difference in the portion of ongoing monthly expenses dedicated to inventory between retailers that grow in-house versus those that purchase wholesale is not surprising. However, the higher cost of purchasing wholesale is often offset by the need for fewer employees, as reflected in the fact that retailers growing in-house have higher monthly payroll/wage and utilities expenses.

Chart 3.22: Marketing, Advertising & PR As Percent Of Retailers' Monthly Budget

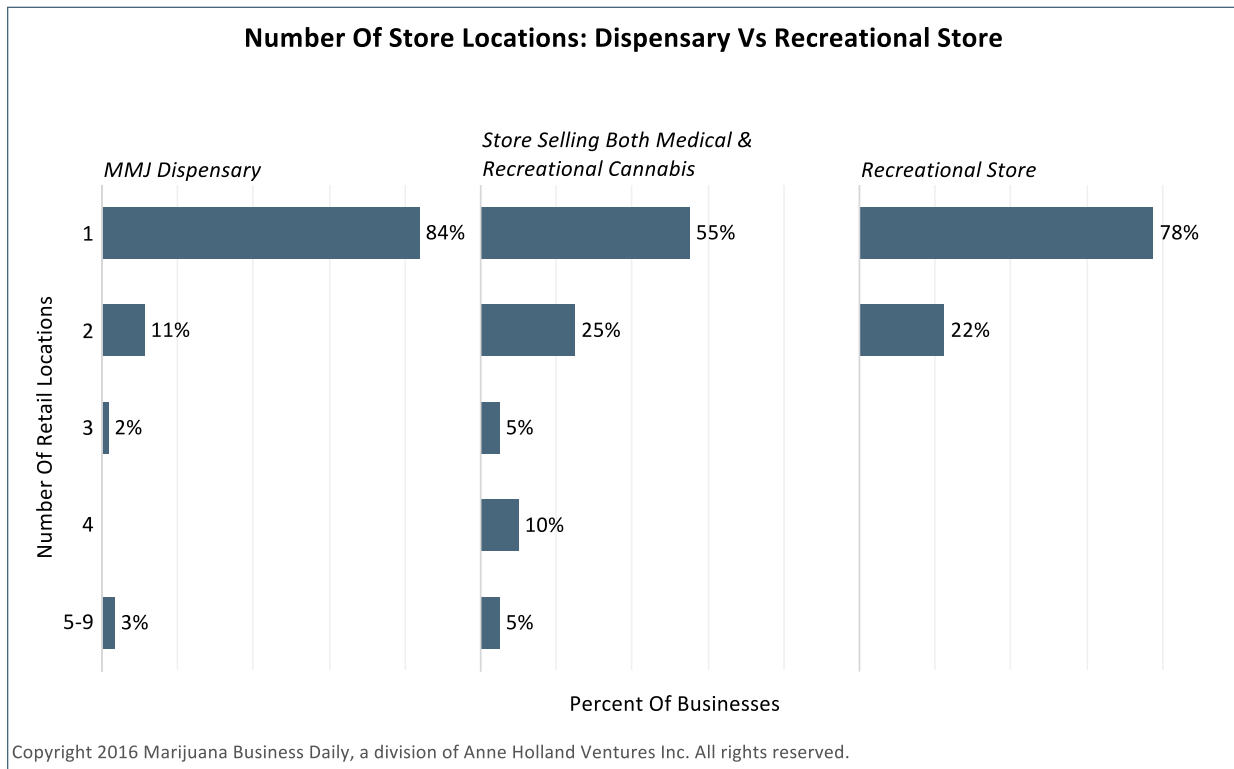


Dispensaries and recreational stores typically spend 10% or less of their monthly operating budgets on marketing and advertising. Many rely on word-of-mouth from current customers and having a strong presence on social media, in part because many traditional forms of advertising (mainstream magazines and newspapers, TV commercials, radio stations and billboards) are often off-limits. Advertising expenses tend to be lower among dispensaries in states with strict caps on retail licenses, as the competition is lighter.

Stores that solely sell recreational marijuana tend to shell out more on advertising, with 14% of them spending 21-30% of their budget on reaching out to consumers. This is likely in part due to the fact that rec stores can sell to out-of-state visitors, meaning the market is truly international. The customer base is therefore much larger than it is for medical marijuana dispensaries, and outreach is therefore more important.

Additionally, there are either no limits or relatively generous ones on the number of recreational stores that can operate in Colorado, Washington State and Oregon – leading to more competition. In many medical cannabis states, on the other hand, there are restrictive caps on the allowable number of dispensaries.

Chart 3.23: Number Of Store Locations: Dispensary Vs Recreational Store

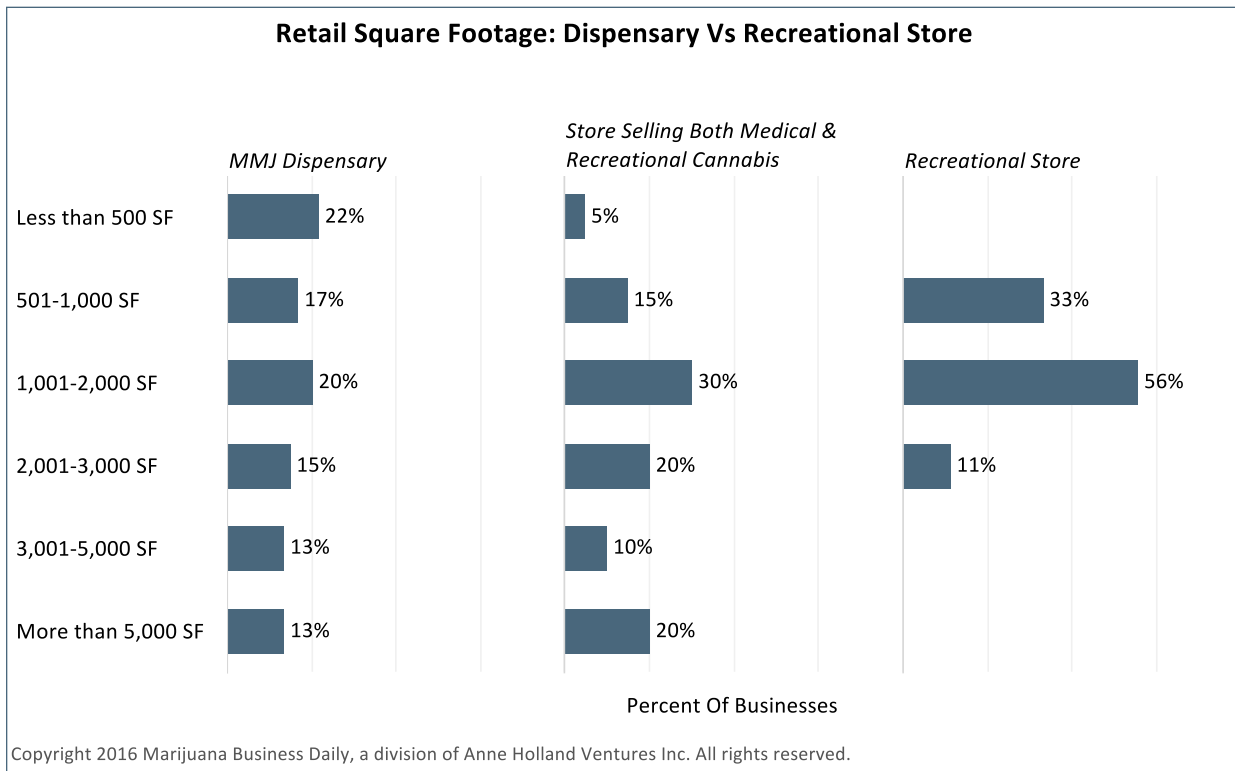


The marijuana industry is finally seeing the emergence of chain dispensaries/rec shops, which have been built through both organic growth and acquisitions. This is particularly true in certain western states where such operational structures are permitted (many states don't allow companies to operate cannabis chain stores, or the number of licenses is so low that it's virtually impossible). Some retailers have managed to open dispensaries in multiple states as well. California-based Harborside Health Center, for instance, opened a dispensary in Oregon in 2015.

For now, these businesses are still the minority, as 77% of all medical and recreational retailers currently have a single location.

An encouraging 15% of retailers have two locations, though, while 7% have three or more dispensary/store locations. These figures will likely change significantly in the coming years as the industry matures and the opportunities for expansion multiply.

Chart 3.24: Retail Square Footage: Dispensary Vs Recreational Store



### Average Retail Outlet Square Footage

MMJ Dispensary	2,100 Square Feet
Medical & Recreational Store	2,500 Square Feet
Recreational Store	1,400 Square Feet

Broadly speaking, medical dispensaries tend to have less retail square footage than stores that also or exclusively sell recreational cannabis. There are likely many reasons for this, including less foot traffic and revenue per transaction.

That being said, it’s interesting to note the near-even distribution across square footage of dispensaries.

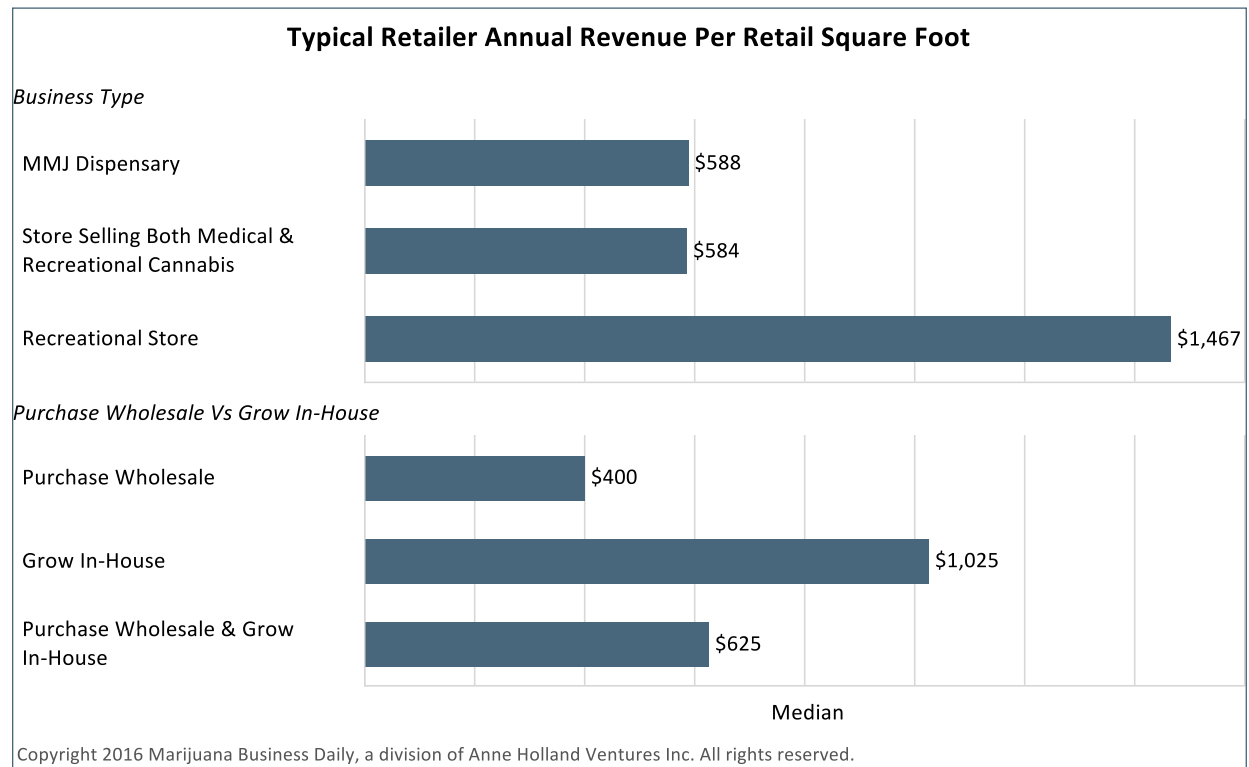
This indicates that in some markets where the patient base is large and commercial space is abundant and affordable, medical retailers certainly can have larger spaces that are still profitable. The overall average size of medical retailers’ space is about 2,100 square feet.

It’s not surprising many co-located dispensaries and recreational stores have a need for larger spaces, as often these businesses are either required to maintain physical separation or the company has elected to keep the two separate for patient privacy. Recreational retailers are also competing to appeal to a broad range of consumers, so it’s beneficial to build larger retail spaces where more products can be displayed and multiple customers can be served.



The difference in the size of the retail space between dispensaries and co-located stores is not large though, as the average for the latter type of outlets is about 2,500 square feet. Recreational-only stores actually tend to be on the smaller size, with an average of only 1,400 square feet – though there are very few businesses in this category currently and this number will likely change significantly in the future as these companies proliferate.

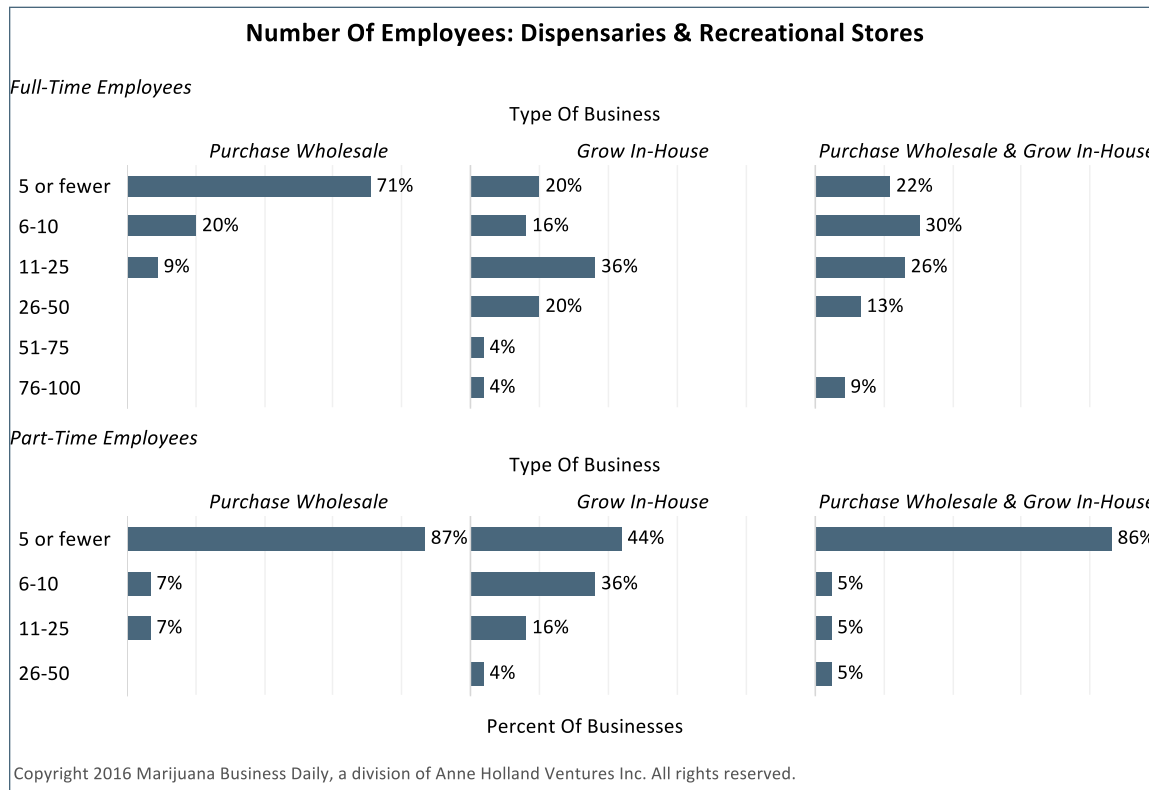
Chart 3.25: Typical Retailer Annual Revenue Per Retail Square Foot



In a reflection of demand for recreational cannabis – and dovetailing on the previous discussion about how rec-only stores tend to be on the smaller side at present – these businesses have enviable annual revenue per square foot of nearly \$1,500. However, entrepreneurs considering opening or converting to this type of business should keep in mind the figures for rec-only stores reflect brand new markets with a comparatively low number of businesses when compared to how many will exist in coming years. With that in mind, revenue per square foot will therefore likely change.

The noticeably higher annual revenue per square foot for retailers that cultivate their own cannabis is likely attributable to representation among some of the larger businesses in this space, which typically bring production and processing in-house to achieve better economies of scale and to maintain control over their supply chains.

Chart 3.26: Number Of Employees: Dispensaries & Recreational Stores



As previously mentioned, retailers that grow their own cannabis – and therefore need to run and operate cultivation facilities - are going to require more employees than businesses that purchase wholesale.

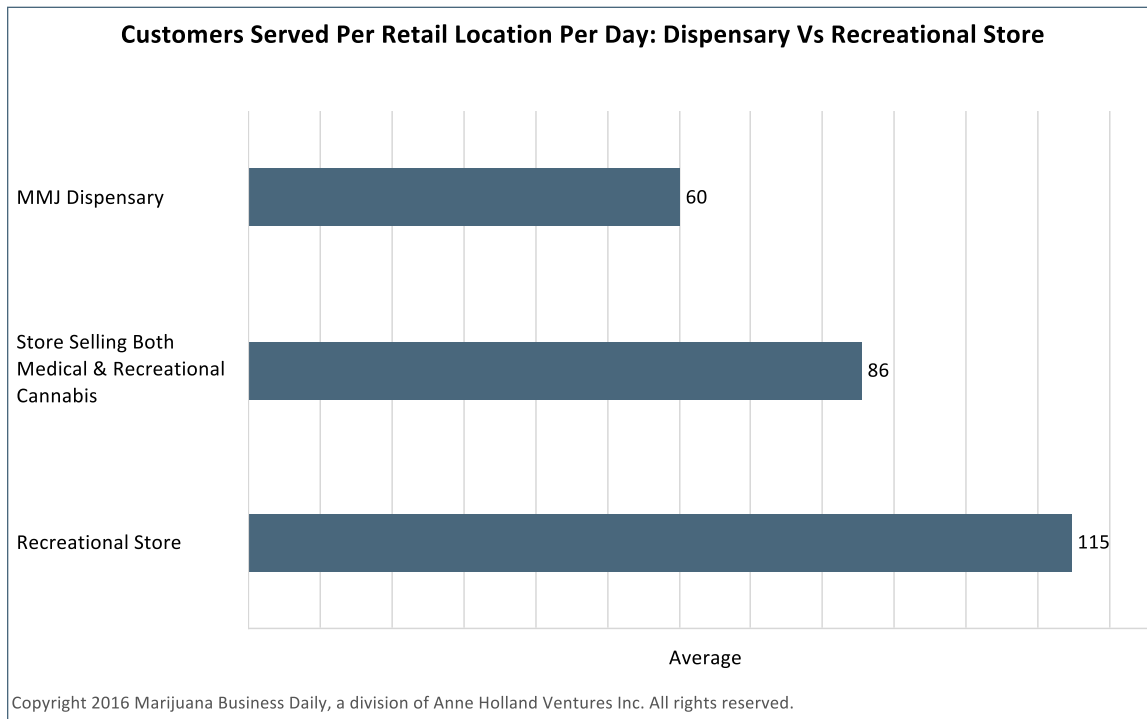
### Typical Number Of Employees: Retailers

	Full-Time	Part-Time	Total
Purchase Wholesale	3	3	6
Grow In-House	19	8	27
Combination	8	3	11

### Typical Number Of Employees: Retailers

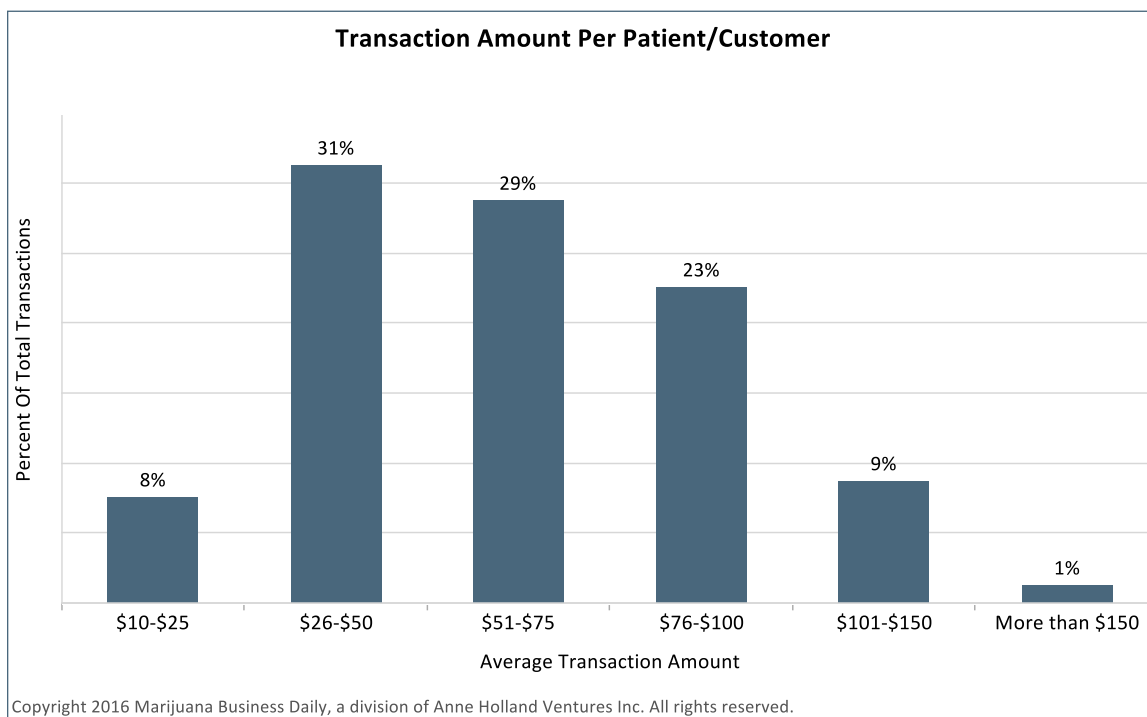
	Full-Time	Part-Time	Total
MMJ Dispensary	3	3	6
Recreational Store	8	3	11
Medical/Recreational Store	19	3	22

Chart 3.27: Customers Served Per Retail Location Per Day: Dispensary Vs Recreational Store



The larger addressable market for recreational businesses alluded to earlier is obvious by many metrics. One of the strongest indicators in this regard is the differences in the number of customers/patients served per retail location per day. Stores that sell only recreational cannabis serve almost twice as many customers each day as medical dispensaries do patients.

Chart 3.28: Transaction Amount Per Patient/Customer



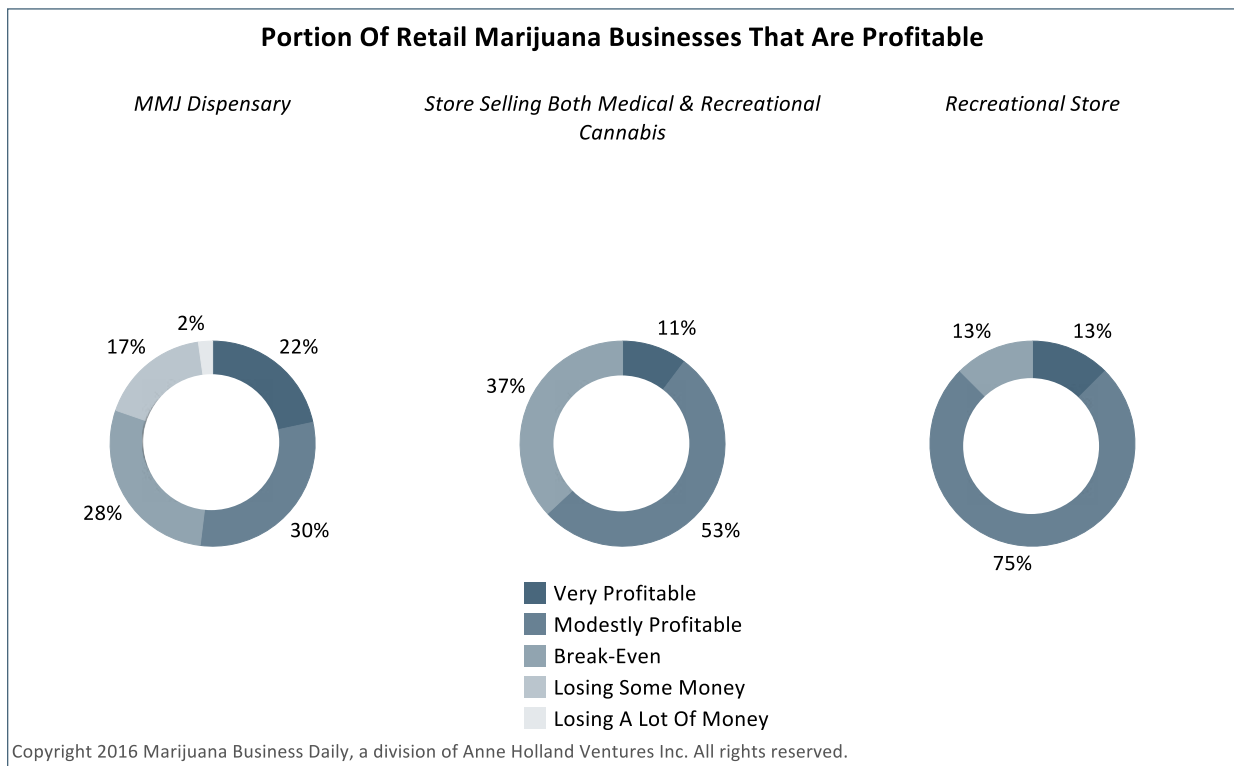
Though buying patterns differ among medical patients and recreational consumers, over half of the transactions at both dispensaries and stores still fall in the range of \$51 to \$100, and 10% are greater than \$100.

### Average Transaction Amount At Retailers Per Patient/Customer

MMJ Dispensary	\$72
Recreational Store	\$49
Medical/Recreational Store	\$50

Despite lower levels of foot traffic each day, dispensaries see transaction amounts that are almost 50% higher than rec-only stores and hybrid shops. It's not surprising: Patients often like to stock up on their medicine, much as they would when visiting a pharmacy. Rec shops, however, attract a fair share of tourists and locals who are only buying relatively small amounts of cannabis while in town or to last just a few days, so the average transaction amount is lower. Rec customers also typically use marijuana less frequently than a patient who needs it every day.

Chart 3.29: Portion Of Retail Marijuana Businesses That Are Profitable



### Portion Of Retailers That Are Profitable Or Break-Even

MMJ Dispensary	80%
Recreational Store	100%
Medical/Recreational Store	100%

On the whole, more recreational-only and combination stores are profitable than dispensaries. In fact, every rec shop and store selling both medical and adult-use cannabis reported in this year’s survey that it is at break-even or in the black – an astounding finding. Chalk it up to huge demand for recreational cannabis, a massive market in general, and the fact that many rec shops were built off of existing dispensaries.

On the medical side, roughly one in five dispensaries are losing some or a lot of money – which isn’t as impressive as rec stores but is still encouraging none the less.

Dispensaries in Minnesota, Illinois and New York specifically are facing steep uphill climbs as various circumstances – such as restrictive qualifying conditions lists, low physician participation and limits on what products can be sold – are dampening the market. Many business owners and patient advocates have been very vocal about these challenges, which hopefully will convince state regulators and lawmakers to enact more favorable rules and policies on their cannabis industries.

### Average Length Of Time To Profitability: Retailers

Medical Dispensaries	Less than 6 months
Recreational-Only & Combination Stores	6-12 months

Chart 3.30: How Long Does It Take Retailers To Hit Profitability?



Despite some of the greater challenges dispensaries are facing with regard to achieving profitability at this time compared to recreational-only or combination stores, it is encouraging to note that the former tend to hit profitability slightly sooner than the latter in states where the market is thriving and companies are able to turn a profit.

The difference in average time to profitability between dispensaries and rec-only/combo stores is small though, and as more recreational states come online, cannabis entrepreneurs will have more of a shared body of knowledge with regard to getting recreational-only or combination stores off the ground and quickly earning a profit.

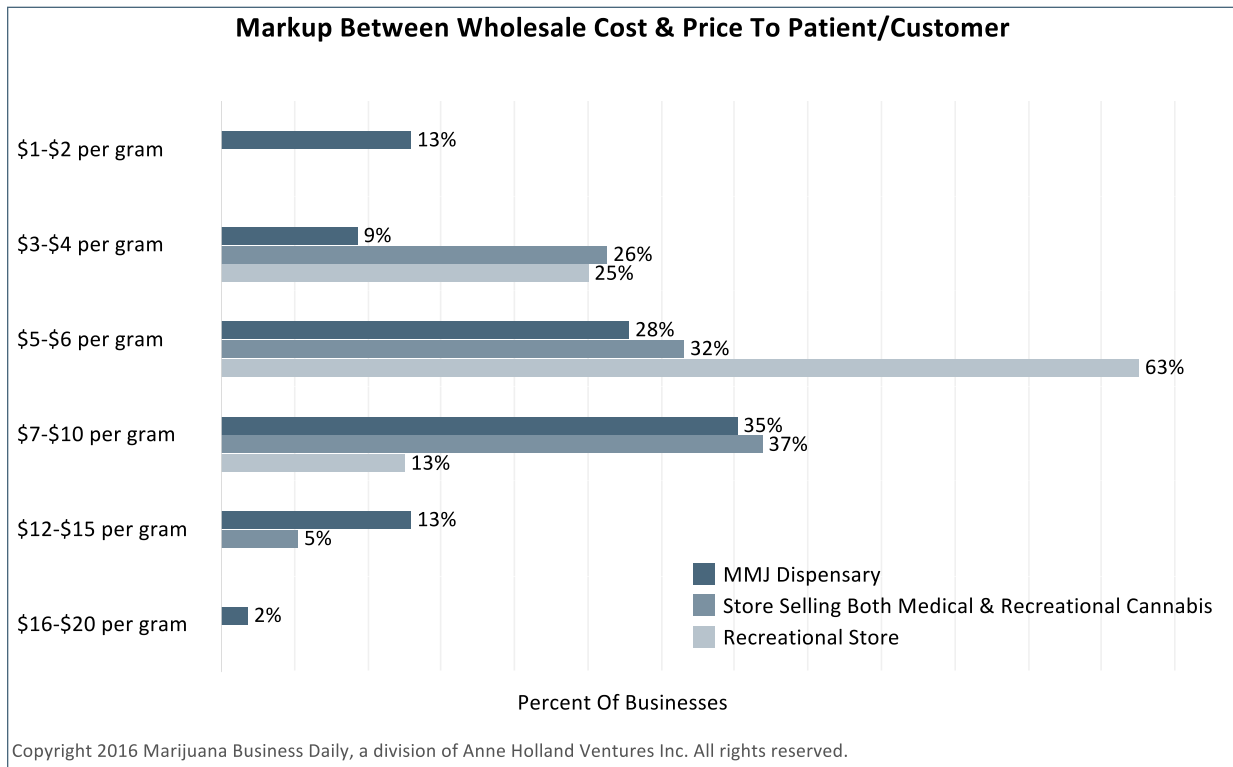
Chart 3.31: Sampling Of Average Profit Margin By Type Of Dispensary/Store

Sampling Of Average Profit Margin By Type Of Dispensary/Store			
	Grow In-House	Purchase Wholesale	Purchase Wholesale & Grow In-House
MMJ Dispensary	26%	17%	20%
Store Selling Both Medical & Recreational Cannabis	14%	13%	23%
Recreational Store	19%	23%	

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Profit margins for cannabis retailers depend more on whether a business purchases cannabis wholesale or cultivates in-house as opposed to whether they serve the medical and/or recreational markets. Net profit margins among retailers range from 13% at combination stores that purchase wholesale to nearly 26% at dispensaries that grow their own cannabis. There seems to be some benefit to choosing just one market – medical or recreational – rather than serving both when it comes to maximizing profit margins.

Chart 3.32: Markup Between Wholesale Cost &amp; Price To Patient/Customer



Retailers in different states are subject to very different pricing pressures and structures, as reflected in the difference between the wholesale and retail price of cannabis.

In really competitive markets such as Colorado and California, profit margins are tighter than in more restrictive markets such as Illinois and Maine, limiting the markup the market will bear. Additionally, some states require dispensaries to operate in a not-for-profit manner, which also keeps markup rates lower.

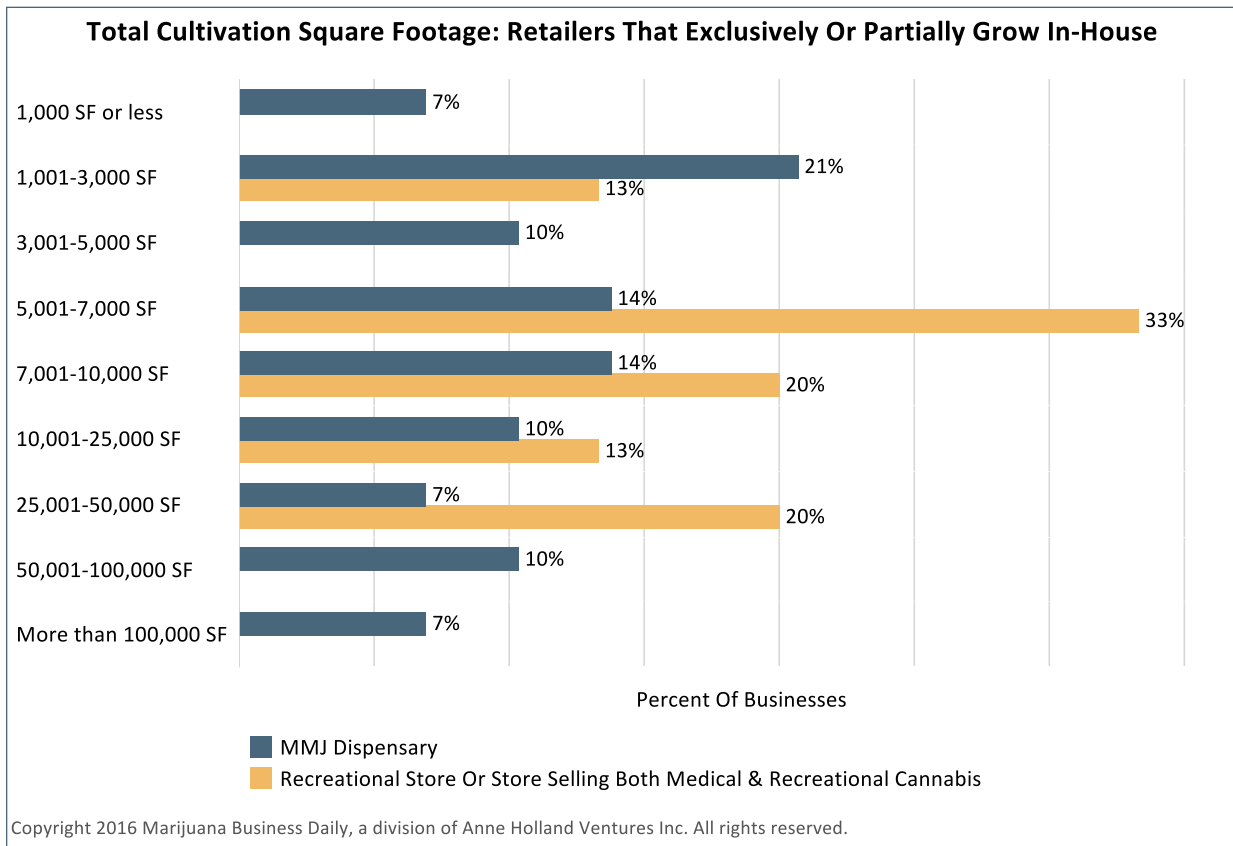
That being said, in certain loosely regulated markets where production expenses and the cost of doing business are lower than in fully regulated ones - or in markets where there just isn't much competition to drive down prices (such as Connecticut and New Jersey) - higher margins can be achieved.

The average markup for all retailers is about \$7 per gram, though profit margins differ greatly depending on the costs of production/inventory.

### Average Markup Between Cost Of Inventory & Retail Price Per Gram

MMJ Dispensary	\$7.13
Recreational Store	\$5.36
Medical/Recreational Store	\$6.50

Chart 3.33: Total Cultivation Square Footage: Retailers That Exclusively Or Partially Grow In-House



In spite of circumstances mentioned earlier with regard to hybrid stores often still having to maintain physically separate medical and recreational cannabis cultivation spaces, these businesses currently have less space dedicated to cultivation on average than dispensaries do. This suggests many of these new recreational businesses have not yet had a chance to mature and expand to the degree many dispensaries in established markets have, and these figures will likely change as more of these companies open for business and new markets come online.

It's worth noting the sizeable 17% of dispensaries that have grow spaces larger than 50,000 square feet. These are likely businesses in restrictive markets where each company serves a large portion of the patient base.

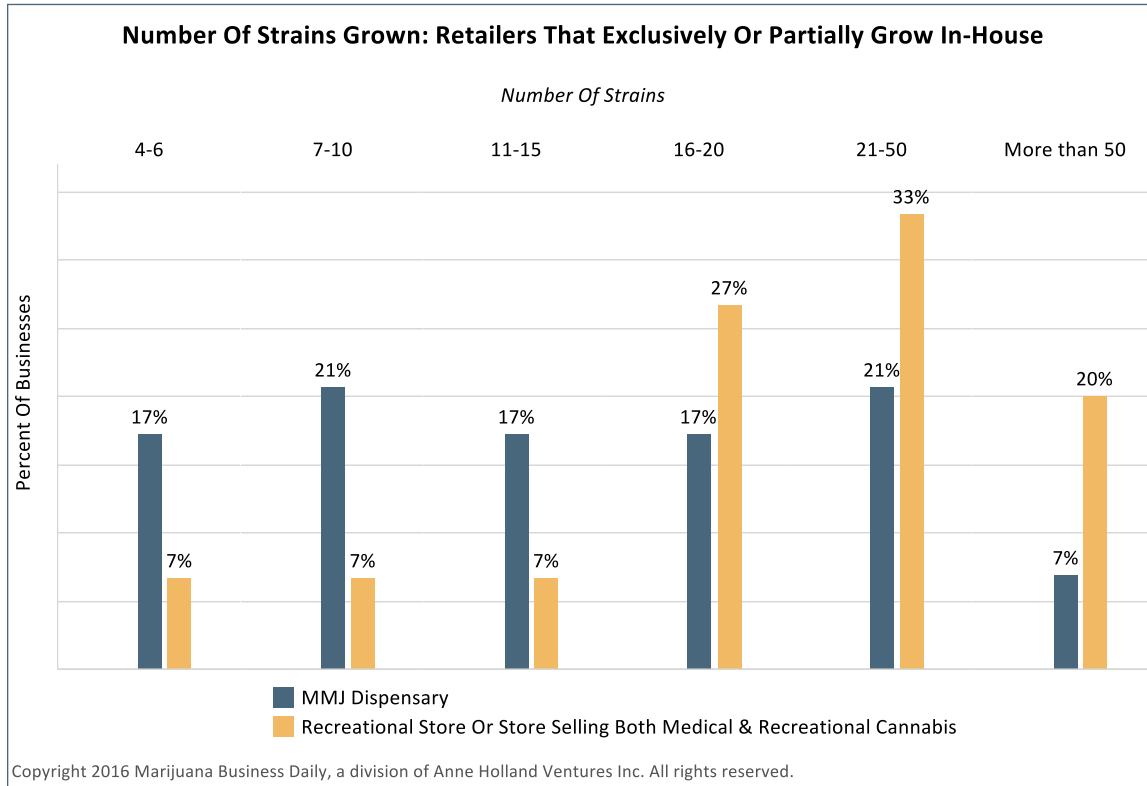
Overall, dispensaries that partially or exclusively grow in-house have an average of 23,000 square feet dedicated to cultivation, compared to only 14,000 for recreational-only or stores that sell both rec and medical at present. It's important to keep in mind though that in the three states where recreational stores currently operate, vertical integration is not required and the wholesale market in each is quite robust. So in those states, there are far fewer retail businesses cultivating their own cannabis when compared to dispensaries in many medical markets.



### Average Cultivation Square Footage: Medical & Recreational Retailers With In-House Cultivation

MMJ Dispensary	23,000 Square Feet
Medical/Recreational Store	14,000 Square Feet

Chart 3.34: Number Of Strains Grown: Retailers That Exclusively Or Partially Grow In-House

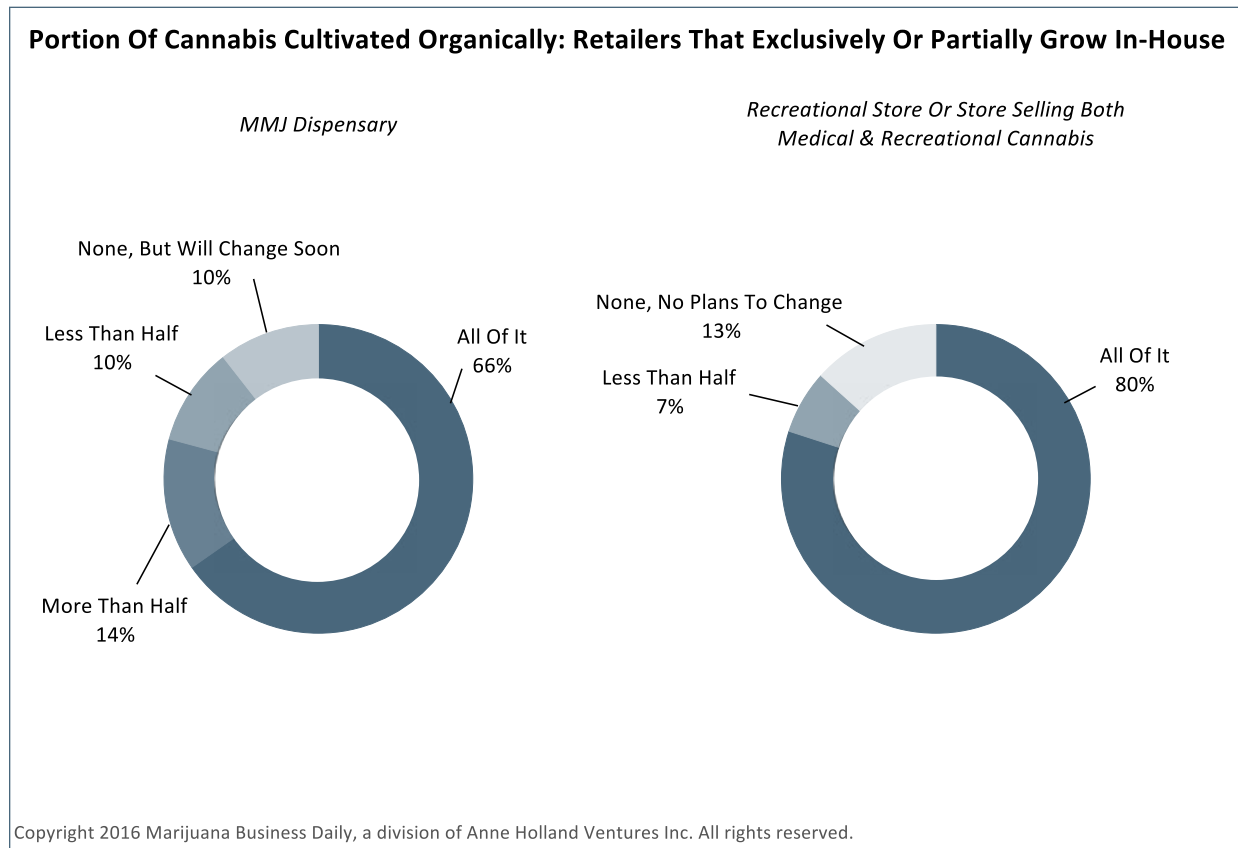


It's clear recreational consumers demand variety, as 80% of recreational-only and combination stores typically grow more than 15 strains. By comparison, only 45% of dispensaries consistently cultivate more than 15 strains. The overall average number of strains consistently cultivated by dispensaries is 15, which is half the average of 30 for recreational-only or combination stores.

### Average Number Of Strains Cultivated: Retailers With In-House Cultivation

MMJ Dispensary	15
Medical/Recreational Store	30

Chart 3.35: Portion Of Cannabis Cultivated Organically: Retailers That Exclusively Or Partially Grow In-House

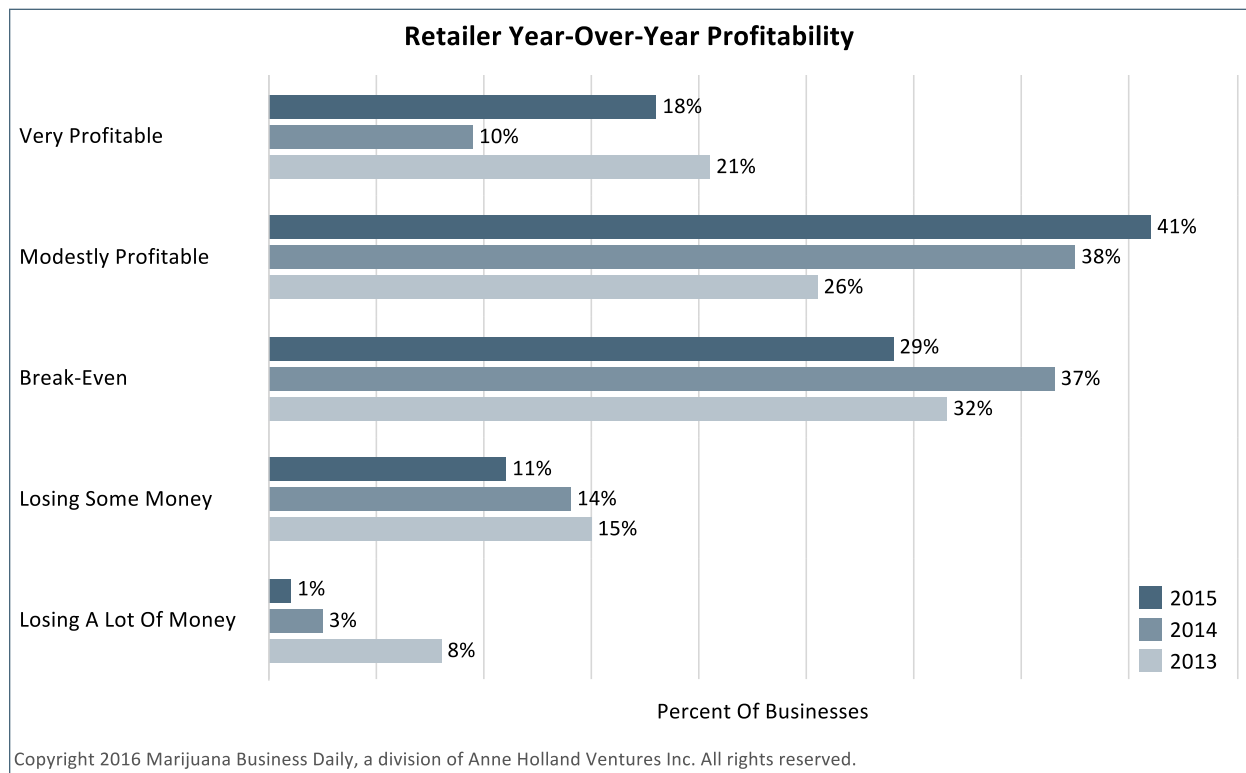


In the United States, the term “organic” is actually a certification granted by the U.S. Department of Agriculture (USDA). But cannabis businesses can’t technically get an “organic” designation at this time since marijuana is illegal at the federal level and therefore not under the purview of the USDA.

Still, the federal requirements to grow something in an organic manner in general are well-defined, and many cannabis businesses do in fact adhere to such cultivation practices even if they can’t get an official designation from a government agency. When it comes to retailers that grow their own cannabis (see the next section for data on wholesale cultivation businesses), rec stores and combo shops are much more likely to say they cultivate all of their cannabis using organic practices than dispensaries.

As with many of the nuances between the medical and recreational markets currently, this difference in cultivation practices is likely to diminish in the next few years as new states legalize medical and/or recreational cannabis and the industry as a whole is subject to more uniform regulation.

Chart 3.36: Retailer Year-Over-Year Profitability



Despite the ongoing risks and challenges medical and recreational retailers encounter every day, things are overall moving in a positive direction. The portion of retailers who indicated they were losing a lot of money (expenses and taxes exceed revenue by more than 25%) has dropped significantly, from 8% in 2013 to only 1% currently.

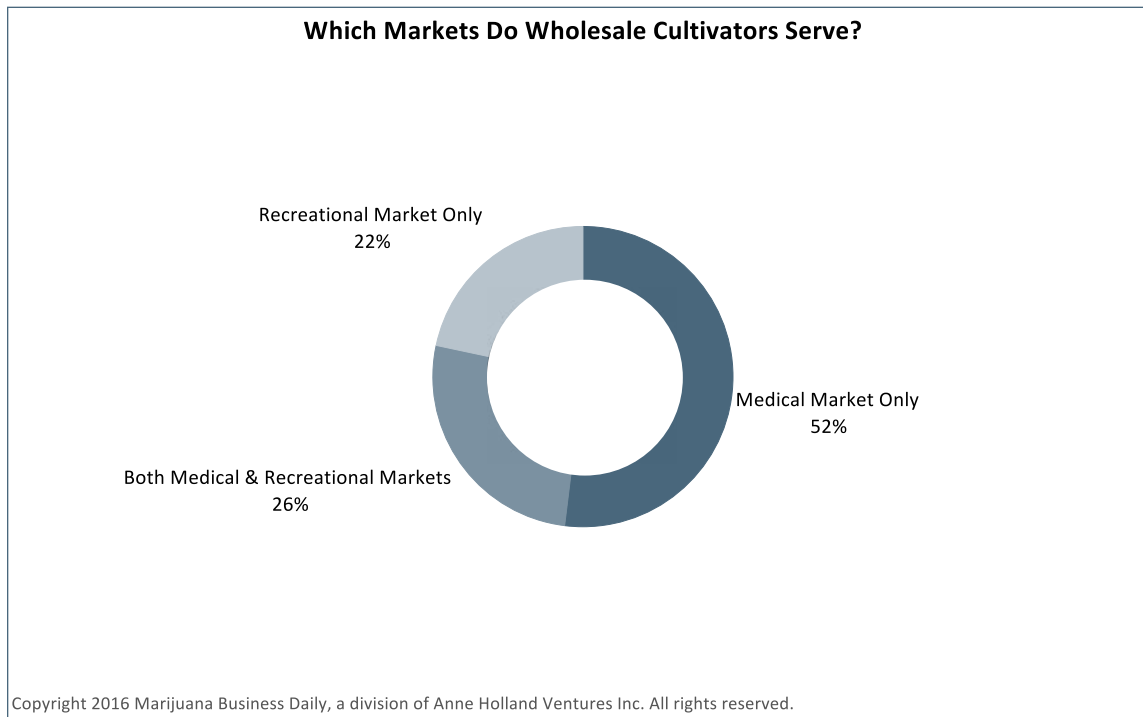
Even more telling, the portion of businesses that reported being modestly profitable (revenue exceeds expenses and taxes by up to 25%) to very profitable (revenue exceeds taxes and expenses by more than 25%) has increased from 47% of all retailers in 2013 to nearly 60% at present.

## WHOLESALE CULTIVATORS

Wholesale cannabis sales are only permitted in some states, including California, Colorado, Connecticut, Illinois, Nevada, New Mexico, Oregon, Washington DC and Washington State. A wholesale market also exists in Michigan and Montana, though commercial production and sales are technically illegal in those states.

Many of the cannabis industry's biggest companies are in the wholesale cultivation sector (the other one being infused product manufacturing), and many insiders believe a few large producers/cultivators will ultimately dominate the entire national industry, similar to alcohol and tobacco.

Chart 3.37: Which Markets Do Wholesale Cultivators Serve?



Nearly a quarter of wholesale cultivators focus exclusively on the rec market, while more than half serve the medical cannabis market only. The remainder – 26% – focus on both the medical and recreational markets and are therefore located in the three states that currently allow adult-use sales.

Note: Differences in financial metrics for wholesale cultivators were more strongly correlated with their cultivation method than with which market they serve. Therefore, most metrics for this sector have been broken out according to cultivation method, rather than whether the business serves medical, recreational or both markets.

## Wholesale Cultivation Startup Costs

Startup costs for plant-touching companies are on the rise pretty much across the board. States that have legalized medical cannabis within the past couple of years have implemented increasingly onerous application and licensing fees, working capital/bond requirements and operational regulations, driving up the cost to establish a business. The recreational markets are not immune to this trend either – full legalization and legitimization of the industry will bring all cannabis businesses under the umbrella of a host of regulatory authorities, and the cost of doing business will continue to increase in the near future.

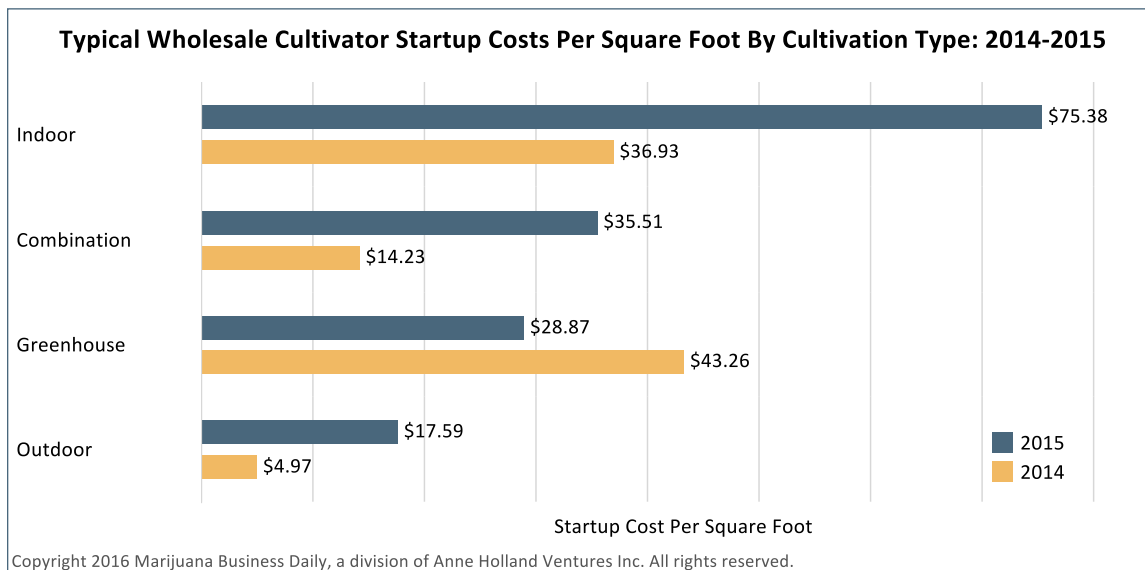
### Median Wholesale Cultivation Startup Costs By Market Served

Cultivators Serving Medical Markets Only	\$137,500
Cultivators Serving Recreational Markets Only	\$310,000
Cultivators Serving Both Medical & Recreational Markets	\$250,000

### Median Wholesale Cultivation Startup Costs By Growing Method

Indoor Growing	\$225,000
Outdoor Growing	\$165,000
Greenhouse Growing	\$360,000
Combination Method Growing	\$110,000

Chart 3.38: Typical Wholesale Cultivator Startup Costs Per Square Foot By Cultivation Type: 2014-2015



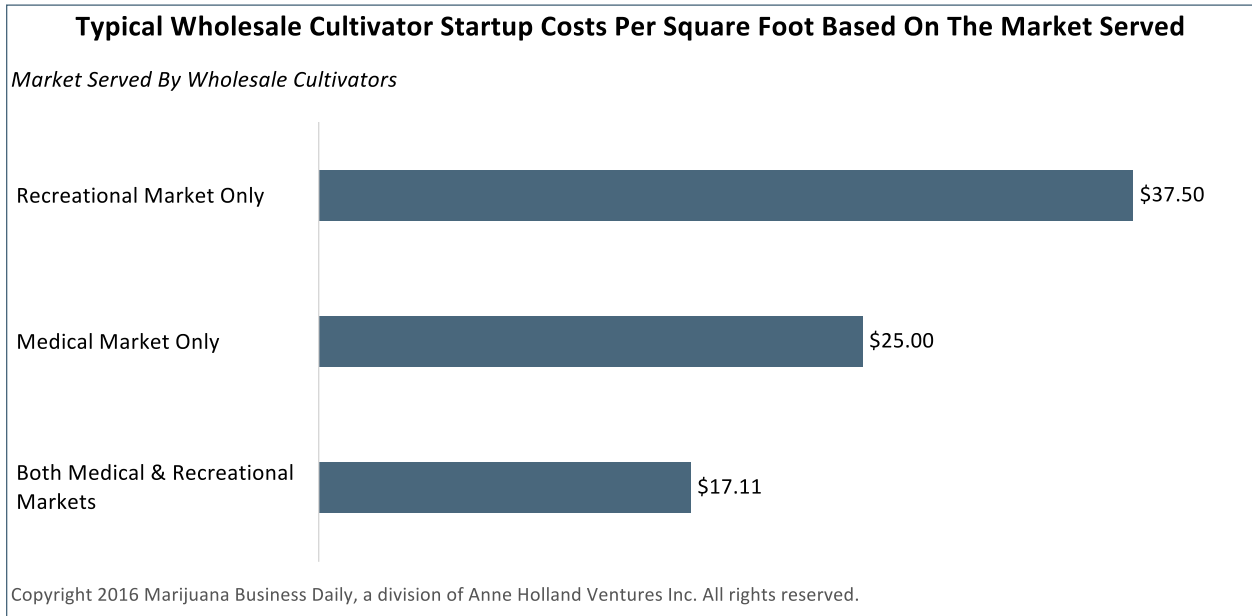
With the exception of wholesale cultivators that exclusively grow cannabis in greenhouses, startup costs per square foot have risen quite a bit just since last year for all methods of cultivation. The cost per square foot to establish operations roughly doubled for both indoor and combination growers, while the typical cost per square foot to set up an outdoor growing operation more than tripled.

A couple of states have relaxed or removed provisions that prevented many cultivators from using greenhouses, making this method available to more growers now than at any time in the

past. Costs per square foot to set up greenhouse operations likely decreased because many more businesses are growing this way than a year ago and there are more opportunities to do so.

Additionally, in the past, most outdoor grows were only located in California where regulations are sparse, but now outdoor cultivation is used quite often by cultivators in Washington State, Oregon and Colorado, where the costs of doing business are higher.

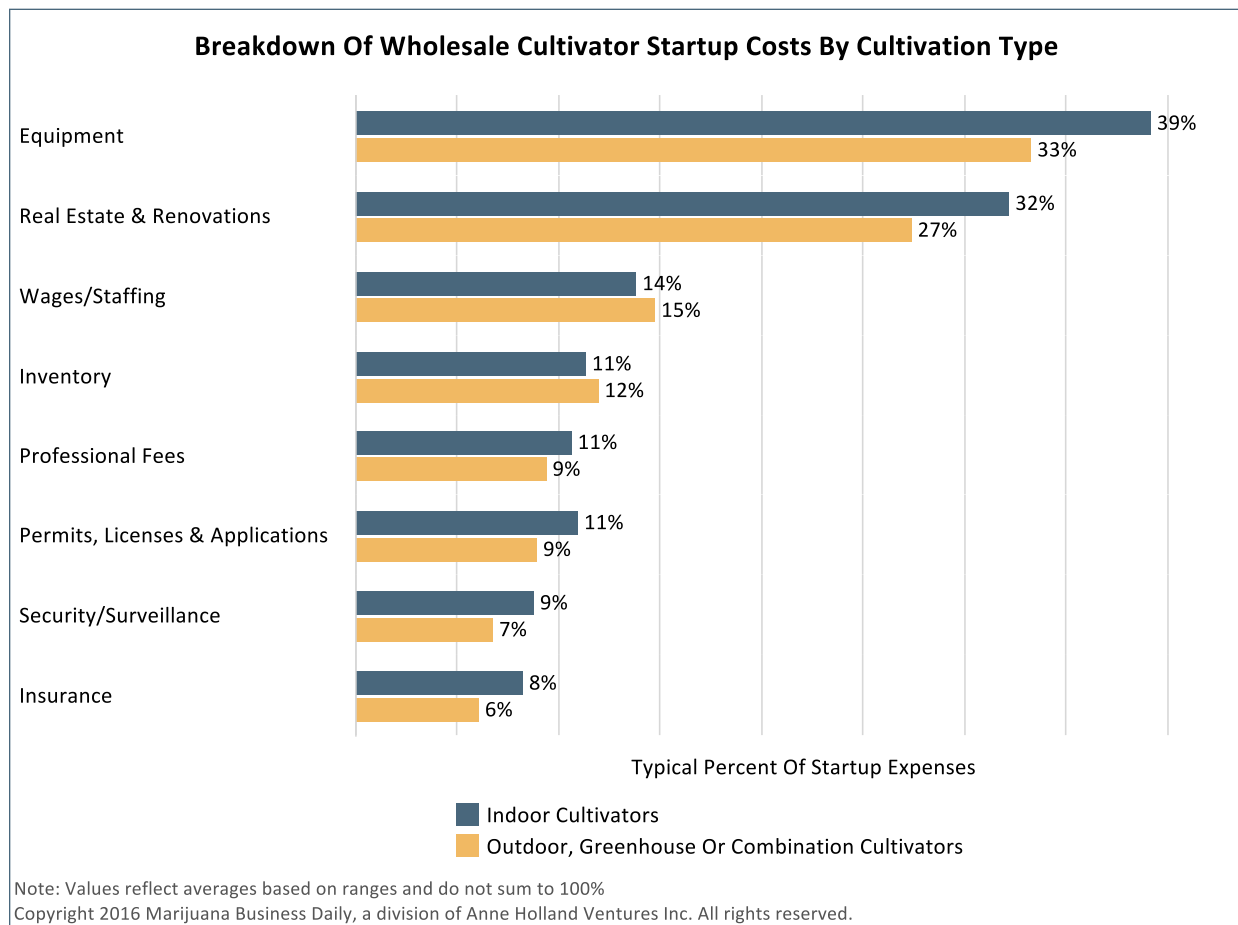
Chart 3.39: Typical Wholesale Cultivator Startup Costs Per Square Foot Based On The Market Served



Similar to trends noted in startup costs for retailers, the investment required to establish a wholesale cultivation operation that serves both medical and recreational businesses is currently skewed lower by representation among companies in Oregon and Washington State, where many of these establishments are operating under temporary or special circumstances.

Higher startup costs per square foot for growers solely serving the recreational market are likely attributable to heavy representation of these businesses in Washington State. Unlike in Colorado and Oregon where existing medical businesses were/are the only ones permitted to start serving recreational customers, most of the recreational companies in Washington State are brand new businesses. Their startup costs are therefore higher when compared to previously existing medical dispensaries that entirely or partially converted to a recreational store.

Chart 3.40: Breakdown Of Wholesale Cultivator Startup Costs By Cultivation Type



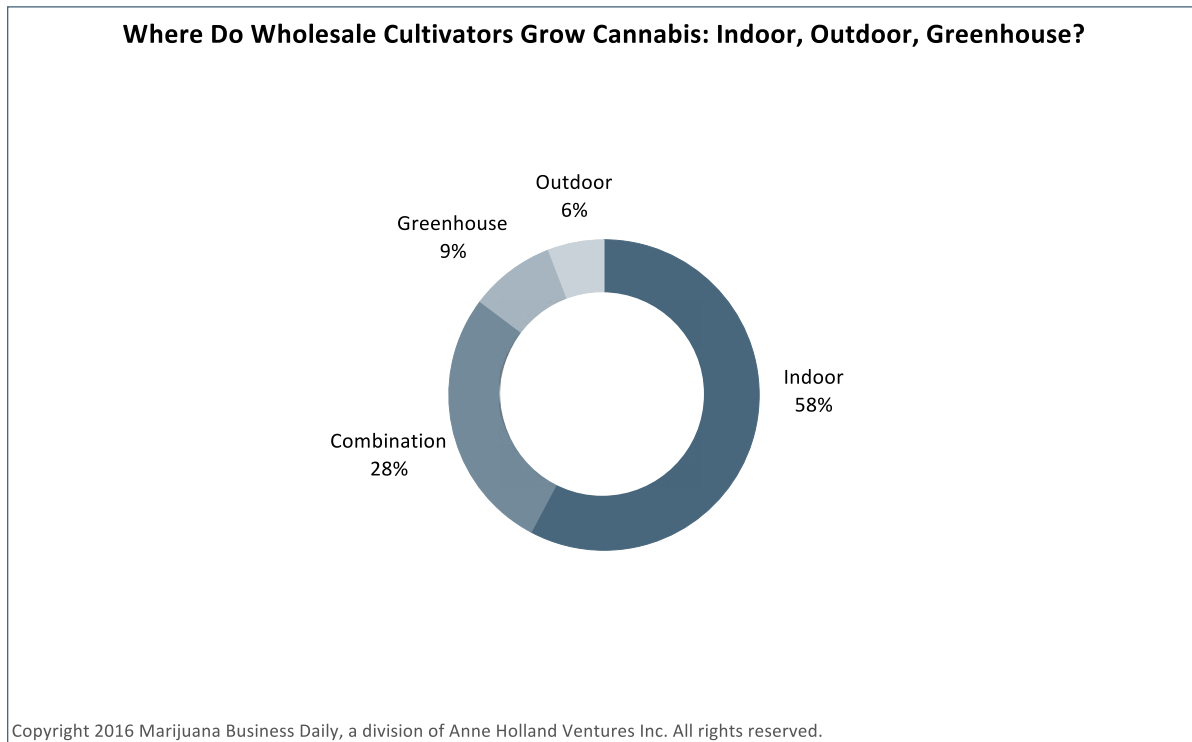
Getting a space to grow – whether indoor, outdoor or in a greenhouse – and equipment/supplies will nearly always be the largest startup expenses for wholesale cultivators. The actual cost will vary based on where the marijuana is cultivated, but those items will consistently comprise huge portions of the budget to launch a cultivation operation.

Cultivators that grow exclusively indoors or via greenhouses will have similar needs when it comes to building or retrofitting a space, whereas outdoor growers will have different requirements in that regard.

It's also worth noting the sizeable portion of the cost that is eaten up by professional fees for experts such as lawyers, consultants and accountants. Many businesses pay tens of thousands of dollars alone to consultants who assist with the license application process and the build-out of a growing facility. Navigating the legal and regulatory landscape is one of the biggest challenges for cannabis companies, and the role these types of experts play in helping entrepreneurs win licenses and establish operations should not be underestimated.

## Cultivation Methods & Technology

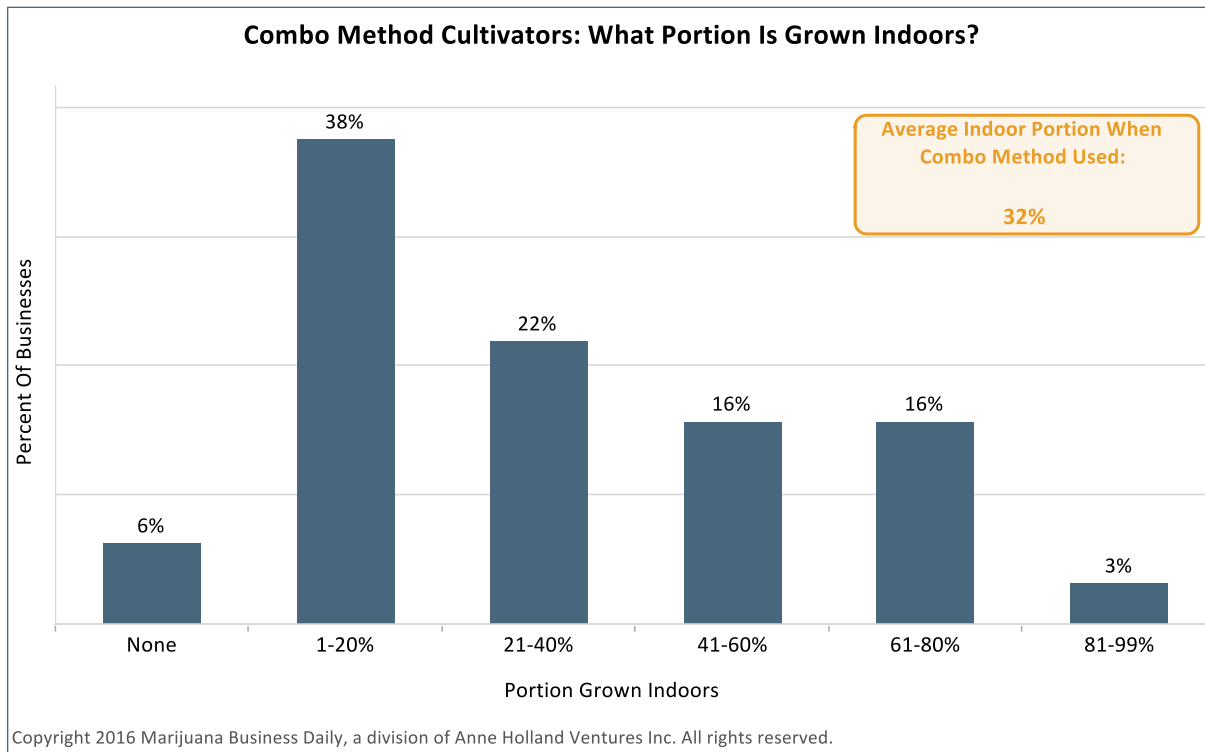
Chart 3.41: Where Do Wholesale Cultivators Grow Cannabis: Indoor, Outdoor, Greenhouse?



Traditionally, marijuana cultivation in states that have legalized medical or recreational cannabis has been relegated mostly to indoor growing. The reasons for this have been and continue to be somewhat misguided notions on the part of lawmakers and the general public that indoor grows are easier to secure and that they are indistinguishable from any other type of business from the outside, which helps minimize concerns over both security and aesthetics. The “not in my neighborhood” factor has been a very real challenge for all cannabis businesses, not just cultivators.



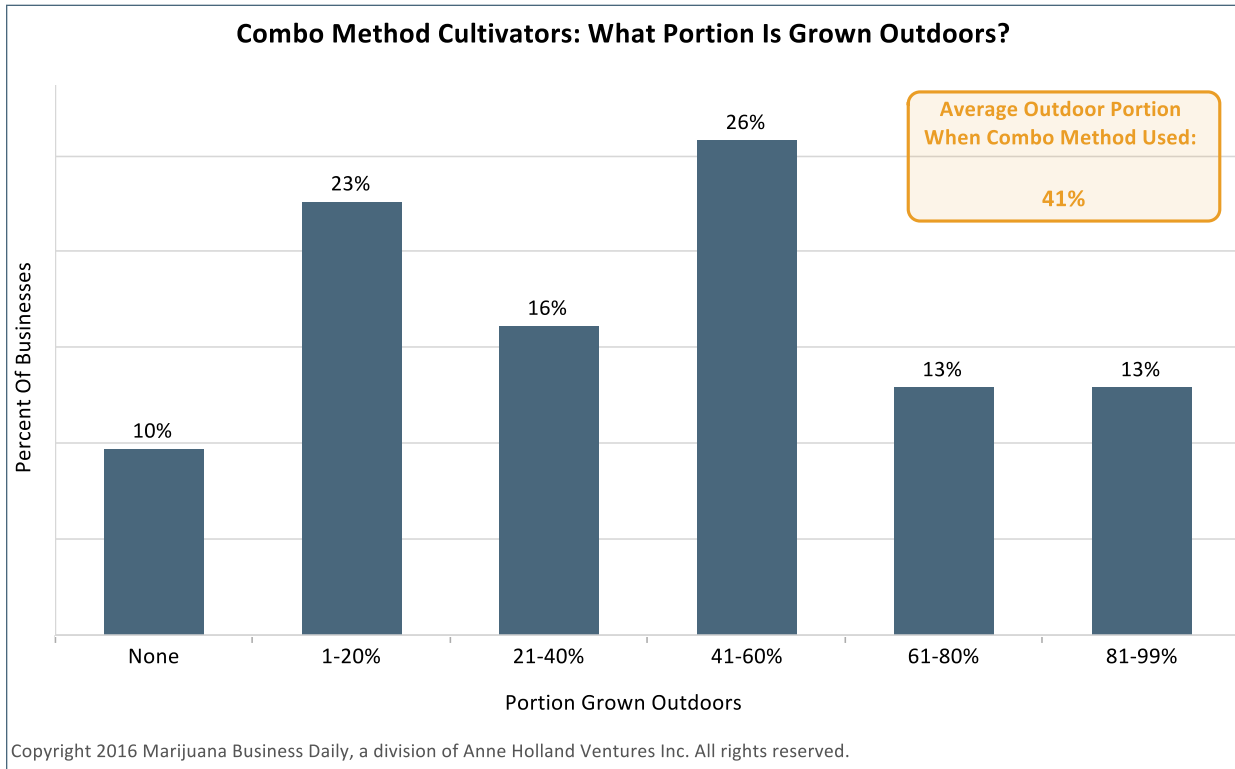
Chart 3.42: Combo Method Cultivators: What Portion Is Grown Indoors?



But indoor cultivation also places incredibly high demands on the power grid, and most indoor growers will tell you their HVAC infrastructure to remove the hot air generated by the growing lights consumes more energy – and more of the monthly utilities bill – than the lights themselves.

Xcel Energy in Colorado, which serves the majority of the state’s residents and all of the city and county of Denver where most of the state’s cultivation businesses are located, reported that grow operations served by the company used a mind-boggling 200 million kilowatt-hours of energy in 2014, which equated to nearly 1% of Xcel’s total electric revenue in the state that year.

Chart 3.43: Combo Method Cultivators: What Portion Is Grown Outdoors?

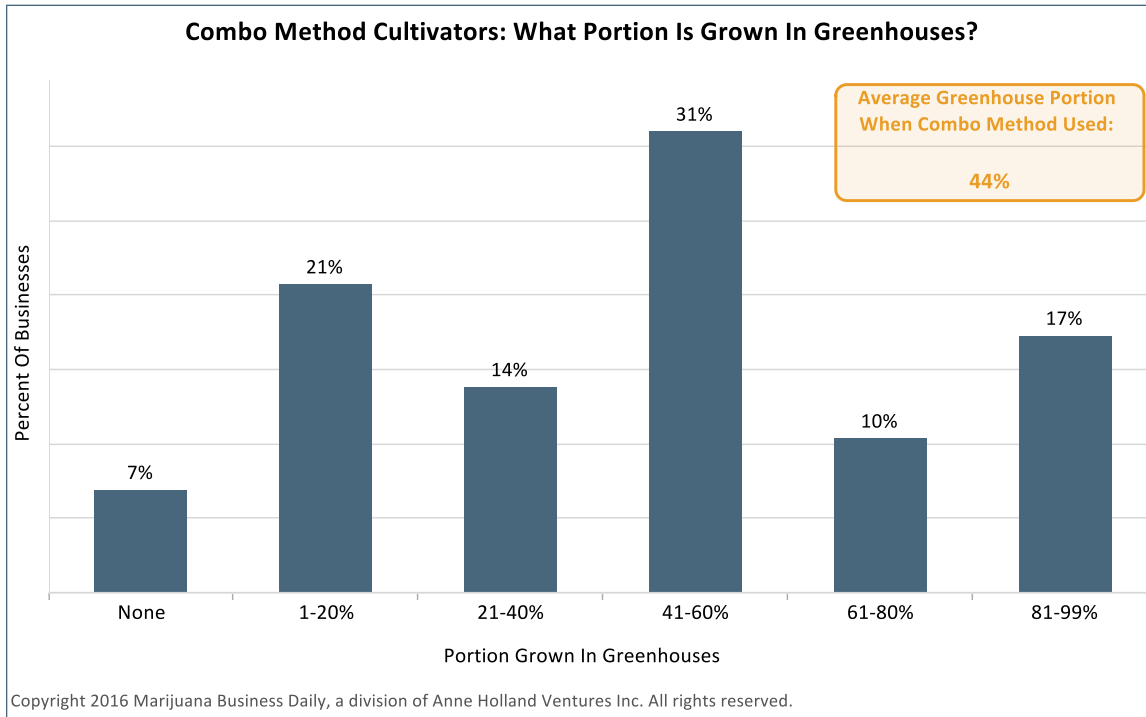


The good news is that sentiment on where marijuana is grown is starting to change, and outdoor and greenhouse cultivation is starting to proliferate in many western states with the right climates.

### Change In Cultivation Methods

	2014	2015
Only Indoor	72%	58%
Only Outdoor	5%	6%
Only Greenhouse	1%	9%
Combo	22%	28%

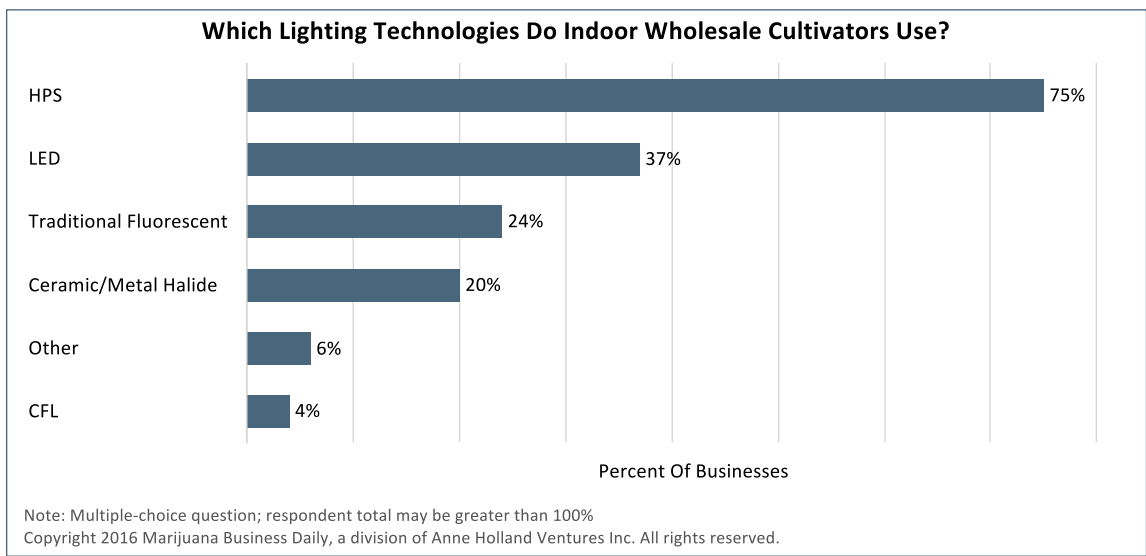
Chart 3.44: Combo Method Cultivators: What Portion Is Grown In Greenhouses?



While the portion of marijuana grown outdoors has remained virtually unchanged since last year, the portion grown indoors has dropped dramatically, and more environmentally friendly cultivation practices are on the rise.

On the plains of eastern Oregon, greenhouses have become very popular, while outdoor growing is the norm in many areas of Washington State. Overall, 21% of Oregon’s wholesale marijuana is cultivated in greenhouses and 16% of Washington State’s is grown outdoors. Combination methods are the most popular in California, but it’s worth noting that only 36% of the cannabis grown there is exclusively cultivated indoors.

Chart 3.45: Which Lighting Technologies Do Indoor Wholesale Cultivators Use?

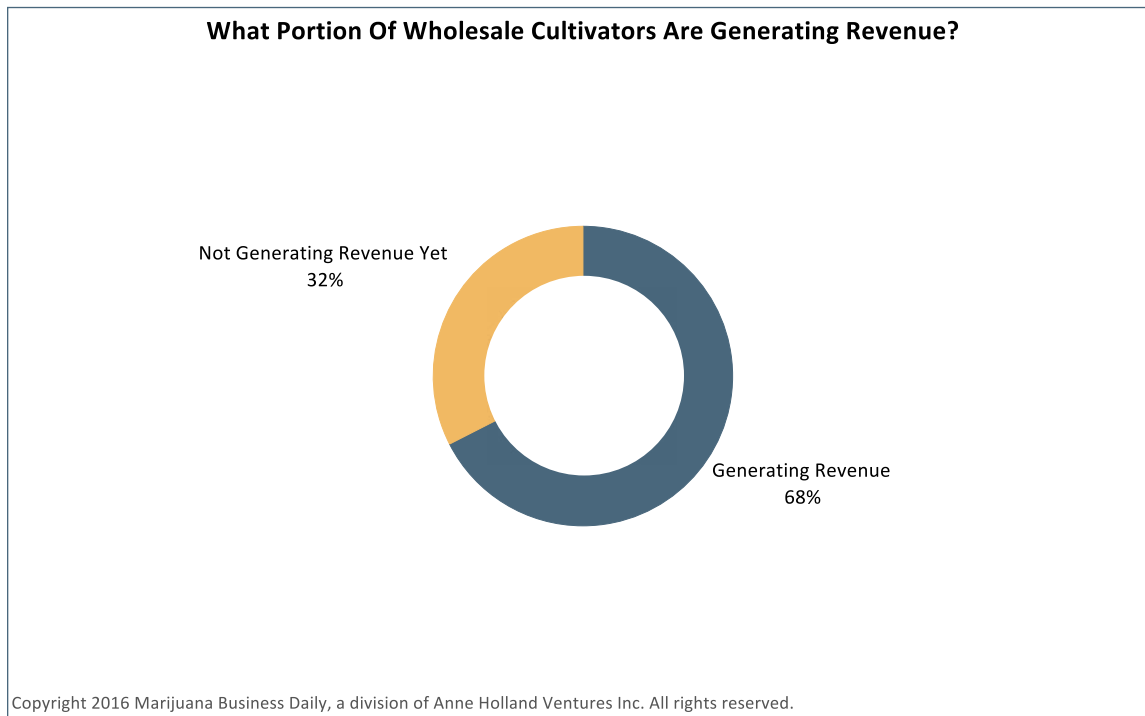


For many growers though, options other than indoor cultivation are simply not available, and these businesses must find other ways to be environmentally conscious. In response to this concern, LED lights have become very popular in the industry because they don't emit nearly as much heat as more traditional lighting technologies. They also use less energy. However, LED lights are relatively new in the cannabis cultivation world and there is still a lot of trial and error involved with dialing in the right light spectrum at different phases throughout cultivation.

Many growers are therefore trying LED lights in a small portion of their cultivation areas so that they don't jeopardize revenue while learning how best to use the technology. In the meantime, high-pressure sodium bulbs continue to dominate this sector.

## Wholesale Cultivator Revenue & Operations

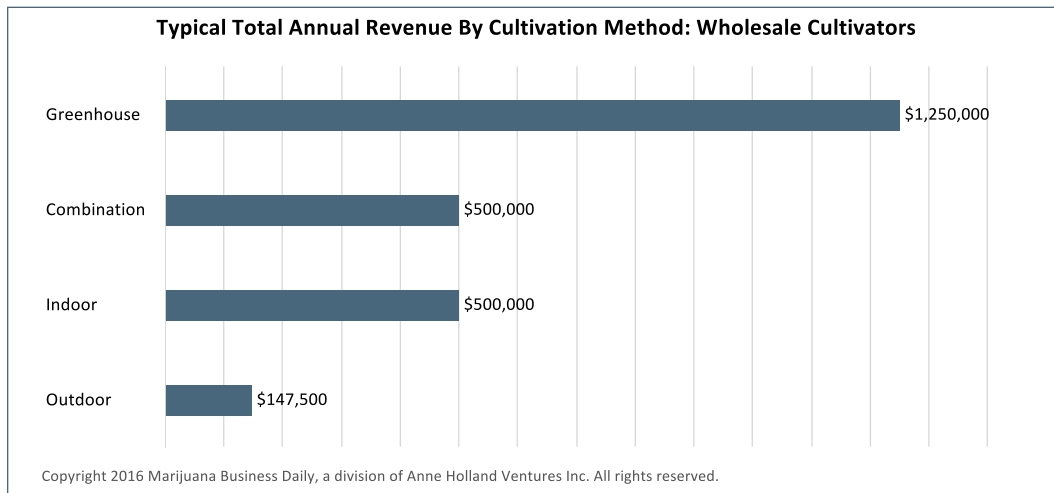
Chart 3.46: What Portion Of Wholesale Cultivators Are Generating Revenue?



There's often a substantial gap in the time between when entrepreneurs decide to start a wholesale cultivation business and when they actually start planting. Obtaining licenses, permits, commercial space and initial seeds/clones as well as staffing up the business, fundraising and so on are all time-consuming activities that can stretch into months or even years in some cases. And then it takes at least a few months between when the first seeds are planted and when the plants are ready to be harvested.

To that end, about one out of three wholesale cultivators are currently in this phase awaiting the sale of their first harvest.

Chart 3.47: Typical Total Annual Revenue By Cultivation Method: Wholesale Cultivators

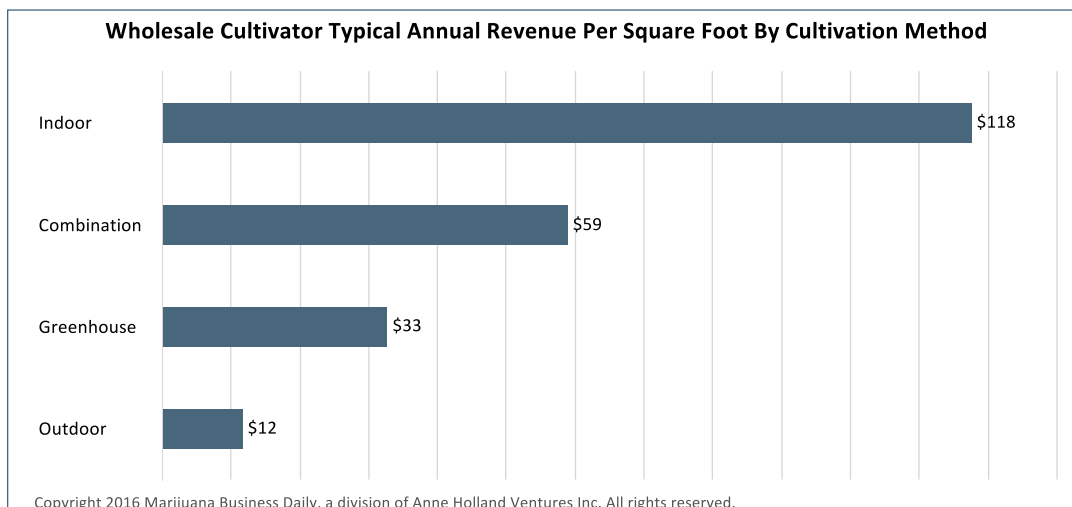


Though there are some well-known, large commercial wholesale cultivators in the industry with revenue that far exceeds these figures, the number of these businesses is still very small and therefore annual revenue for a typical wholesale cultivation businesses will be more in line with what's presented here.

Cannabis that's grown outdoors nearly always commands a lower price than marijuana grown via other methods that produce pretty, dense buds that retailers and consumers alike tend to favor. Additionally, there's usually only one harvest per year for outdoor crop (though in some climates growers can get more) versus the three to five harvests a year that can be supported with indoor or greenhouse cultivation.

Typical revenues for cultivators that utilize greenhouses are higher because of representation of businesses in Colorado, Washington State, Oregon and California – home to a significant portion of the country's biggest commercial cannabis growers. Larger growers in these mature markets have more capital at their disposal to invest in greenhouse operations, which can be pricey and out-of-reach for smaller grows. This therefore drives up typical annual revenue.

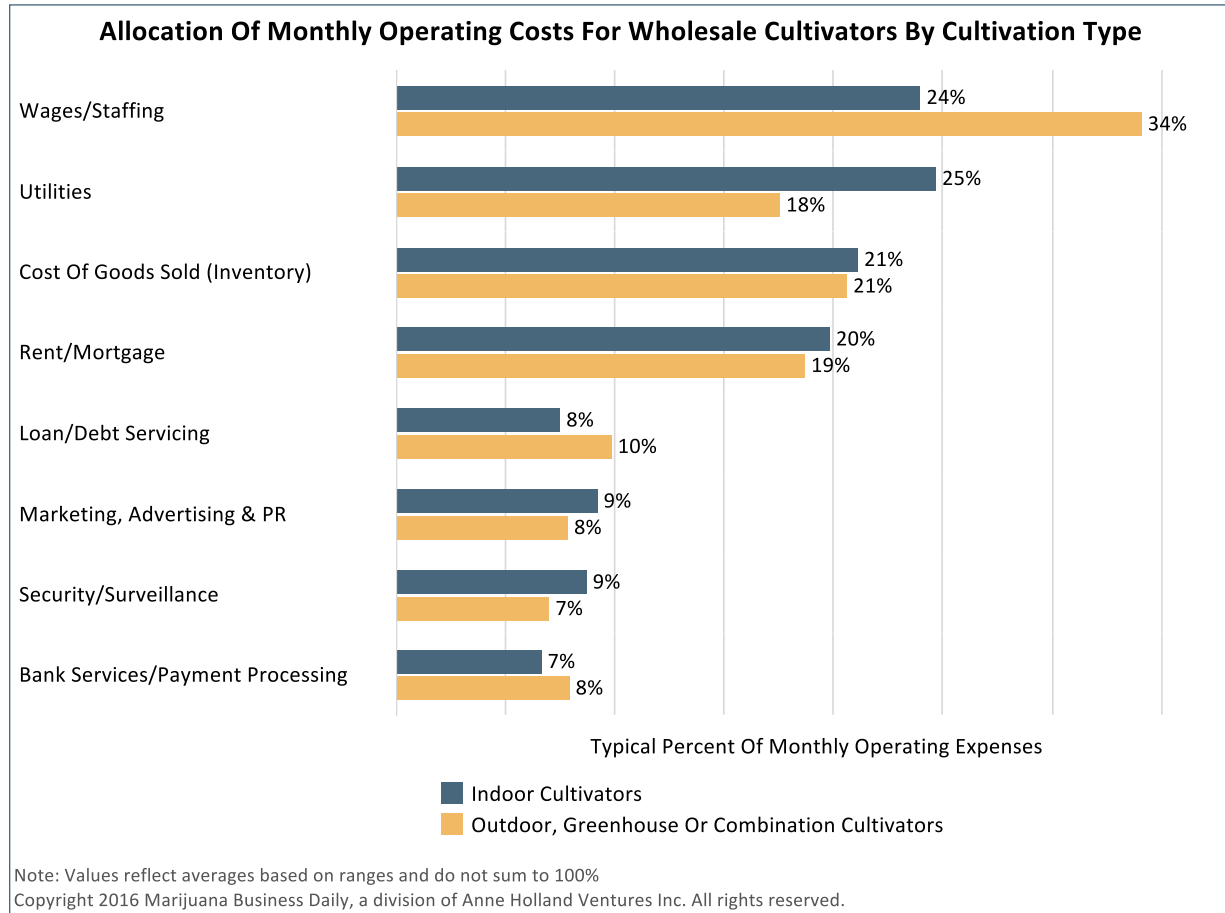
Chart 3.48: Wholesale Cultivator Typical Annual Revenue Per Square Foot By Cultivation Method



Indoor cultivation is generally very dense, leading to plants that don't usually exceed two to three feet in height, whereas greenhouse and certainly outdoor cultivation tends to be much more spread out. The result of these differences are noticeable when looking at revenue on a square footage basis.

Additionally, many indoor cultivators are starting to explore "vertical farming" for cannabis where rows of plants can be stacked on top of one another, which may necessitate a switch to cubic feet instead of square feet for certain metrics at these businesses in the future.

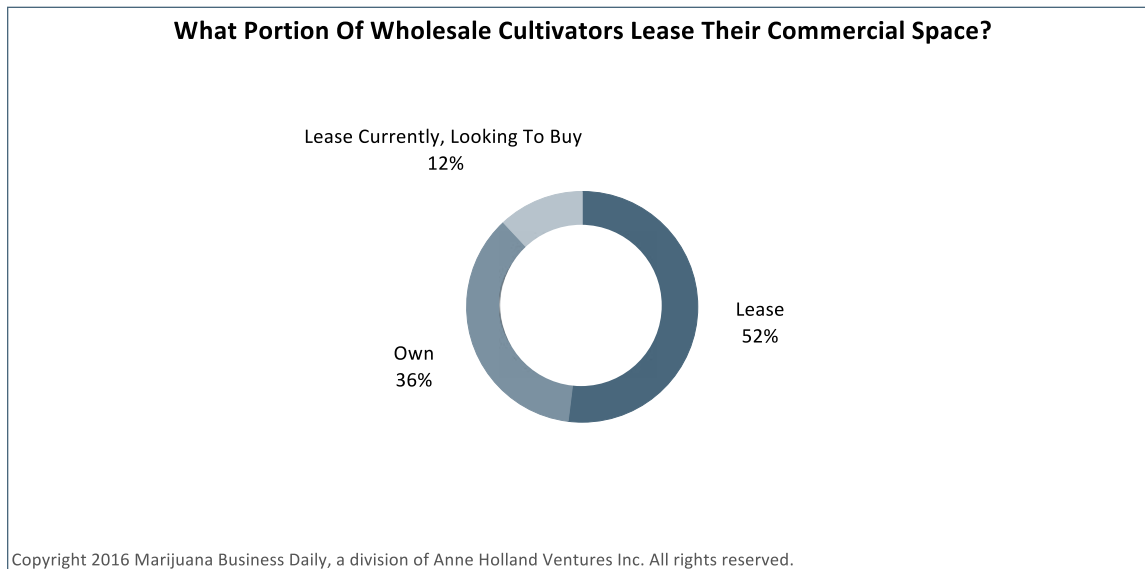
Chart 3.49: Allocation Of Monthly Operating Costs For Wholesale Cultivators By Cultivation Type



Outdoor and greenhouse sites generally require larger staff sizes than indoor operations, as seen in the noticeably larger portion of these growers' monthly operating expenses dedicated to wages. This is largely because outdoor and greenhouse operations often have a larger physical footprint.

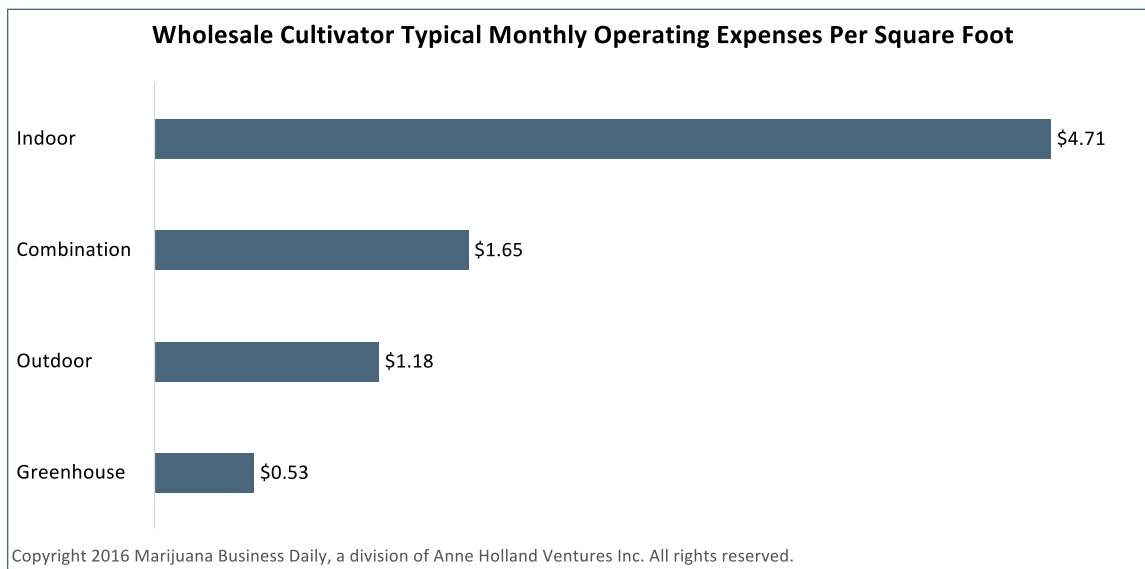
Wholesale cultivators that exclusively grow indoors pay essentially the same amount in utilities each month as they do in payroll, illustrating the high energy demands for these businesses. As the industry continues to mature and a natural degree of consolidation takes hold, it will become increasingly important for wholesale growers to build a brand around their product that both retailers and consumers seek out. As this shift starts to take place, the portion of cultivators' budgets dedicated to marketing and advertising will certainly increase.

Chart 3.50: What Portion Of Wholesale Cultivators Lease Their Commercial Space?



The fact that nearly two out of three wholesale growers lease rather than own their commercial space is likely not entirely by choice. In an industry where businesses simply don't have the same access to financing options as companies in other industries, it can be challenging to generate the funds necessary to buy a building or land. This is yet another example of the critical role private investors are playing in the advancement of the industry as a whole.

Chart 3.51: Wholesale Cultivator Typical Monthly Operating Expenses Per Square Foot

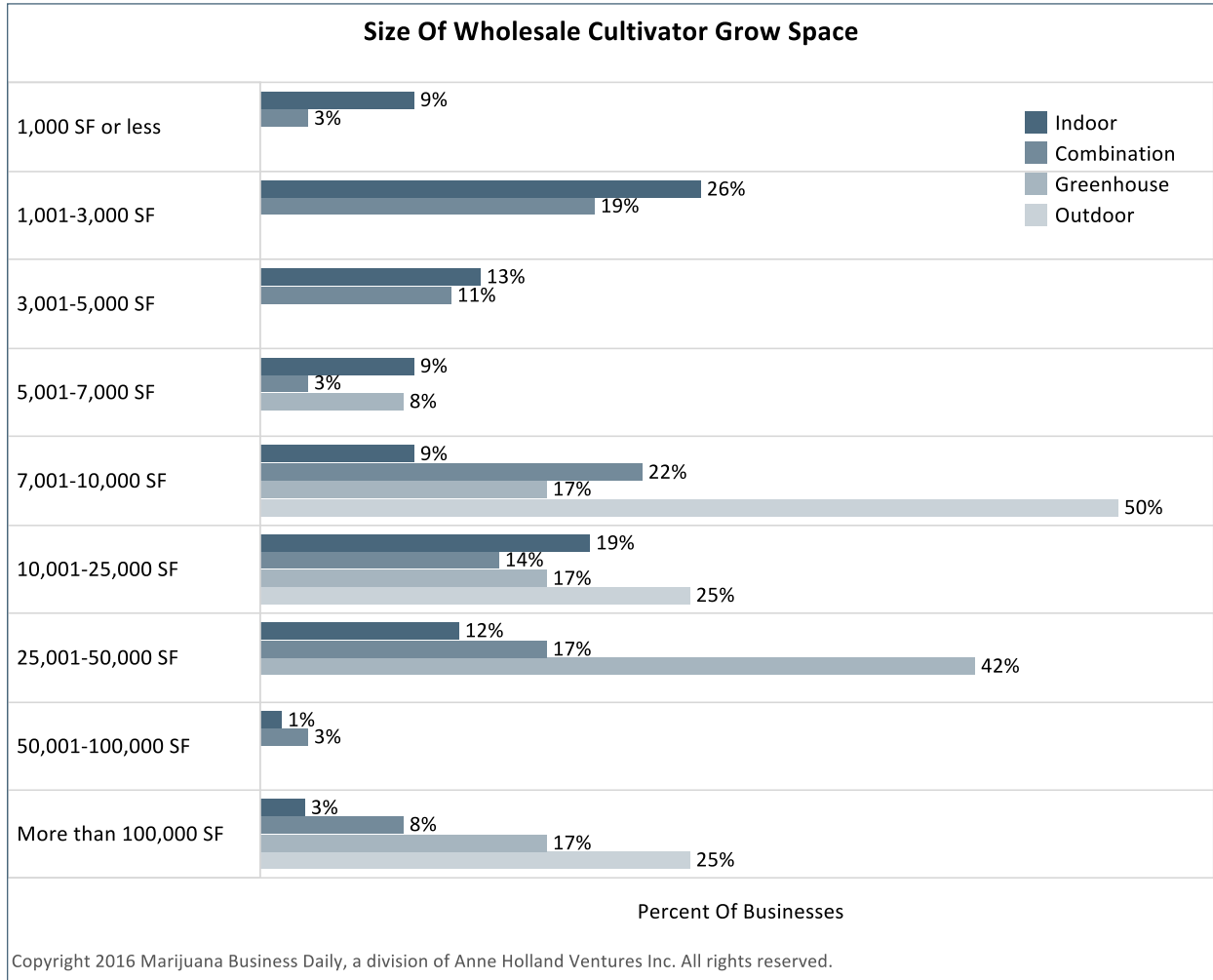


With many additional, or just greater, expenses than what you would see for outdoor, greenhouse or combination growers, the comparatively high operating cost per square foot for indoor operations is not surprising.

Among greenhouse cultivation, there is still a spectrum across which growers can operate – from fully “sun-grown” setups that are dependent only on the natural elements to “sealed

greenhouses” that afford cultivators the option to utilize Mother Nature when she’s amenable, but in which they can also control lighting, humidity and so on when necessary. The low operating expenses per square foot for greenhouse cultivators suggests that, for now, most are using setups more along the lines of true, natural greenhouses. Additionally, the average amount of cultivation square footage for greenhouse operations is nearly three times the size of the average outdoor grow at present. That drives down the operating costs per square foot for greenhouses to well below outdoor grows.

Chart 3.52: Size Of Wholesale Cultivator Grow Space



One of the benefits of operating in such a de-centralized and compartmentalized industry is that wholesale cultivation operations of all sizes can find a place in the market currently. That being said, when it comes to comparing harvest yields, outdoor and greenhouse cultivation tend to necessitate a larger cultivation footprint when compared to indoor growing.



### Average Cultivation Square Footage: Wholesale Cultivators

Indoor Growing	6,000 Square Feet
Outdoor Growing	13,250 Square Feet
Greenhouse Growing	38,000 Square Feet
Combination Method Growing	8,500 Square Feet

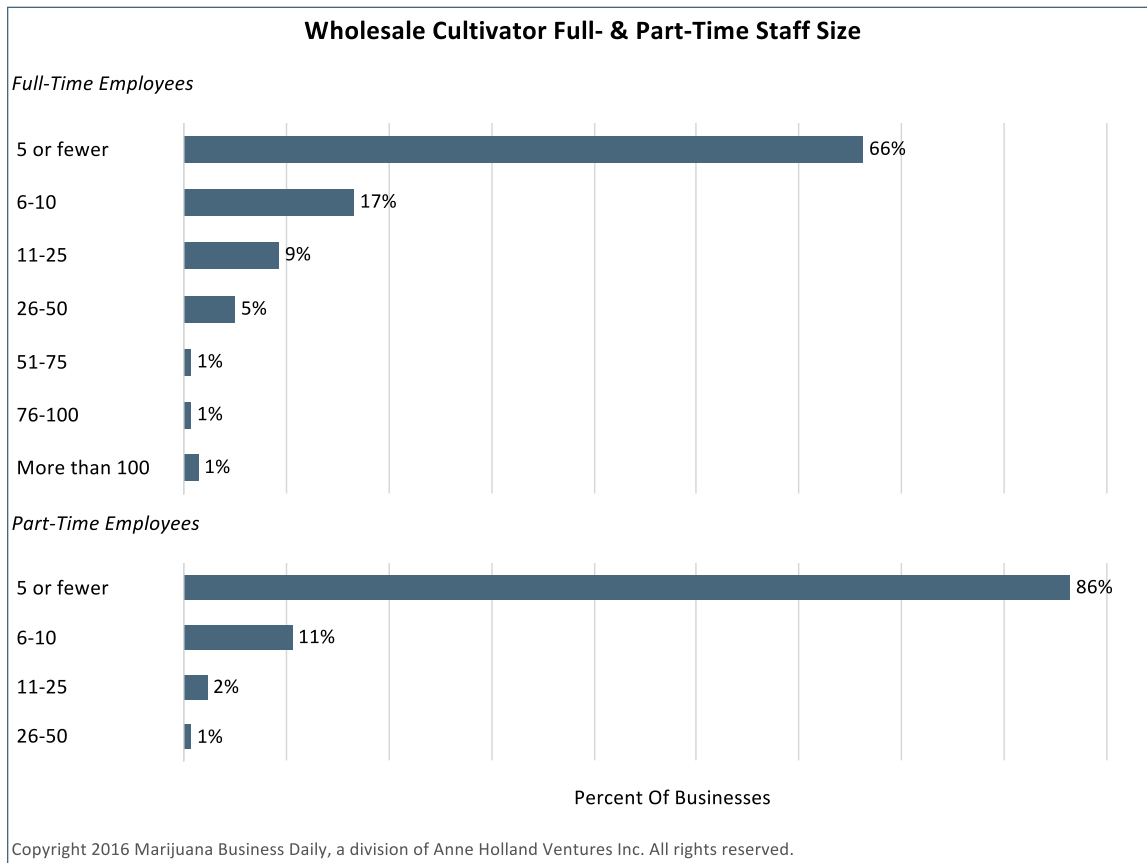
Chart 3.53: Snapshot Of How Wholesale Cultivation Costs Relate To Cultivation Type & Size

Snapshot Of How Wholesale Cultivation Costs Relate To Cultivation Type & Size			
		10,000 SF Or Less	More Than 10,000 SF
Indoor	Startup Costs	\$100,000	\$1,000,000
	Monthly Operating Expenses	\$8,000	\$130,000
Combination	Startup Costs	\$69,000	\$182,500
	Monthly Operating Expenses	\$10,000	\$35,000
Greenhouse	Startup Costs	\$185,125	\$475,000
	Monthly Operating Expenses	\$2,900	\$20,000
Outdoor	Startup Costs	\$165,000	\$275,000
	Monthly Operating Expenses	\$10,000	\$30,000

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There are many variables that affect the actual cost of establishing a wholesale cultivation operation and that contribute to ongoing expenses, particularly among growers that utilize a combination of methods. With large operations, economies of scale will be realized for fixed expenses such as rent/mortgage. On the other hand, variable expenses such as wages and utilities will increase commensurate with the size and nature of the business.

Chart 3.54: Wholesale Cultivator Full- & Part-Time Staff Size



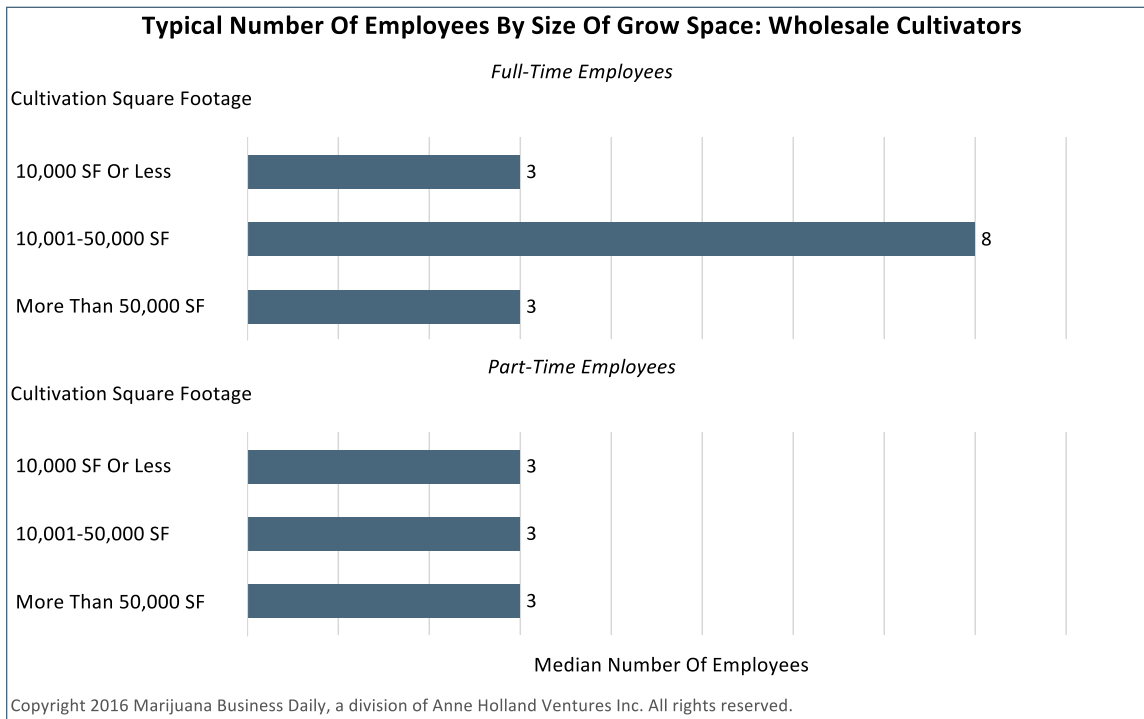
Broadly speaking, wholesale cultivation operations are still very small enterprises, as two-thirds of these businesses have five or fewer full-time employees. Use of permanent (i.e., not seasonal) part-time positions is also common, though nearly nine out of 10 wholesale cultivation businesses still only have a handful of these positions in addition to their full-time staff.

The average number of full-time employees in the wholesale cultivation sector is 10, with the support of an average of four part-time positions.

**Median Number of Full- And Part-Time Employees: Wholesale Cultivators**

Full-Time	Part-Time	Total
3	3	6

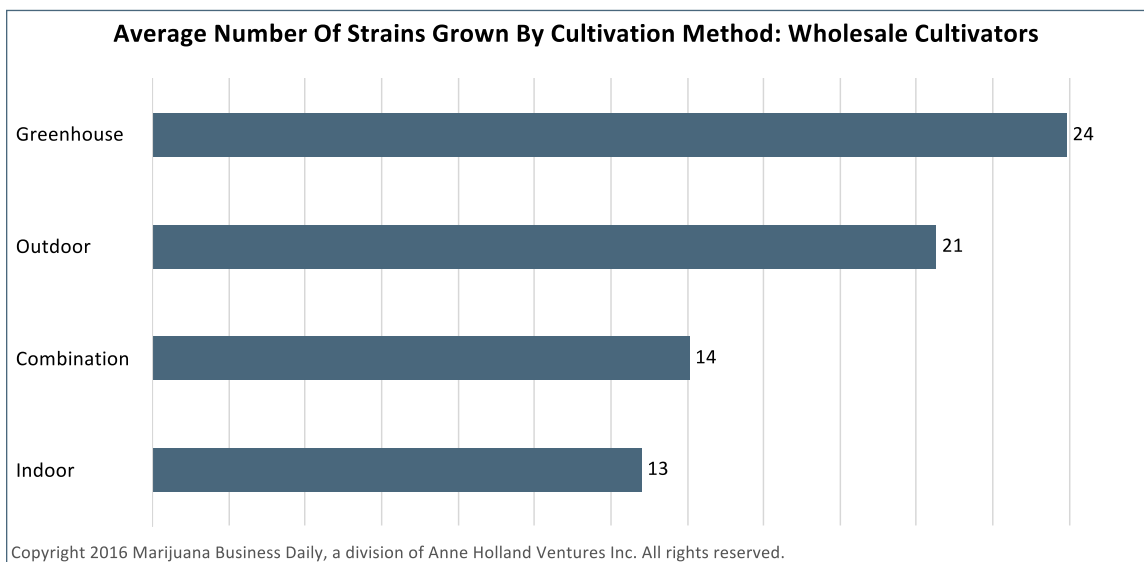
Chart 3.55: Typical Number Of Employees By Size Of Grow Space: Wholesale Cultivators



While the number of required full-time positions varies based on the size and nature of the operation, the need for just a few part-time positions is a commonality among all wholesale growers. Most growers, for instance, can use extra hands at harvest time.

Notice that mid-sized operations (10,001-50,000 square feet) require more full-time employees than sites that are larger than 50,000 square feet. That seems counter-intuitive. But many larger sites might employ more automation than mid-sized grows, so they in turn need fewer full-time workers.

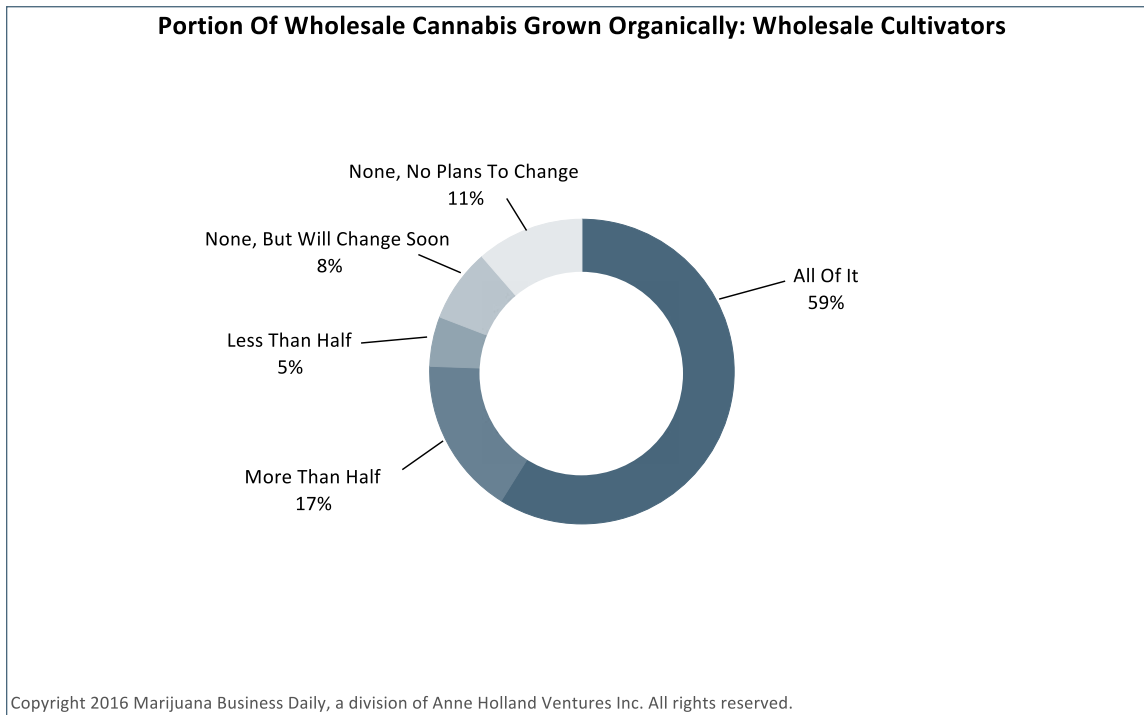
Chart 3.56: Average Number Of Strains Grown By Cultivation Method: Wholesale Cultivators



Despite the relatively small average staff sizes at cultivation businesses, they are nevertheless able to consistently cultivate at least a dozen strains in the case of indoor operations, and up to twice that figure for outdoor and greenhouse growers.

Other research performed by *Marijuana Business Daily* has shown that consumers tend to become pickier and more selective about products and strains in legal markets, particularly in recreational ones, versus people who buy from the black market. This is largely due to a combination of product proliferation thanks to the innovation that's possible in legal markets, and the associated higher levels of consumer knowledge. Add it all up, and you get what are known as “cannaseurs” who fancy a wide selection.

Chart 3.57: Portion Of Wholesale Cannabis Grown Organically: Wholesale Cultivators



As mentioned earlier for retailers, cannabis can't actually be classified as “organic” at present since this is a certification granted by the U.S. Department of Agriculture, which, like other federal regulatory authorities, is taking a conservative approach to the industry for now and isn't releasing any cannabis-specific guidance nor is it certifying marijuana businesses as organic.

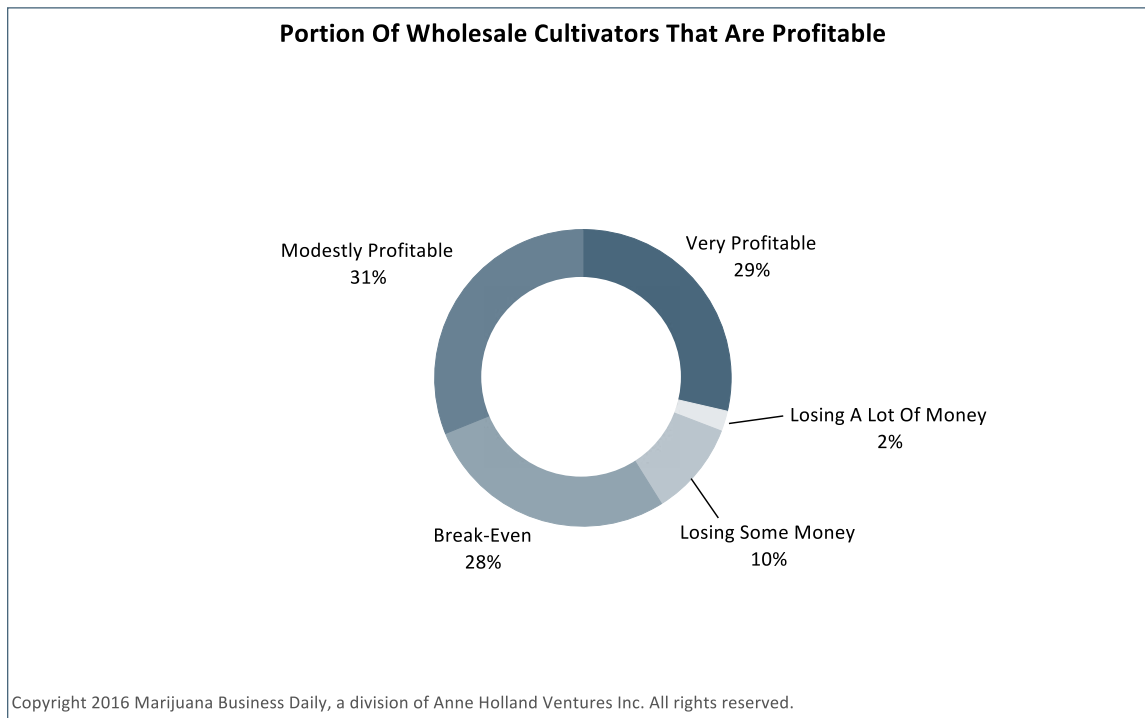
That being said, medical and recreational consumers still expect a safe and environmentally friendly product, and many cultivators have taken it upon themselves to utilize organic growing practices, despite not being able to earn the formal designation. Keep in mind though that interpretations of what constitutes organic cannabis cultivation methods differ given the lack of federal oversight on the industry. The term is being thrown around a lot in the industry, and plenty of growers who claim they use organic practices would not meet USDA standards.

The 19% of wholesale growers that don't currently use organic practices will diminish quickly as more stringent cannabis testing requirements naturally lead to organic-type practices to address concerns about pesticides, fungicides, mold, heavy metals and other contaminants.

## Wholesale Cultivator Profitability

On the whole, indoor, greenhouse and combination cultivation businesses are profitable, with two-thirds reporting positive net profit margins, and one out of four realizing net profit margins of 25% or greater. None of these businesses are currently losing “a lot of money”, which was characterized in the survey of these executives as a scenario where expenses and taxes exceed revenue by 25% or more.

Chart 3.58: Portion Of Wholesale Cultivators That Are Profitable



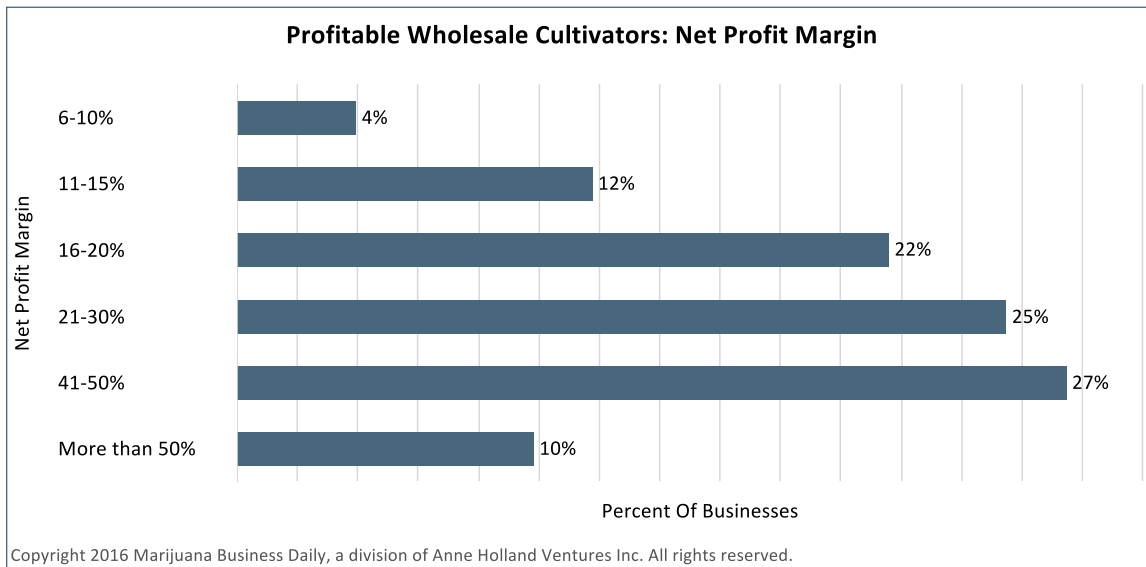
The story for outdoor growers is quite different. A small contingent of outdoor growers is experiencing great success, with 14% reporting revenues exceeding expenses and taxes by at least 25%. However, unlike the other wholesale cultivation business types, profitability seems to be harder to come by for outdoor growers. Among the 86% that are not “very profitable,” half are only breaking even and the other half are experiencing losses – large ones in many cases.

As a portion of all operation types, outdoor growers are definitely still in the minority, and they are largely concentrated in northern California. Severe drought issues, federal intervention and widely disparate local regulation have plagued many of these businesses. The passage of sweeping statewide legislation in California last year that will take effect by 2018 will alleviate many of these challenges for outdoor growers, but many of them will also be put out of business because of the changes, leaving an air of uncertainty over these enterprises for the near future.

### Portion Of Wholesale Cultivators That Are Profitable Or Break-Even

Indoor Growers	88%
Outdoor Growers	57%
Greenhouse Growers	84%
Combination Method Growers	96%

Chart 3.59: Profitable Wholesale Cultivators: Net Profit Margin



Not surprisingly, outdoor growers have the highest profit margins, as they have the lowest startup costs by a wide margin. That means they can hit profitability quickly. They also have the second-lowest monthly operating expenses.

### Average Wholesale Cultivator Net Profit Margin

**30%**

Chart 3.60: How Long Does It Take Wholesale Cultivators To Hit Profitability, By Cultivation Type?

<b>How Long Does It Take Wholesale Cultivators To Hit Profitability, By Cultivation Type?</b>				
<i>Time To Profitability</i>	Indoor	Combination	Greenhouse	Outdoor
Less than 6 months	30%	17%	40%	
6-12 months	42%	39%		100%
1-2 years	26%	43%	60%	
2-3 years	2%			

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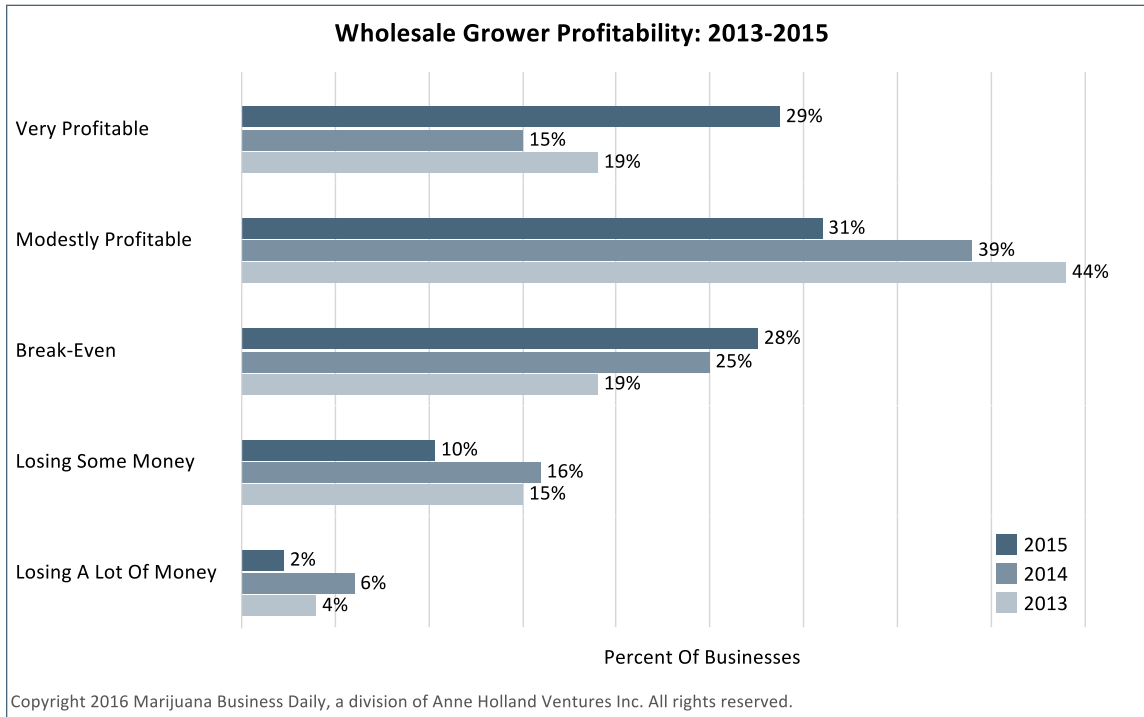
### **Average Length Of Time To Profitability: Wholesale Cultivators**

Indoor Growers	6-12 months
Outdoor Growers	6-12 months
Greenhouse Growers	6-12 months
Combination Method Growers	6-12 months

In spite of the challenges many outdoor growers are currently experiencing, particularly in California, the good news is that profitability comes quickly when favorable operational circumstances exist: 100% of profitable outdoor growers reported achieving profitability within a year, or essentially the first harvest.

Profitability is a bit further off for most indoor, greenhouse and combination growers, though it's also worth noting the sizeable portion of these businesses that get there within six months – again, essentially within the first harvest.

Chart 3.61: Wholesale Grower Profitability: 2013-2015



In a sign that a portion of wholesale cultivators in each market seem to be emerging as leaders within the space, businesses that were reporting modest profitability in prior years appear to have been shaken out in one of two ways: They have either won more market share and are achieving better economies of scale, or they have actually experienced setbacks and profitability has decreased or disappeared entirely. Fewer businesses overall are sitting in loss territory at present, but competition is getting tight and the ability to move from break-even into profitability is proving more difficult for these companies over time.





# Infused Product Makers, Testing Labs & Ancillary Firms

While dispensaries and growers make up the backbone of the marijuana industry, three other overarching sectors are equally as important:

**Infused Product Manufacturers:** Demand for infused products – which includes edibles, topicals and concentrates – has rocketed in recent years and is one of the fastest-growing areas of the entire industry. To be sure, dried cannabis still accounts for the majority of total revenue at both medical marijuana dispensaries and recreational cannabis stores (except in states where it is not permitted). But infused products are becoming a huge part of the industry and could one day overtake sales of flower.

**Testing Labs:** When measured by the number of businesses, the cannabis testing lab sector is by far the smallest. That being said, testing has become a critical part of the industry and is required in nearly every state that regulates cannabis businesses. Labs play a key role in helping protect patients/consumers and legitimize the industry as a whole.

**Ancillary Firms:** Companies that provide products, services and technology to the industry and patients/users but don't actually touch the plant itself have always been – and will continue to be – important to the industry's success, maturation and evolution. These ancillary businesses provide everything from consulting, real estate and legal services to cultivation lighting technology and inventory management software. Ancillary companies conservatively outnumber plant-touching businesses by about two-to-one.

This chapter will highlight financial and operational data for each of these sectors.

## INFUSED PRODUCT MANUFACTURERS

Important note: This section includes data for processors, infused products companies that perform all their own extractions and infused products companies that purchase concentrates from third parties and/or perform some of their own extractions. We have combined processors with infused companies that exclusively perform in-house processing for their own products for most of this analysis. This is denoted with the label “processors/infused companies with in-house processing”.

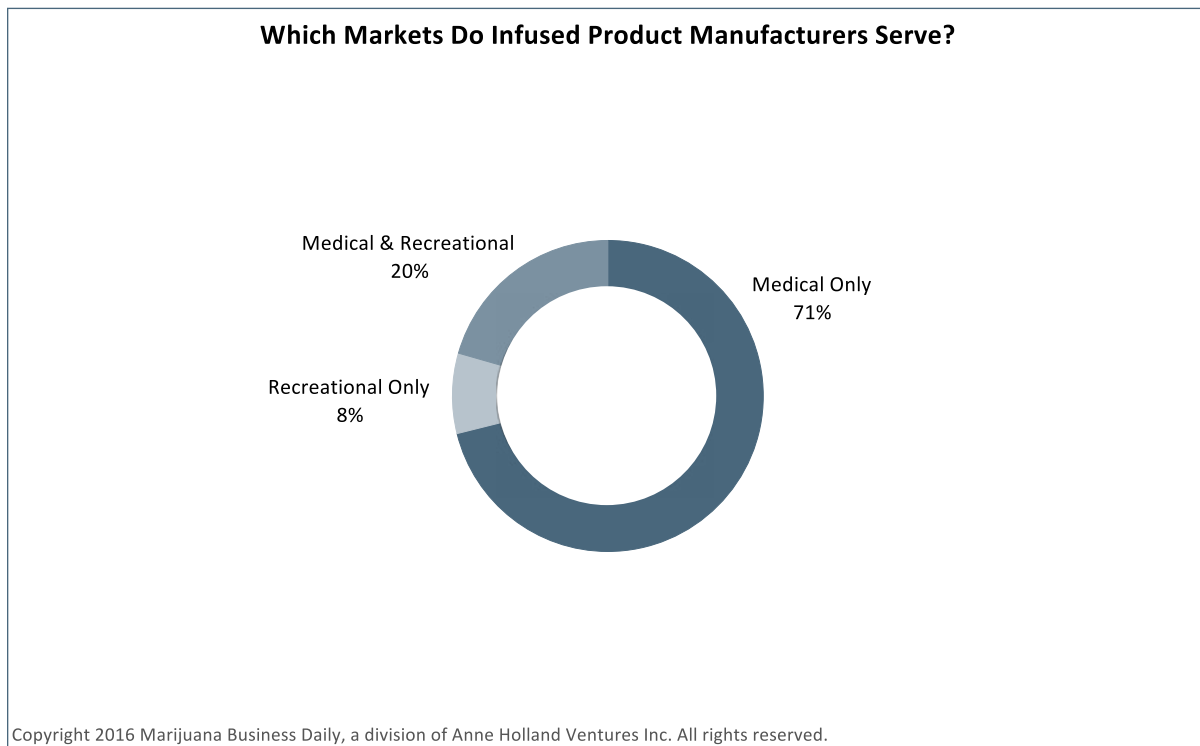
The category “purchase extracts from third parties or combination,” on the other hand, refers to infused product companies that exclusively buy concentrates from other companies or perform limited in-house processing.

The reason is twofold:

Extraction-only companies exist in just a few markets at present, so there isn't enough data to break them out into their own category.

Despite some differences in required equipment and other areas, the nature of general operations at processors and edibles/topicals makers that perform all of their own extractions are similar enough to aggregate for the purposes of calculating basic financial metrics.

Chart 4.01: Which Markets Do Infused Product Manufacturers Serve?

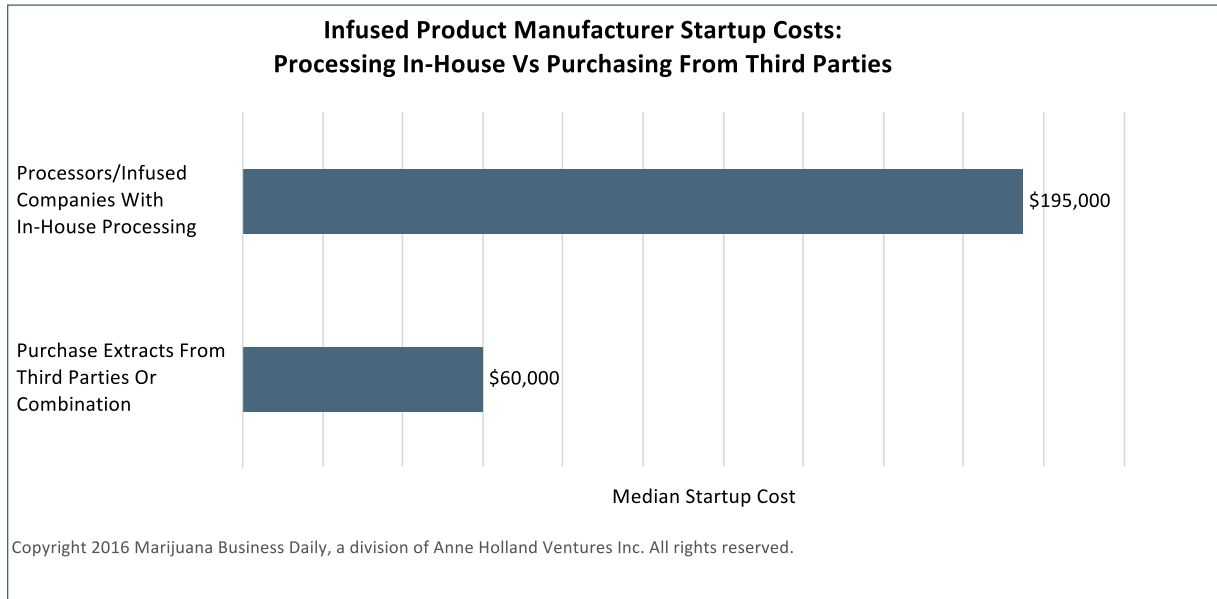


Overall, a large majority of infused product makers are exclusively serving medical markets at present. However, it's worth noting that 28% of these businesses are serving recreational markets either exclusively or partially, which is only possible in Colorado, Washington State and very recently Oregon.

The portion of these businesses that only serve medical markets will decrease and may even be overtaken by the contingent that partially or exclusively serves adult-use markets as recreational legalization spreads to more states over the next few years.

### Infused Product Manufacturer Startup Costs

Chart 4.02: Infused Product Manufacturer Startup Costs: Processing In-House Vs Purchasing From Third Parties

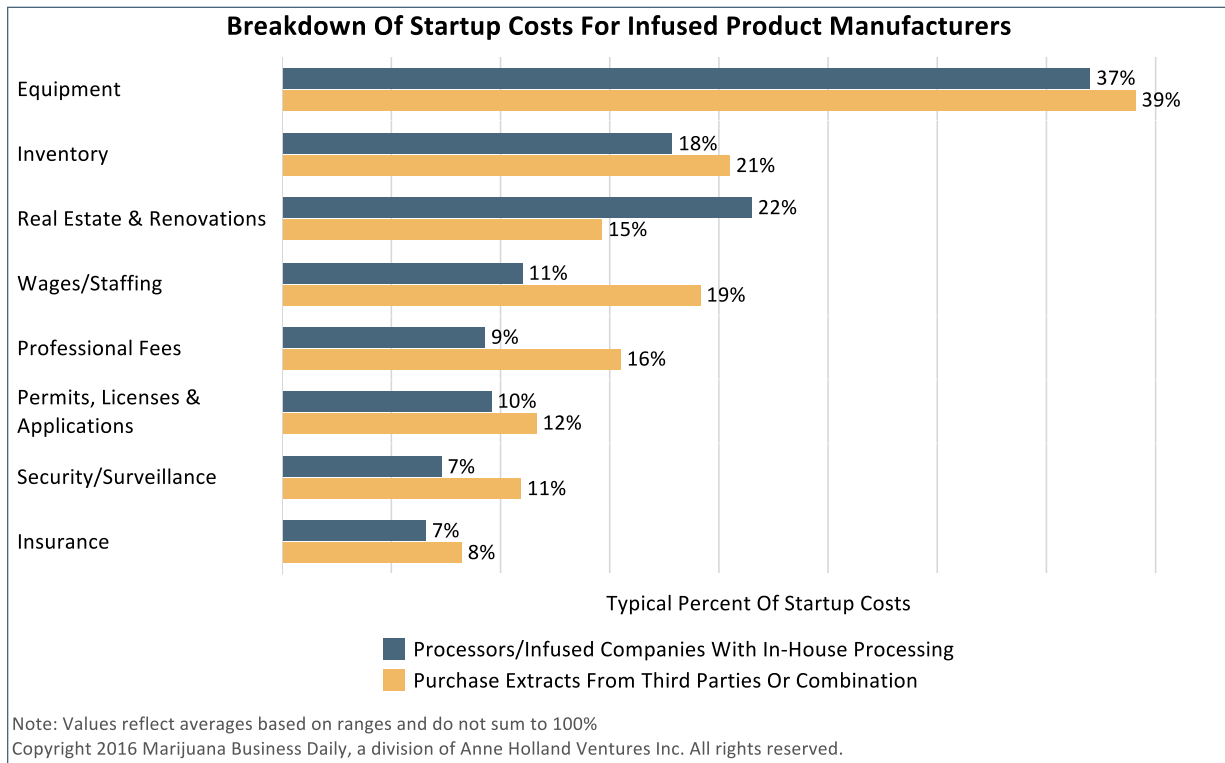


The equipment required to perform extraction and manufacture edibles/topicals is not cheap. As the chart above shows, this has a significant impact on startup costs. Not surprisingly, initial expenses are much higher for processors and infused products companies that perform all their own extractions.

### Median Infused Product Manufacturer Startup Cost

**\$125,000**

Chart 4.03: Breakdown Of Startup Costs For Infused Product Manufacturers

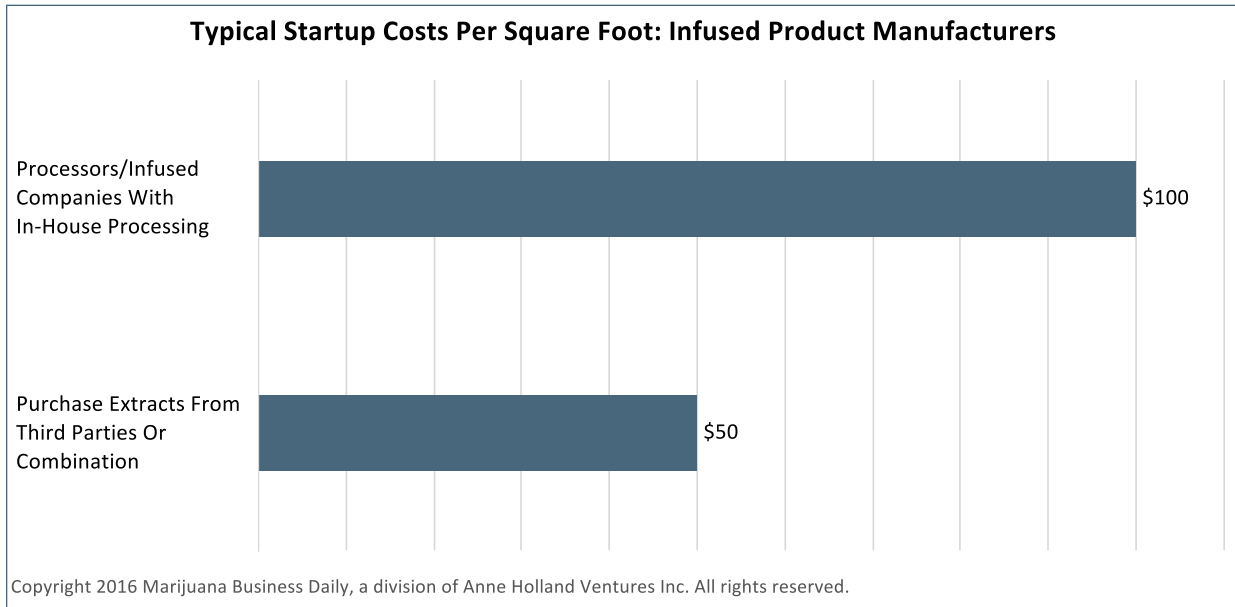


That being said, even for edibles/topicals makers that don't perform their own extractions, there is still a need for commercial manufacturing equipment to produce the final product. From custom molds and automated filling and assembly lines to full-blown commercial kitchens, these businesses all require large capital investments in equipment.

When it comes to processing specifically, a dedicated, sealed room with additional safety features to minimize potential destruction in the event of an explosion during the extraction process is usually required, contributing to higher renovation costs.

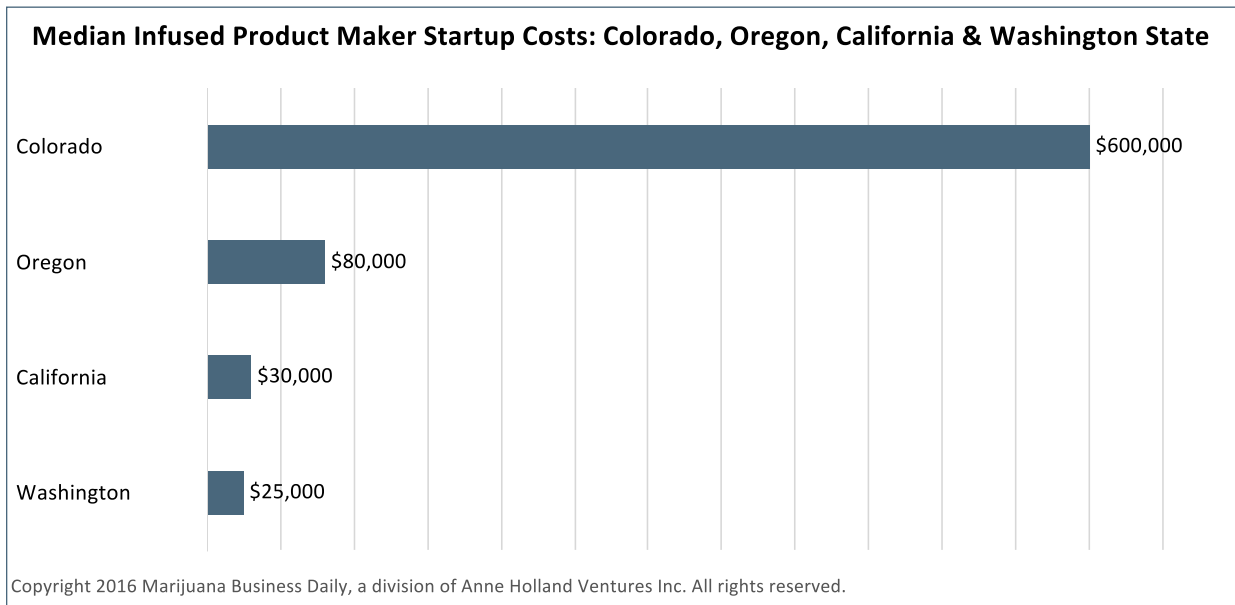
Manufacturers of edibles/topicals that also perform any degree of in-house processing will require employees with different types of specialized knowledge, from those well-versed in extraction techniques to traditional culinary staff with expertise in cannabis infusion. These types of businesses also often require multiple operating licenses, which is one contributing factor to higher professional fees as a portion of total startup costs.

Chart 4.04: Typical Startup Costs Per Square Foot: Infused Product Manufacturers



Startup costs per square foot are higher for processors and infused companies that perform all their own extractions because they often require different types of specialized staff, multiple operating licenses and expensive equipment.

Chart 4.05: Median Infused Product Maker Startup Costs: Colorado, Oregon, California & Washington State



As with businesses in any other industry sector, the actual amount of capital it takes to launch an infused products company varies greatly by state at present. Many infused product makers in California and Washington State launched in an unregulated environment, meaning their startup costs were relatively low. But both states are adopting strict regulations. So startup costs in these states will increase going forward.

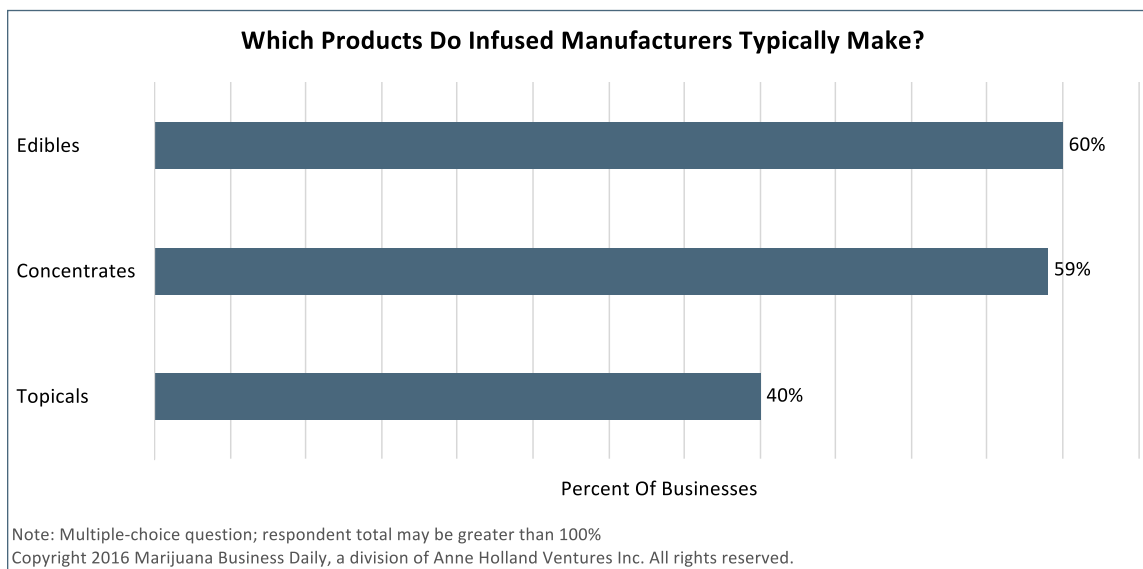
Oregon is a slightly unique market. Unlike Washington State and California, Oregon did not have a licensing and regulatory structure in place for these businesses to serve the state's medical market prior to the passage of recreational legalization. However, under Oregon's temporary rules for early rec cannabis sales prior to the opening of businesses specifically licensed to serve the adult-use market, infused products are not permitted to be sold – only flower/dried herb products are allowed. So for now, infused products companies in Oregon are only serving the medical market, and they were licensed under a much less stringent framework than they will be subject to going forward.

In Colorado, infused product makers can serve either/both of the medical and recreational markets (meaning there's a much larger addressable customer base) and are subject to robust and constantly evolving regulatory frameworks, significantly driving up the typical cost to launch.

More robust data will be available in the future as more of these businesses open in other states under circumstances more similar to those in Colorado. In that regard, Colorado's figures are more indicative of the startup costs businesses in this space can expect going forward.

## Infused Product Manufacturer Operations & Revenue

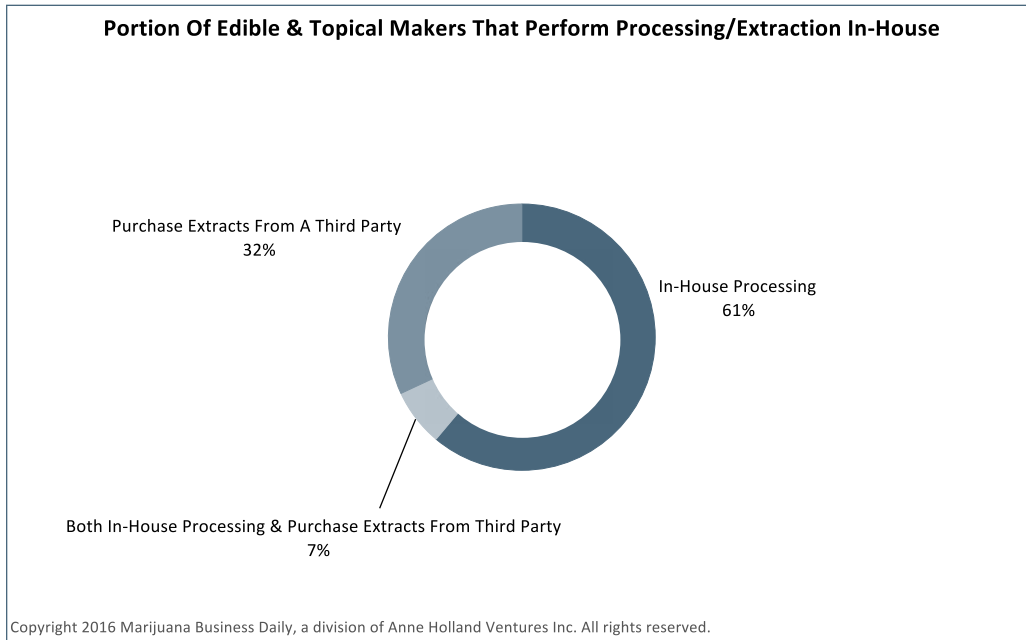
Chart 4.06: Which Products Do Infused Manufacturers Typically Make?



About 60% of all infused product makers produce edibles and/or concentrates, while only 40% also or exclusively make topicals. Though topicals comprise much smaller portions of medical and recreational retail revenue when compared to edibles and concentrates, they are still a solid part of the industry, as these numbers demonstrate.

That being said, 24% of all infused product makers exclusively manufacture edibles and 26% solely focus on concentrates, while only 7% exclusively produce topicals. This indicates that topicals are a nice side product to produce but aren't big enough to warrant an exclusive focus for most companies. About 43% of infused companies produce some combination of edibles, concentrates and topicals.

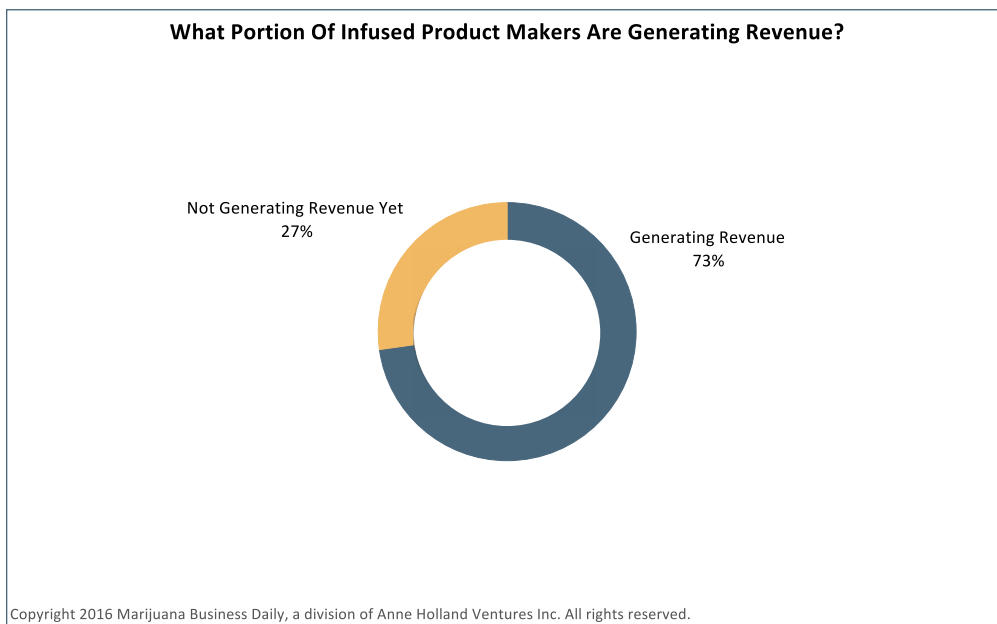
Chart 4.07: Portion Of Edible & Topical Makers That Perform Processing/Extraction In-House



Among edibles and topicals manufacturers, just over three out of five businesses perform all of their own processing, which is twice the portion that exclusively uses third parties. A combination of in-house processing and purchasing concentrates wholesale does not appear to be a cost-effective setup, as only 7% of edibles/topicals makers operate in this manner, which may very well be a temporary solution for some new businesses anyhow.

From a cost and margin management perspective, it's more beneficial for these companies to select whichever operational type best suits their business rather than attempt to mix it up.

Chart 4.08: What Portion Of Infused Product Makers Are Generating Revenue?





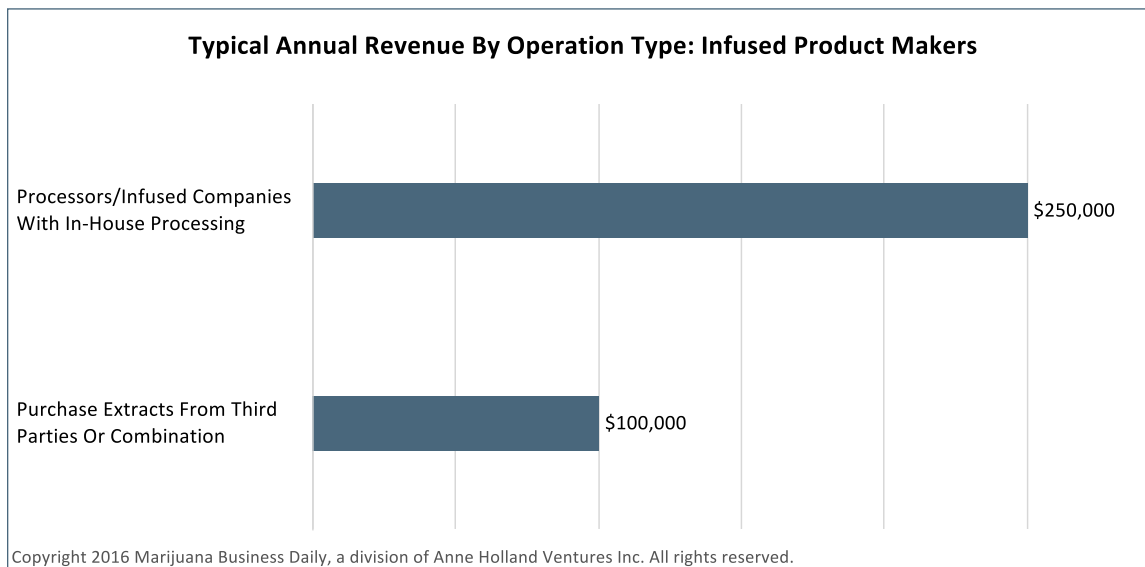
The portion of all infused product manufacturers that have not yet begun generating revenue – 27% – is slightly smaller than the 32% of retailers and wholesale cultivators that haven't.

Establishing operations for an infused products company is not a simple or quick task. Several state medical and recreational cannabis programs have experienced severe delays in the application and licensing phases as well as rule promulgation, while in other cases businesses have struggled to procure investment capital and real estate/commercial space or simply ran into issues trying to meet regulations.

Whatever the reasons, it's not uncommon in the industry right now for there to be substantial delays between when infused products businesses are launched and when they actually start shipping products to medical/recreational retailers and generating revenue.

About 67% of retail, infused product manufacturing and wholesale cultivation businesses that aren't generating revenue launched just last year. It often takes newer companies a while to fully develop their products/services and get their operations running, so it's not a bad sign that these startups aren't selling anything yet. Many are likely still wading through the licensing process. However, it's worth noting that about a third of businesses that aren't currently generating revenue launched over a year ago, demonstrating the very real possibility of significant setbacks and delays for new companies in the industry.

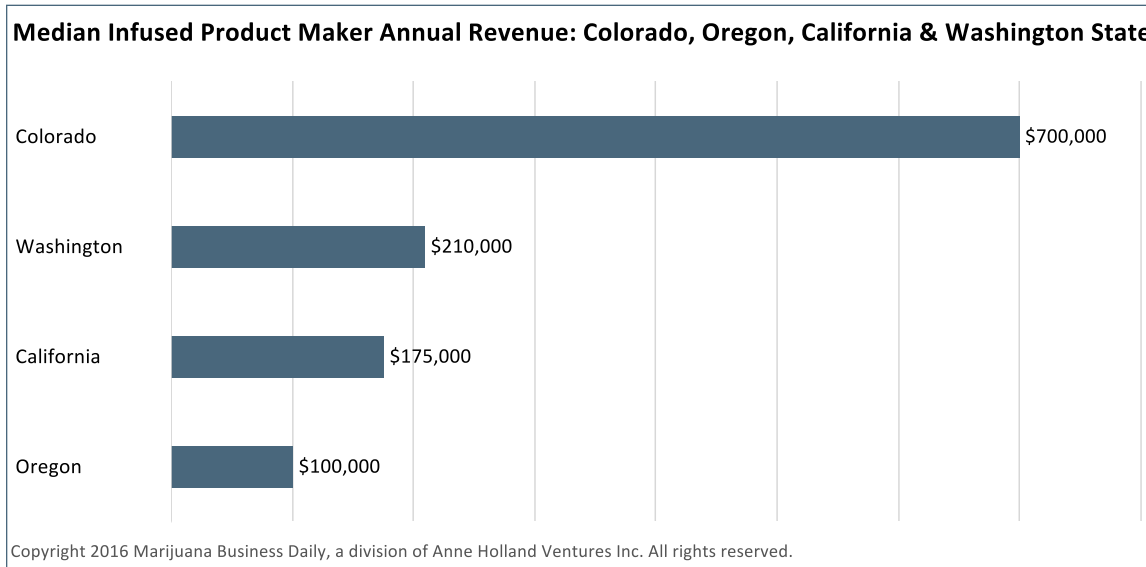
Chart 4.09: Typical Annual Revenue By Operation Type: Infused Product Makers



Since the number of processors and infused companies with in-house processing far outnumbered edibles/topicals makers that purchase concentrates wholesale or perform some of their own processing, it stands to reason there is a wider range of the overall size of businesses in the former category, and therefore a wider range of associated annual revenue.

Additionally, for the largest businesses in this sector, it's more cost effective to produce everything in-house. The representation of the largest companies in that category likely also contributes to the higher typical annual revenue for these enterprises.

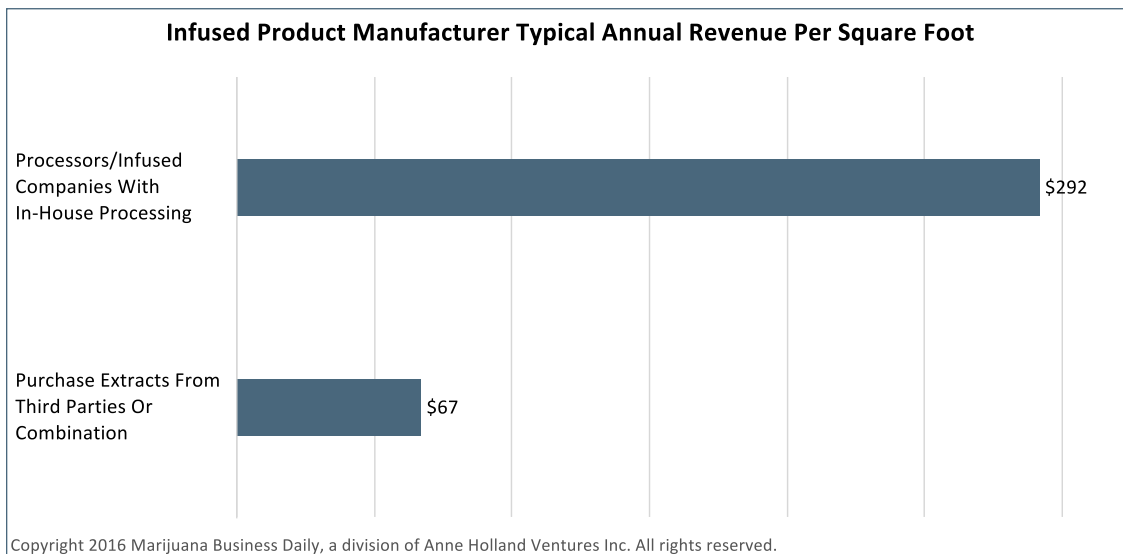
Chart 4.10: Median Infused Product Maker Annual Revenue: Colorado, Oregon, California & Washington State



Due to reasons highlighted in the previous discussion about why startup costs greatly differ among infused product makers in California, Colorado, Oregon and Washington State at present, typical annual revenue for infused companies in these states covers a large range.

It bears repeating that Colorado is the only state at present in which all legal infused product makers are formally licensed to serve either/both the recreational and medical markets at this time. As Washington State and Oregon move past the unique and temporary circumstances each are currently wading through and officially license all medical and recreational businesses, infused products makers in these states will have much greater opportunities to scale revenue up more in line with those seen in Colorado. Additionally, California is a strong candidate to legalize recreational marijuana this November, which would open up a whole new market for these businesses there.

Chart 4.11: Infused Product Manufacturer Typical Annual Revenue Per Square Foot

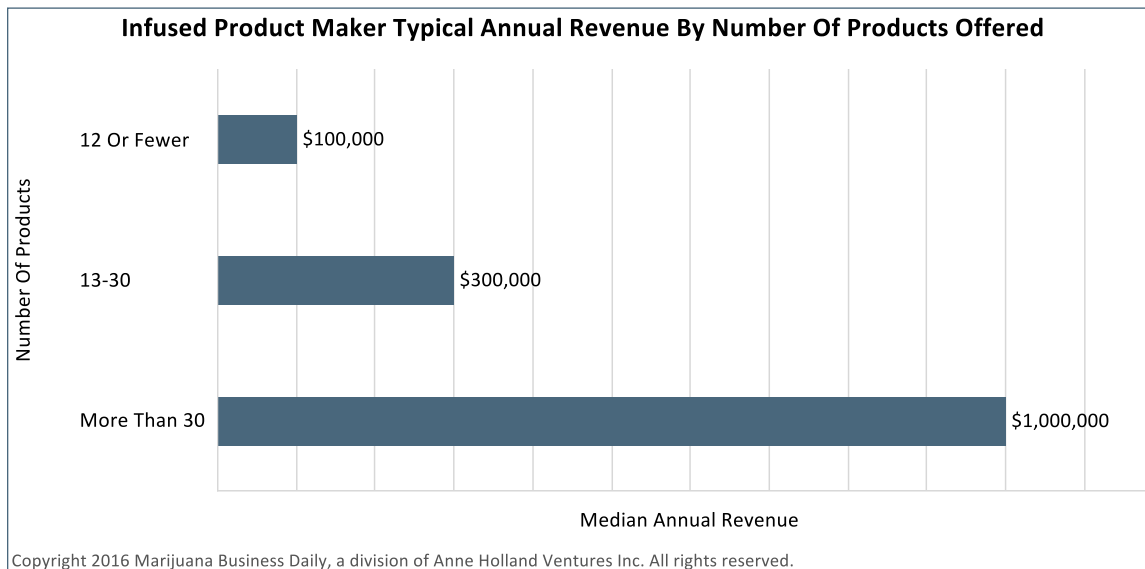


The noticeable disparity in revenue per square foot suggests edibles and/or topicals manufacturers that purchase wholesale concentrates for infusion are by and large small enterprises with limited top-line revenue potential. This is an important distinction to understand when evaluating the potential size of an opportunity in a new market.

### Median Annual Revenue Per Square Foot: Infused Product Makers

**\$250**

Chart 4.12: Infused Product Maker Typical Annual Revenue By Number Of Products Offered



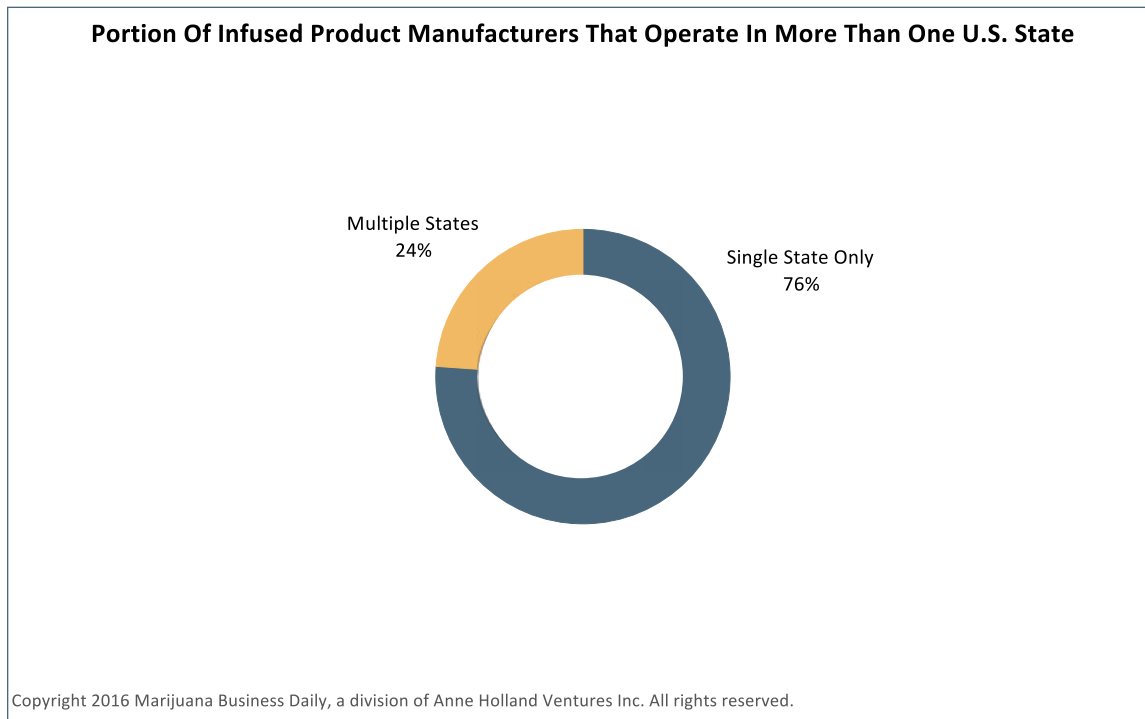
The number of products offered corresponds directly to the amount of revenue an infused company generates. This is a good indicator of strong consumer demand for all of these products and underscores the importance of diversity. Recreational consumers in particular have a strong affinity for variety.

However, it's important to note the law of diminishing returns will eventually kick in, and at some point the marginal cost of production for one more product line will outweigh its contribution to net profit – though the exact threshold will differ among each individual company.

### Median Annual Revenue For Infused Product Makers

**\$212,500**

Chart 4.13: Portion Of Infused Product Manufacturers That Operate In More Than One U.S. State

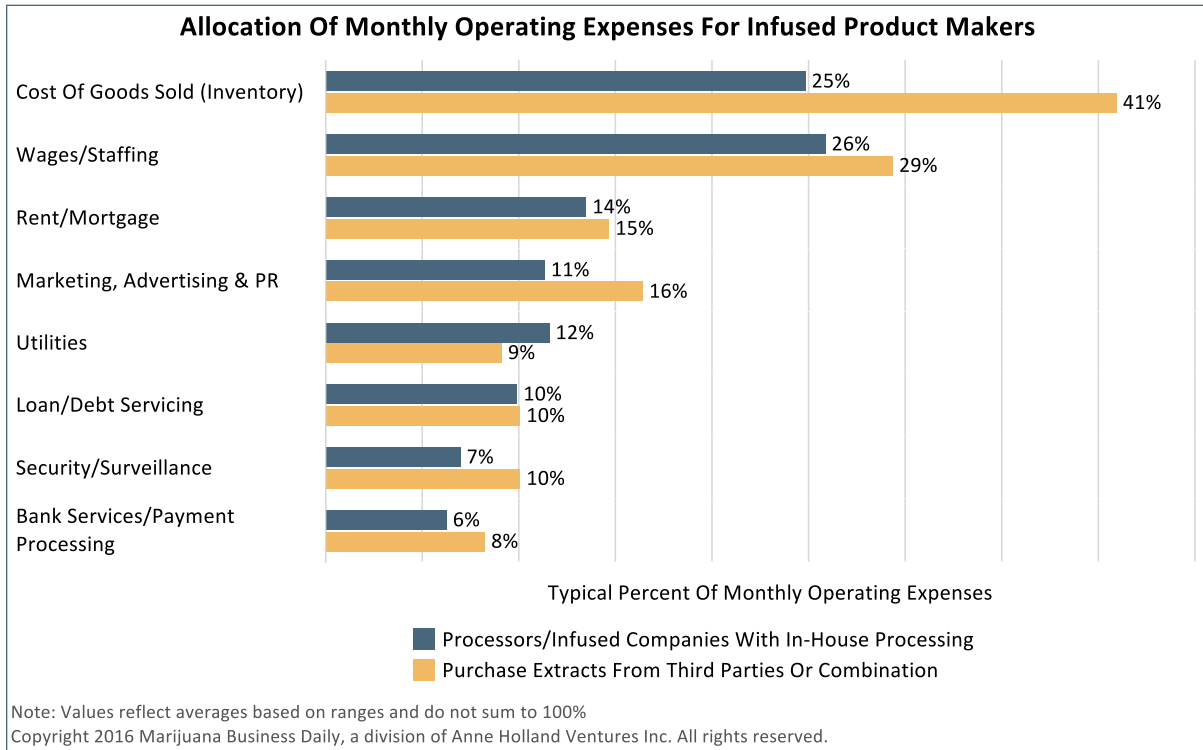


Among the plant-touching sectors, infused products manufacturers are currently best-positioned and able to expand across state lines. Though the transportation of infused products across state lines is prohibited, these companies are uniquely able to capitalize on brand recognition and loyalty fostered within one state to launch operations in another. About a quarter of the companies in this sector have already pursued this strategy and have operations in at least two states.

### **Average Number Of States Served: Infused Product Makers In Multiple States**

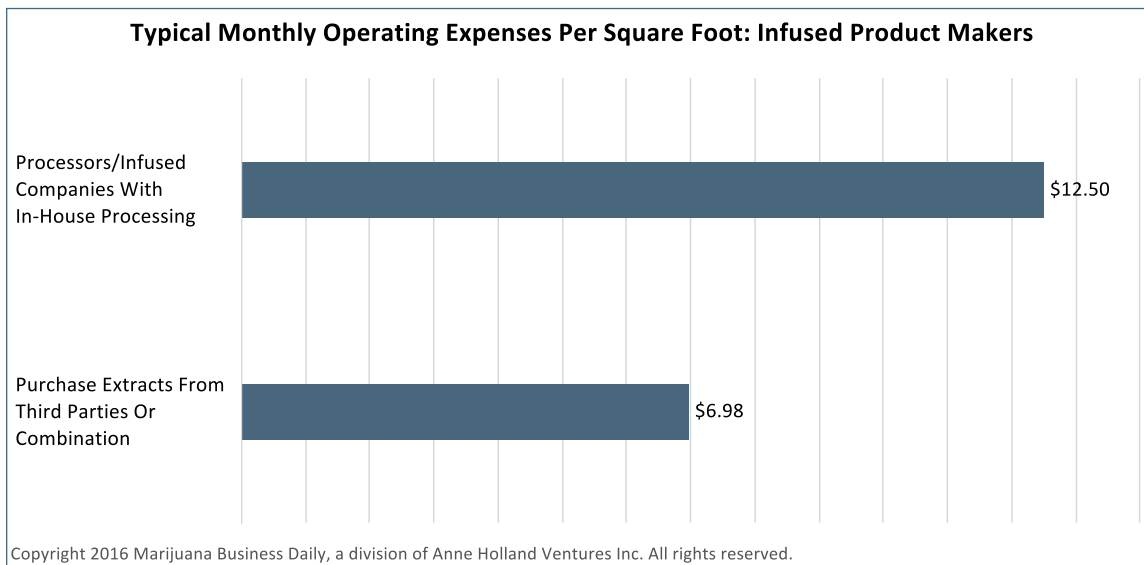
**8**

Chart 4.14: Allocation Of Monthly Operating Expenses For Infused Product Makers



Processors and edibles/topicals makers that perform all their own extraction clearly realize cost savings, as indicated by the much lower portion of monthly operating expenses devoted to the acquisition cost of inventory. Infused companies that buy concentrates from third parties might benefit initially from lower startup costs, but they're at a disadvantage over the long term, particularly in terms of scalability. Some states require full vertical integration of cultivation, processing and retail, while others mandate these functions be split up among different companies. So businesses don't necessarily get to choose which operation type they will utilize.

Chart 4.15: Typical Monthly Operating Expenses Per Square Foot: Infused Product Makers

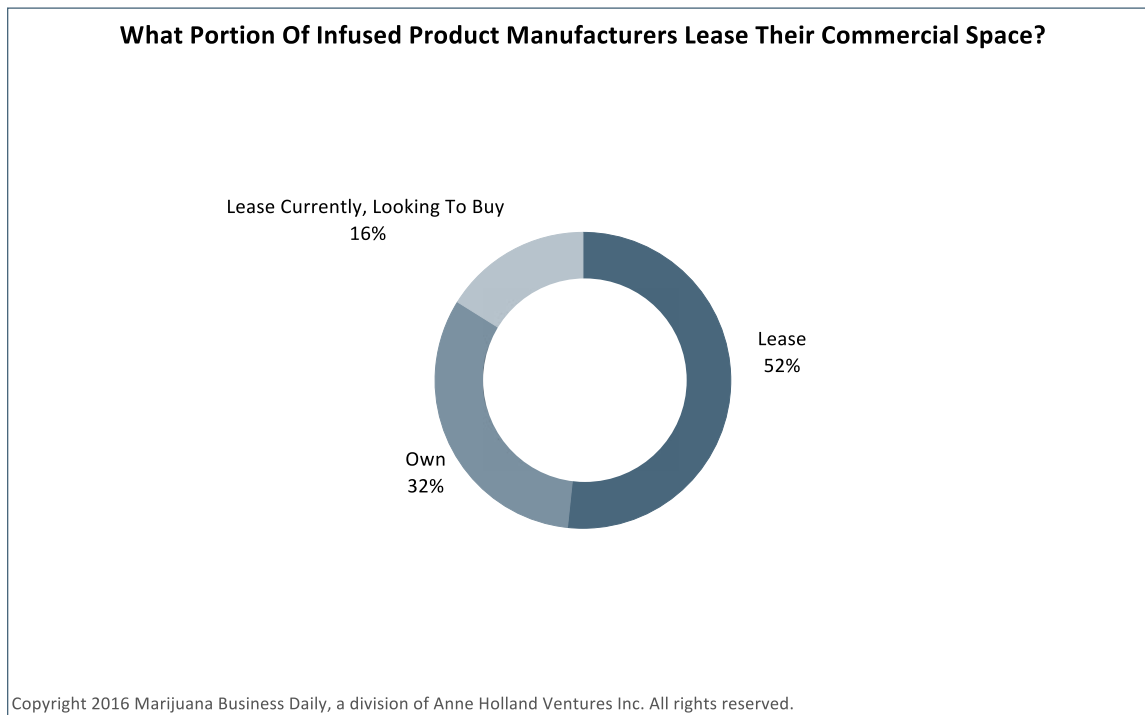


Processors and edibles/topicals makers that perform all their own extraction have higher monthly operating expenses per square foot than those that purchase concentrates from third parties or perform partial in-house processing. The reasons include, but are not limited to, higher energy consumption, more equipment maintenance and larger staff size.

### Median Monthly Operating Expenses Per Square Foot: Infused Product Makers

**\$10**

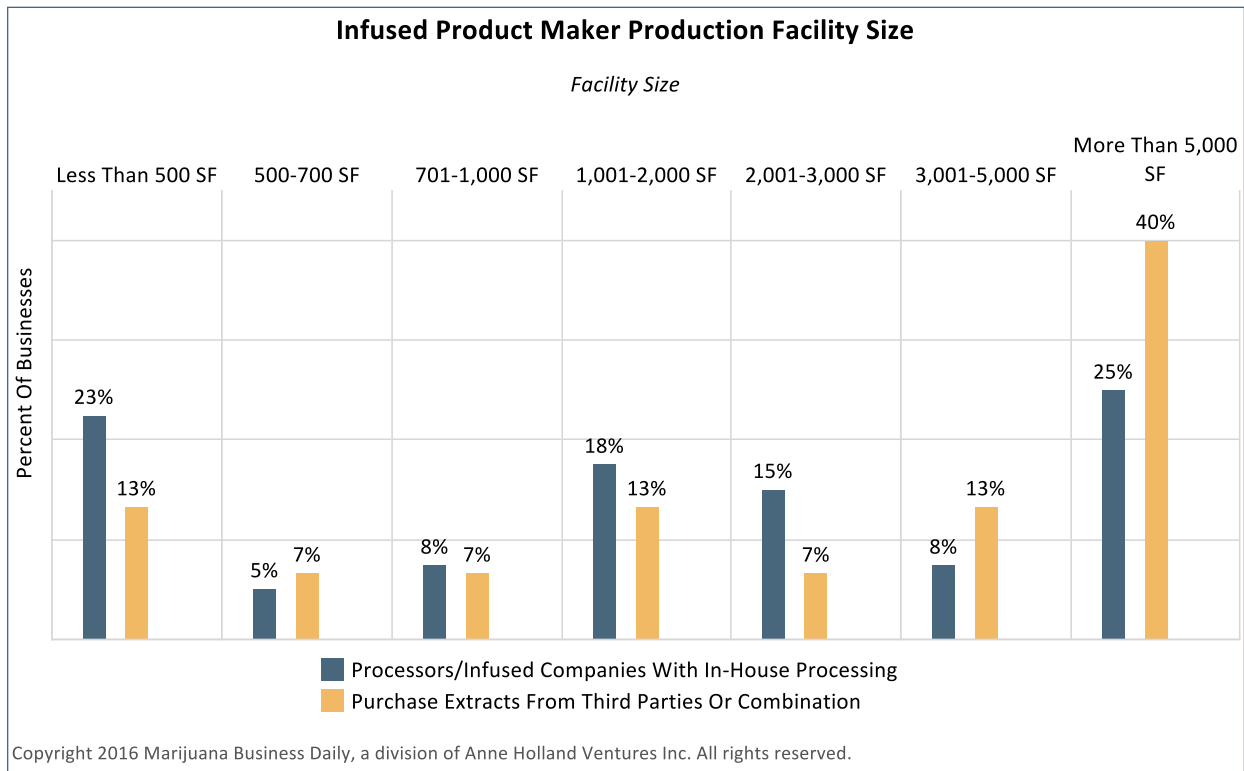
Chart 4.16: What Portion Of Infused Product Manufacturers Lease Their Commercial Space?



The breakout of infused product manufacturers that lease, own or lease currently and are looking to buy a commercial space is nearly identical to that for wholesale cultivators. The exact same portion – 52% – of infused companies and commercial growers lease their commercial space. Additionally, the portion of infused product makers that own their commercial space is only four percentage points smaller than the portion of wholesale cultivators that currently own their facilities.

These similarities demonstrate that the two sectors face very similar challenges and obstacles in this regard, but also provide reason for hope as about a third of both infused companies and cultivators have nevertheless been able to buy their production facilities.

Chart 4.17: Infused Product Maker Production Facility Size

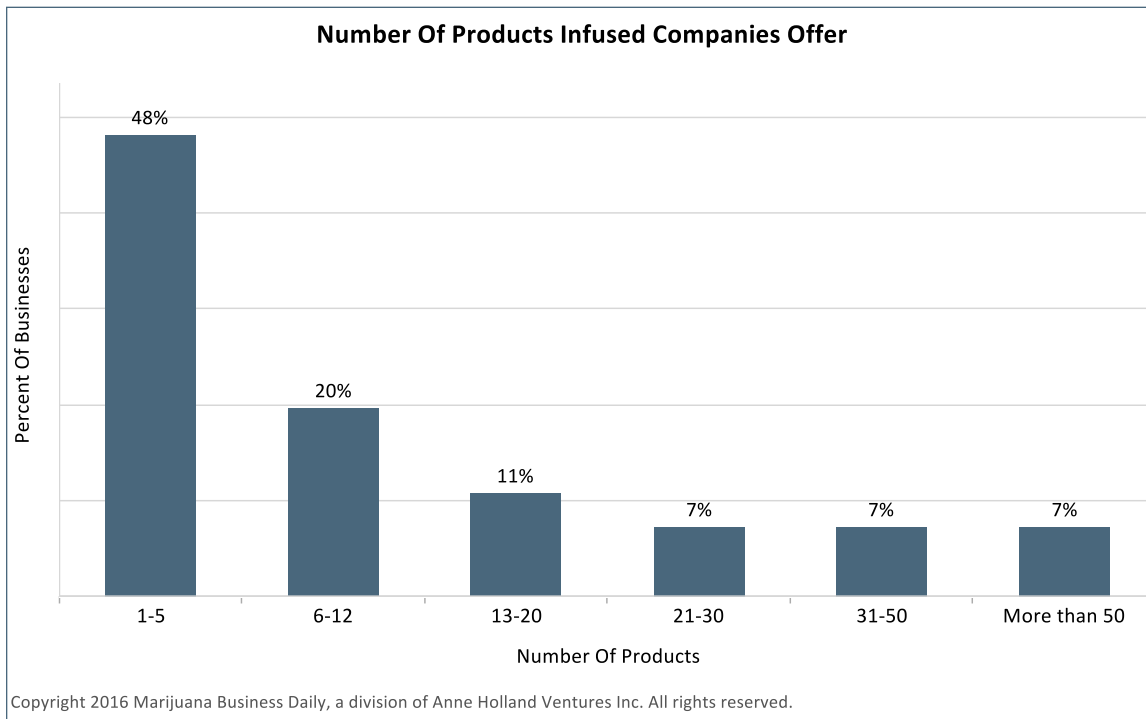


Though the size of infused companies’ commercial spaces covers a wide spectrum, the representation of processors among edibles/topicals makers that perform processing in-house slightly drives down the average facility size for this category. As mentioned earlier, processors can operate with smaller facilities than companies that also produce edibles and/or topicals.

**Average Production Facility Size:  
Infused Product Makers**

Processors/Infused Companies With In-House Processing	2,500 Square Feet
Purchase Extracts From Third Parties Or Combination	3,200 Square Feet

Chart 4.18: Number Of Products Infused Companies Offer



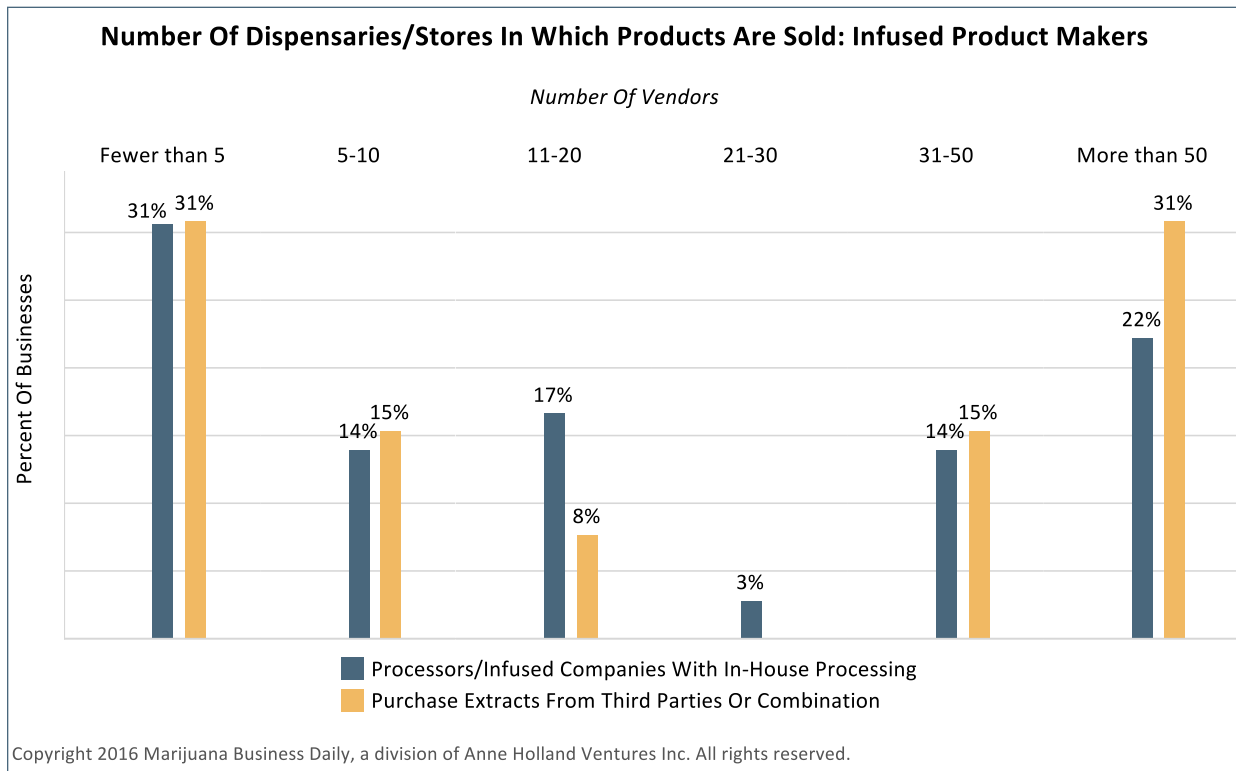
Despite the emergence of some larger, multimillion-dollar infused product manufacturing businesses, nearly half of infused companies currently make five or fewer distinct products. So when it comes to product diversity, many companies come in on the low end. Nevertheless, nearly one-third currently produce over a dozen products, demonstrating the strong demand and growth potential for these businesses.

### Average Number Of Products Manufactured By Infused Companies

14



Chart 4.19: Number Of Dispensaries/Stores In Which Products Are Sold: Infused Product Makers

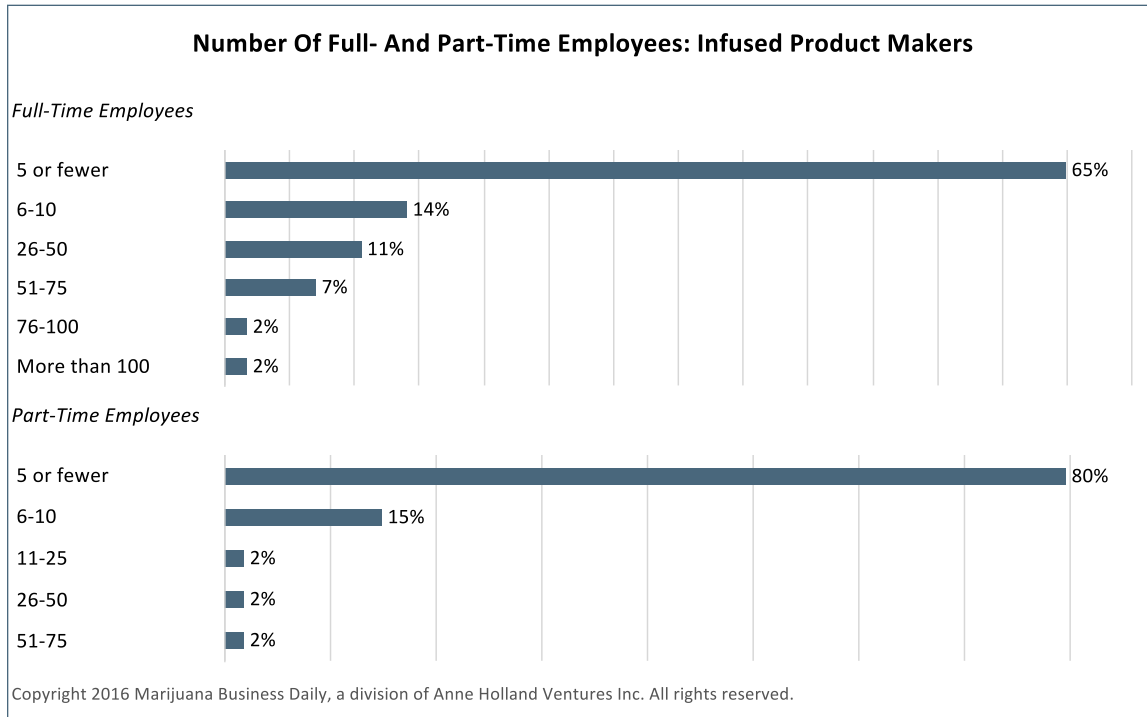


One area in which the nuanced types of infused product manufacturers differ very little is with regard to the number of dispensaries/stores in which their products are available for sale. It’s interesting to note the broad distribution across the spectrum, with noticeable concentrations at each end. This indicates most of these businesses likely start out with just a few vendors that carry their products – and then the manufacturer either finds success with a limited distribution network (possibly through exclusive agreements) or quickly expands to a diverse vendor network, spending relatively little time in the in-between territory.

**Average Number Of Dispensaries/Stores  
Products Sold In: Infused Products Companies**

Processors/ Infused Companies With In-House Processing	23
Purchase Extracts From Third Parties Or Combination	27

Chart 4.20: Number Of Full- And Part-Time Employees: Infused Product Makers



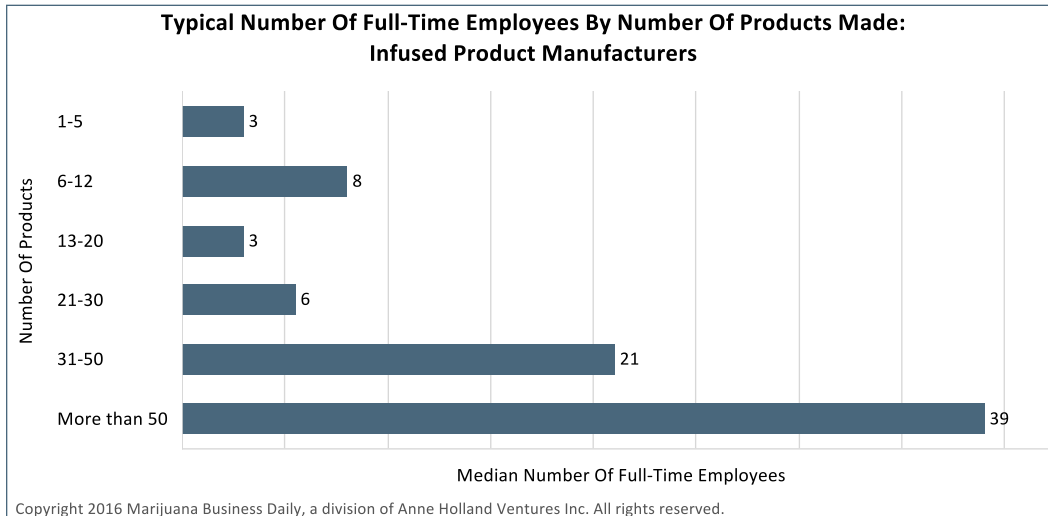
Processors and edible/topical makers that perform all of their own extractions will require more employees than businesses that perform limited or no in-house processing.

In general, infused companies have a need for a few permanent part-time positions. It’s worth noting though that infused product companies are still relatively small enterprises in terms of headcount.

**Median Number Of Full- And Part-Time Employees: Infused Product Makers**

Full-Time	Part-Time	Total
3	3	6

Chart 4.21: Typical Number Of Full-Time Employees By Number Of Products Made: Infused Product Manufacturers

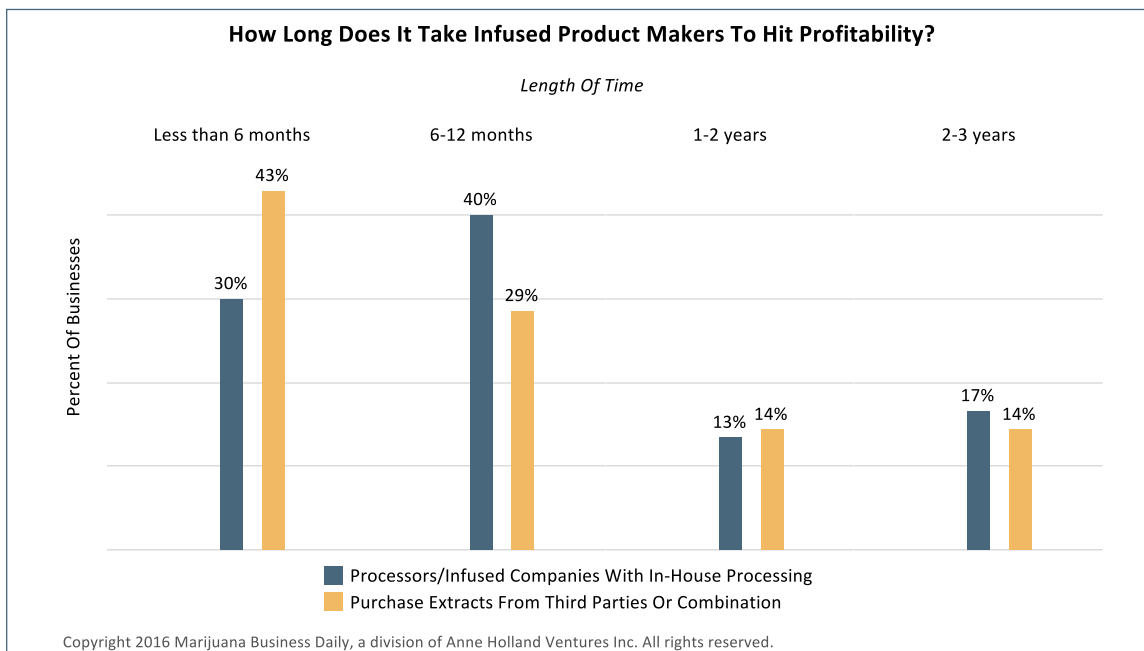


As infused product makers expand their offerings, the size and complexity of their operations will increase as well, which will boost staffing needs and associated payroll expenses. That being said, commensurate increases in staff sizes don't appear to be truly necessary until manufacturers approach about 30 distinct products.

### Infused Product Manufacturer Profitability

When looking at the typical length of time that elapses between the launch of a business and when it hits break-even or profitability, the good news is the average for medical and recreational retailers, wholesale cultivators and infused product makers is the same: 6 to 12 months. That's an astonishingly short time frame by any measure.

Chart 4.22: How Long Does It Take Infused Product Makers To Hit Profitability?

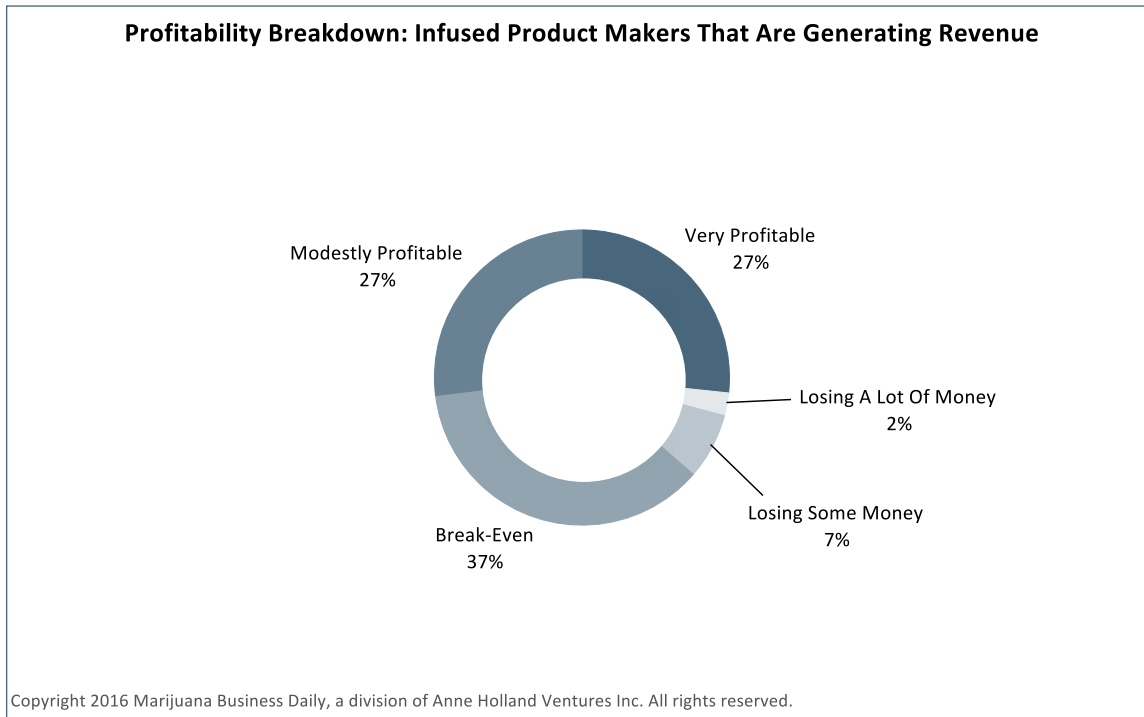


Certainly there are some differences that emerge when looking at a more granular level of detail, and it's important to note that approximately 16% of infused product manufacturers didn't reach break-even or profitability for over two years, likely reflecting severe delays in establishing or ramping up operations. That being said, about 70% of these businesses will hit at least break-even inside of a year.

Processors and edible/topical makers that perform all their own extractions take slightly longer to achieve profitability vs. the other types of infused companies. However, this difference is relatively inconsequential, as most businesses of each type still hit profitability within 12 months.

**Average Time To Profitability:  
Infused Product Makers  
6-12 months**

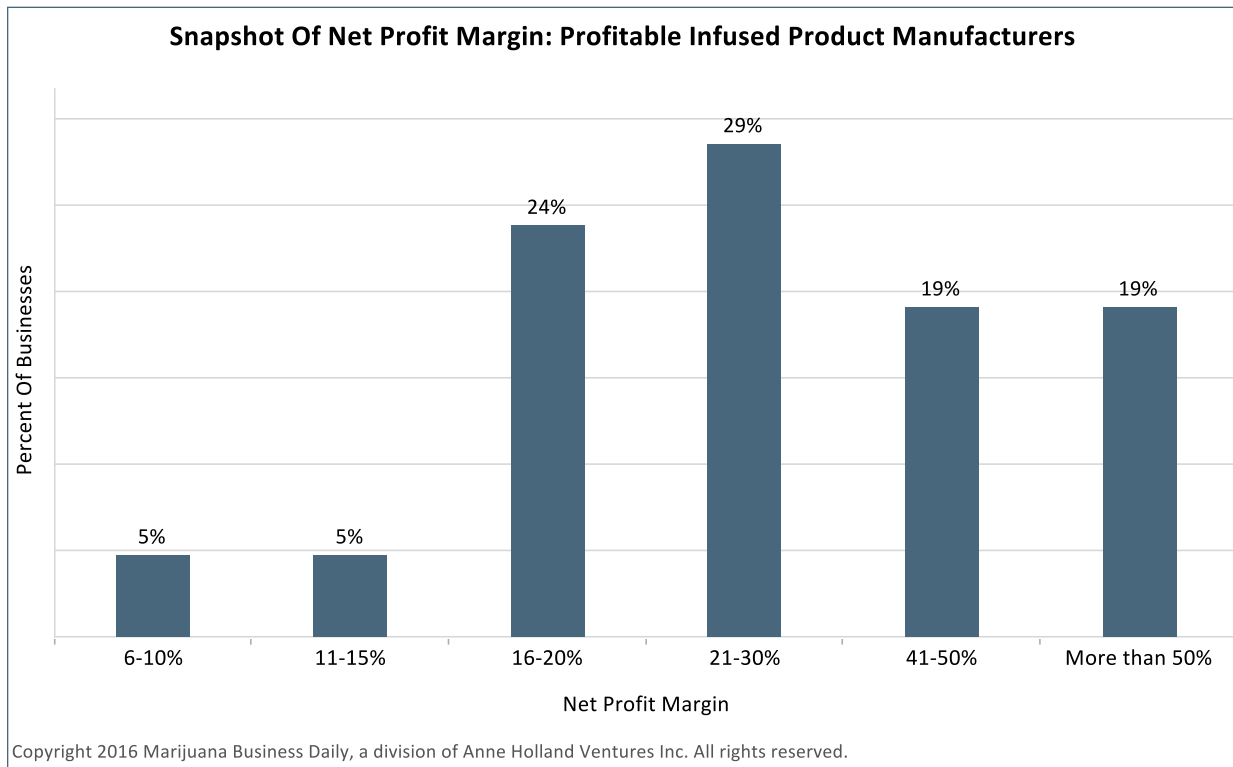
Chart 4.23: Profitability Breakdown: Infused Product Makers That Are Generating Revenue



Another indicator of the strong financial performance of infused product manufacturers once they start selling products is the portion of revenue-generating entities that are profitable: Just over half, or 52%, of these businesses earn enough revenue to exceed all expenses and taxes. And while operating in break-even territory is not exactly desirable, the data suggests this is temporary for most of these businesses, as less than 10% report current losses.

**Portion Of Infused Product Makers At  
Profitability Or Break-Even  
91%**

Chart 4.24: Snapshot Of Net Profit Margin: Profitable Infused Product Manufacturers



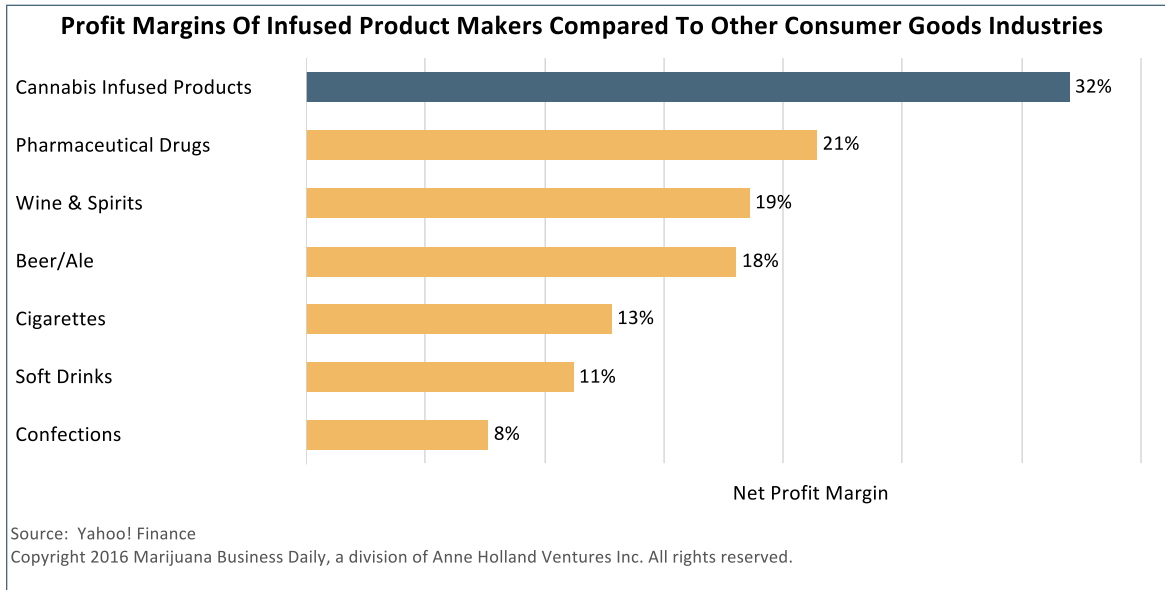
Since infused product makers (and wholesale growers) aren't subject to the same woes as medical/recreational retailers with regard to income taxes (see Chapter 1 for a more detailed discussion), their net profit margins after paying all expenses and taxes are generally quite a bit higher.

The net profit margins for profitable infused product makers are enviable. Nearly four out of 10 profitable infused product manufacturers realize net margins of over 40%.

### **Average Net Profit Margin: Infused Product Makers**

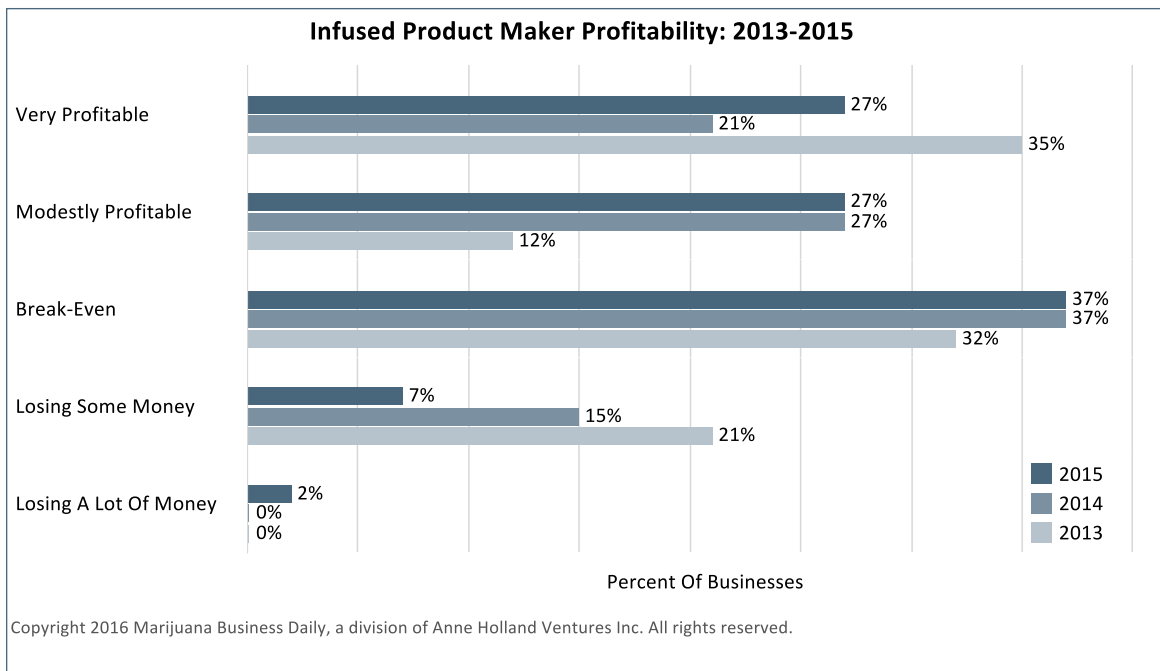
**32%**

Chart 4.25: Profit Margins Of Infused Product Makers Compared To Other Consumer Goods Industries



The infused products sector fares well from a profit margin perspective when compared to manufacturers in comparable consumer goods industries. In some cases, infused products companies exceed their peers in other industries by two or three times in this metric.

Chart 4.26: Infused Product Maker Profitability: 2013-2015



As demonstrated by the average time to profitability for infused product manufacturers, most of these businesses have been able to climb into the black fairly quickly. In just two years, the portion of infused companies that are losing some money (expenses and taxes exceed revenue by up to 25%) has dropped to nearly a third of what it was in 2013. At the same time, it's clear many more businesses have moved out of loss territory and currently generate revenue that roughly equals expenses and taxes.

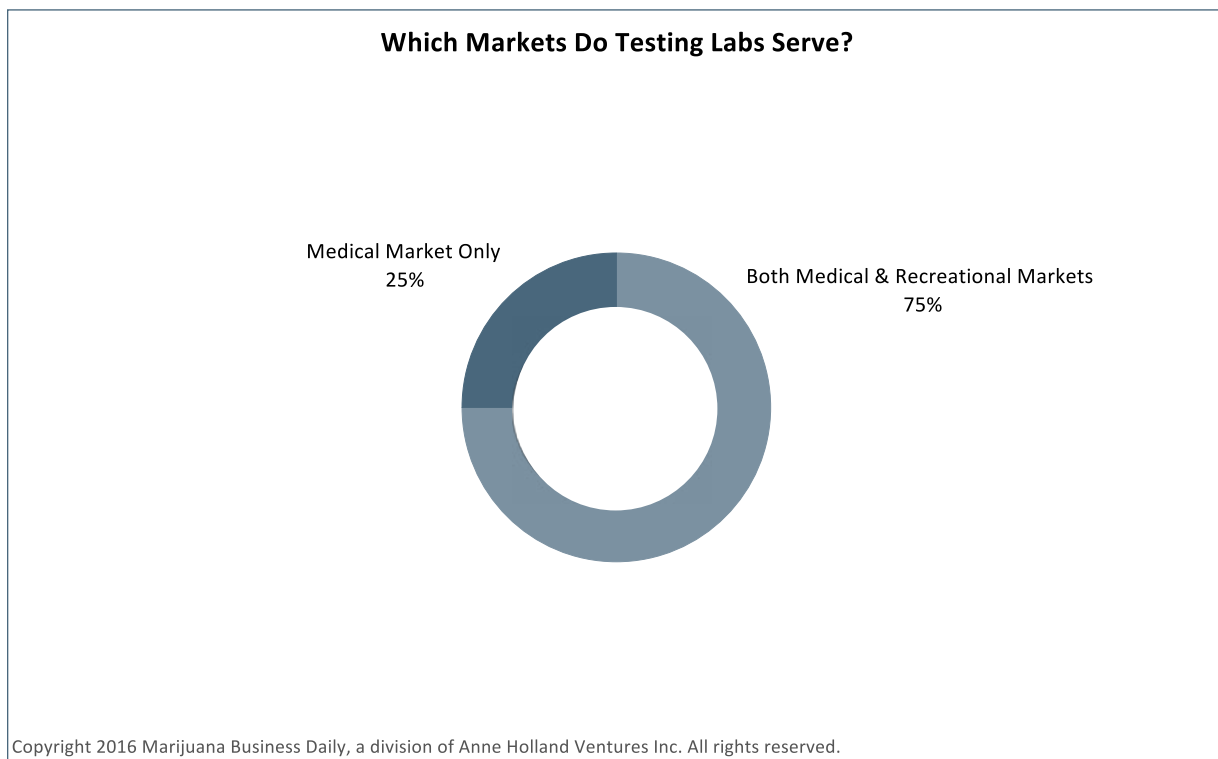
That being said, there are some signs that a shakeout has started. Businesses with inferior products or those that operate inefficiently may have been able to garner some market share in the past, but they are now starting to go under. Indeed, 2015 was the first year since 2013 in which any businesses in this sector reported severe losses.

## CANNABIS TESTING LABORATORIES

This is a unique and often overlooked plant-touching sector in the cannabis industry. Marijuana testing labs perform a critical role both with regard to consumer protection as well as helping to legitimize the industry through analytical methods that yield quantifiable insights.

Federal prohibition has strangled most potential research into both the chemical/molecular makeup of the plant itself, as well as into its therapeutic and medicinal uses and efficacy. Though testing labs are not specifically focused on addressing these issues, the body of knowledge being aggregated by these businesses and the cannabis-specific techniques they are pioneering will undoubtedly help propel the industry forward.

Chart 4.27: Which Markets Do Testing Labs Serve?

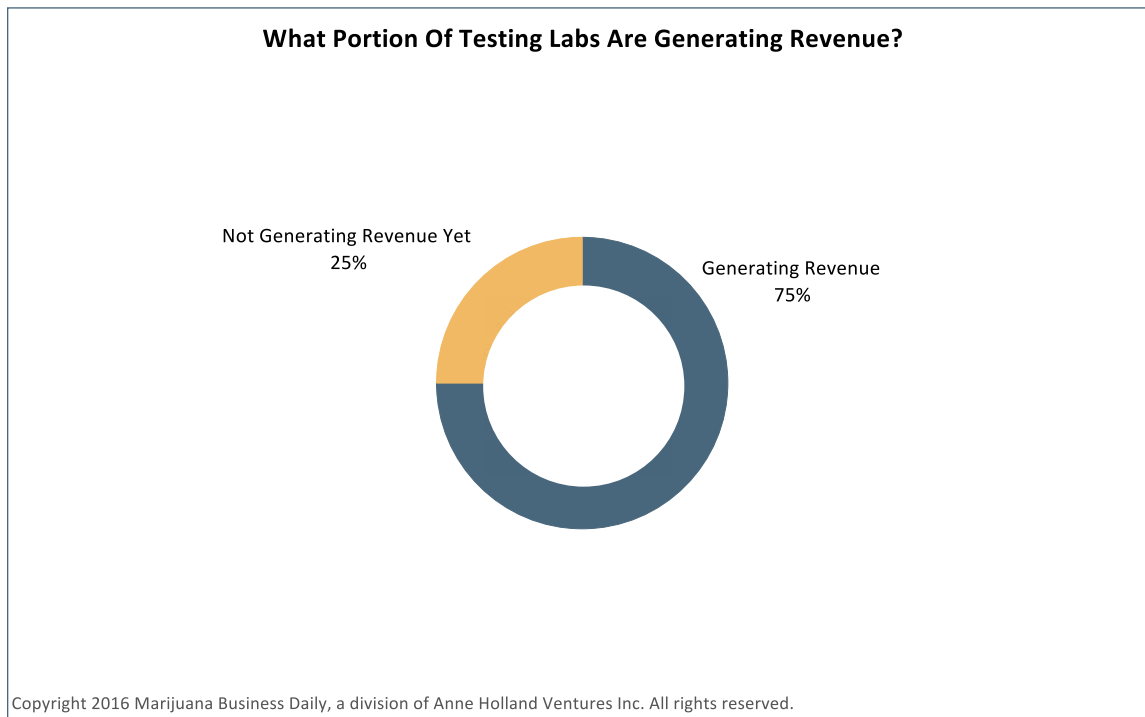


In contrast to the other plant-touching sectors, most of the businesses in this space already serve both medical and recreational markets. Since only Colorado, Oregon and Washington State allow rec sales currently, this indicates that a large number of testing labs are active in those markets. Recreational legalization has had a tremendous impact on the growth and acceleration of the testing lab sector, as lawmakers and public health authorities have been forced to address the safety of these products once they become available to the entire adult population of a state. Additionally, more labs than ever are operating in multiple states, and some likely expanded into rec markets because of the opportunities.

Testing labs are some of the most capital-intensive businesses in the whole industry, due to requirements for both sophisticated (expensive) equipment and highly educated employees that command hefty wages. Because of this, a certain portion of the cost to establish these types of businesses has remained fairly consistent over the past few years. However, testing labs have also been subject to the same increasingly strict regulatory environments and licensing requirements as other plant-touching sectors, which has driven up the startup cost for these businesses in recent years.

Testing lab executives who responded to this year's survey and launched their business in 2012 or later indicated they have incurred startup costs ranging anywhere from \$150,000 to \$4 million.

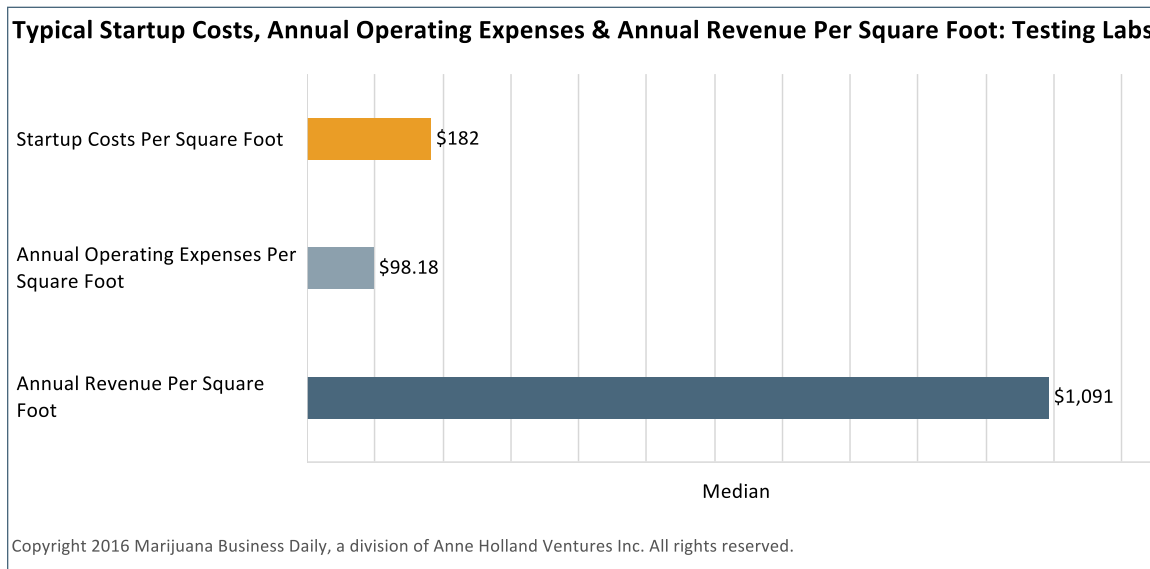
Chart 4.28: What Portion Of Testing Labs Are Generating Revenue?



The portion of labs that are currently generating revenue, 75%, is right in line with other sectors. All of the testing labs that have yet to begin generating sales were founded within the past two years, many of which will likely have revenue to report this year. Labs in some newer medical cannabis states have faced longer-than-expected wait times for the first dispensaries to open, meaning they have to sit in a holding pattern for months until they can start generating revenue.



Chart 4.29: Typical Startup Costs, Annual Operating Expenses &amp; Annual Revenue Per Square Foot: Testing Labs



The exact nature of testing labs can cover a wide spectrum, ranging from brand new businesses focused solely on the marijuana industry to established organizations that now partially serve the cannabis market. Because of this, as well as the fact that there simply aren't many labs in existence today, granular analysis and financial figures are not very meaningful in this niche.

With that in mind, some broad benchmark financial figures are still useful in quantifying this sector. On a square footage basis, testing labs are one of the most expensive businesses to establish, but then they're also fairly lucrative, with median annual revenue per square foot of nearly \$1,100, which exceeds typical operating costs per square foot by over ten times.

### Key Financial Metrics: Cannabis Testing Labs

Median Startup Cost	\$1,000,000
Median Annual Revenue	\$6,000,000
Median Annual Operating Expenses	\$2,500,000

There are a handful of publicly traded cannabis testing labs, which means their basic financial statements can be accessed by the public (though as with most stocks on the over-the-counter markets, the supporting financial statements are often unaudited). DigiPath and Pazoo are two prominent companies in the sector. Neither started out exclusively serving the cannabis industry, but they both have recently either restructured operations or simply adjusted strategy to focus on the opportunities in this space. DigiPath is now exclusively serving the marijuana industry, while Pazoo still is involved in other sectors as well.

As with most companies in this industry at present, each company's income statement line items are greatly impacted by unique circumstances. However, insights on operational performance in the early stage of launching/starting to serve the cannabis industry can nevertheless be gained from a look at these companies' income statements. It's important to keep

in mind that neither of these companies is currently profitable, and both are operating under different circumstances from labs that have achieved profitability and/or may be privately held.

Example 1: DigiPath Income Statement For Last Three Fiscal Years (Which End Sept. 30)

Period Ending	All numbers in thousands		
	9/30/2015	9/30/2014	9/30/2013
<b>Total Revenue</b>	<b>16</b>	<b>55</b>	<b>567</b>
Cost of Revenue	86	29	304
<b>Gross Profit</b>	<b>(69)</b>	<b>26</b>	<b>263</b>
Operating Expenses			
Research Development	144	23	-
Selling General and Administrative	3,228	2,339	575
Non Recurring	-	-	-
Others	-	-	-
Total Operating Expenses	-	-	-
<b>Operating Income or Loss</b>	<b>(3,441)</b>	<b>(2,336)</b>	<b>(312)</b>
Income from Continuing Operations			
Total Other Income/Expenses Net	(272)	-	-
Earnings Before Interest And Taxes	(3,714)	(2,336)	(312)
Interest Expense	-	12	18
Income Before Tax	(3,714)	(2,348)	(330)
Income Tax Expense	-	-	-
Minority Interest	-	-	-
Net Income From Continuing Ops	(3,714)	(2,348)	(330)
Non-recurring Events			
Discontinued Operations	(619)	(484)	-
Extraordinary Items	-	-	-
Effect Of Accounting Changes	-	-	-
Other Items	-	-	-
<b>Net Income</b>	<b>(4,332)</b>	<b>(2,832)</b>	<b>(330)</b>
Preferred Stock And Other Adjustments	-	-	-
<b>Net Income Applicable To Common Shares</b>	<b>(4,332)</b>	<b>(2,832)</b>	<b>(330)</b>

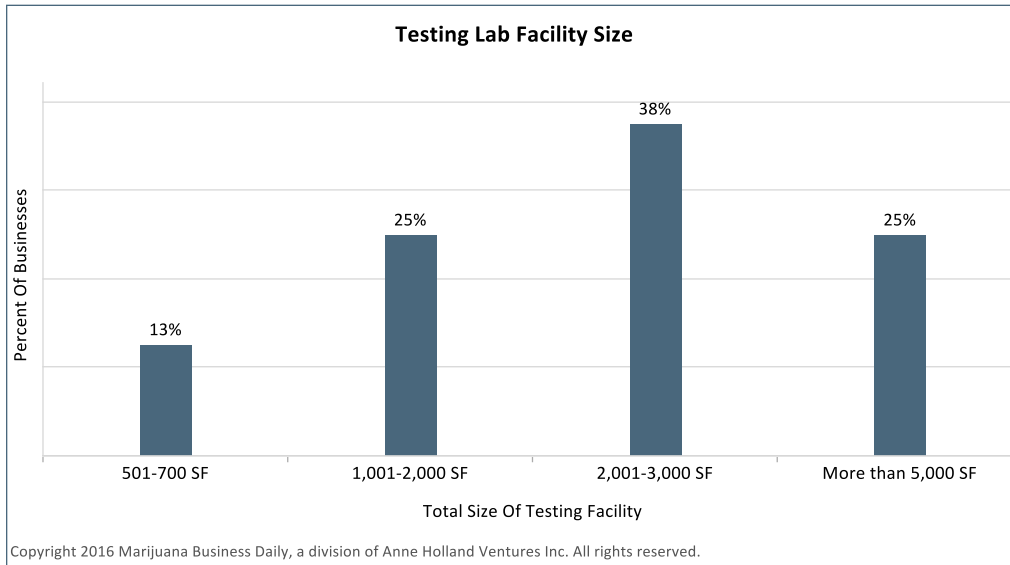
Source: Yahoo! Finance

## Example 2: Pazoo. Income Statement For Last Three Fiscal Years (Which End Dec. 31)

Period Ending	All numbers in thousands		
	12/31/2014	12/31/2013	12/31/2012
<b>Total Revenue</b>	<b>111</b>	<b>53</b>	<b>119</b>
Cost of Revenue	1	9	15
<b>Gross Profit</b>	<b>111</b>	<b>44</b>	<b>104</b>
Operating Expenses			
Research Development	-	-	-
Selling General and Administrative	2,479	579	1,672
Non Recurring	-	0	13
Others	-	-	-
Total Operating Expenses	-	-	-
<b>Operating Income or Loss</b>	<b>(2,368)</b>	<b>(536)</b>	<b>(1,581)</b>
Income from Continuing Operations			
Total Other Income/Expenses Net	(1,292)	(122)	-
Earnings Before Interest And Taxes	(3,661)	(658)	(1,581)
Interest Expense	696	0	0
Income Before Tax	(4,357)	(658)	(1,581)
Income Tax Expense	-	-	-
Minority Interest	-	-	-
Net Income From Continuing Ops	(4,900)	(658)	(1,581)
Non-recurring Events			
Discontinued Operations	-	-	-
Extraordinary Items	-	-	-
Effect Of Accounting Changes	-	-	-
Other Items	-	-	-
<b>Net Income</b>	<b>(4,900)</b>	<b>(658)</b>	<b>(1,581)</b>
Preferred Stock And Other Adjustments	(105)	(67)	(39)
<b>Net Income Applicable To Common Shares</b>	<b>(5,005)</b>	<b>(724)</b>	<b>(1,620)</b>

Source: Yahoo! Finance

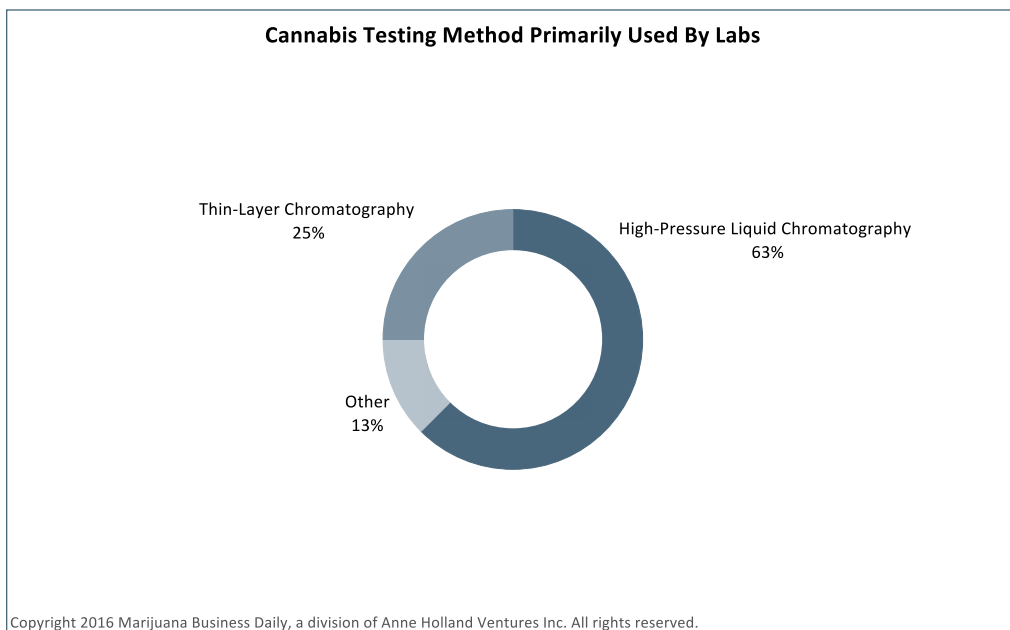
Chart 4.30: Testing Lab Facility Size



When compared to cultivators and infused product makers, testing labs generally have much smaller facilities that are more similar in size to the typical retail square footage of a dispensary/store. The ability for these businesses to operate in smaller spaces combined with the general lack of challenges other plant-touching companies face when trying to find commercial space means labs have quite a few more options available with regard to where operations will be located.

### Average Cannabis Testing Lab Facility Size 2,800 Square Feet

Chart 4.31: Cannabis Testing Method Primarily Used By Labs

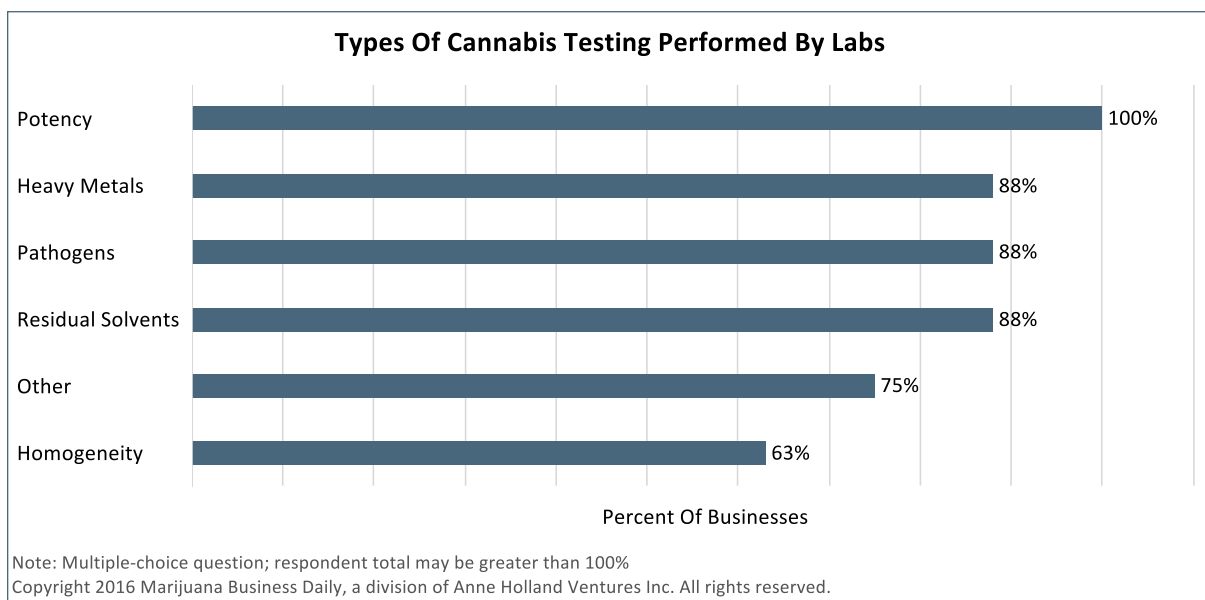


The breakout of testing methods primarily used by labs for cannabis has changed significantly since last year. While high-pressure liquid chromatography is still the most prevalent technique, the portion of companies that utilizes it has decreased to 63% - a massive dropoff from 91% a year ago.

Additionally, last year 9% of labs indicated they used gas chromatography and none appeared to be using thin-layer chromatography. In a sign the businesses in this sector are evolving their techniques, there appears to have been a sizeable adoption of thin-layer chromatography in lieu of gas chromatography within the past year, as well as the adoption of yet a fourth technique by 13% of labs during that time. The overall shift is likely due to the wave of startup labs last year in Nevada, Illinois and other new MMJ states.

Most businesses in this space consider their specific techniques and procedures to be proprietary, which has generated some ire in those who believe sharing this knowledge would benefit the entire industry and patient/customer base. Only time will reveal whether this remains an area of protected intellectual property, or whether it becomes a shared body of knowledge.

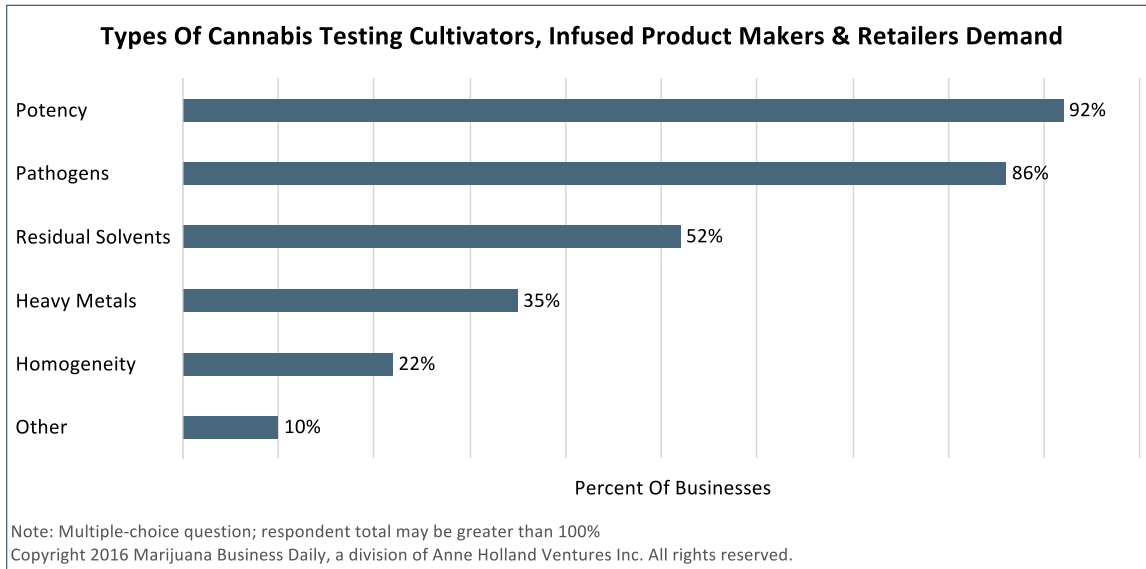
Chart 4.32: Types Of Cannabis Testing Performed By Labs



Potency testing for the concentration of key cannabinoids is by far the most common baseline of cannabis testing, as demonstrated by the fact that all marijuana labs currently conduct this type of test. It's also encouraging to note nearly nine out of 10 labs can also test for heavy metals, pathogens and residual solvents, as those categories encapsulate most of the issues that can present health risks to consumers.

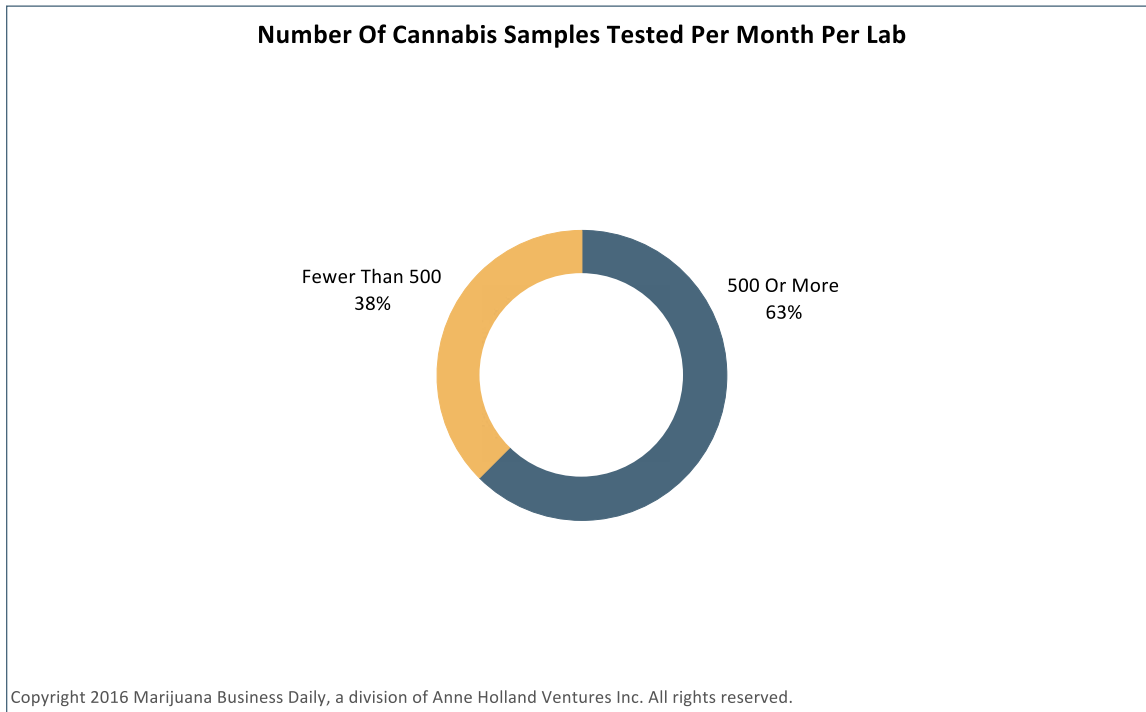
Homogeneity testing is starting to catch on, though this type of test will only be required by infused product manufacturers, limiting the client base for labs that can provide this particular service. Three-quarters of testing labs provide other types of testing (primarily for terpenes, moisture and/or mycotoxins), indicating that this part of the industry is finally offering an extensive variety of options.

Chart 4.33: Types Of Cannabis Testing Cultivators, Infused Product Makers & Retailers Demand



The fact that a larger portion of labs offer each of these types of testing than the portion of plant-touching companies demanding them is another sign of the relatively lower maturation of the testing sector at present. Labs are in the fortunate position of having services to offer cannabis companies, but the knowledge of and demand (whether driven by legal requirements or voluntary adoption) for testing is lagging behind labs’ capabilities at present. This suggests there are quite a few opportunities for individual testing companies or trade groups to educate the industry on this important topic.

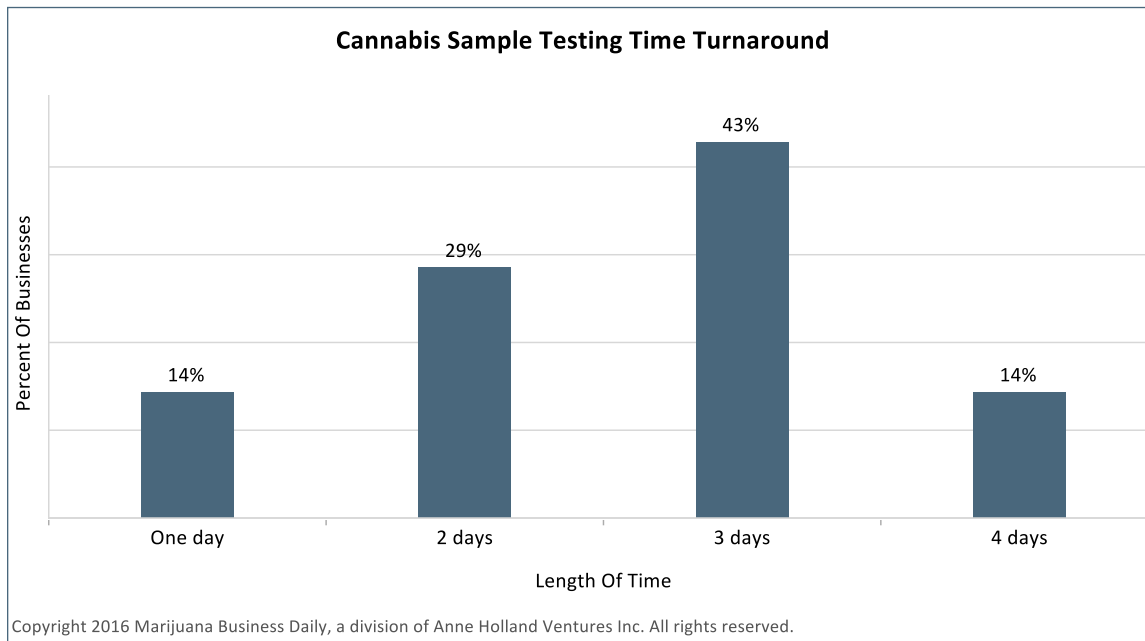
Chart 4.34: Number Of Cannabis Samples Tested Per Month Per Lab



A little over three out of five labs are cranking out at least 500 cannabis sample tests each month. For now, businesses with that level of throughput are primarily concentrated in Colorado, Oregon and Washington State where cannabis companies are quite numerous, lab testing is required and both medical and recreational markets are operational.

Labs that serve smaller markets with only a handful or a few dozen possible clients will likely never reach that level of output for cannabis testing because the need simply isn't there.

Chart 4.35: Cannabis Sample Testing Time Turnaround

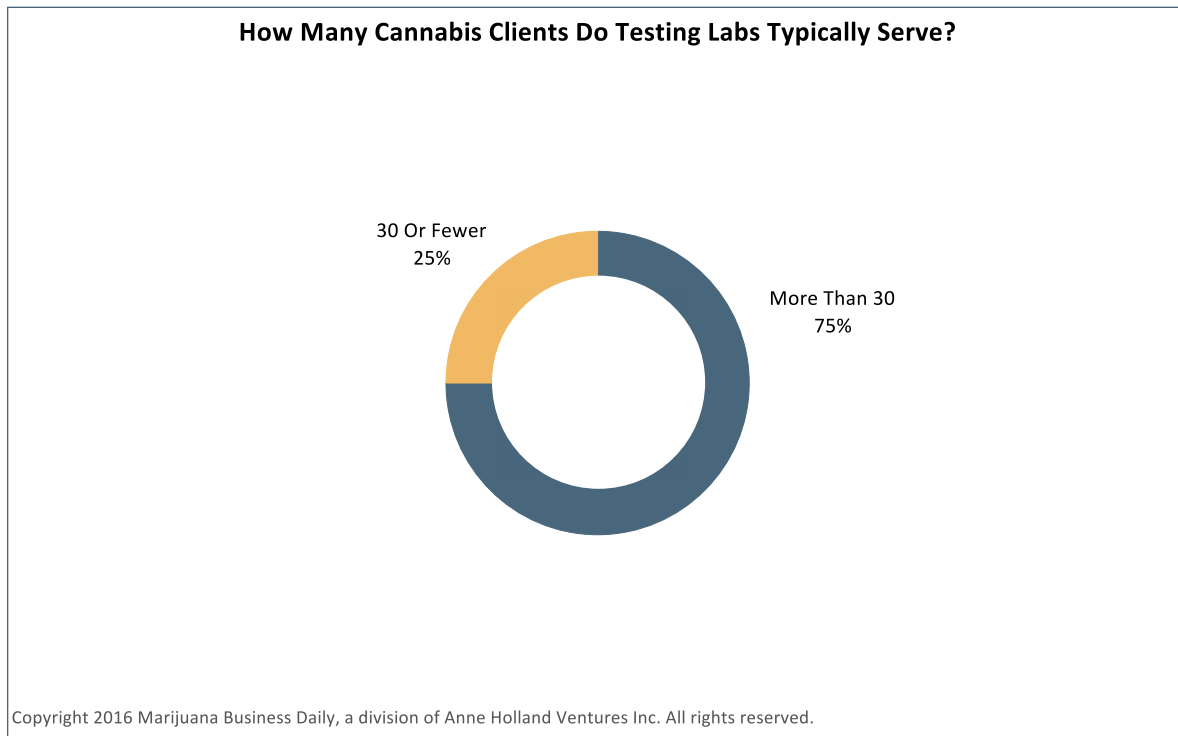


No testing labs currently take longer than four days to perform cannabis testing and provide results. And while a healthy 14% of these businesses can provide same-day results, nearly three-quarters of labs have two or three day turnarounds on these tests. Entrepreneurs at plant-touching companies that need to order testing on each batch, harvest, etc. need to build that lead time into their overall distribution plan.

### Average Lab Turnaround Time On Cannabis Samples

**3 Days**

Chart 4.36: How Many Cannabis Clients Do Testing Labs Typically Serve?



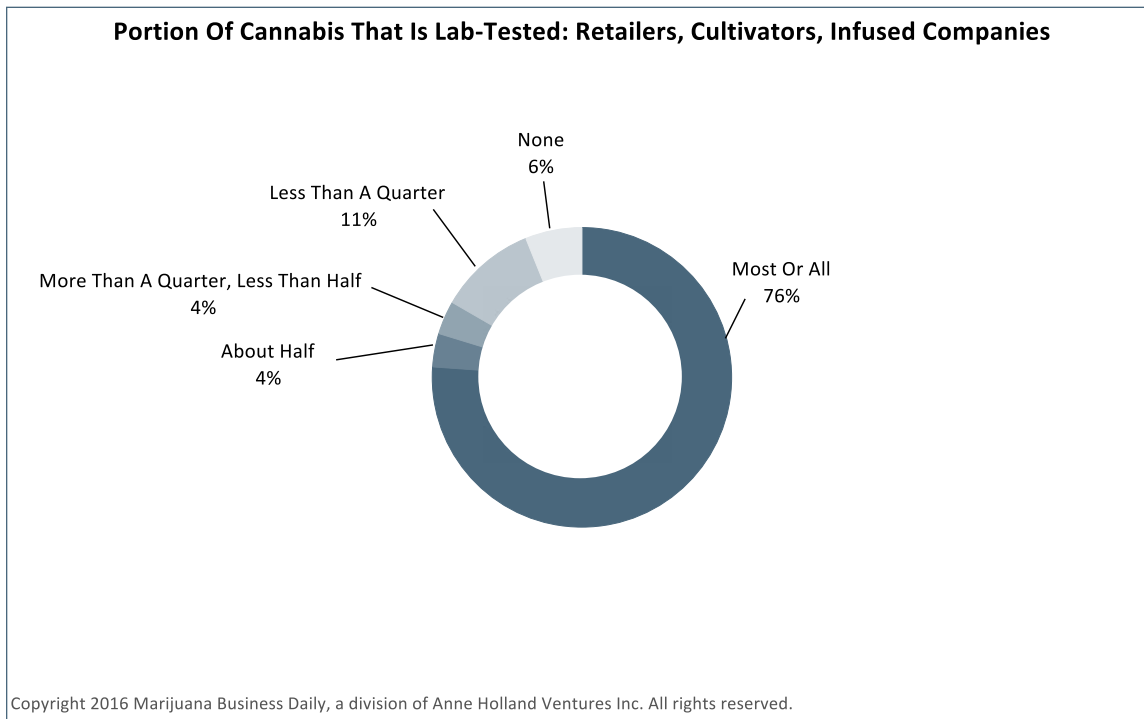
The large portion of testing labs that serve more than 30 cannabis clients again reflects the concentration of these businesses at present in Colorado, Washington State and Oregon where the markets are robust with literally hundreds of potential clients for each lab.

Most cannabis testing lab owners and scientists are passionate about developing standardized techniques for the industry and helping to legitimize it by bringing guidelines and frameworks from other industries to bear on marijuana.

To that end, all of the testing lab professionals that responded to this year's executive survey indicated they have adopted frameworks such as Good Laboratory Practices (GLP) and/or ISO 17025. Still, it should be noted that some labs in existence today – particularly in unregulated markets like California – might not have adopted such standards.



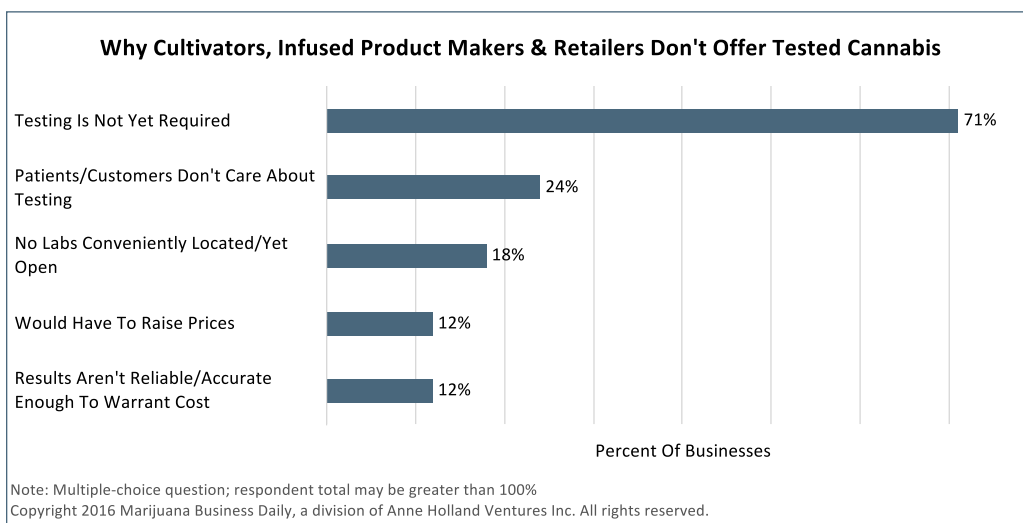
Chart 4.37: Portion Of Cannabis That Is Lab-Tested: Retailers, Cultivators, Infused Companies



Primarily driven by laws and regulations, three-quarters of all retailers, infused product makers and wholesale cultivators have most, if not all, of their cannabis lab tested. In spite of the widely varying state laws when it comes to medical and recreational cannabis, one of the few consistent aspects of the laws passed in recent years is a requirement for lab testing.

As more states pass legalization laws and some of the older ones get serious about robust regulatory frameworks, the opportunities for testing labs will continue to increase, and the portion of businesses in a given market that don't obtain lab testing will significantly decrease or disappear entirely.

Chart 4.38: Why Cultivators, Infused Product Makers & Retailers Don't Offer Tested Cannabis



In further support of the trajectory toward increasing opportunities for testing labs, 71% of retailers, infused product makers and wholesale growers that don't currently offer tested marijuana only refrain from doing so because it's not required. There is strong representation of California businesses among this contingent, which will be subject to regulations that mandate testing within the next two years and will result in one of, if not the, largest potential client bases in the country for testing labs.

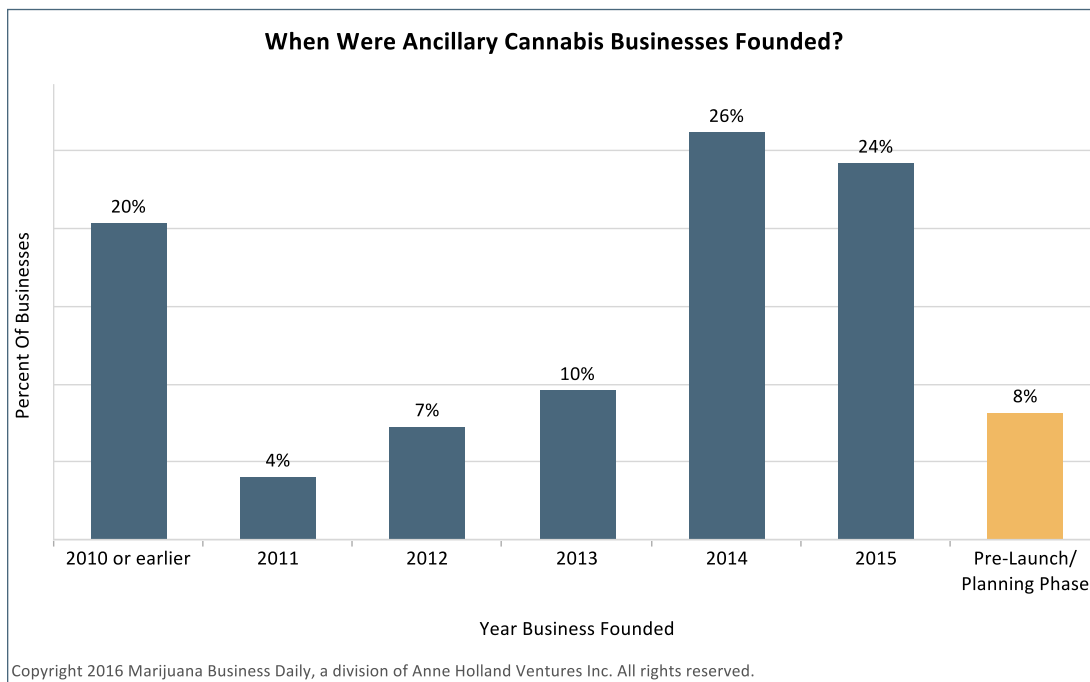
The 12% of companies that don't currently lab test their cannabis because they believe current techniques and methods are not reliable enough to warrant the cost demonstrates the continued levels of uncertainty around and within the testing lab sector. A few industry groups have undertaken efforts to address these items, but the timeline in which they will be resolved for the sector – and therefore industry as a whole – is unknown at this time.

## ANCILLARY COMPANIES

There's an old saying that the best products to sell in the middle of a gold rush are picks and shovels. It essentially means that the biggest opportunities are tied to serving the people and companies at the center of the action, rather than jumping in directly. This same adage holds true in the cannabis industry, as demonstrated by the proliferation of ancillary services, technology and products companies that have sprung up to solve problems for and address the needs of the plant-touching sectors.

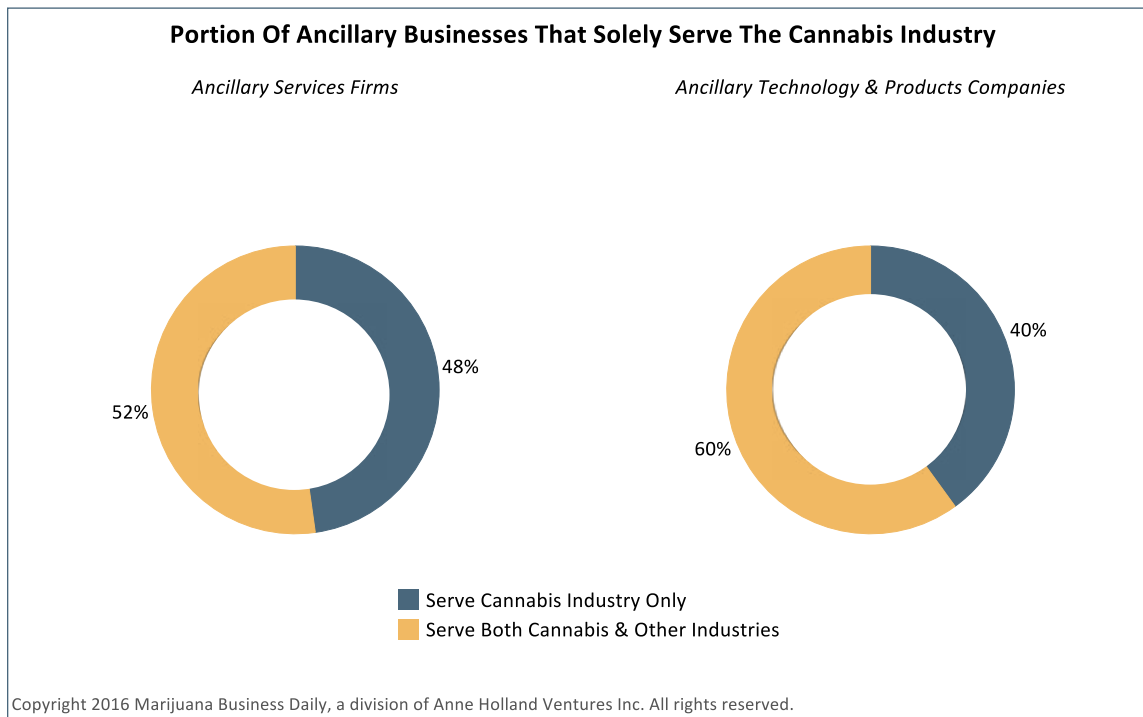
In this regard, the ancillary sectors cover a gamut of company types – from brand new enterprises that exclusively serve the cannabis industry, to large and older companies that found success in other industries and are now dipping their toes into the business of marijuana. Because of these circumstances, it's often not meaningful to compare detailed metrics for these businesses. But as with testing labs, certain helpful benchmarks can be established and evaluated.

Chart 4.39: When Were Ancillary Cannabis Businesses Founded?



As plant-touching companies go, so do ancillaries. The distribution of the launch date for ancillary firms very closely mirrors that of the plant-touching sectors, demonstrating the symbiotic relationship between the two. Half of all ancillary companies in existence today were launched just within the past two years, when the political and operational environment for the whole industry improved significantly compared to earlier years.

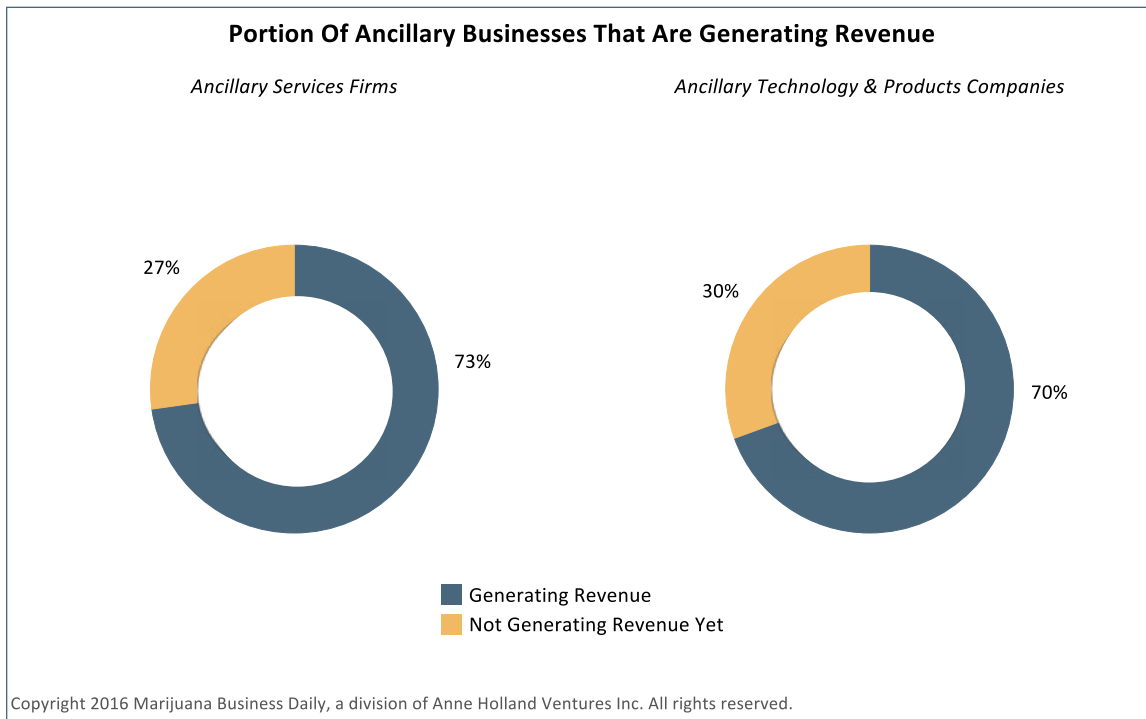
Chart 4.40: Portion Of Ancillary Businesses That Solely Serve The Cannabis Industry



A majority of companies in both ancillary sectors still serve other industries in addition to cannabis. This is driven in part by the fact that many ancillary businesses have simply brought expertise and knowledge from other industries to bear on cannabis. Scores of companies that serve other industries such as agriculture, biotechnology and alcohol in particular have found opportunities in bringing similar concepts and techniques to the marijuana space.

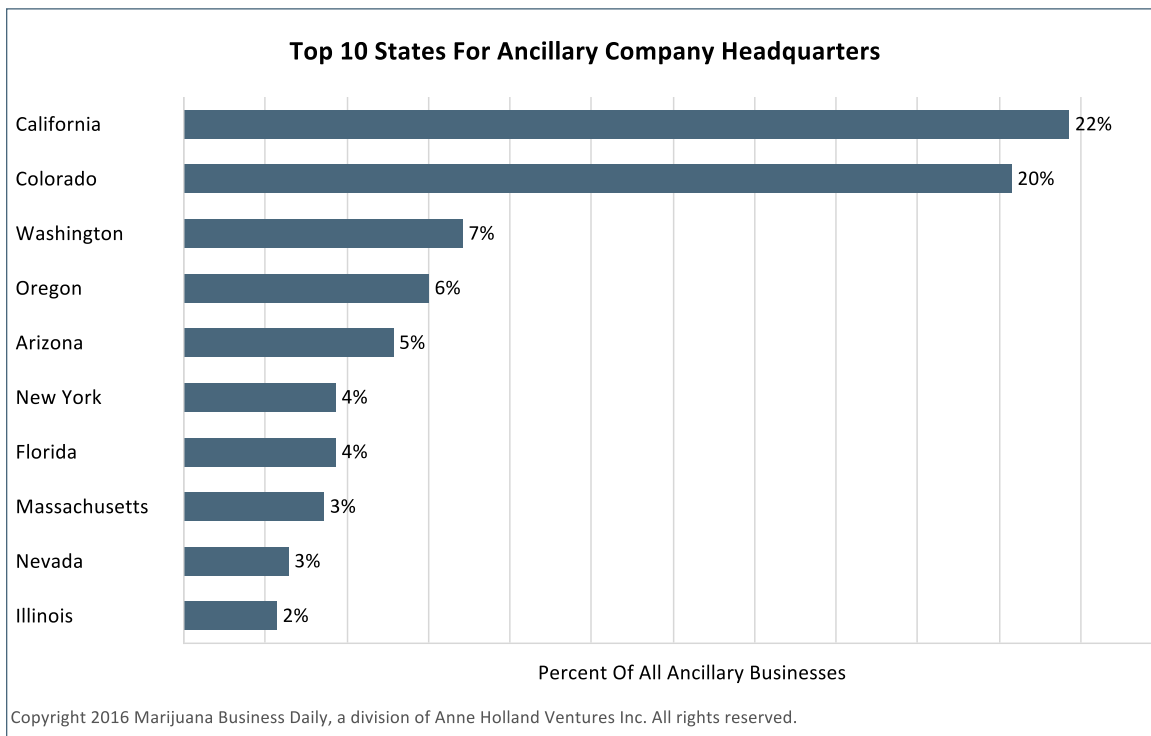
That being said, just 37% of ancillary businesses founded in 2013 or earlier exclusively serve the cannabis industry vs. 53% of ancillary firms that launched within the past two years. This indicates there are growing opportunities for cannabis-specific services, products and technology as businesses mature and tackle new challenges.

Chart 4.41: Portion Of Ancillary Businesses That Are Generating Revenue



The portion of ancillary businesses that have launched but are not yet generating revenue is right in line with all other sectors, reflecting the large contingent of early-stage companies in the entire industry.

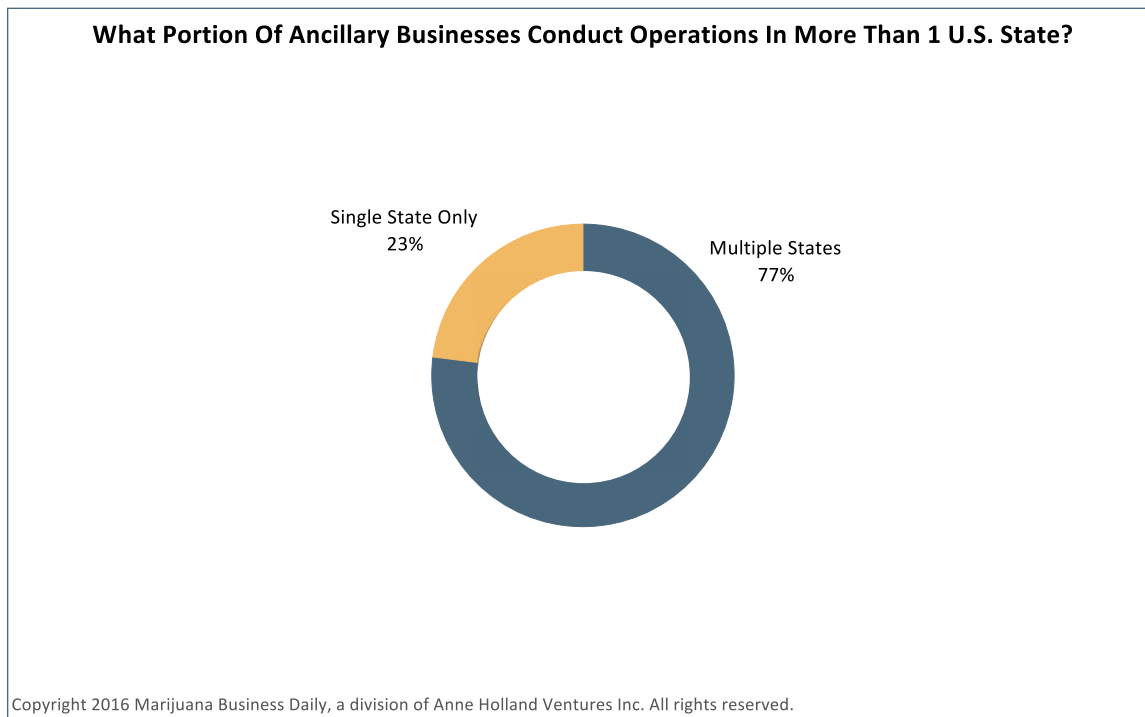
Chart 4.42: Top 10 States For Ancillary Company Headquarters



Though ancillary businesses can be headquartered anywhere in the world since they don't touch the plant, there is clearly value in being close to the customer. These firms are therefore largely located in states with cannabis retailers, grows and infused products companies, though a handful are based in states that have not yet legalized medical or recreational marijuana. The cannabis industry is still in some cases a tight-knit community, and new or growing ancillary companies often find that it's immensely beneficial to operate in a state that has legalized.

Additionally, in a sign of the growing international interest in the U.S. cannabis industry, 6% of all ancillary companies serving the U.S. market are headquartered in other countries.

Chart 4.43: What Portion Of Ancillary Businesses Conduct Operations In More Than 1 U.S. State?



Ancillary firms are the clear leaders in serving multiple markets, as they don't face the same regulatory and legal restrictions as plant-touching companies. Over three-quarters of ancillary companies operate in multiple states, which demonstrates the tremendous potential to scale these businesses.

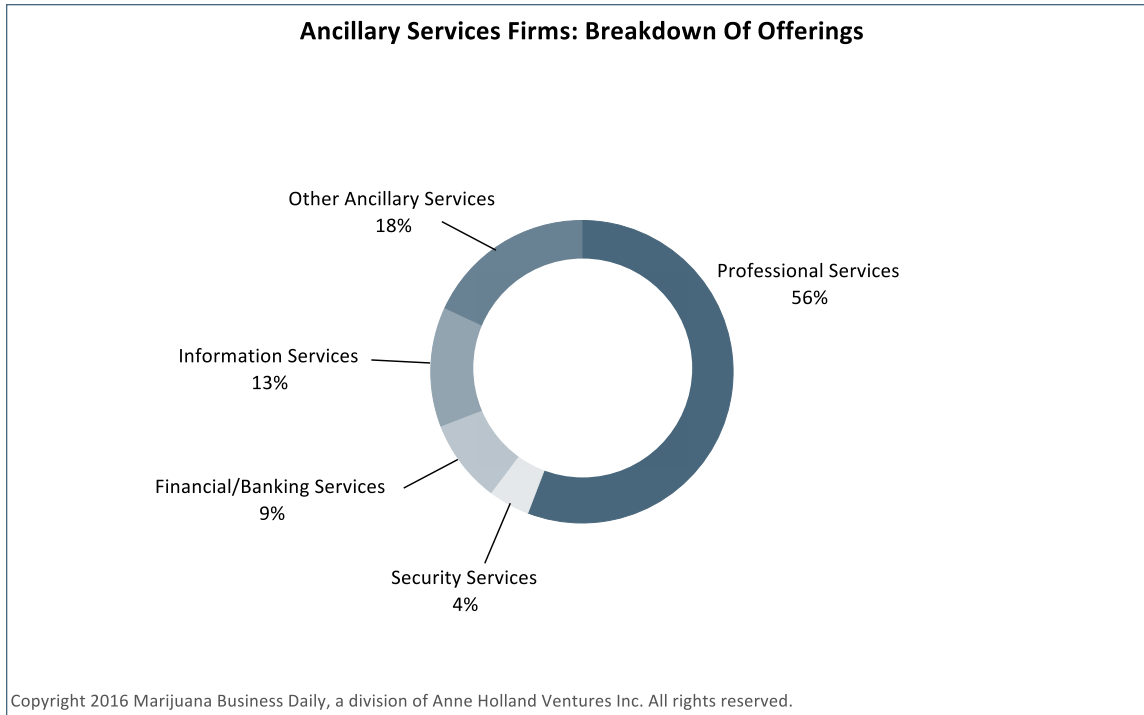
The next two sections of this chapter will zero in on the two main sub-sectors of the ancillary industry: companies that provide services and firms that provide products/technology.

## Ancillary Services Firms

The types of businesses/professionals in this particular sector are wide-ranging, including any company that provides some type of service to retailers, growers, infused products companies, testing labs, other ancillary businesses or patients and customers. Examples include, but are not limited to:

Law firms	Accounting/tax practices
Business consultants	Training/education companies
Public relations firms	Marketing/advertising agencies
Security services/consulting companies	Alternate payment processing providers
News/media organizations	Conference & expo companies

Chart 4.44: Ancillary Services Firms: Breakdown Of Offerings

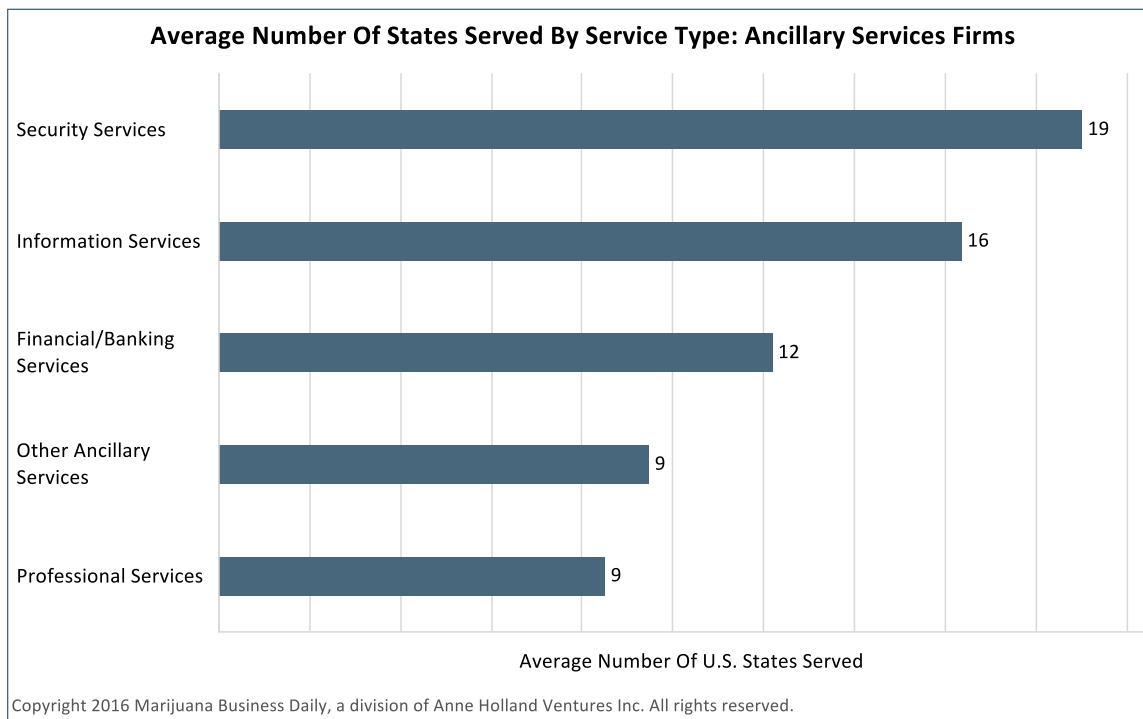


The diversity of business types in this sector makes it difficult to group companies together for data analysis purposes. But overall, firms in this space can be classified as offering professional, information, financial/banking, security or “other” services.

Just over half of ancillary services firms fall under the professional services umbrella, which notably includes lawyers, consultants and accountants. It’s no surprise, as these are services almost every type of cannabis company will eventually need to some degree.

It’s interesting to note that 9% of ancillary services firms are devoted to solving or at least mitigating banking challenges. This should provide some hope to both entrepreneurs and investors that the industry can eventually come up with workable solutions to this issue, though many companies currently offering banking-type services are still trying to gain traction.

Chart 4.45: Average Number Of States Served By Service Type: Ancillary Services Firms



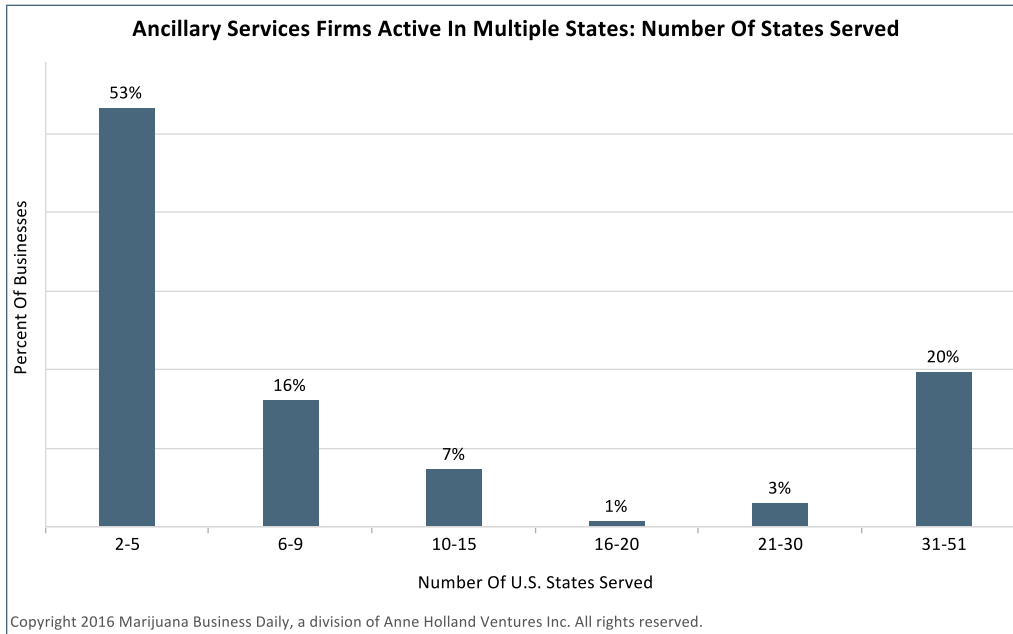
Firms that provide security services such as armed guards, secure transport and consulting have scaled their footprint quicker than any other business type in the sector. Security companies serve an average of 19 states, meaning most are essentially operating in every viable medical and recreational marijuana market.

A huge driving force behind this is the high value of the inventory and the cash-intensive nature of the industry. Additionally, security is another one of the few operational areas that is pretty consistent among different states, as most have mandated strict safety and surveillance requirements for plant-touching companies.

Information services companies – which provide a wide range of offerings such as dispensary locator/review websites, databases of strain properties and reviews, industry-specific certifications and industry trade publications – serve broad needs within the industry and generally provide services that are useful to entrepreneurs operating in any state, as seen with an average of 16 U.S. states served by these entities.

Other subsectors – particularly professional services – can only serve as many states as they have experts on staff to do so, limiting the geographic footprint of these firms.

Chart 4.46: Ancillary Services Firms Active In Multiple States: Number Of States Served

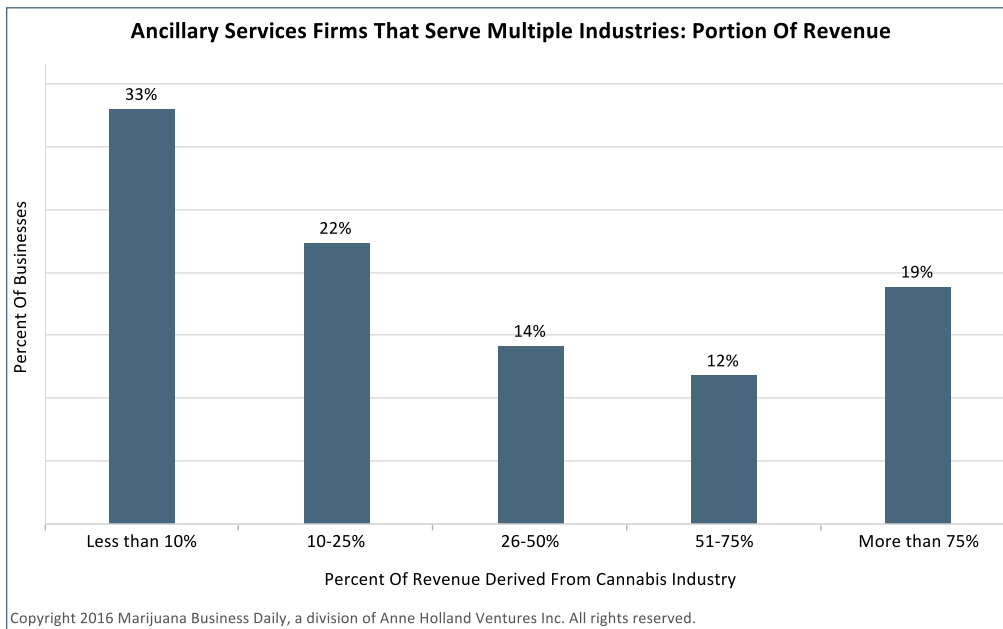


The fact that ancillary services firm can generally scale to a large degree and quickly – yet over half of them are in five or fewer states at present – is indicative of the fact that many of the businesses in this space are young. As the addressable market expands for this sector with new legal states in the coming years, these figures will likely change quite a bit.

### Average Number Of U.S. States Served By Ancillary Services Firms

13

Chart 4.47: Ancillary Services Firms That Serve Multiple Industries: Portion Of Revenue

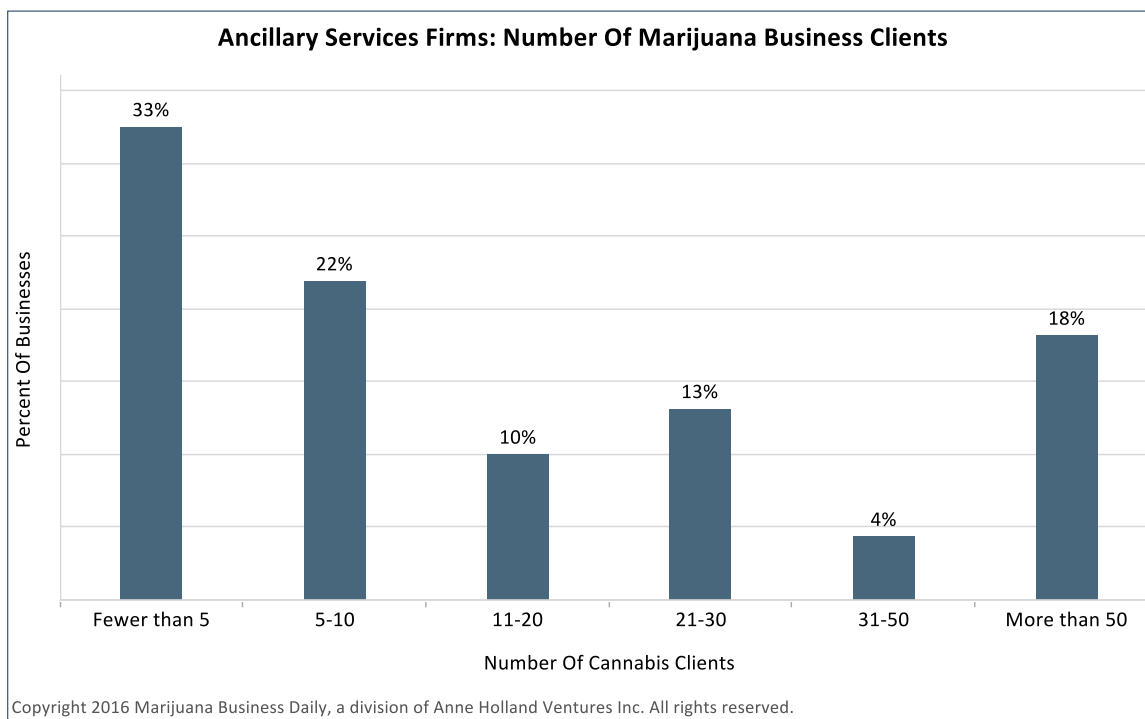




The large portion of ancillary services companies founded within the past two years that exclusively serve the cannabis industry is an encouraging sign of growth in this sector. But it's worth noting that among companies serving cannabis businesses and other industries, over half are still only deriving 25% or less of their total revenue from the marijuana space.

And while an encouraging one out of five ancillary services firms derive more than three-quarters of their revenue from serving cannabis clients, many businesses in this space are still taking conservative approaches to their overall involvement in the marijuana industry. This, too, will change though as more states legalize medical and/or recreational cannabis and as professionals and companies from other industries become more comfortable with the marijuana industry.

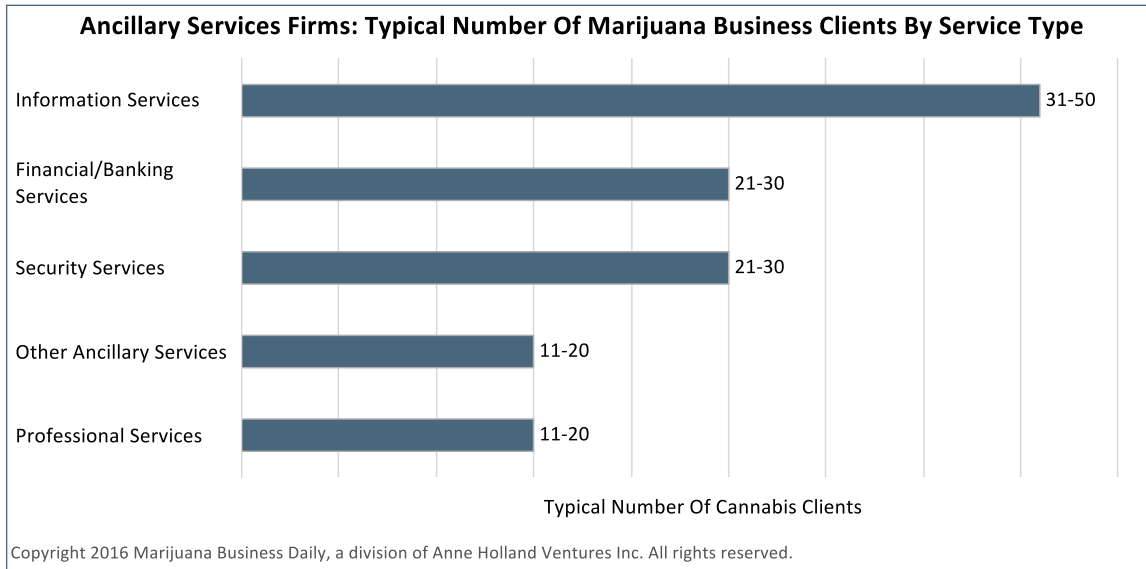
Chart 4.48: Ancillary Services Firms: Number Of Marijuana Business Clients



A notable 18% of companies in this space are already serving over 50 cannabis business clients. Still, most ancillary services firms – by far – are working with a small portfolio of cannabis customers as they scale their operations.

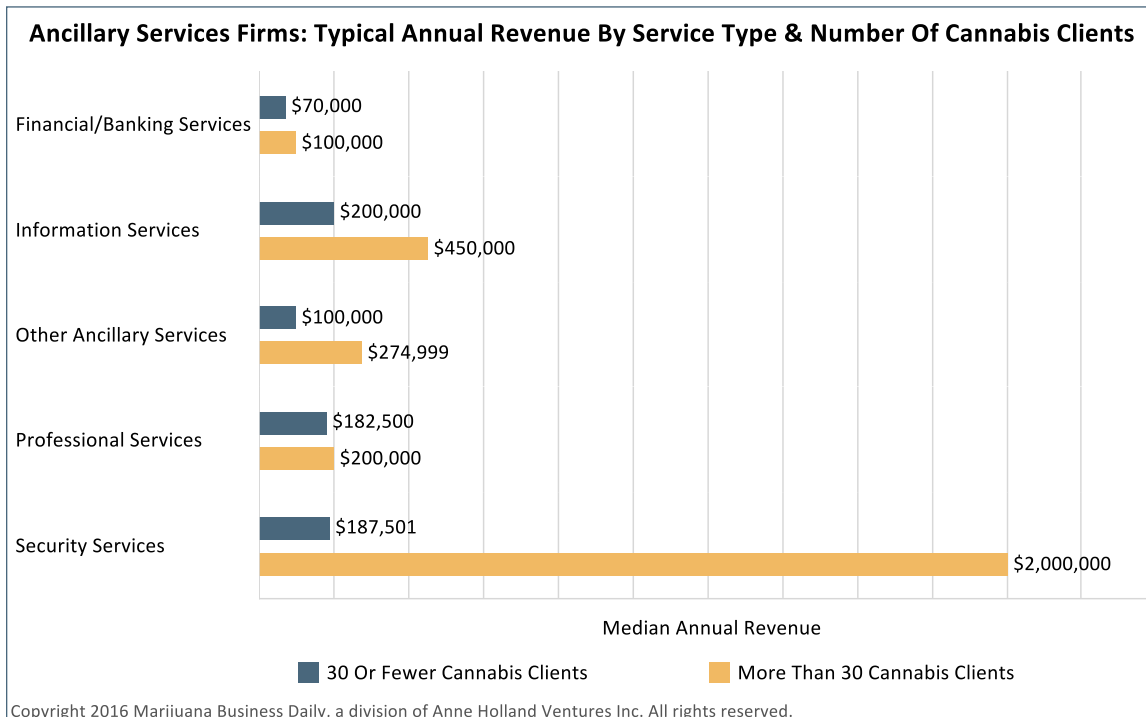
### Average Number Of Cannabis Business Clients: Ancillary Services Firms

Chart 4.49: Ancillary Services Firms: Typical Number Of Marijuana Business Clients By Service Type



Since security services firms have the biggest geographic footprint on average, yet don't serve the largest number of cannabis business clients, this suggests those companies are likely landing contracts with a few businesses in a large number of states. By comparison, information services companies operate in fewer states but serve more clients within each one.

Chart 4.50: Ancillary Services Firms: Typical Annual Revenue By Service Type & Number Of Cannabis Clients

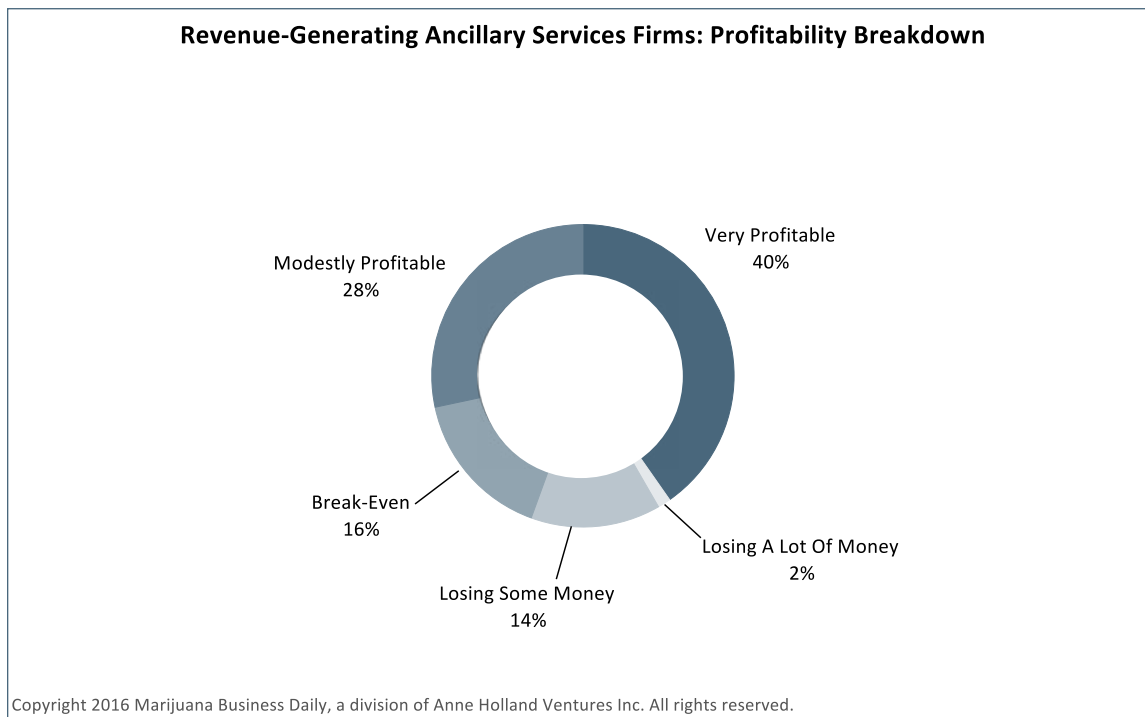


The figures in this chart also suggest that some of the biggest security services firms, which are the least numerous among all ancillary services companies, are landing large contracts. Firms that

provide security services to more than 30 marijuana clients report median annual revenue of \$2 million.

Similar to the plant-touching sectors, however, there is room for all types and sizes of ancillary services companies – as seen in particular with financial/banking services and information services firms, which are on the lower end of the spectrum of annual revenue. However, it's interesting to note that for financial/banking and professional services firms, incremental revenue earned on each client does not scale up the way it does for other subsectors. That's largely reflective of the nature of these types of businesses, which are heavily dependent on human capital and labor.

Chart 4.51: Revenue-Generating Ancillary Services Firms: Profitability Breakdown

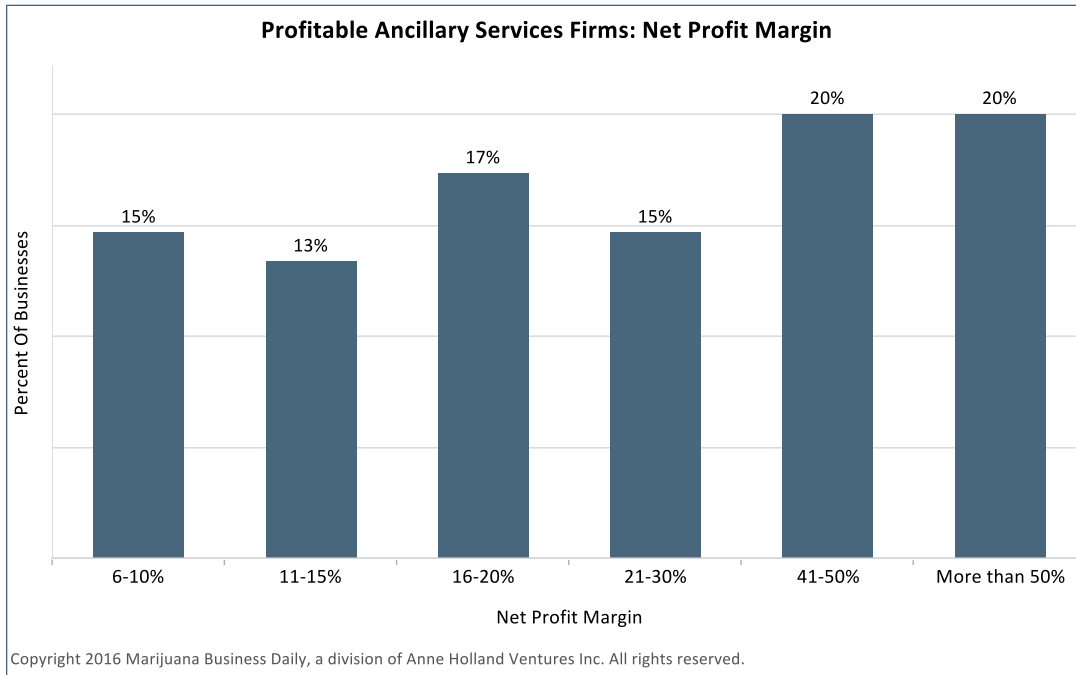


Ancillary services companies are by and large doing well at present, with nearly 70% reporting they are earning a net profit.

### Portion Of Ancillary Services Firms That Are Profitable Or Break-Even

**84%**

Chart 4.52: Profitable Ancillary Services Firms: Net Profit Margin



Despite the fact that roughly 15% of ancillary services companies report losing money at present, the picture is extremely bright for those that are profitable. Just over half, or 55%, of profitable ancillary services firms report net profit margins of at least 21%, with a full one out of five reporting margins in excess of 50%.

### Ancillary Services Firms Average Net Profit Margin

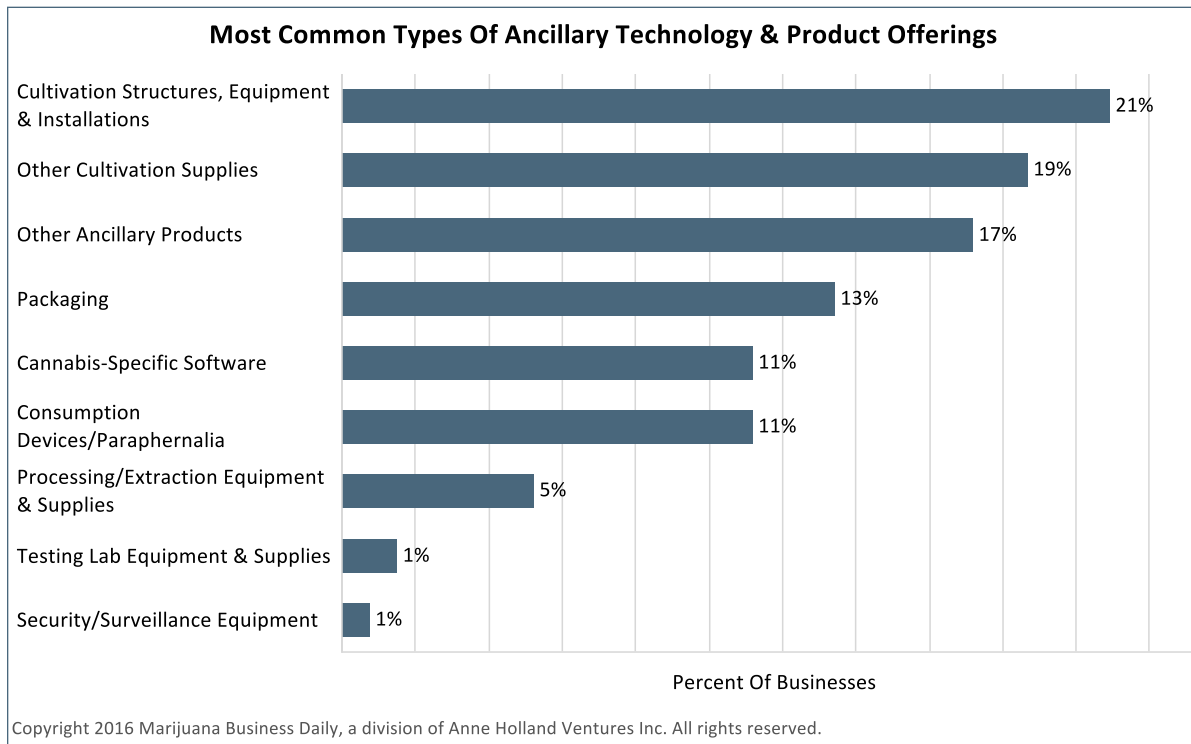
**30%**

### Ancillary Technology & Products Companies

Similar to ancillary services, businesses providing technology and products to the cannabis industry and patients/consumers provide a wide range of offerings. Though many of these businesses provide solutions that are cannabis-specific, others have simply seen the opportunity to sell their existing products/solutions in the marijuana space. This is especially true of agricultural and hydroponics companies, many of which have existed for decades and are now bringing valuable expertise to the cannabis cultivation space. Examples of offerings/technology in this sector include, but are not limited to:

Cultivation lighting/other supplies	Cannabis packaging
Seed-to-sale software	Consumption devices (e.g., vaporizers)
Greenhouse/cultivation structures	Automated nutrient delivery systems
Surveillance cameras/equipment	Payment kiosks
Extraction equipment/supplies	Testing lab equipment/supplies

Chart 4.53: Most Common Types Of Ancillary Technology & Product Offerings



Nearly 40% of companies in this space provide solutions to commercial cultivators. The reason for low representation of companies that provide security, testing lab and extraction equipment is likely because these are existing technologies and products that can be directly utilized in the cannabis space – so many of those companies may not even consider the marijuana industry a target market.

Chart 4.54: Types Of Packaging Solutions Typically Offered By Packaging Companies

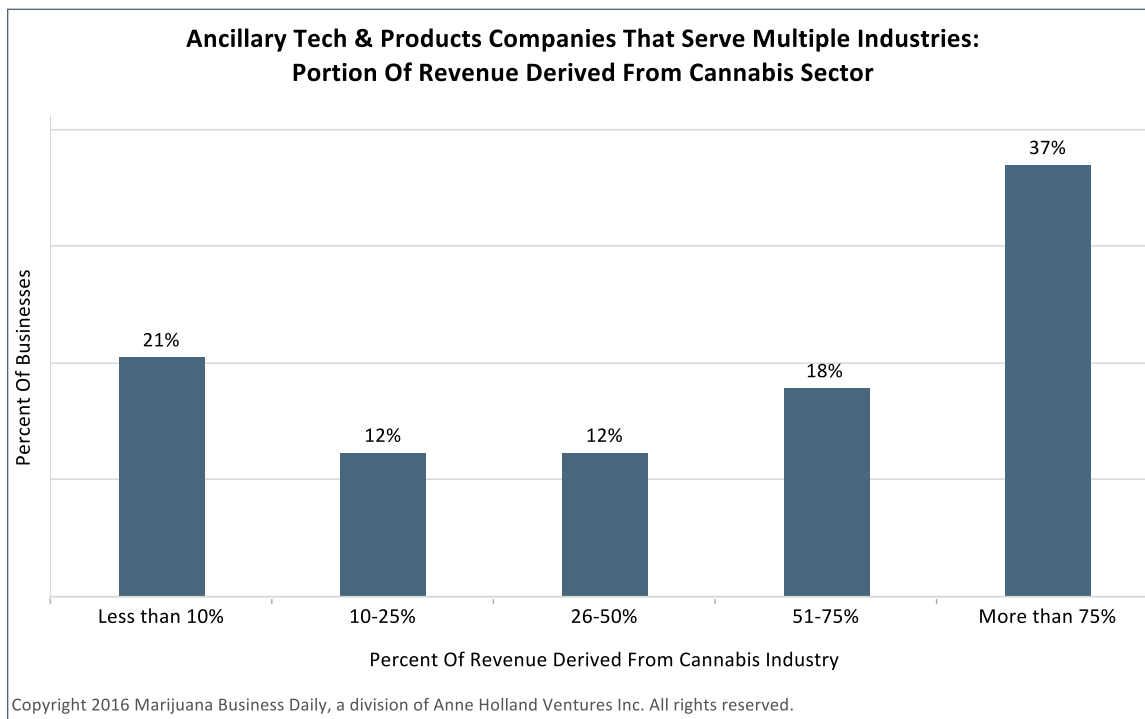


Packaging specifically is an area of great interest in the cannabis industry because of the increasingly onerous requirements for marijuana to be in child-resistant packaging that must also be labelled with a host of mandatory disclosures. Additionally, packaging offers a critical outlet to develop and foster a brand through a unique and consistent look and feel, which is increasingly important as competition grows tight in the industry.

In the spirit of the unique nature of the industry and the entrepreneurs behind it, the most popular type of solution is fully customizable packages and labels. Roughly 56% of packaging companies offer those types of solutions – twice the size of the portion that offer standard containers meant for custom third-party labels.

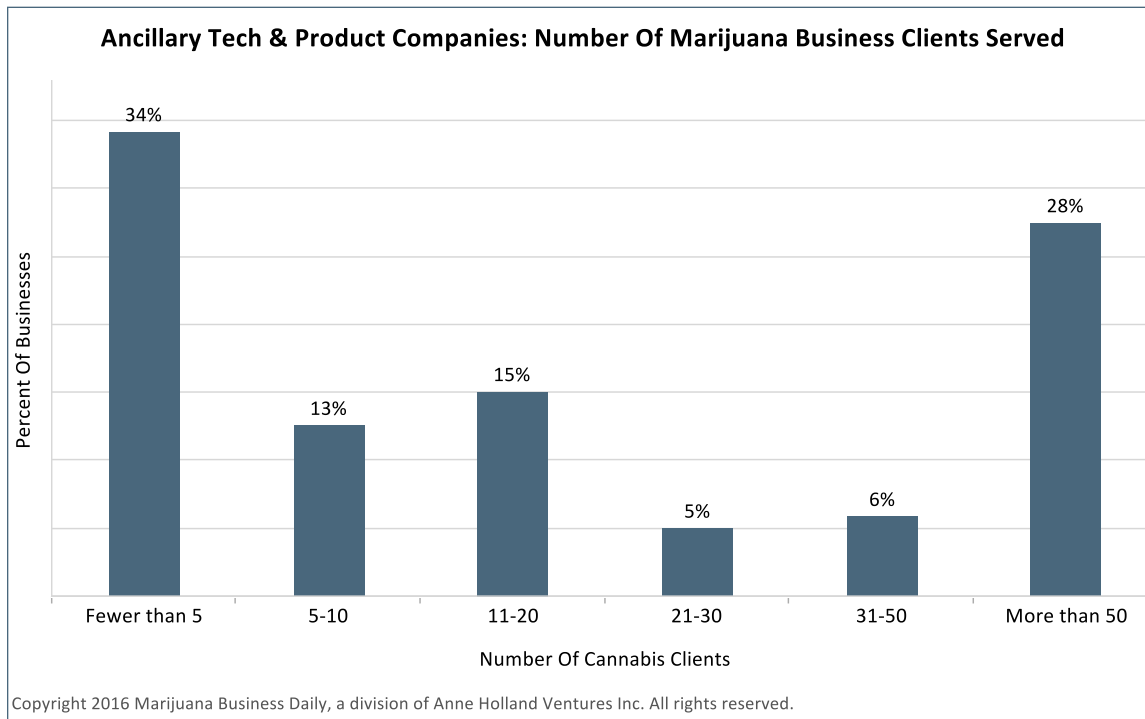
Unlike many of the ancillary services sub-sectors that are limited in their ability to scale operations into multiple states because of dependence on human labor and capital, most ancillary tech and products companies are able to offer their goods in however many states the nature of the business will support.

Chart 4.55: Ancillary Tech & Products Companies That Serve Multiple Industries: Portion Of Revenue Derived From Cannabis Sector



In contrast to ancillary services firms, a larger portion of ancillary tech and products companies that don't exclusively serve the cannabis industry nonetheless derive a majority of their revenue from marijuana businesses. This indicates that a sizable number of existing firms in this space have achieved great success after entering the marijuana industry.

Chart 4.56: Ancillary Tech &amp; Product Companies: Number Of Marijuana Business Clients Served

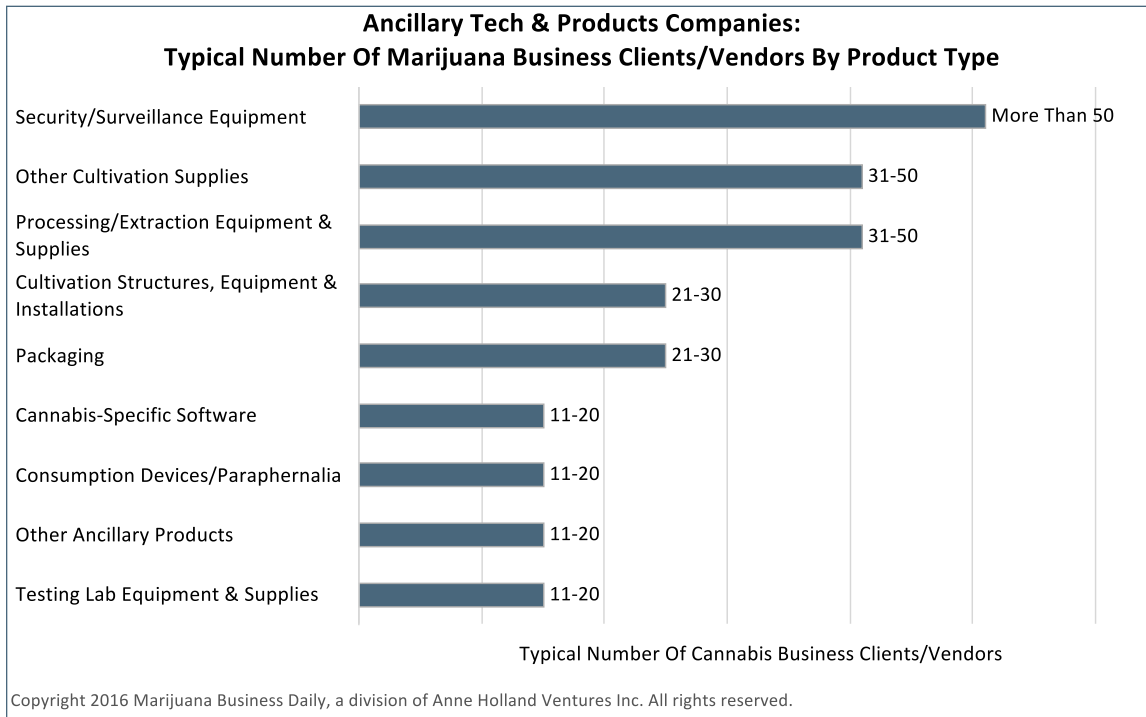


A healthy 28% of ancillary technology and products companies serve more than 50 cannabis business clients at present. However, these are likely the largest companies in this sector, as 47% only serve 10 or fewer clients.

### **Average Number Of Cannabis Business Clients: Ancillary Tech & Products Firms**

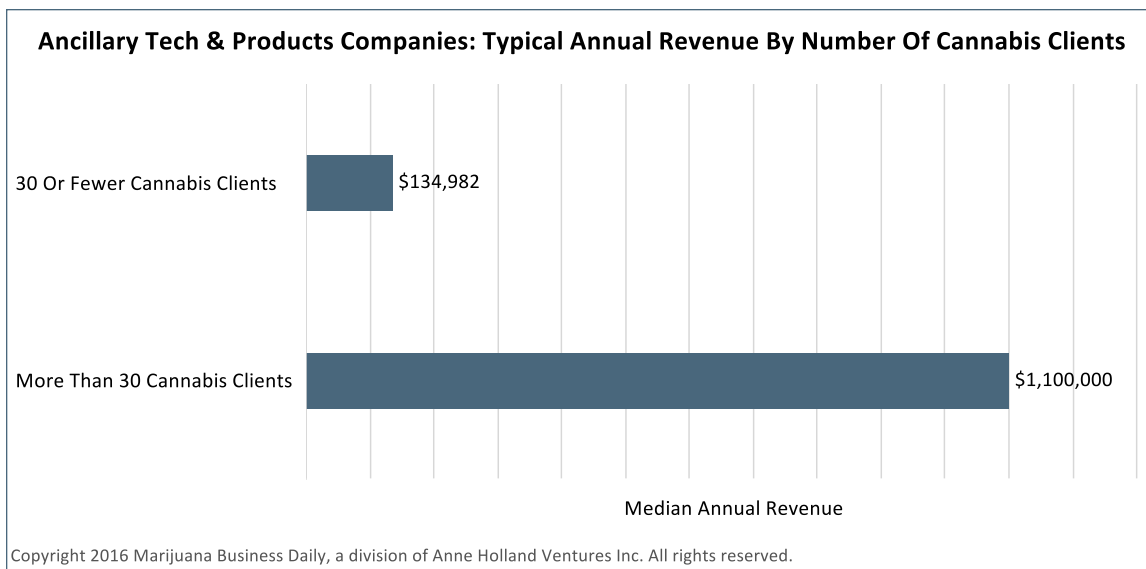
**23**

Chart 4.57: Ancillary Tech & Products Companies: Typical Number Of Marijuana Business Clients/Vendors By Product Type



As seen with security services, companies that provide surveillance and other related equipment to cannabis companies are some of the least numerous, but they serve a larger number of marijuana businesses than companies in all of the other subsectors. The need for these products is again largely driven by regulatory requirements, but the importance of their role in protecting cash, inventory and possibly human life is not lost on cannabis entrepreneurs.

Chart 4.58: Ancillary Tech & Products Companies: Typical Annual Revenue By Number Of Cannabis Clients





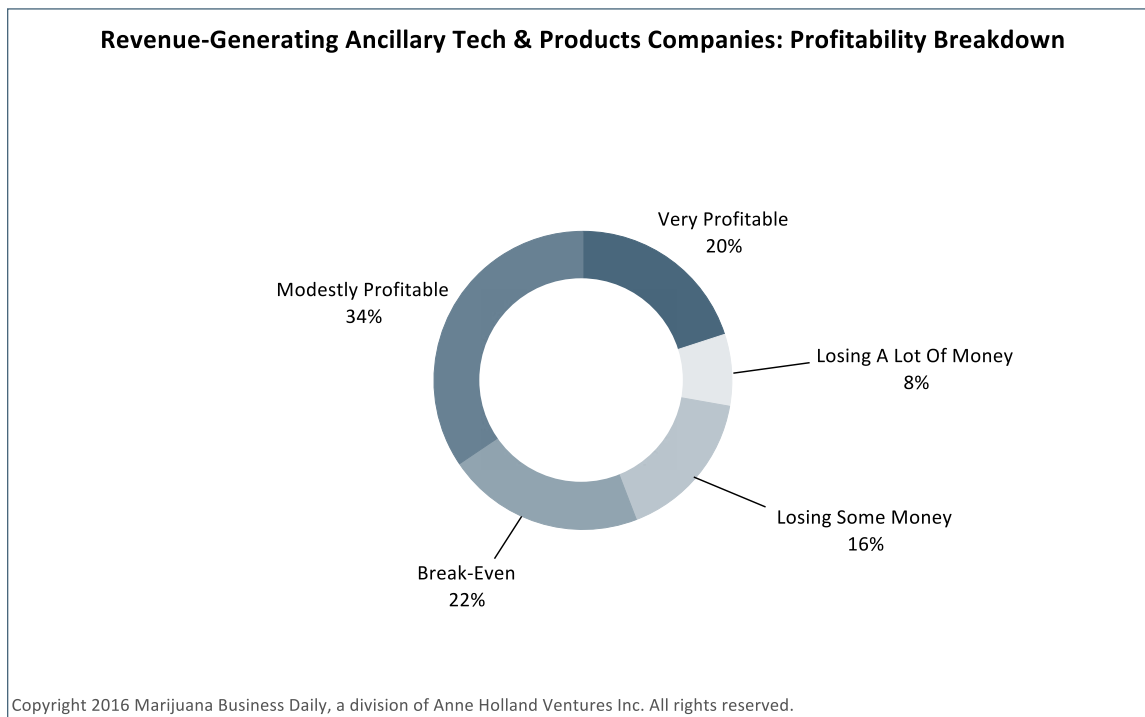
Ancillary technology and products companies that serve more than 30 business clients typically generate nearly eight times as much revenue annually as their peers that serve fewer than 30 clients. This is likely because the largest companies in the whole sector have a wealth of clients, skewing the numbers higher.

The good news for most of the smaller companies is that there are still a lot of unmet needs in the cannabis industry and market share is ripe for the taking.

### Median Annual Revenue: Ancillary Tech & Products Companies

**\$400,000**

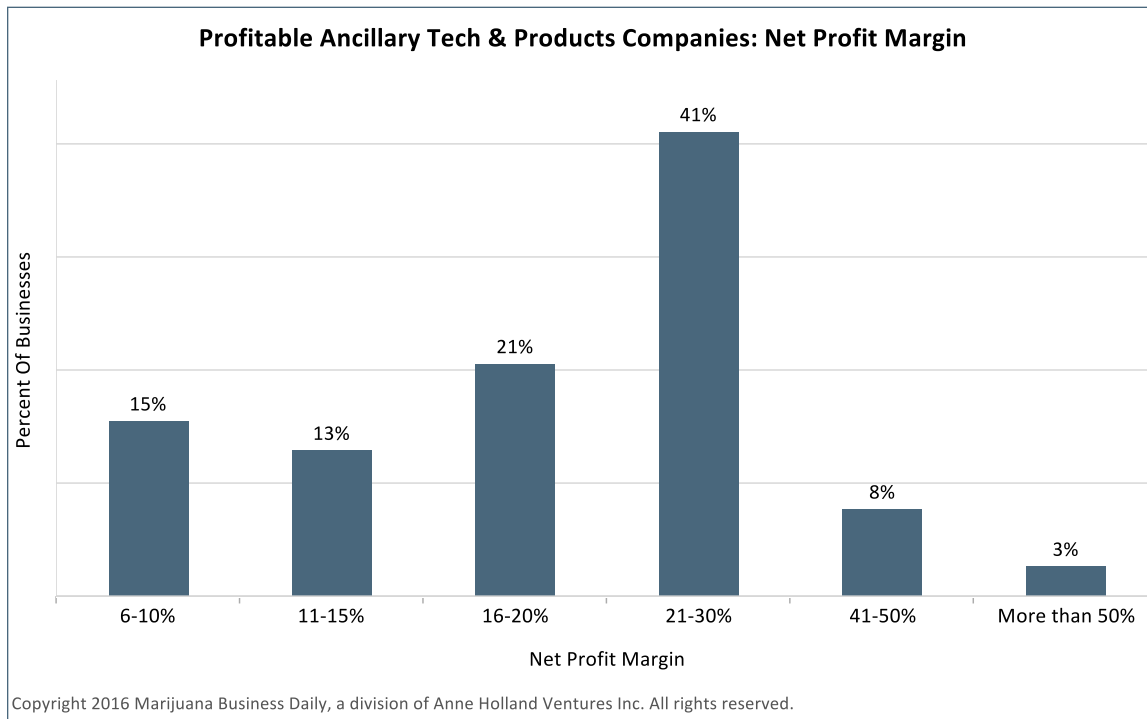
Chart 4.59: Revenue-Generating Ancillary Tech & Products Companies: Profitability Breakdown



Though a slightly larger portion of ancillary technology and products companies report experiencing losses currently compared to ancillary services firms, over half of them are nevertheless turning a profit.

That being said, nearly 25% of ancillary tech and products businesses are losing money. Some of these are likely younger companies still honing their products/technology and attempting to gain traction, but a portion of this group might also be on the verge of going under.

Chart 4.60: Profitable Ancillary Tech &amp; Products Companies: Net Profit Margin



The typical net profit margin for ancillary technology and products companies is noticeably lower than for ancillary services firms. However, that's simply reflective of the nature of companies that manufacture and sell a physical product vs. businesses that sell services.

### **Average Net Profit Margin: Ancillary Technology & Products Companies**

**22%**

Overall, most ancillary services, technology and products companies are doing quite well – but it's worth reiterating the success of these businesses is largely dependent upon the overall progress and success of the plant-touching enterprises around which they revolve.

With a general election in November 2016 – and the possibility that a host of states could legalize recreational and/or medical cannabis at the ballot box – this could be a bellwether year for the industry.

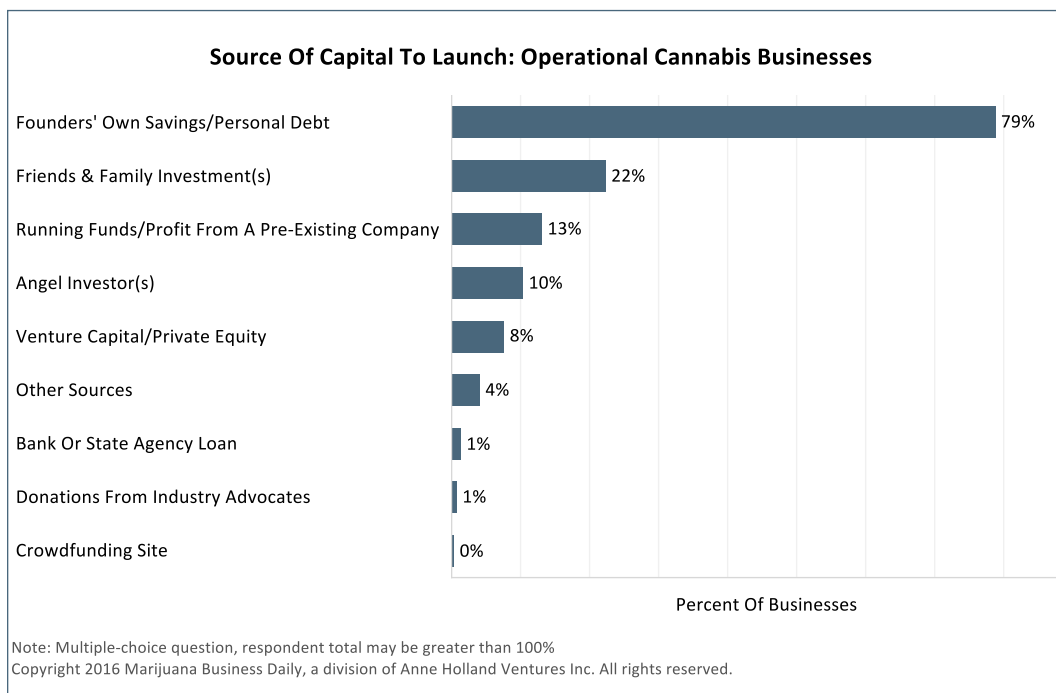


## Cannabis Business Funding & Investing

Until very recently, marijuana entrepreneurs had few options on the funding front. Many were forced to tap their own savings, rack up personal debt or secure loans from close family and friends to start their companies, while those looking to expand had to rely on organic growth rather than huge cash infusions from investors.

Now, though, a growing number of wealthy individuals and smaller investment funds are providing capital to marijuana businesses. And while most institutional investors, banks and large venture capital firms will likely keep their distance for at least a few more years, the funding dam is starting to crack, and more money than ever is flowing into both plant-touching companies and ancillary businesses.

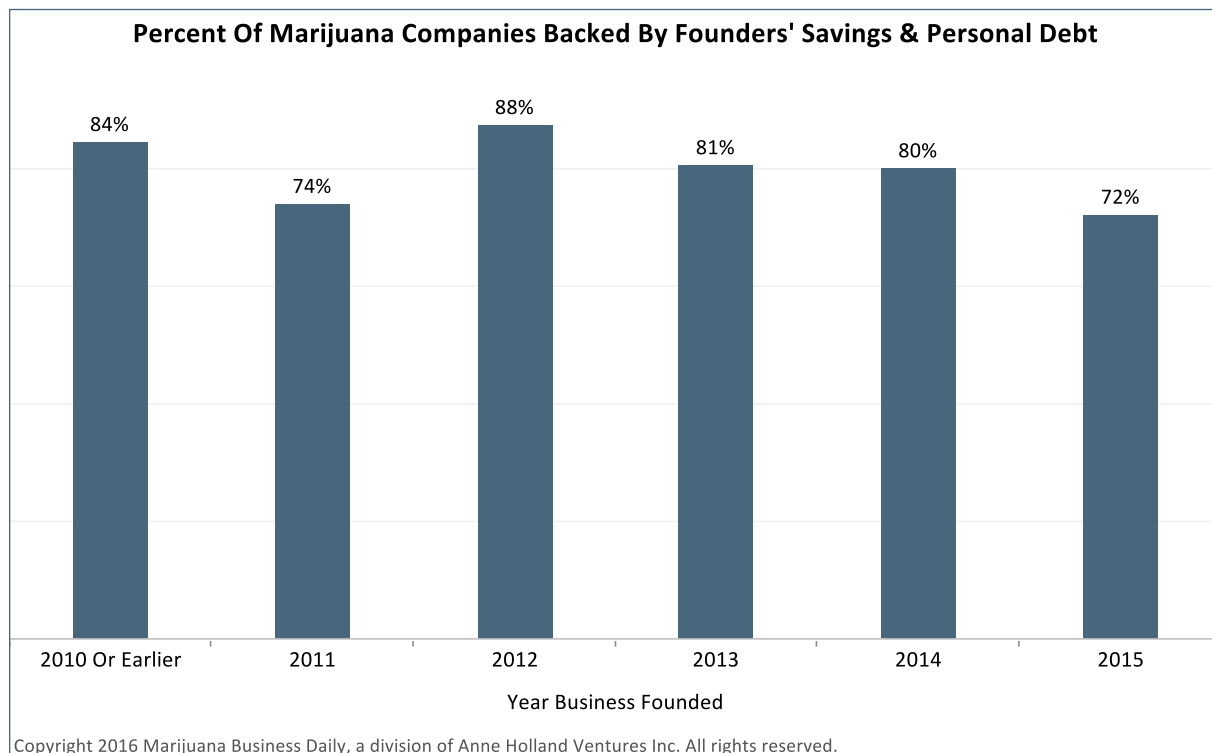
Chart 5.01: Source Of Capital To Launch: Operational Cannabis Businesses



Roughly 18% of entrepreneurs who have started cannabis companies indicated they landed money from angel or venture capital/private equity investors, a figure that has been growing in recent years as more investors enter the space.

The portion of marijuana entrepreneurs who used their savings and personal debt to start a company is also at its lowest level ever and has dipped 16 percentage points since 2012, another indication of the rise in alternate funding sources.

Chart 5.02: Percent Of Marijuana Companies Backed By Founders' Savings & Personal Debt

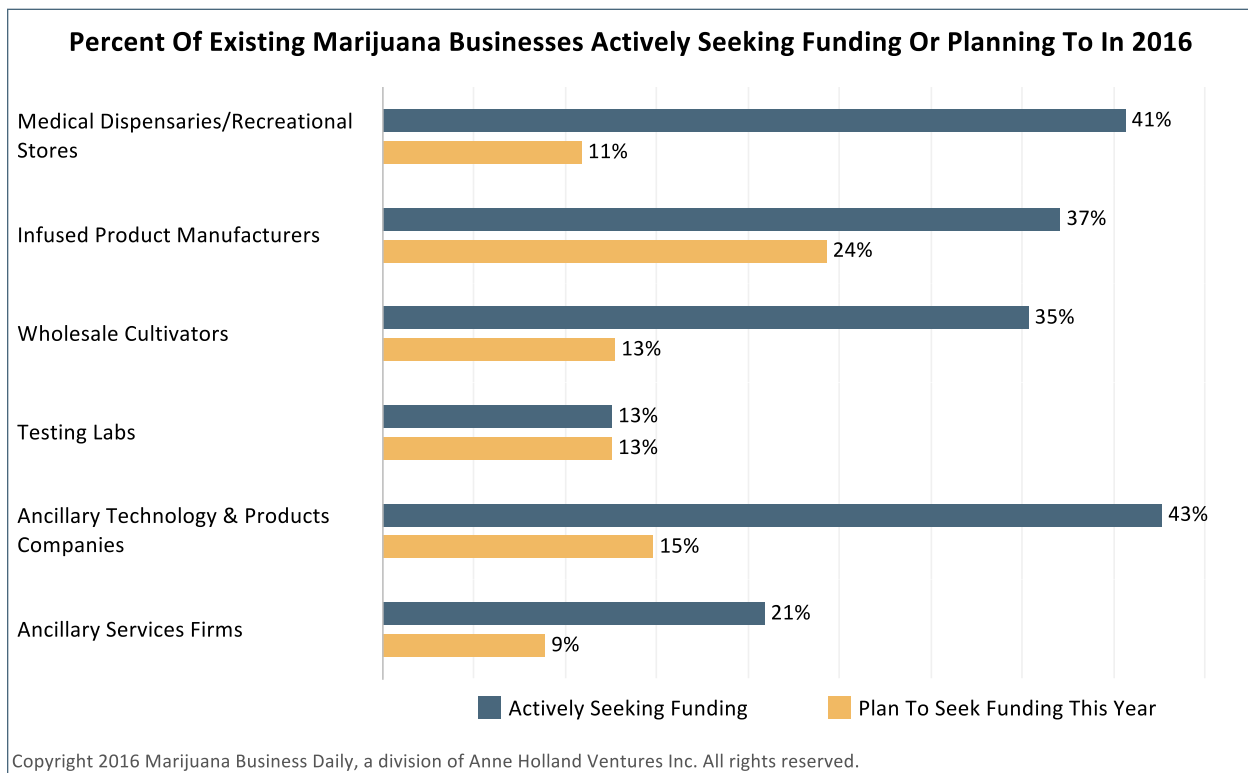


## THE INVESTMENT OPPORTUNITY: COMPANIES SEEKING FUNDING

Funding needs remain relatively high in the industry, although they have actually decreased over the past year. Forty-seven percent of operational businesses – those that have launched a product or service, but may or may not yet be generating revenue – report that they are either actively seeking capital or plan to in 2016 – down from about 55% a year ago.

The decrease is surprising considering that a quarter of all existing cannabis companies launched just last year, so one would expect to have seen a rise in the number of operational businesses in need of external capital. The figures could indicate an uptick in startups founded by wealthier entrepreneurs who don't need outside capital. It's also possible more companies that started in 2015 landed all their required seed funding quickly after their launch, meaning they no longer need financing for the foreseeable future.

Chart 5.03: Percent Of Existing Marijuana Businesses Actively Seeking Funding Or Planning To In 2016



Current capital needs are highest for infused product manufacturers – which includes edibles and topicals makers as well as processors/extractors – with 61% reporting they’re actively seeking or planning to seek capital this year. Companies in this area of the cannabis industry are increasingly looking to expand across state lines, which can be costly. Infused products manufacturers often cement licensing deals or partnerships with existing companies in other states, granting the use of their formulas and brands. But some are looking to win licenses and establish their own manufacturing facilities in multiple states, increasing their capital needs.

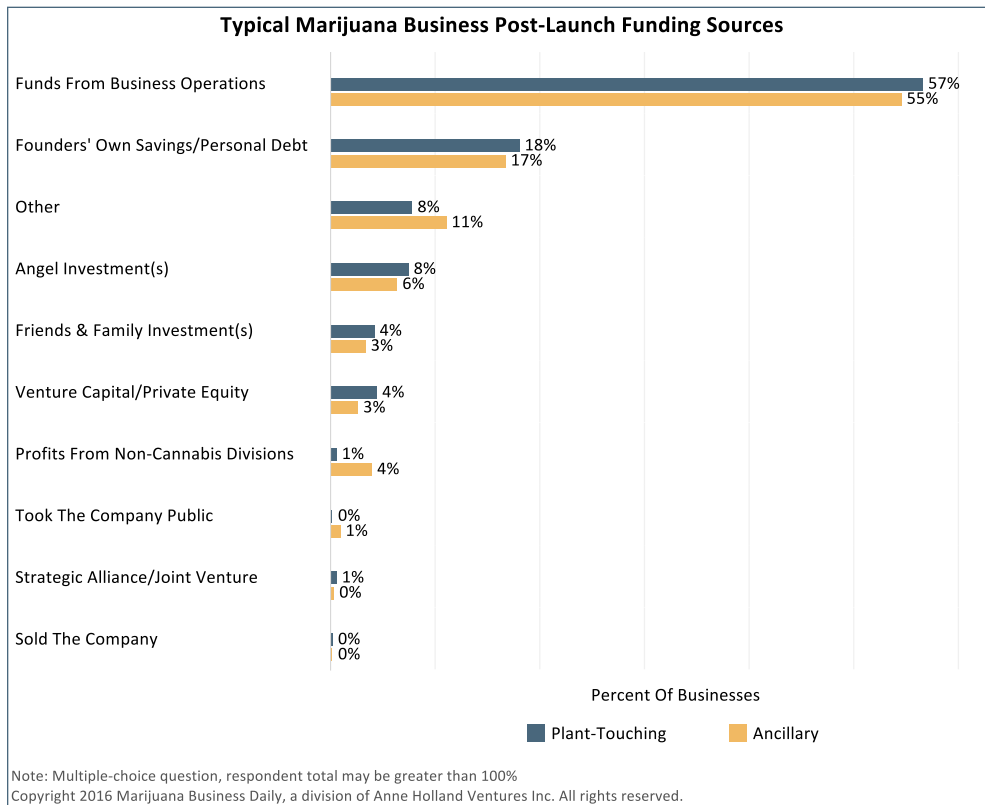
These businesses also often need to buy specialized, expensive equipment such as extraction systems. Edibles companies in particular also face increased regulatory burdens in many states. Some edibles companies, for instance, must operate in professional-grade kitchens and meet a host of food safety, testing and packaging standards.

In the plant-touching sector, dispensaries and recreational stores have relatively high funding needs as well, with 52% reporting they are seeking or plan to seek capital this year.

Overall, however, ancillary technology and products companies – such as those that make consumption devices or packaging – have the highest current funding needs, with 43% reporting they are actively looking for money.

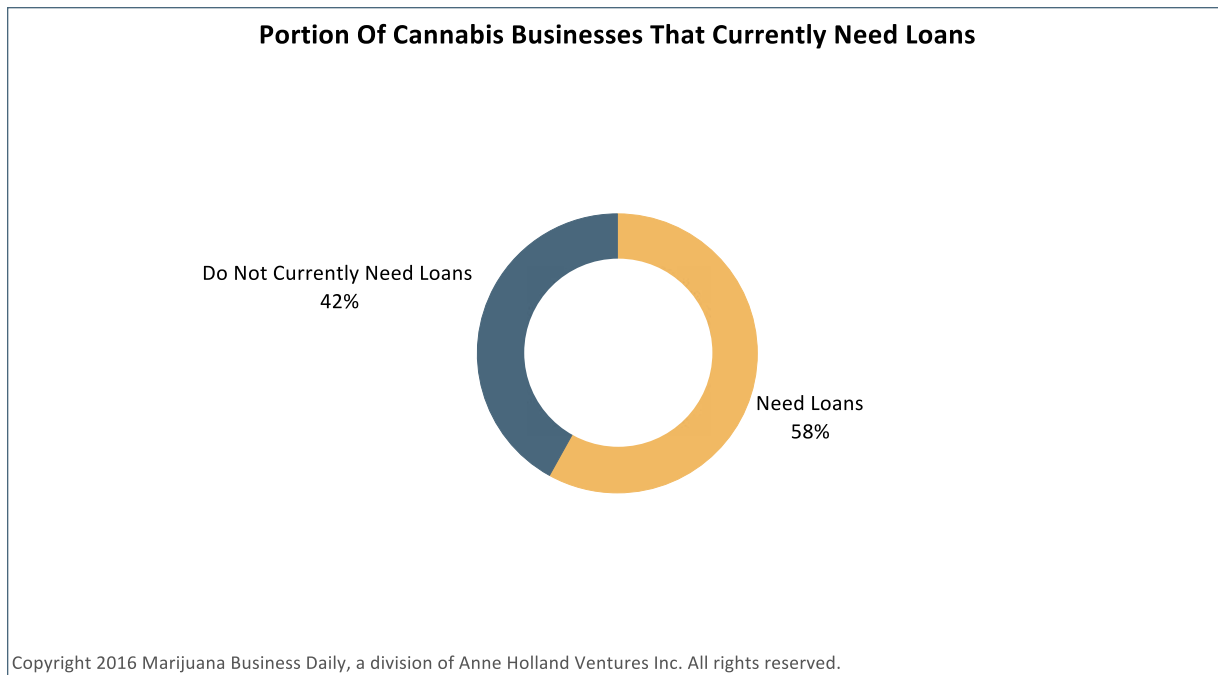
In a positive sign of the financial strength of most businesses once they launch, more than half of plant-touching and ancillary companies report that their primary source of working capital for growth and expansion is profits from the business itself.

Chart 5.04: Typical Marijuana Business Post-Launch Funding Sources



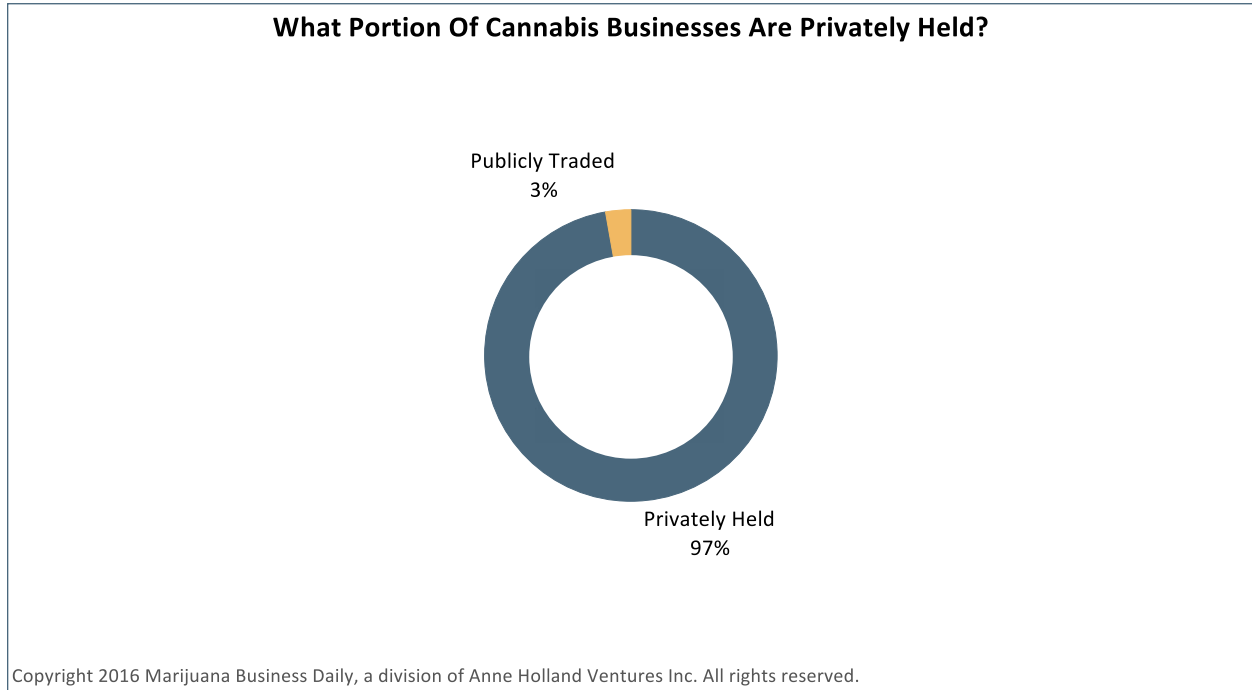
It’s not uncommon for businesses to also seek external capital from investors or via a liquidity event to finance growth, but it’s promising that more businesses are generating sufficient funds from operations than any other source.

Chart 5.05: Portion Of Cannabis Businesses That Currently Need Loans



That being said, cannabis entrepreneurs are working hard to bring products and services to the market and then to scale those enterprises. Nearly three out of five operational marijuana companies report needing some help in the form of loans. This has moderately increased from last year, when 47% of businesses said they needed a loan.

Chart 5.06: What Portion Of Cannabis Businesses Are Privately Held?



While some cannabis companies are publicly traded and have access to public markets for their capital needs, they are the extreme minority – much like the overall business breakdown in the U.S. Among this year’s survey respondents, 97% indicated their cannabis business is privately held.

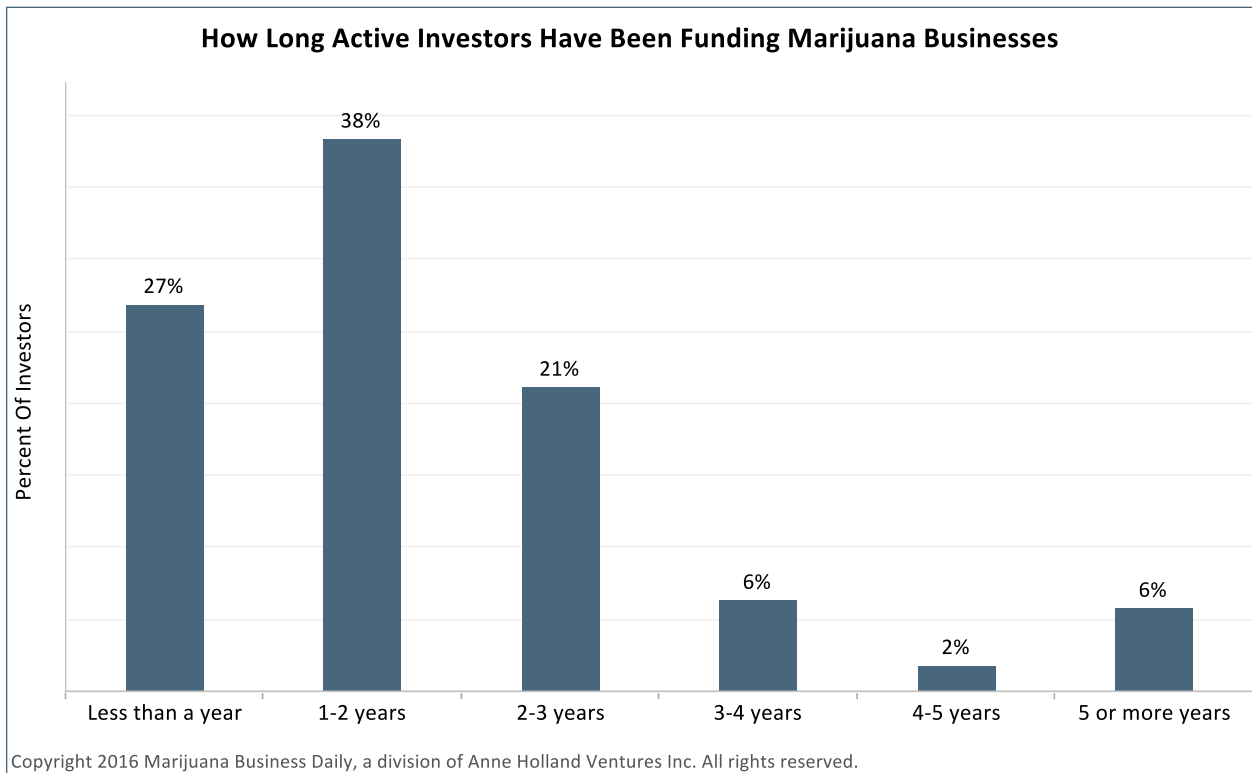
This demonstrates not only the opportunity for investors, but also the critical role they are playing and will continue to play in advancing the industry.

## THE LANDSCAPE: INVESTORS FUNDING CANNABIS COMPANIES

In a sign of just how quickly the fundraising landscape has changed, nearly two-thirds of active cannabis investors only began funding marijuana businesses within the past two years. Take into consideration that 38% of cannabis businesses have been around for longer than two years, and the severity of the capital shortage until recently becomes even more apparent.

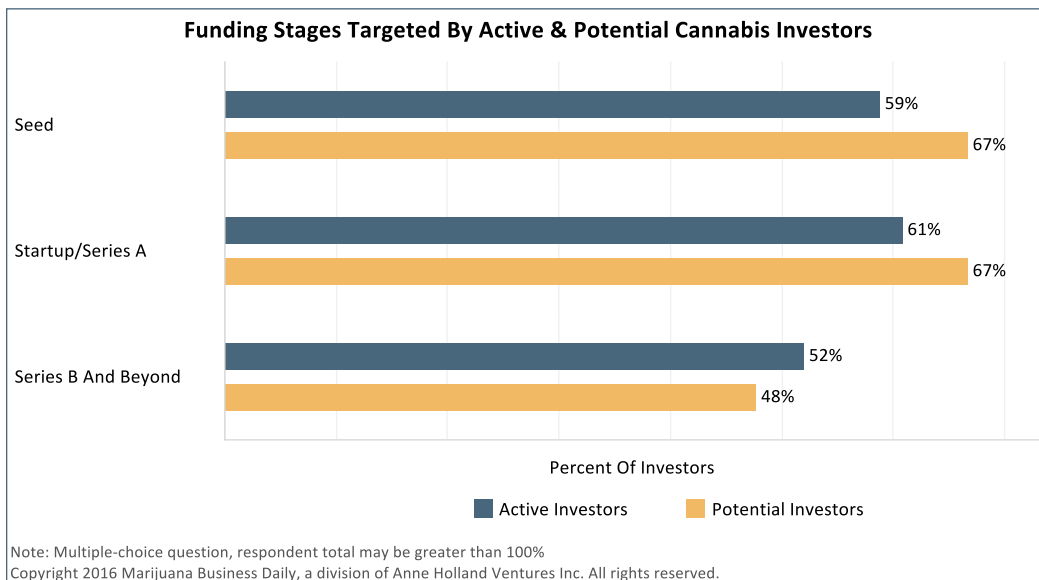


Chart 5.07: How Long Active Investors Have Been Funding Marijuana Businesses



The cannabis industry is one of the most complex in the world, which poses unique operational challenges for investors. Individuals pumping money into cannabis companies need to fully understand the challenges of operating in this sector and must have a good sense of the regulatory climate at the federal and state levels. To that end, it’s interesting to note the differences in funding stages targeted this year by active vs. potential investors (those who haven’t made investments in marijuana businesses yet but plan to this year).

Chart 5.08: Funding Stages Targeted By Active & Potential Cannabis Investors

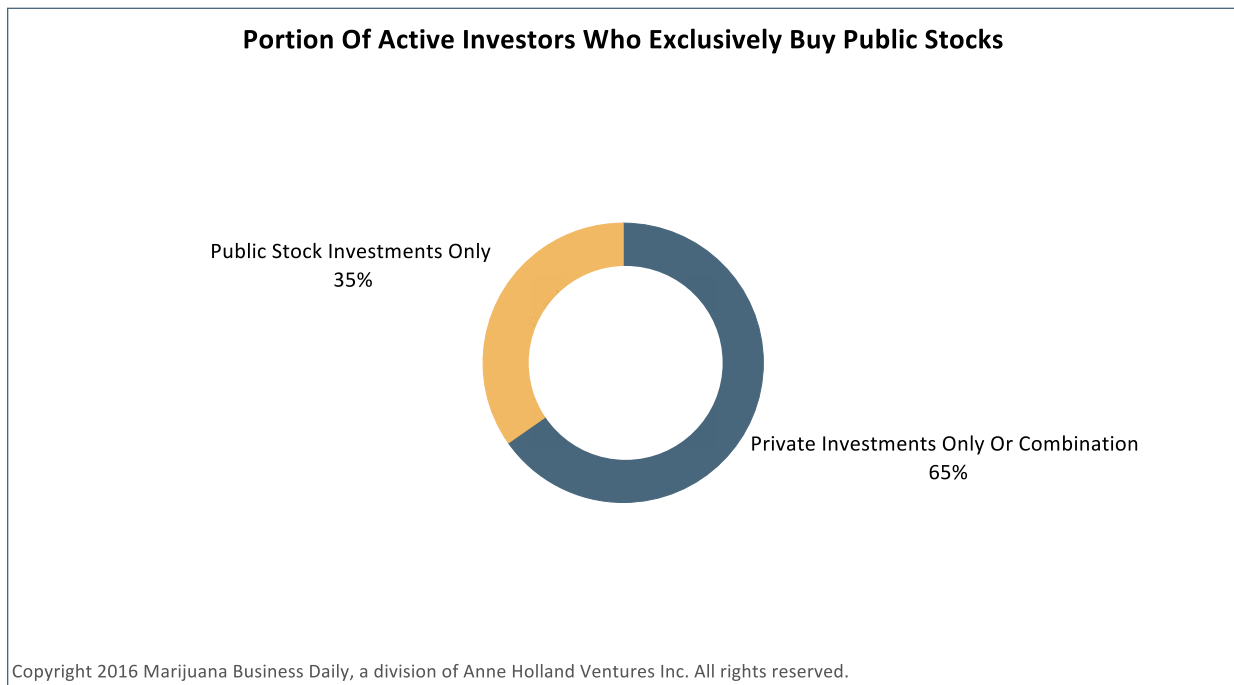


The good news for marijuana companies is that both active and potential investors are interested in all phases of funding, from seed to Series B and beyond. There is strong interest from potential investors in early-stage financing, indicating there could be a plethora of funding sources this year for the 13% of all businesses that are still in the planning/pre-launch phase. Active investors also have strong interest in early-stage companies, though it's worth noting over half of them still plan to target businesses that are past the startup phase and fully into growth and expansion.

However, from an investor's perspective, there are plenty of opportunities to get involved with companies at whichever stages they prefer and/or specialize in.

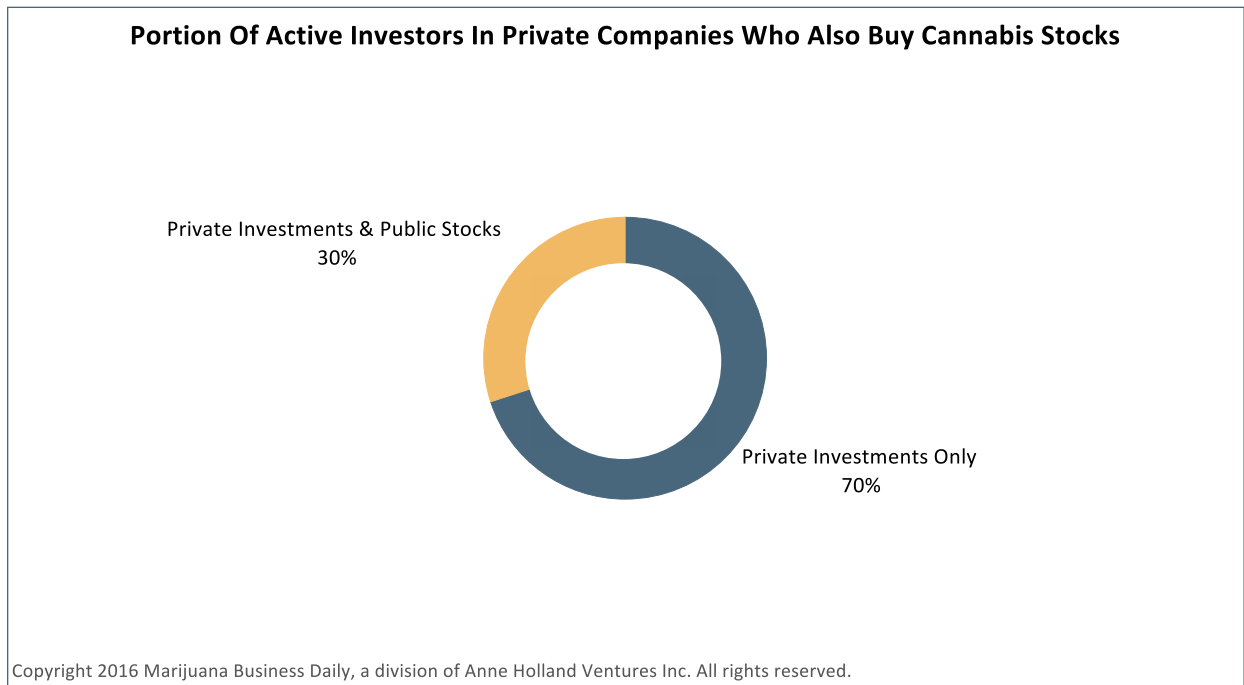
Most active marijuana investors are targeting privately held businesses, but a healthy 35% are exclusively purchasing publicly traded cannabis stocks. This demonstrates strong interest in one of the riskiest places to put money today, since all but a handful of public marijuana companies trade on the mostly unregulated over-the-counter markets.

Chart 5.09: Portion Of Active Investors Who Exclusively Buy Public Stocks



Still, many investors shy away from marijuana stocks. Of active investors who have funded private companies, 70% are not buying shares of publicly traded marijuana companies at this time.

Chart 5.10: Portion Of Active Investors In Private Companies Who Also Buy Cannabis Stocks



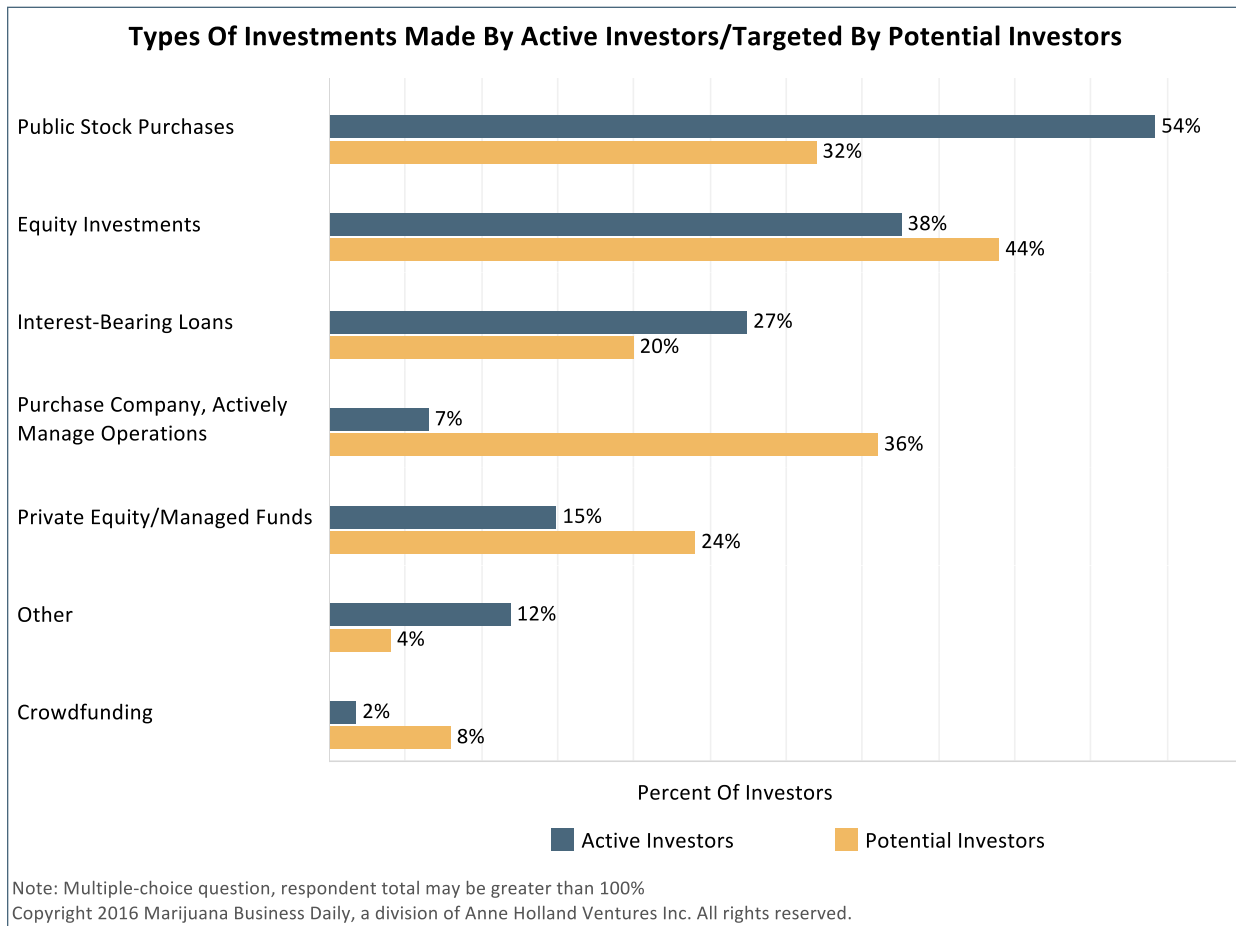
Overall, 46% of active investors are solely focused on private companies, 35% exclusively invest in public stocks, and the remaining 20% fund both public and private cannabis companies.

So how do active and potential investors want to deploy their capital?

There are some interesting differences.

It's clear that potential investors are attracted to deals that provide a degree of ownership in the target business. They are much more interested in equity investments and acquisitions that allow them to run the company. Potential investors are also more interested than active investors in crowdfunding, which typically doesn't provide actual ownership but creates a unique sense of loyalty to the company or product.

Chart 5.11: Types Of Investments Made By Active Investors/Targeted By Potential Investors



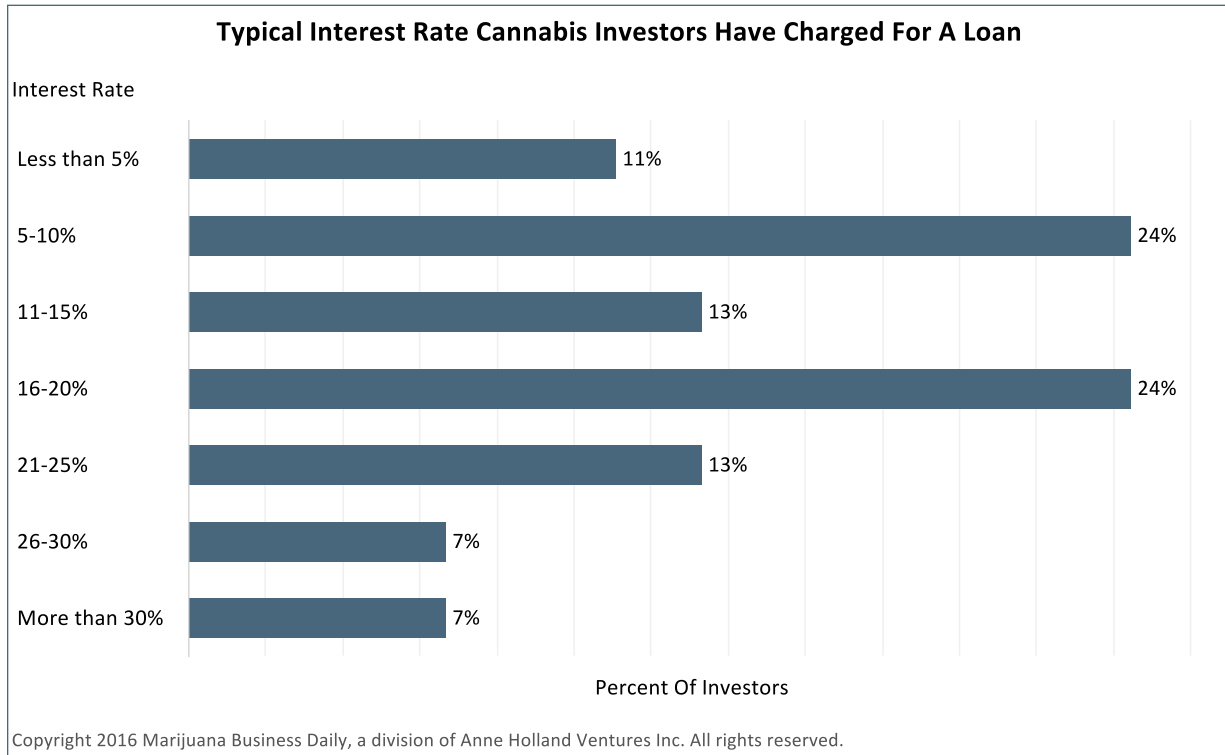
Interest-bearing loans are often attractive to both cannabis companies and active investors in particular. Loans allow entrepreneurs to retain ownership and management control of companies they have literally risked their livelihoods to build. For investors, traditional loans or convertible debt are often preferred given that determining valuations for cannabis businesses is an extremely daunting task. The industry is still so young that investors don't have solid historical (and competitive) benchmarks to help them put a value on a company. There's also a high degree of uncertainty surrounding the entire industry, and widely varying – and constantly changing – regulations at the state level complicate things further.

These factors weigh in when making loans too, of course. Active investors appear to have at least two distinct risk categories in this area, as the most common interest rates they charge on loans are either on the low end of 5-10% or on the higher end at 16-20%. From an investor perspective, the risk profile of cannabis companies is not evenly distributed – rather, it's primarily in separate categories of low or high risk.

Nearly 15% of investors who have made loans negotiated interest rates in excess of 25%, with half of those in this group getting rates over 30%. These are very high rates for traditional loans, but the industry is riskier than most. However, average rates have fallen dramatically – several years ago, many businesses were paying interest rates of 25% or more, as the risks were much

higher and there were fewer investors in general. Today, the overall average interest rate investors have received on loans thus far is about 15%, demonstrating the more favorable deal terms being negotiated these days.

Chart 5.12: Typical Interest Rate Cannabis Investors Have Charged For A Loan



**Average Interest Rate Investors Have Received  
For Debt Investments In All Cannabis Companies:**

**15%**

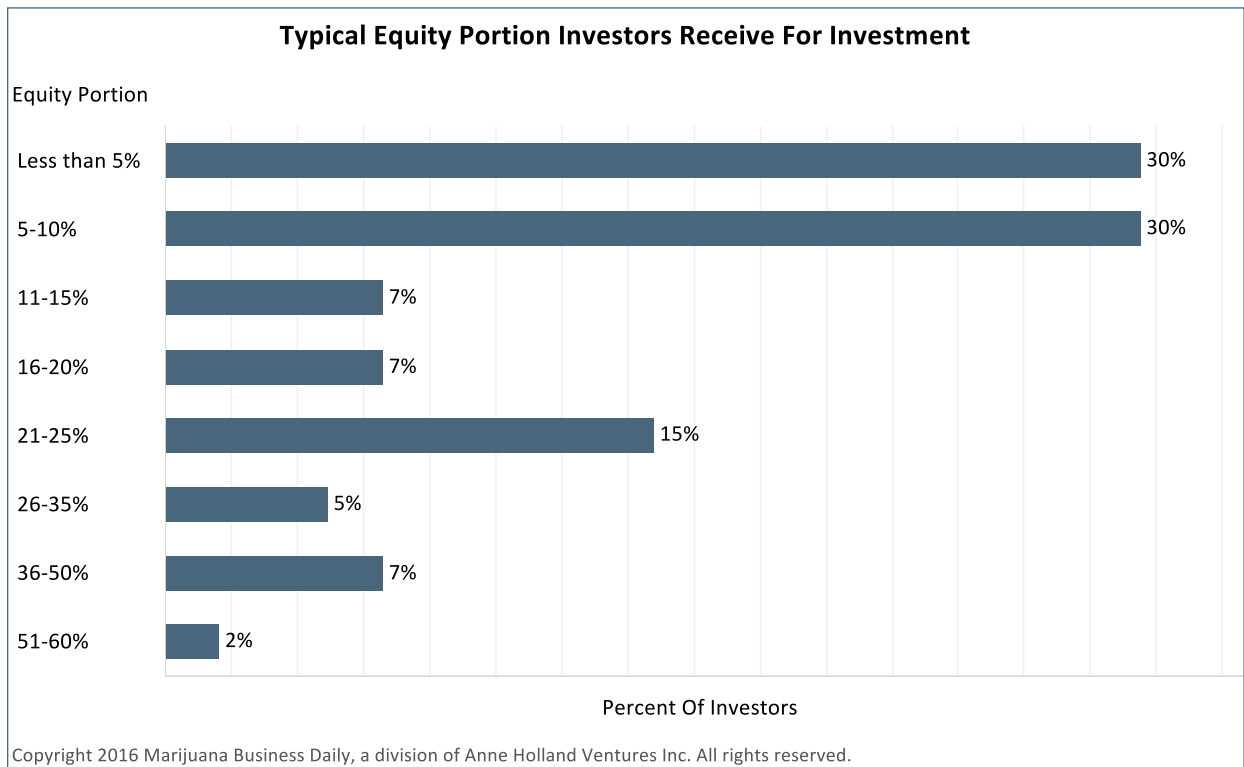
That being said, the Small Business Administration - which provides small or micro-loans to businesses that banks are generally not interested in providing - currently only charges between 5.75% and 8.25% on its loans. When put in this context, the premiums many marijuana businesses are paying to obtain financing seem egregious.

While loans are often an attractive option, investments in exchange for equity stakes often make sense for entrepreneurs and investors as well. For entrepreneurs, it can resemble more of a partnership, as the investor might provide mentorship, guidance and valuable connections to other people or businesses. Equity stakes also free entrepreneurs from the stress of having to make agreed-upon payments on a strict timeline, which is beneficial if cash flows are uncertain or intermittent.

For an investor, nothing really positions them better to make a lucrative exit than having outright ownership in a company that eventually goes through some sort of liquidity event, such

as an acquisition or initial public offering. They are incentivized to support the business because they are literally invested in its growth and success.

Chart 5.13: Typical Equity Portion Investors Receive For Investment



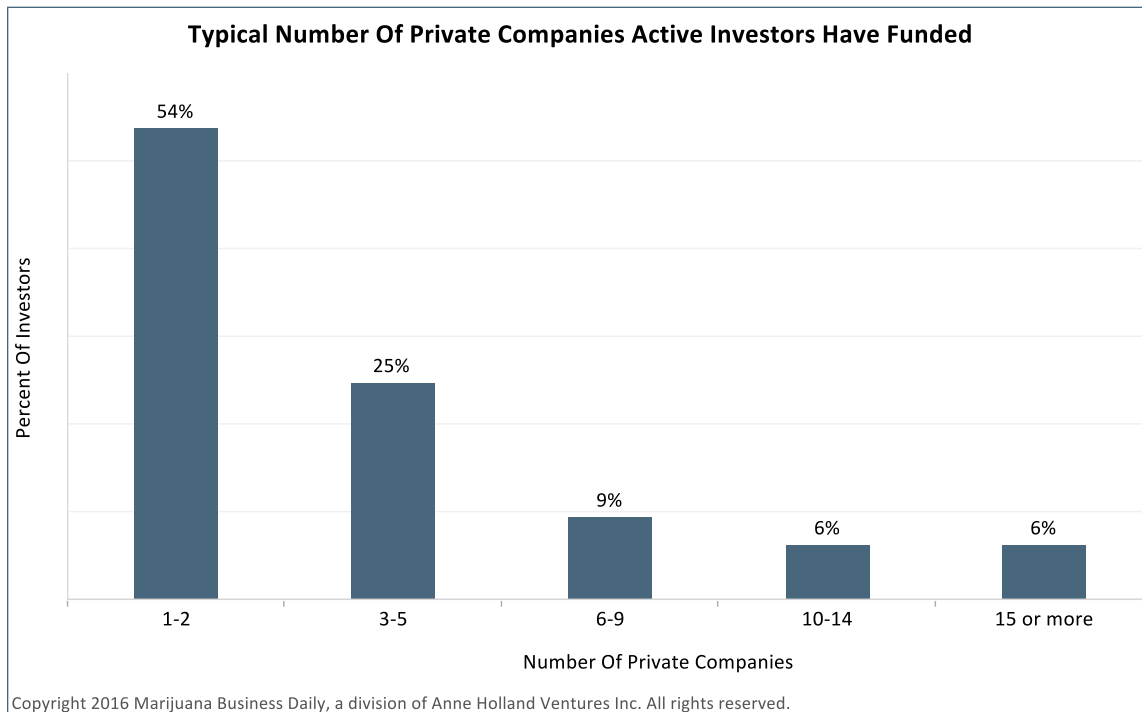
Many marijuana entrepreneurs offer ownership stakes in exchange for funding, which has a host of benefits and drawbacks. The good news is that three out of five investors who gained equity in a cannabis company they funded received 10% or less of the business. And just 2% have received more than half of the company's equity, so by and large cannabis entrepreneurs seem to be retaining control of their companies.

That being said, a fair share of investors have ended up with a third of the company or more, indicating that some owners are willing to pay a premium on capital right now.

Cannabis investors are still largely doing a very limited number of deals. Just over half of active investors in private companies have only funded one or two companies thus far. This is likely reflective of the large portion of investors who only entered the industry in the past two years.

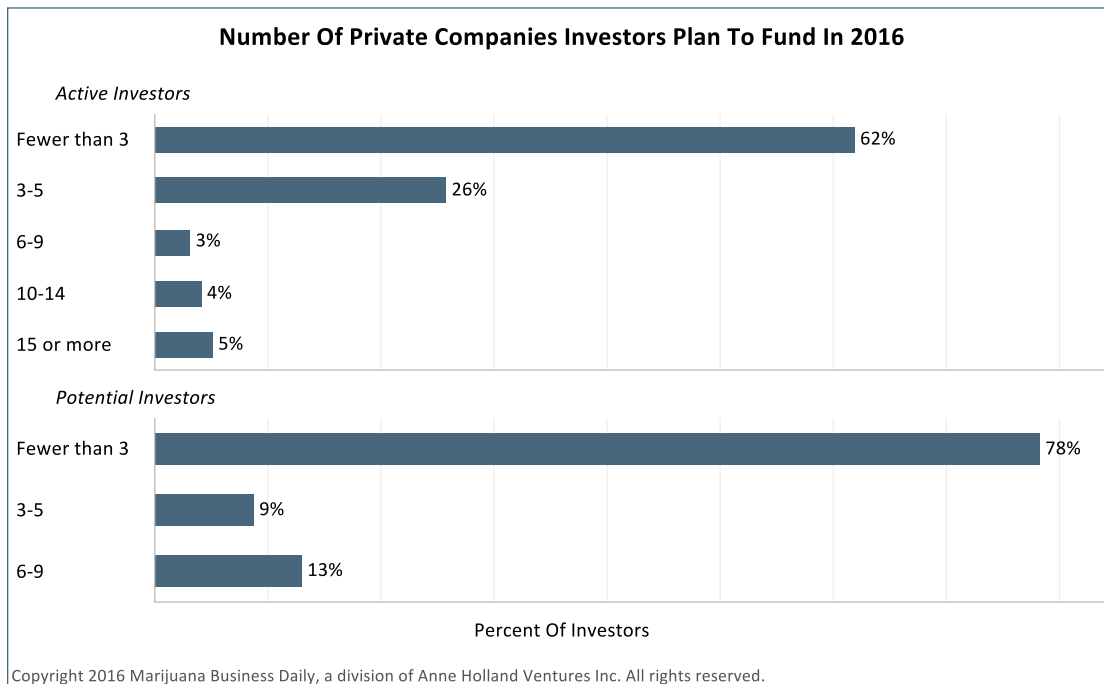
However, it's interesting to note that over one out of five investors have funded six or more marijuana companies. The reason for this is likely twofold: There are more opportunities than ever before, and this is a highly connected industry with many overlapping ownership interests and common professional networks. Once investors get involved, they are likely quickly turned on to other high-caliber entrepreneurs and their fundraising needs.

Chart 5.14: Typical Number Of Private Companies Active Investors Have Funded



As investors become more familiar with the machinations of the cannabis industry and where the lucrative deals are, they will grow more comfortable funding marijuana businesses. This year, 9% of active investors will be targeting 10 or more companies to fund. And while the sweet spot for both active and potential investors is clearly in maintaining small portfolios, these figures demonstrate the demand and need for investors.

Chart 5.15: Number Of Private Companies Investors Plan To Fund In 2016

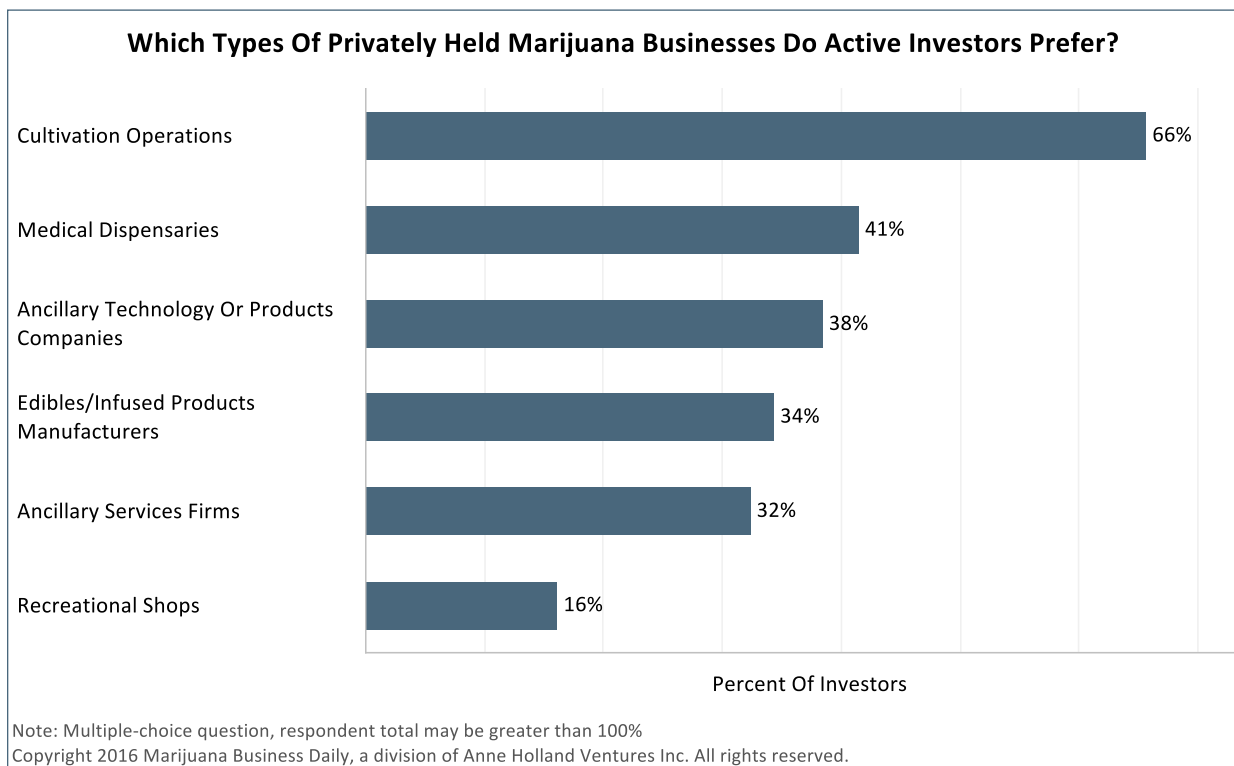


Despite its venerated status, cannabis is ultimately just a crop. Nevertheless, it’s a crop around which the entire industry orbits – a fact that’s well understood by investors, as two-thirds of active ones report having funded cultivation operations.

The second most commonly funded businesses are medical dispensaries, the other pillar of the industry. It’s interesting to note that investors target dispensaries more than twice as often as recreational stores. This is likely temporary, however, because of the small number of recreational states compared to medical ones at this time.

Overall, there is strong investor interest in all major industry sectors. About a third of investors are interested in ancillary companies, though it’s worth pointing out that there are a lot more of those businesses operating today than the plant-touching ones coveted by more investors.

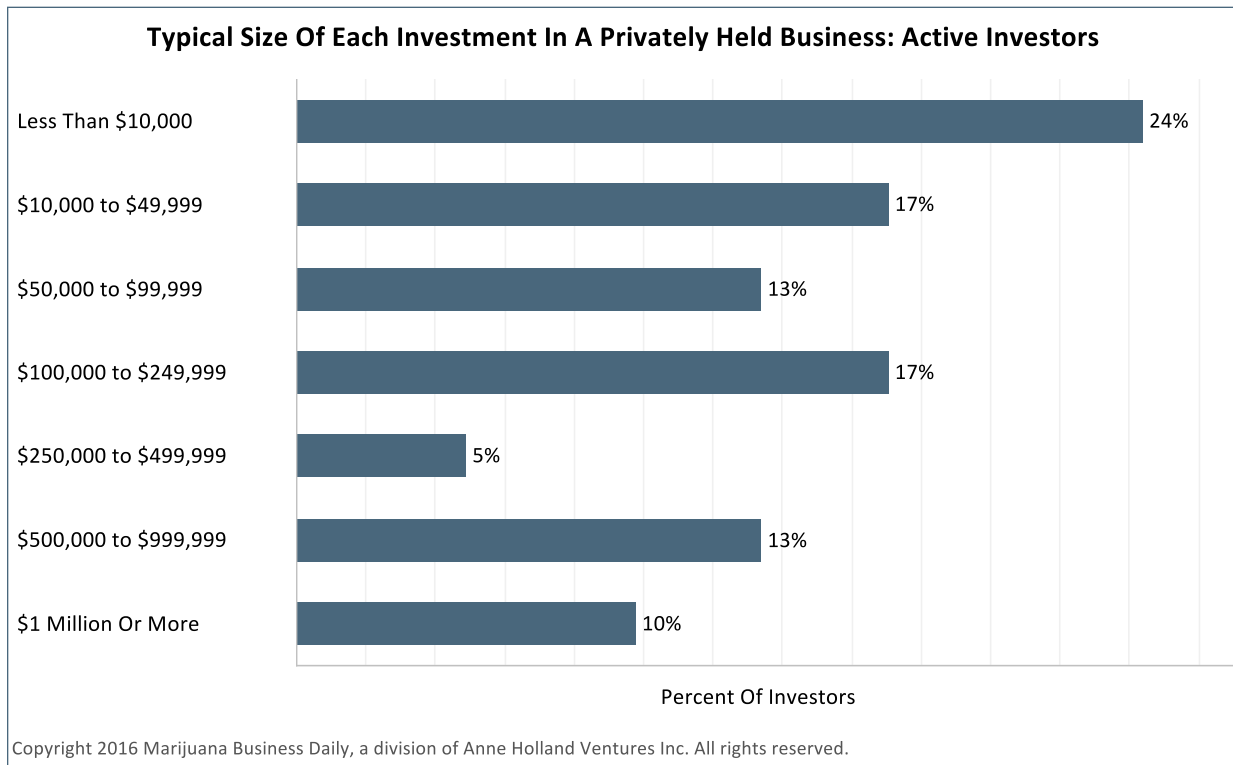
Chart 5.16: Which Types Of Privately Held Marijuana Businesses Do Active Investors Prefer?



Some good news perhaps for angel investors and the dozen or so managed funds that can all make large investments of half-a-million dollars or more: They are still in the minority of investors and can afford to be picky with deals. Only 10% of active investors typically deploy \$1 million or more per deal (see the next major section of this chapter for a sampling of recent investment deals and what this means for companies seeking money). By comparison, nearly a quarter of investors operate on the other end of the spectrum and invest less than \$10,000 at a time. Overall, the median investment amount per deal is right around \$100,000, with about half of investors typically deploying more than that amount each time, and about half deploying less.



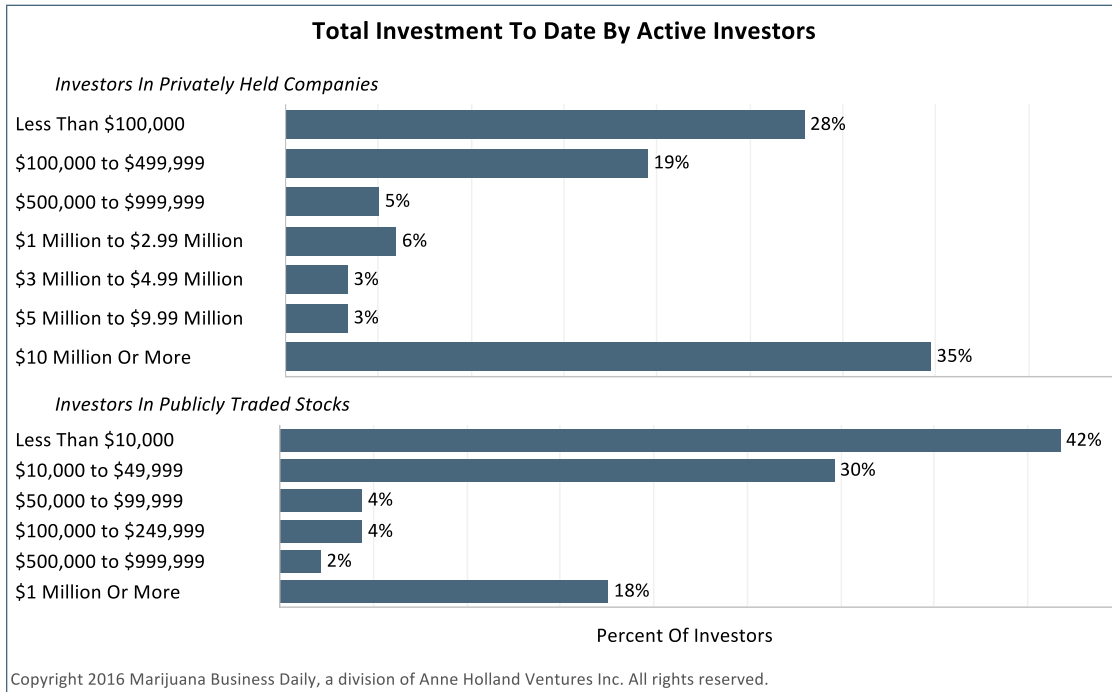
Chart 5.17: Typical Size Of Each Investment In A Privately Held Business: Active Investors



The chart at the top of the next page illustrates the simple reality that major investors are providing far more capital to privately held businesses than publicly traded ones. It also shows that publicly traded companies tend to attract less sophisticated investors with a much lower net worth, who are therefore investing much smaller amounts and are not involved with mentoring entrepreneurs or the growth of their companies. Of investors who have bought public stocks, 76% of them have invested a total amount less than \$100,000, whereas only 28% of investors providing capital to privately held businesses have funded a total amount less than that.

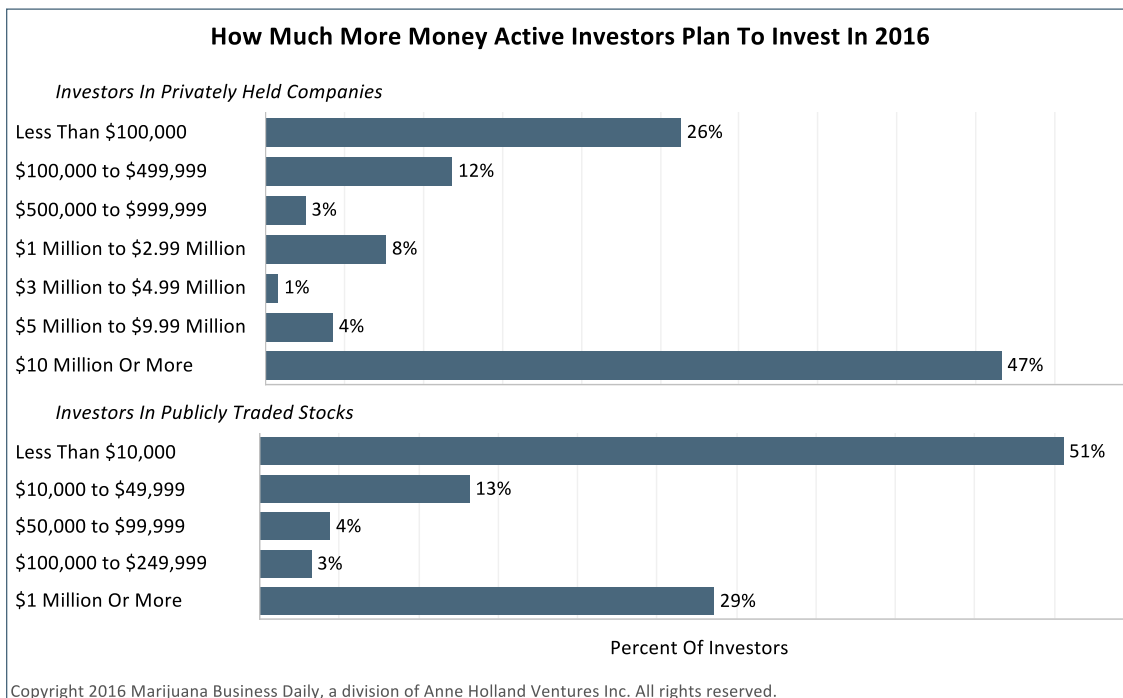
On the other end of the spectrum, the portion of investors who have invested a total of \$1 million or more in privately held companies is more than twice as large as the portion of those who have invested that amount in businesses with publicly traded stock.

Chart 5.18: Total Investment To Date By Active Investors



Perhaps even more telling than the amounts already invested are the dollar figures and the types of companies investors indicate they plan to fund this year. Almost half of active investors say they will deploy \$10 million or more this year, while 60% will deploy at least \$1 million – which is very welcome news to cannabis companies. By contrast, 64% of investors in public stocks will only invest up to \$50,000 more this year.

Chart 5.19: How Much More Money Active Investors Plan To Invest In 2016



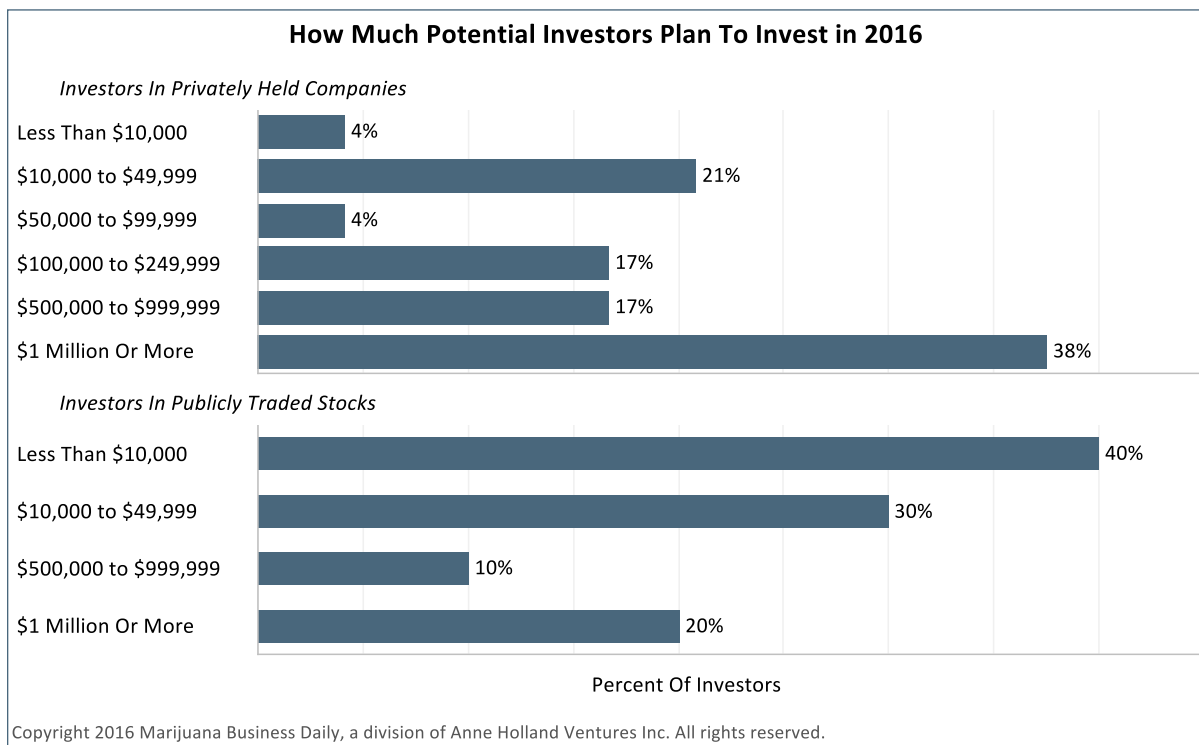
### Median Total Amount Active Investors Plan To Invest In 2016

Privately Held Companies: \$10 Million

Publicly Traded Stocks: \$10,000

Most of the investors who haven't invested in marijuana companies yet but are strongly considering it appear to have a relatively conservative approach to cutting their cannabis teeth. Just over 60% of potential investors targeting privately held businesses and 80% of those targeting public stocks plan to invest less than \$1 million this year.

Chart 5.20: How Much Potential Investors Plan To Invest in 2016



### Total Amount Potential Investors Plan To Invest In 2016

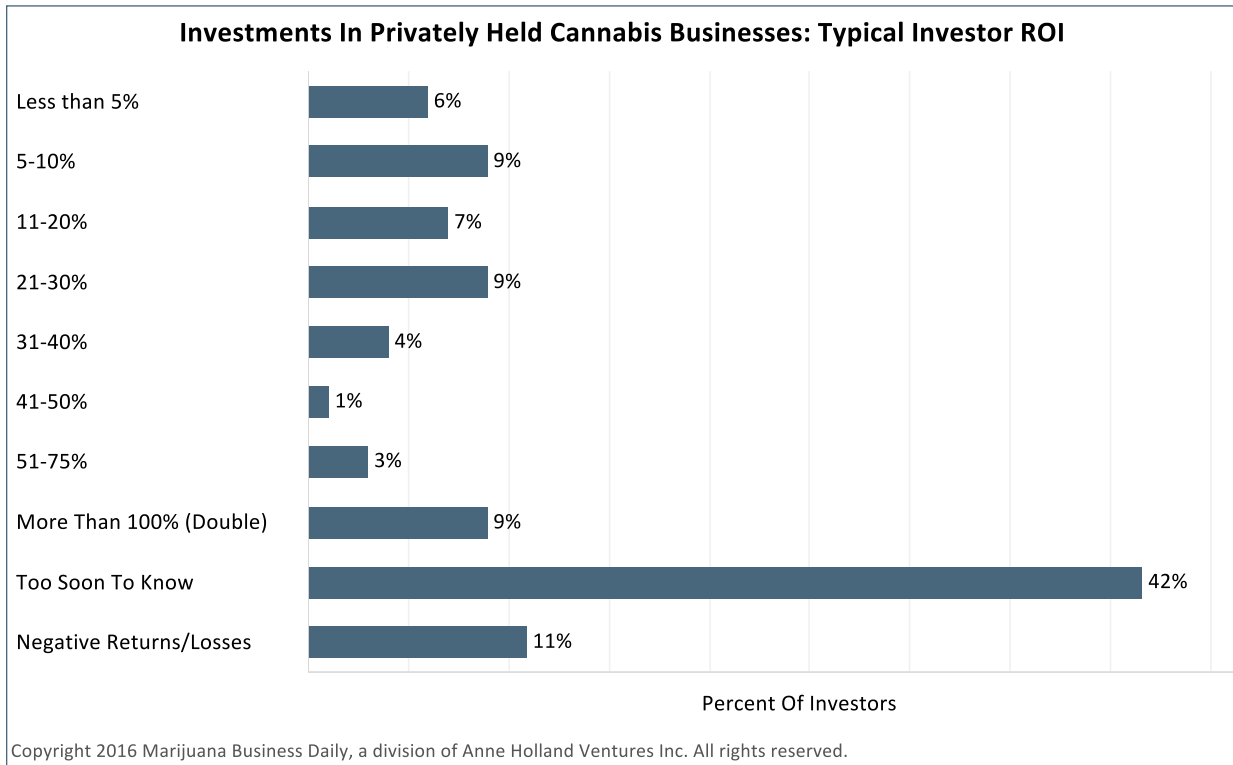
Privately Held Cannabis Companies: Approximately \$500,000

Publicly Traded Cannabis Stocks: Approximately \$10,000

Unlike investments in public stocks that can be liquidated any time the investor chooses, private investments – particularly those in exchange for ownership – are longer-term endeavors. Additionally, there's a lot of uncertainty tied to them, as often the time period in which a return or loss will be realized is unknown. Investors who receive equity stakes won't realize a return until an exit/liquidity event takes place. Those who negotiated interest-bearing debt have to wait until

the loan term expires to know whether the company will ultimately be able to repay the principal plus interest.

Chart 5.21: Investments In Privately Held Cannabis Businesses: Typical Investor ROI



To that end, 42% of active investors in private companies appear to be in this holding pattern with their cannabis investments right now. Assuming a worst-case scenario in which investors who posted negative returns lost their full investment amount, the overall average rate of return on privately held cannabis investments is only about 10% right now. However, it’s important to note that a large portion of these investors don’t even yet know what their ROI is, as well as the fact that an encouraging 12% report having received returns of over 50%.

With such a large percent of this contingent still waiting to see how their investments play out, these statistics will change quite a bit over the next few years. Overall right now though, for investors who have realized a positive return, the average ROI is about 36%.

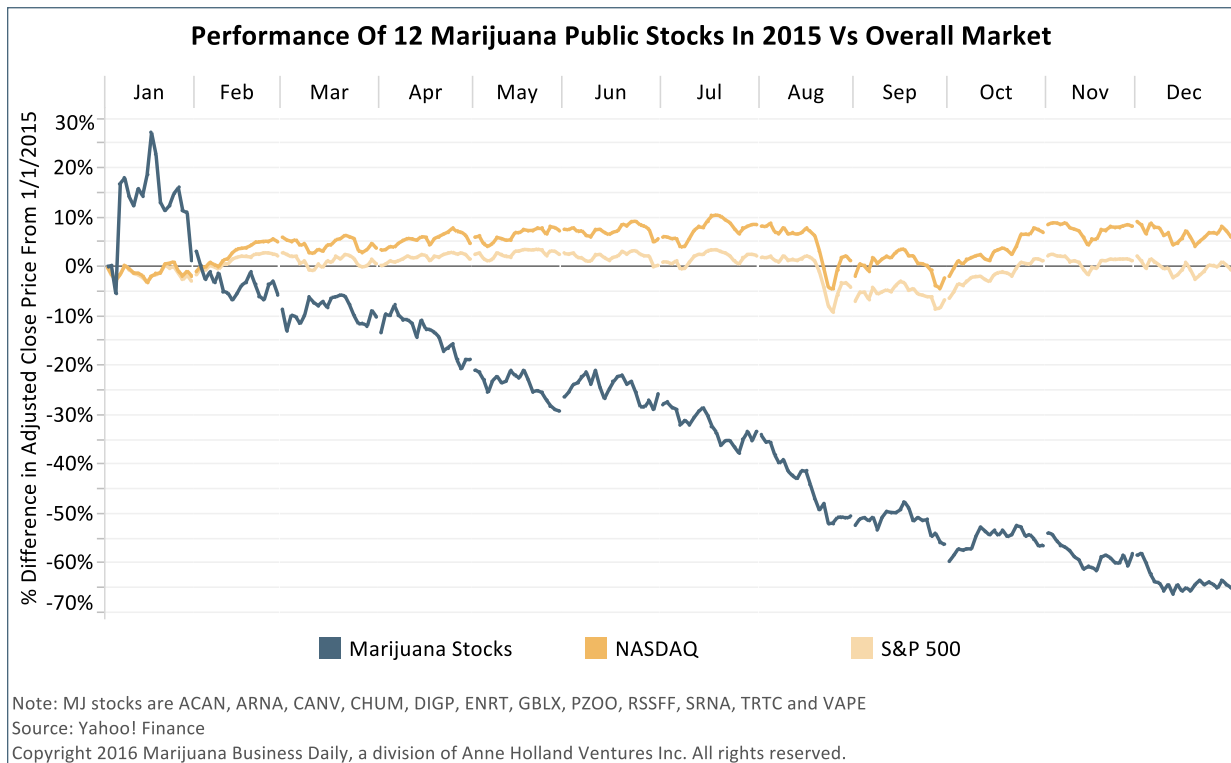
**Average ROI Realized By Investors With Positive Returns On Investments In Privately Held Cannabis Businesses:**

**36%**

When it comes to publicly traded companies, 2015 was a rough one for cannabis stocks – and for many investors who bought them. Though there were some winners that provided positive returns over the year, the majority took a pretty strong tumble by the end of 2015.

A sampling of the performance of 12 cannabis stocks last year paints an ugly picture, especially when compared to the broader markets. The stocks started the year off strong, collectively rising about 27% during the first weeks of 2015. However, the tide quickly turned, and the marijuana stocks ended the year down an astounding 65% from where they started.

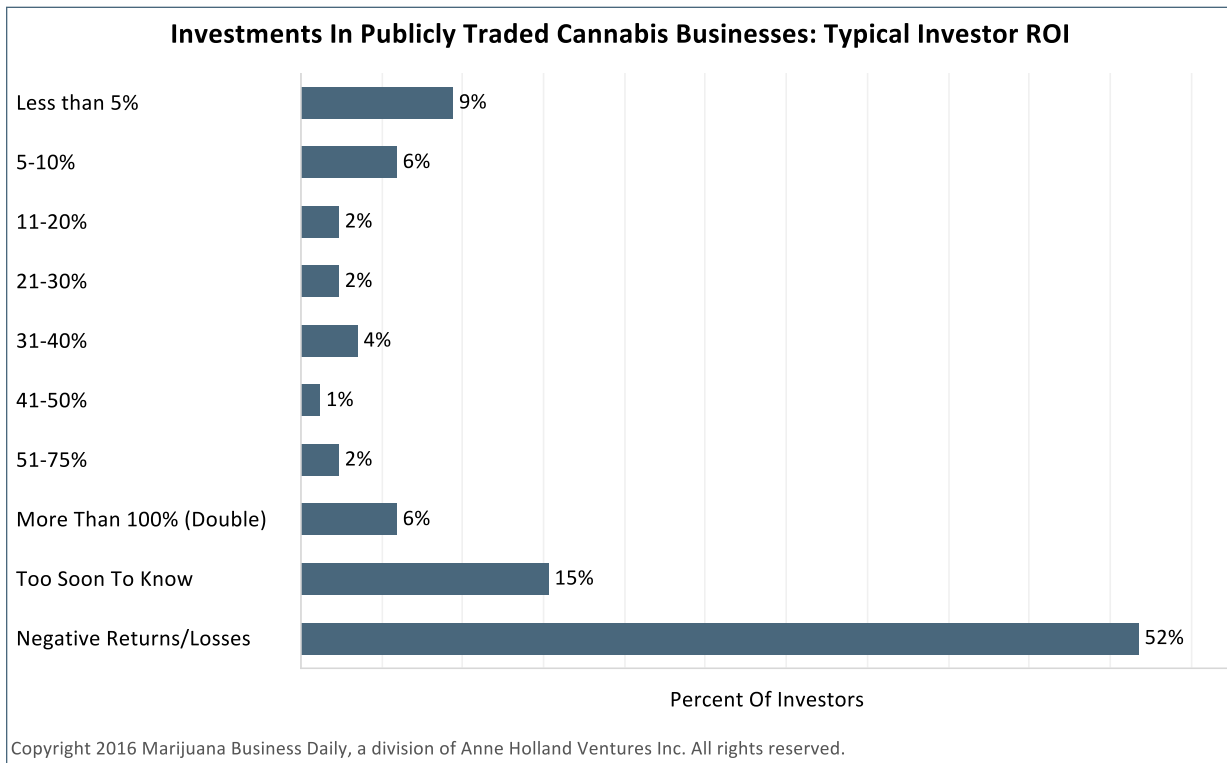
Chart 5.22: Performance Of 12 Marijuana Public Stocks In 2015 Vs Overall Market



By comparison, the S&P 500 was flat – ending 2015 almost exactly where it began – while the Nasdaq rose about 6%. To be sure, some individual cannabis stocks ended 2015 in positive territory, while others that ultimately ended down managed to record impressive sustained rallies at some point during the year.

Regardless of where they finished the year, though, many fluctuated significantly at some point along the way, demonstrating the tremendous volatility of these investments.

Chart 5.23: Investments In Publicly Traded Cannabis Businesses: Typical Investor ROI



With that in mind, it’s not surprising that just over half of investors in public cannabis stocks have lost money thus far. Another 15% appear to be playing the long game and are holding onto the stocks, though many of them likely experienced paper losses last year as well.

It’s interesting to note that 8% of stock investors report earning a return of over 50% last year, and the average rate of return among those who didn’t experience losses is actually an impressive 33%, which is very close to the 36% ROI investors in privately held businesses have realized on successful investments. So there are certainly some diamonds in the rough and the possibility to make money. Overall, however, more investors are losing their money on these stocks than those making money, and it’s almost a coin toss as to whether any individual stock pick will be a winner or a loser.

**Average ROI Realized By Investors With Positive Returns  
On Public Cannabis Stocks:**

**33%**

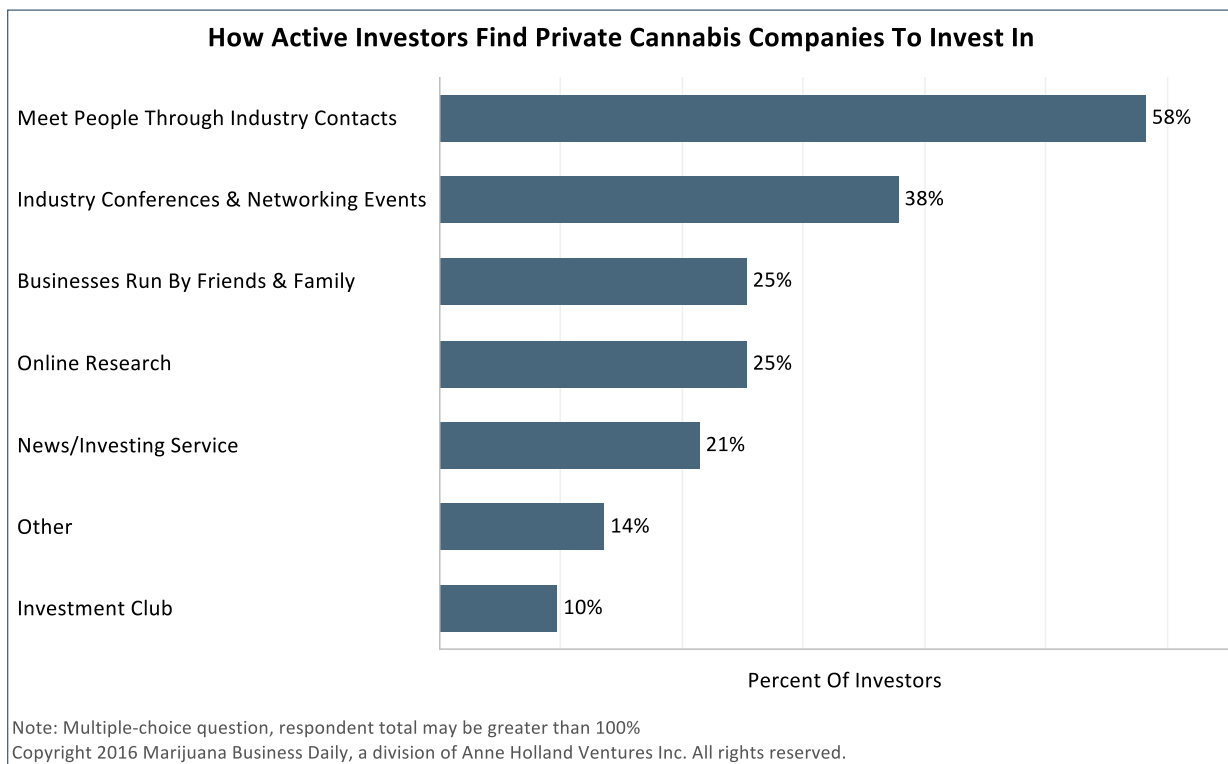
This demonstrates that publicly traded cannabis companies are operating relatively independently from one another right now, and instead of generally responding to similar market forces, each company is still very much an island, subject to relatively unique circumstances when compared to others. This also makes it very difficult to make any sweeping statements about cannabis stocks as a whole, which means each potential investment target needs to be evaluated in detail.

One of the biggest challenges for both entrepreneurs and investors can be identifying each other and generating pipelines of potential matches between interested parties. As a testament to the importance of professional networks within the industry, 58% of active investors find potential deals simply by putting out feelers within their personal network. In the same vein, 38% go to industry conferences and events to meet people and expand their networks.

Among the 10% of investors who indicated they use other means to find companies, nearly all were simply describing variations on leveraging contacts in their network.

It's also important to note that there is a definite market for companies that can provide investors with information, as roughly a quarter of investors perform online research and 21% rely on investing news services to identify opportunities.

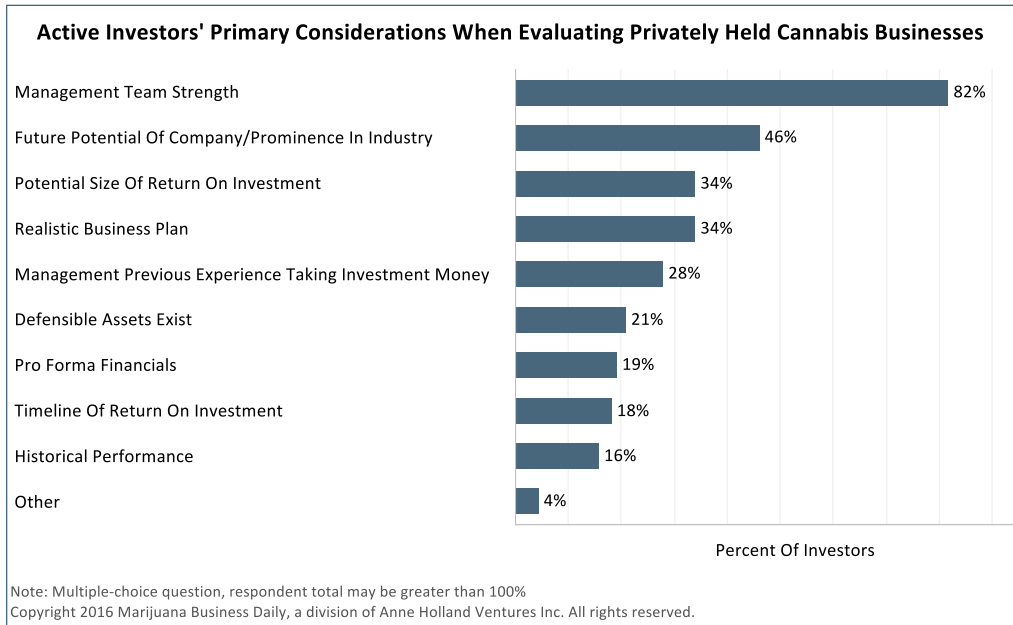
Chart 5.24: How Active Investors Find Private Cannabis Companies To Invest In



Once investors identify companies, they then start evaluating them. The top factor they look for in a potential investment – by far – is a strong management team. More than four out of every five investors say this is the most important factor when evaluating companies.

The second most important consideration, with 46% of investors in agreement, is the overall future potential of the company and its prominence in the industry. These top two factors are basically the intangible pieces of a good investment: the right people with the right idea at the right time. While quantifiable details such as the business plan and potential return on investment are clearly still important supporting factors, entrepreneurs in need of funding would be well-served to note investors' priorities.

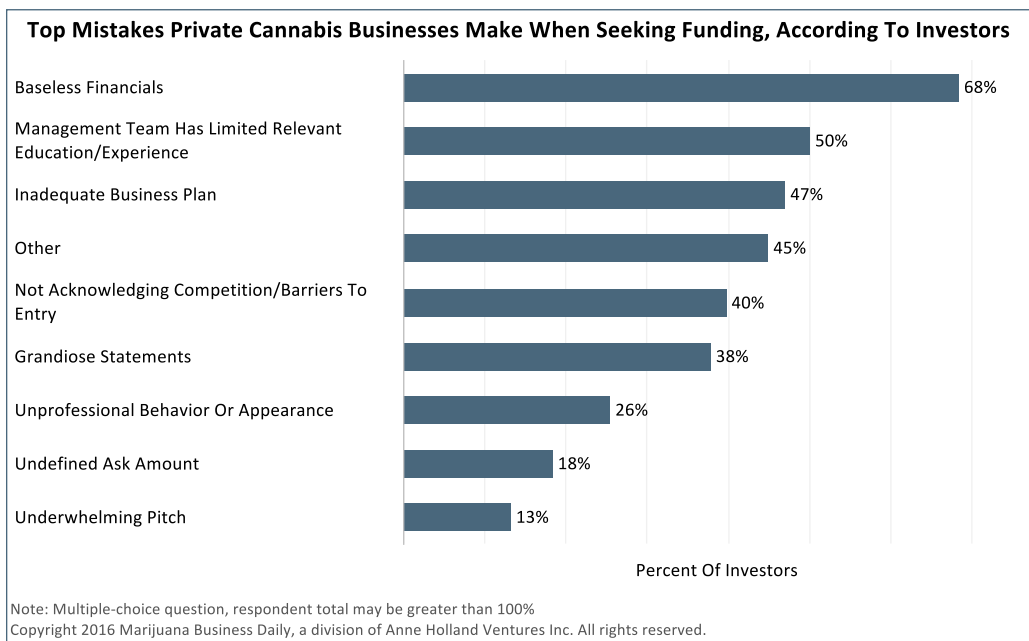
Chart 5.25: Active Investors' Primary Considerations When Evaluating Privately Held Cannabis Businesses



On the other side of the coin, 68% of investors rate unsubstantiated financial projections and business valuation as the number one mistake entrepreneurs seeking funding make. The lack of a strong leadership team is the second biggest red flag for investors, with half agreeing.

Here’s how these data points should be interpreted: While the relevant education, experience and overall strength of the management team is the number one factor investors must feel good about when evaluating deals, nothing can spoil having a top-notch team faster than throwing out outlandish and unsupported financial figures. Pro forma financials and the business valuation simply must be built on verifiable and quantifiable research and facts.

Chart 5.26: Top Mistakes Private Cannabis Businesses Make When Seeking Funding, According To Investors





## THE REALITY: DEAL HIGHLIGHTS, WHAT CANNABIS COMPANIES NEED

The number of single capital raises for amounts that stretch into the seven- and eight-digit figures has grown tremendously just within the past year. A broad sample of both plant-touching and ancillary firms that completed capital raises in 2015 reveals all types of companies are being funded for a large range of investment sizes.

Chart 5.27: Sampling Of Cannabis Company Single Capital Raises In 2015

Sampling Of Cannabis Company Single Capital Raises In 2015		
Company	Sector	Amount
Kalyx Development	Ancillary Technology & Products Company	\$25,000,000
Minnesota Medical Solutions (MinnMed)	Producer/Distributor	\$16,600,000
Illumitex	Ancillary Technology & Products Company	\$16,000,000
LeafLine Labs	Cultivator	\$12,400,000
Eaze	Ancillary Technology & Products Company	\$10,000,000
CannaVest Corp	Producer/Distributor	\$6,500,000
Two Rivers Water & Farming Co	Producer/Distributor	\$4,400,000
OrganiGram Holdings	Producer/Distributor	\$3,000,000
LeafLine Labs	Cultivator	\$2,500,000
BDS Analytics	Ancillary Services Provider	\$1,500,000
Auntie Dolores	Infused products Manufacturer	\$1,250,000
TraDiv	Ancillary Technology & Products Company	\$1,000,000
Jetty Extracts	Processor	\$1,000,000
Scientific Botanical Leasing	Ancillary Services Provider	\$800,000
LeafLink	Ancillary Technology & Products Company	\$750,000
Nemus Bioscience Inc	Ancillary Technology & Products Company	\$724,989
CannaPharmaRx	Ancillary Technology & Products Company	\$454,501
Vapor Corp	Ancillary Technology & Products Company	\$350,000
Vapor Corp	Ancillary Technology & Products Company	\$350,000
Advanced Cannabis Solutions	Ancillary Technology & Products Company	\$300,000
Cannabis Sativa Inc.	Producer/Distributor	\$300,000
Advanced Cannabis Solutions	Ancillary Technology & Products Company	\$200,000
Northsight Capital	Ancillary Services Provider	\$169,000
Enertopia Corp	Producer/Distributor	\$88,022
Medican Enterprises Inc	Ancillary Technology & Products Company	\$66,000
Medican Enterprises Inc	Ancillary Technology & Products Company	\$54,000
Medican Enterprises Inc	Ancillary Technology & Products Company	\$43,000
Enertopia Corp	Producer/Distributor	\$33,294

Note: As of early November  
Source: Marijuana Business Daily  
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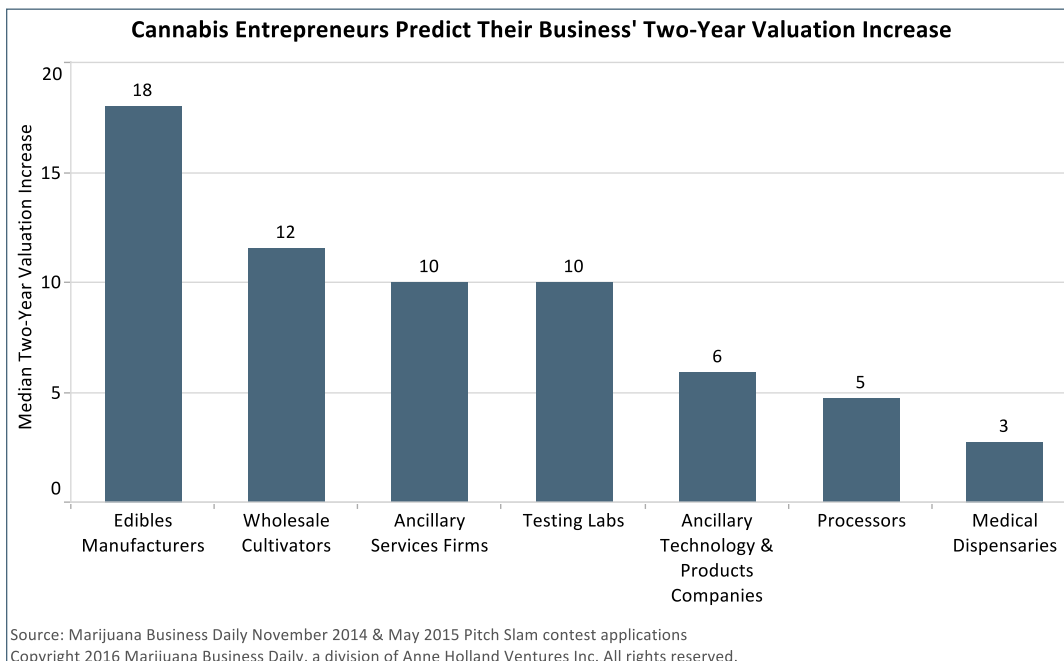
However, while the very largest deals will undoubtedly continue to grab headlines, the vast majority of companies in all sectors have much more modest capital requirements currently. Typical investment amounts businesses are seeking range from \$300,000 for infused product makers and ancillary services firms to \$1.5 million for testing labs.

Chart 5.28: A Sampling Of How Much Money Businesses Are Currently Seeking



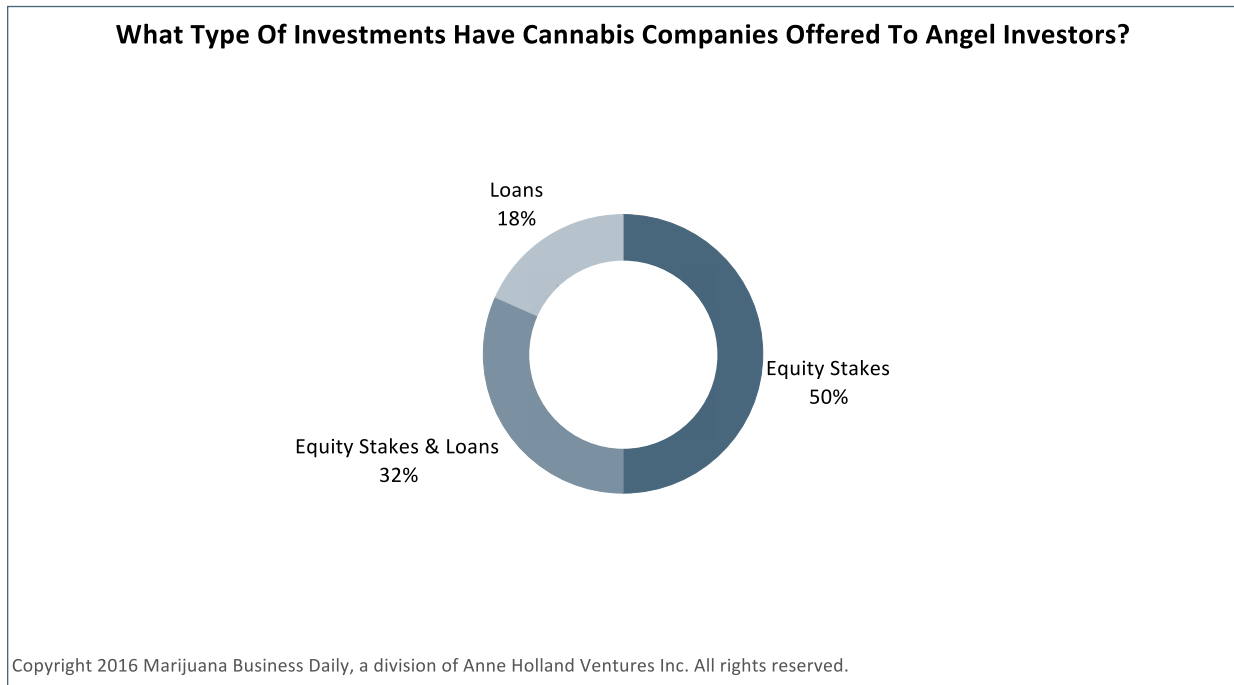
Investors’ most preferred business type – wholesale cultivators – are typically in need of only about \$1 million. In the world of angel investors, venture capital, private equity and the like, that is a relatively modest amount. Entrepreneurs should not be afraid to pitch investors with a high ask, as long as there’s a viable plan for providing a return.

Chart 5.29: Cannabis Entrepreneurs Predict Their Business’ Two-Year Valuation Increase



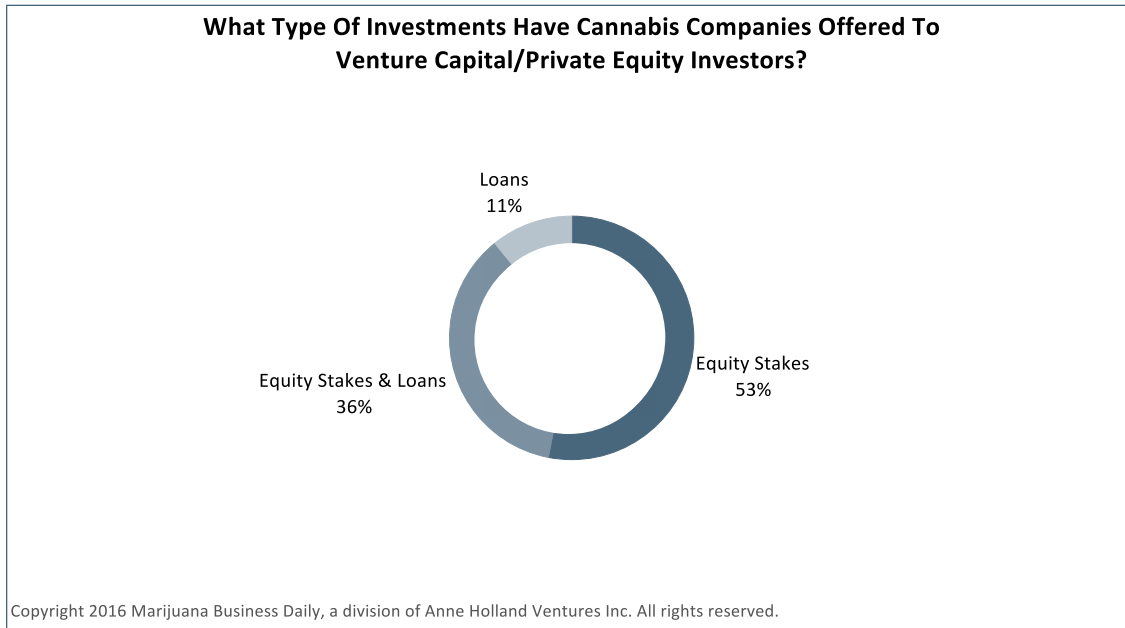
When it comes to an outlook on future growth and performance, owners of edibles manufacturing companies are by far the most optimistic, with a typical estimated two-year valuation increase of 18 times. By comparison, owners of medical dispensaries “only” predict their companies to triple in value over the next two years. Regardless of the sector, these are all impressive valuation growth estimates – though whether they are realistic is an important question for investors to explore.

Chart 5.30: What Type Of Investments Have Cannabis Companies Offered To Angel Investors?



In general up to now, angel investors have more commonly provided seed and other early stage capital to cannabis businesses, while private equity and venture capital funds have most often been involved at later funding stages. But while that’s starting to change, there aren’t many differences in the types of investments entrepreneurs have thus far offered to each.

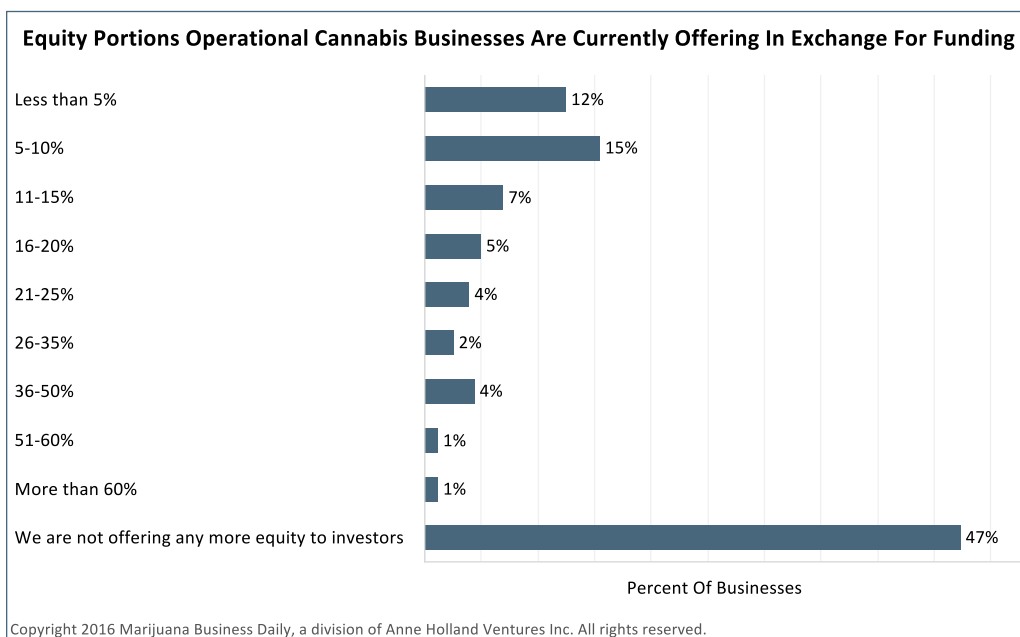
Chart 5.31: What Type Of Investments Have Cannabis Companies Offered To Venture Capital/Private Equity Investors?



While it's clear venture capital/private equity investors are a bit more interested in obtaining ownership in return for their investments than angel investors are, the breakout of deal types with these different investors is largely the same.

However, what's unique to the cannabis space right now is that the gap between the cost of capital entrepreneurs are willing to stomach and the return investors expect can be wide – and it's driven by a fundamental difference in philosophy. Entrepreneurs place a premium on their company because of the risks they're taking (this is especially true for plant-touching companies), while investors tend to apply a discount to the company because of those very same risks.

Chart 5.32: Equity Portions Operational Cannabis Businesses Are Currently Offering In Exchange For Funding

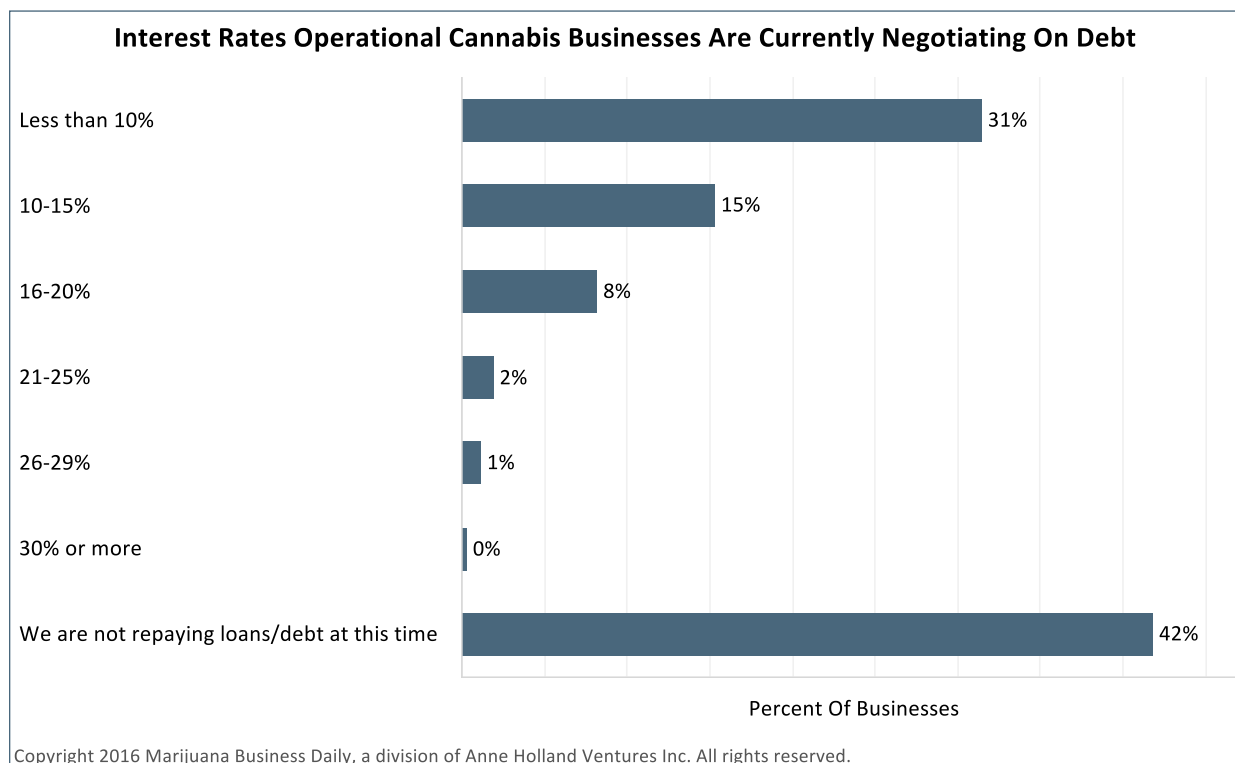


That being said, there can be a tension point between entrepreneurs and investors interested in equity stakes. While investors have a clear preference for ownership stakes, almost half of entrepreneurs report they are not currently offering any equity in exchange for funding. However, a surprising 17% of businesses are still willing to give up more than 15% of ownership, and 2% are even willing to give up more than half of the company. Overall, cannabis companies on average are offering 16% equity in exchange for funding.

**Typical Equity Portion Operational Cannabis Businesses  
Are Offering In Exchange For Funding:**

16%

Chart 5.33: Interest Rates Operational Cannabis Businesses Are Currently Negotiating On Debt



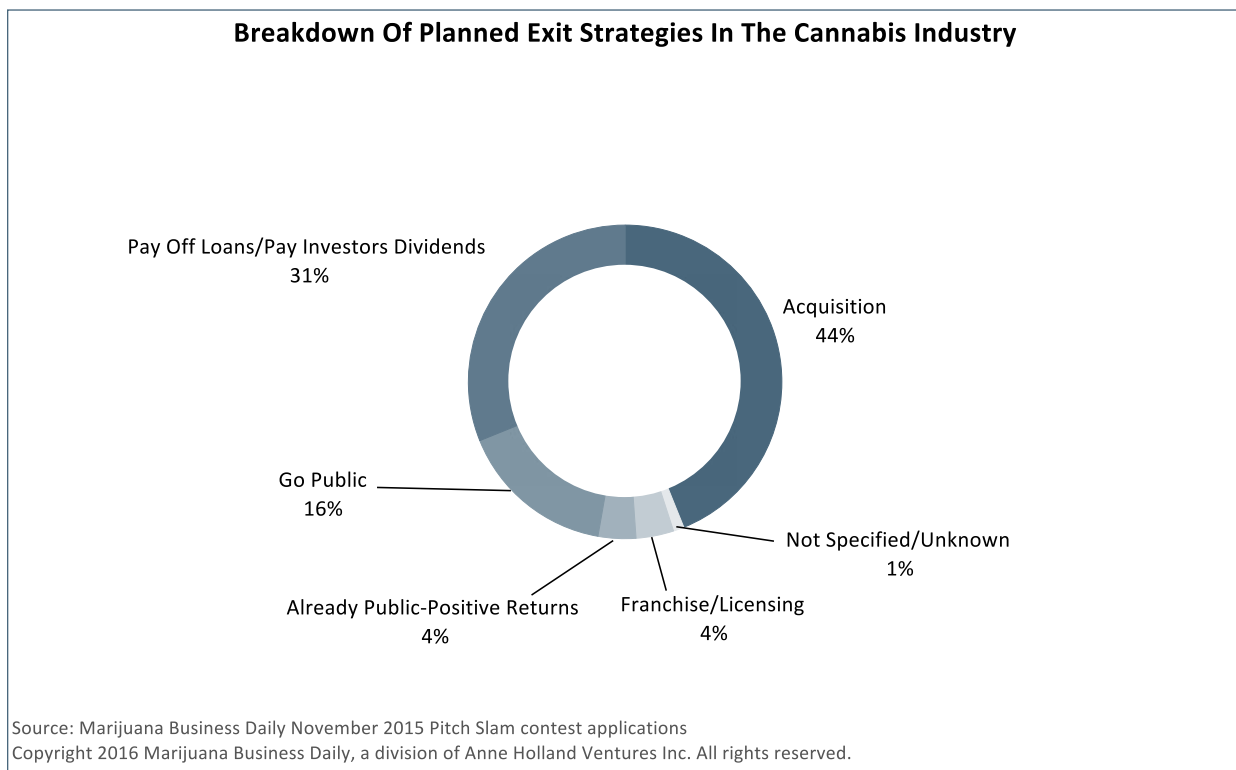
For businesses that opted for debt instead of equity financing, most are paying very reasonable interest rates, with 46% of all businesses reporting a cost of capital of 15% or less on this type of funding. Only about 3% of businesses are paying interest rates in excess of 20% on loans. These companies likely negotiated the loans a couple of years ago rather than recently. Overall, the average interest rate currently being paid on debt is about 10%, which is unchanged from last year.

Typical Interest Rate Operational Cannabis Businesses  
Are Currently Negotiating On Debt:

10%

It’s worth noting a comparison here between the average interest rate operational businesses are typically paying to borrow money, and the average rate investors indicate they have charged for loans to all businesses, which is 15%. The latter figure is inclusive of loans investors have made to both pre-launch and operational businesses, which illustrates that as businesses launch and receive capital subsequent to the seed phase, the cost to borrow that money decreases.

Chart 5.34: Breakdown Of Planned Exit Strategies In The Cannabis Industry



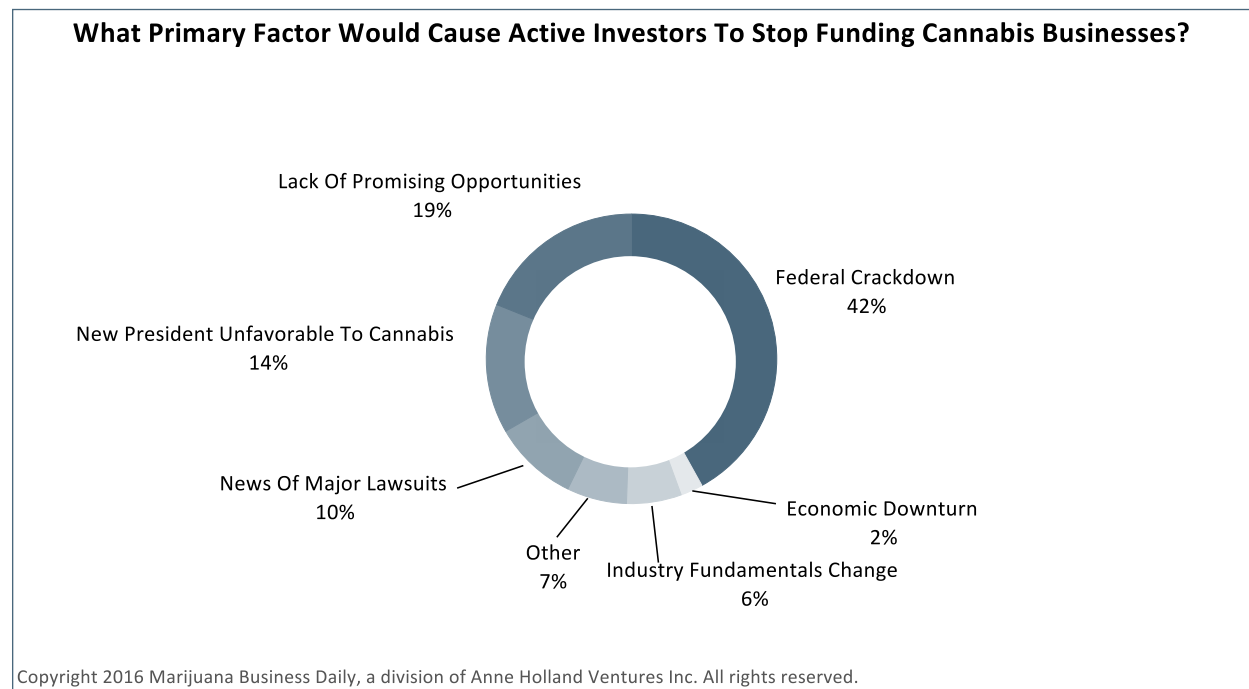
While the actual course of events for most cannabis companies and their investors is yet to be seen, insights can be gleaned from what entrepreneurs are targeting as their preferred exit strategy.

Nearly 45% of entrepreneurs say acquisition by another company is the top choice. Circumstances can vary, but generally an acquisition results in a fundamental business transformation, new executives and a new corporate vision. Because of these circumstances, acquisitions can be a great way to align the interests of both entrepreneurs and investors with regard to an exit strategy.

That being said, the second most desired exit strategy is virtually the opposite scenario: Nearly a third of entrepreneurs want to maintain ownership and control of the company and ultimately grow profitable enough to pay off loans and/or start issuing dividends to shareholders.

Ultimately, no particular exit strategy is inherently better or worse than another, and it really just comes down to factors such as the owners' and investors' preferences, corporate objectives and capital requirements.

Chart 5.35: What Primary Factor Would Cause Active Investors To Stop Funding Cannabis Businesses?



With a general election this November in which there isn't an incumbent, in addition to an unprecedented number of states expected to legalize medical and/or recreational cannabis, 2016 could very well be the year when the industry as a whole reaches critical mass. Many believe that point has already been reached and full legalization at the federal level is only a matter of time.

Regardless, uncertainty about the industry's future is still very high. Fifty-six percent of active investors say they would stop funding cannabis companies if the federal government takes up efforts to squash the industry or if the new president is not friendly to the movement. Given that political support for medical and recreational marijuana varies significantly by state and among lawmakers at the federal level, these concerns are understandable. The industry is not out of the woods yet by any means.

That being said, 35% of investors don't seem overly worried about an unfavorable political environment. They are instead on the lookout for changes within the industry that would reduce or eliminate attractive investment targets before they would head for the exit.

So while there are a lot of potential negative outcomes, the general consensus among both entrepreneurs and investors is that they are making history, and that seems to be a risk worth taking.

# Appendix

## METHODOLOGY

Each year, our in-house editorial team re-performs the research for this entire Factbook from stem to stern. Nothing is simply updated, but rather is re-created from scratch each time. The cannabis industry evolves and changes so quickly that prior assumptions can quickly become outdated, necessitating new research to re-substantiate those assumptions and develop new ones.

*Marijuana Business Daily's* primary goal is to provide cannabis companies and investors the most reliable and timely data possible. Our organization's purpose is not to hype the industry, but rather to serve as a trustworthy reality check. When you see differences between our numbers and those of others, bear in mind that our sole goal is to bring cannabis entrepreneurs and investors a realistic view of the truth – or as close to the truth as one can get at this time.

We are not trying to recruit investors, sell consulting services, land licenses, go public or lobby politicians. Our job is to bring you the numbers. Here's how we do it:

## Exclusive Study Data

Every year since 2012, the team at *Marijuana Business Daily* has conducted an industry-wide, anonymous online survey of cannabis executives from across the industry as well as marijuana investors. We ask that respondents answer questions related to the finances and operations of their businesses honestly and to the best of their knowledge.

The industry has matured over the years, so respondents have a better sense of their companies' financial and operational performance. Our brand and presence has also matured, becoming one of the most trusted in the industry, so respondents are more likely to share this type of information with us. These two factors have allowed us to pose increasingly sophisticated and detailed questions that in turn allow us to present more specific and actionable data.

This year's survey ran from Jan. 4 through Jan. 15, 2016. A typical respondent answered roughly 30 questions relevant to their sector and involvement with the industry.



In total, we received 930 qualified responses, the demographics of which breakdown as follows:

- Medical Dispensaries/Recreational Stores ..... 118
- Infused Product Manufacturers ..... 77
- Wholesale Cultivators ..... 163
- Testing Labs ..... 10
- Ancillary Services Firms ..... 212
- Ancillary Technology & Products Companies..... 148
- Investors..... 202

These figures and all statistics and data throughout this book represent responses from individuals who are operating in a legal capacity in the U.S. cannabis industry. We take an extremely conservative approach and exclude data for businesses/respondents whose legal standing is unclear in any manner. Examples of what we exclude consist of, but are not limited to, responses from those who:

- Claim they operate plant-touching businesses in states that have not legalized medical or recreational cannabis.
- Claim they operate wholesale grows in states where such sales are not permitted.
- Operate plant-touching businesses outside the United States (though international companies in the ancillary services and technology/products or investing sectors that serve the U.S. market are included).

## State Data

To the extent possible, all information in Chapter 2 is based on publicly reported data from state medical/recreational cannabis programs themselves. The amount and type of publicly reported information available on medical/recreational marijuana programs varies considerably by state. Our analysts use patient registries, tax records, regulatory documents, program reports produced by the state and any other available data source to gather all of this information. We then review all of the gathered facts and assess them for accuracy and reasonableness based on our extensive experience covering all aspects of this industry.

In cases where stats and figures are unreliable or unavailable, we develop estimates based on a wide variety of sources including: state and municipal regulations; qualifying conditions; survey and interview data with companies in the region; population and patient demographics; average patient/consumer spend; and comparisons to similar states with higher-quality documentation. Lastly, in some cases we leverage our extensive network of knowledgeable sources to review the final figures and provide feedback.

State-level information and conditions are continually changing. Our cut-off date for information updates was early February 2016 for the purposes of going to press. However, some data is reflective of conditions as of early March. For updates on particular states since then, please see the News by State tab on our main website, [www.MJBizDaily.com](http://www.MJBizDaily.com).

## Sales Projections

We take a conservative approach to our projections based on a belief that as a business owner or investor, it's more prudent to prepare for the worst and hope for the best. This is not to say that we take a pessimistic view of the industry and its trajectory, but rather that we are keeping our feet firmly planted on the ground.

Overall, our sales projections incorporate a variety of factors including our state-by-state data, sales and regulatory trends, survey data, information from our What Cannabis Patients and Consumers Want report, and a healthy dose of professional judgment based on our experiences covering these markets as they have played out for the past five years.

Because the landscape changes quickly and there are still many unknowns, we must make many assumptions. For instance, California is enacting statewide regulations on medical cannabis businesses in 2018, but it's difficult to determine how that will impact everything from sales to the number of MMJ companies in the state. States also often add new medical conditions to their programs or introduce new regulations, which can have a drastic impact on sales. And then of course the federal government is continually shifting its position on cannabis, which affects the size and reach of the national marijuana industry.

We make assumptions on what will happen to the best of our ability using our institutional knowledge and extensive interviews with experts on the ground in each state, and we also create ranges – rather than estimate a specific sales number – that account for a best-case and worst-case scenario.

Legalization can throw a huge curveball at projections. It's difficult to predict which states will legalize recreational or medical marijuana and when, let alone estimate how big those markets will be. For this report, we assume that two to three states will legalize recreational marijuana in 2016 and three states will legalize medical cannabis this fall as well. Given what we know in early 2016, the states most likely to legalize will be large markets (such as California on the rec side and Florida and Ohio on the MMJ side). So we calculate average sales for mid-to-large size markets in general and incorporate them into our estimates. Looking out further, we estimate that another two to three states will legalize recreational marijuana and another two to three will legalize medical cannabis through 2018. Those markets will have a minimal immediate impact on sales because of the typical extended timeline from legalization to launch.

It's important to reiterate that new markets don't begin to function at full throttle the day after a new law is passed. Generally, we've seen a 18-24 month lag time between the date a law passes and the first store/dispensary opening. Openings then proceed on a rolling basis, where often a year or more elapses before we consider the market to be fully functioning. Our forecasts, therefore, build in expectations for those factors.

For sales estimates through 2018, we analyze each market individually and project revenues based on unique factors in each market. Those all feed into the national sales numbers. For 2019 and 2020, we use general growth rates for medical and recreational marijuana sales because the uncertainty is simply too great.

You may notice in some cases our projections for the next several years have changed slightly from what we published a year ago. Each year, we revisit – and revise if necessary – our previous and future estimates for national sales and state MMJ and recreational retail revenues.

Lastly, note that our sales projections through 2020 classify all marijuana sales in Washington State starting in the middle of 2016 as recreational cannabis revenues. The state is merging its medical cannabis program into its recreational program. Even though licensed stores will be able to get an exemption to sell medical cannabis to registered patients, as of press time it appeared that the state will report all figures under the recreational marijuana umbrella and not break out MMJ-specific sales.

## Economic Impact Estimates

Economic multipliers are commonly used to illustrate the “trickle out” effect of a dollar spent within a market. For example, a patient goes to a dispensary and spends \$100. The MMJ business will then use a portion of that money to pay an employee, who in turn goes out and uses that money to pay their rent, eat out at restaurants, buy a car, and so on until the marginal additional dollars injected into the economy are virtually zero.

Traditional macroeconomic multipliers can range anywhere from 10 to 20 times the original dollar amount spent, while more specific values can be derived for particular industries, regions, etc. Through a series of calculations based on data from survey respondents, in addition to consultation with a cannabis economist, we derived a standard multiplier of four for the marijuana industry.

In other words, for every \$1 consumers/patients spend at dispensaries or rec stores, an additional \$3 of economic value will be injected into the economy – much of it at the local level.

This is not the same metric as total revenues along the cannabis supply chain that can be used to approximate the “total size” of an industry. Rather, the economic multiplier paints a picture of the impact of the cannabis industry as a whole has on the broader economy. The multiplier does reflect the economic value created along the supply chain since marijuana retailers use revenue from customers to pay suppliers and vendors, but it also encapsulates the broader impact and can be applied to any instance of spending/sales/revenue. Additionally, it includes cannabis-related tourism and its effect on the economy.

For example, any type of individual cannabis company could use this multiplier to quantify the impact on the local community of its decision to hire two more employees by multiplying their wages by four to determine the total impact of those jobs. Conversely, the multiplier can be used to demonstrate the value that will be removed from a community if jobs are lost or whole businesses are forced to close down.

Legislators and bureaucrats often rely on this type of metric when determining the economic impact of welcoming new businesses to a municipality or that of a tax rate change. Cannabis entrepreneurs can use this metric on a broad scale to make impact statements, influence/inform legislative processes and rulemaking, and so on.

Got questions or input? We are always delighted to hear from folks in the field with their questions, concerns, data and experience. Please feel free to contact us at [CustomerService@MJBizDaily.com](mailto:CustomerService@MJBizDaily.com) or (401) 354-7555 x1.

Also, to keep up with news and developments throughout the year, be sure to sign up for *Marijuana Business Daily's* free newsletter and watch for our Chart of the Week feature every Monday.

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Adherence Compliance developed the first license-based compliance risk score for the cannabis industry in June 2014. Since then, our SCORE App and Enterprise Compliance Platform has been used to audit over 350 cannabis licenses across the country. The SCORE App evaluates more than 250 compliance points per operational cannabis license and is continually updated with State, Local and Federal requirements and regulations.

Adherence's cloud-based software platform supports owner/operators, certified resellers/partners, banking & insurance and regulatory oversight programs. Our industry leading data partners include Marijuana Business Daily, New Frontier Financial and Cannabis Business Executive. Adherence is the global leader in regulatory and financial compliance for the cannabis industry.

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BDS Analytics is the leading provider of Cannabis Business Intelligence and Market Share tracking. Our main clients are dispensaries and grower/producer/brands.

By capturing and organizing millions of transactions from dispensary POS systems we provide actionable insights based on accurate information enabling dispensaries, brands, and growers to sustain their success.

Dispensary clients that use the GreenEdge™ business intelligence system easily adjust the products they carry based on actual point of sales transaction data about overall sales in their State and channel. This increases sales, customer loyalty and profitability at minimal cost.

Manufacturer/grower/producers subscribe to GreenEdge™ to:

- **INCREASE SALES:** Support sales efforts with 3rd party data about the success of their products;
- **DEVELOP BETTER PRODUCTS:** To determine which new products to develop (based on details about growth categories, product attributes and competition) and;
- **IMPROVE MARKETING:** To decide which marketing campaigns to create, maintain or change.

Our veteran team of data analytics experts from similar companies (SPINS and Leisure Trends/NPD) has worked with winning retailers like Wholefoods Market, Vitamin Cottage, REI and Sports Authority. Manufacturer clients have included most major natural foods companies such as Kashi, P&G, General Mills, Solgar, Hain Celestial and bike and outdoor brands like Specialized, Trek, Vibram, Shimano.

## Cannabis Benchmarks, a division of New Leaf Data Services, LLC

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At Cannabis Benchmarks®, our mission is to bring transparency and efficiency to cultivators, dispensaries, investors, traders and other cannabis market participants through validated production cost data and standardized wholesale price benchmarks.

We are the world's first and only wholesale cannabis benchmark, deploying critical business data services and analytics that have proven successful in every other agricultural commodity market. Cannabis Benchmarks® provides a variety of trusted wholesale price benchmarks for national and state-level markets using industry-accepted methods and practices. Our price benchmarks serve as a guide for buyers and sellers to transact with confidence and efficiency and drive the calculations used to make an array of financial and operational go/no-go decisions.

Our team has worked with the leading price assessment and benchmarking firms in energy, chemicals and agricultural commodities. We are supported by our cannabis specialists and field reporters who have an in-depth knowledge of the cannabis market and market participants.

Our goal is to capture a high percentage of buy/sell wholesale transactions across local cannabis markets. We gather data from four primary sources: Our team of in-the-field price reporters who are in constant contact with cultivators and dispensaries, self-reported transactions input directly into our C-Spot Submission Center, data collected by state regulators, and data provided in partnership with exchanges, vendors and associations. Our transaction data and sources remain confidential and secure so industry participants can report with complete confidence.

As legal cannabis markets expand and develop, traders and investors are increasingly relying on Cannabis Benchmarks® to complete economic pro forma analyses, conduct debt and equity research, perform asset valuation and due diligence, develop trading and hedging strategies, index and settle physical and financial transactions, measure, manage and report risk, and perform mark-to-market/fair value accounting. We help our customers make decisions faster, with greater accuracy and confidence.