

ARCVIEW MARKET RESEARCH & BDS ANALYTICS

The State of Legal Marijuana Markets

EXCERPT

6th Edition

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ADVISORS**

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Canna Advisors, named the #1 cannabis consulting firm by Cannabis Business Executive, has helped entrepreneurs and investors in 25 states win licenses and launch and expand their cannabis businesses. Celebrating their 5 Year Anniversary, Canna Advisors was awarded the Industry Excellence Award for 2018 by the National Cannabis Industry Association, and co-founders Diane and Jay Czarkowski have been awarded the Arcview Group Outstanding Member Award.



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Medicine Man Technologies offers industry-leading cannabis cultivation and dispensary consulting. Our dispensary services offer solutions for inventory, quality control, and processes that keep you compliant and profitable. Our Cultivation Max service provides clients who have the resources necessary to enter the competitive cannabis marketplace with the expertise needed to achieve prolific yields. Utilizing our proprietary Three A Light methods, including the exclusive Success Nutrients line, we consistently harvest over 3 pounds of high quality, cured cannabis per 1,000 watts of light. Whether you're retrofitting an existing grow or starting from the ground up, let us help you achieve the same results.

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Cresco Labs is a medical cannabis cultivation, processing, manufacturing and retail company. We are drafting the new cannabis narrative through regulatory compliance and professional process-based operations that consistently produce high-quality products for consumers. Since inception, we have sourced field experts to drive innovation forward in the regulated cannabis market. Together, we have shaped the framework for the future of the industry.

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Cannasure Insurance Services

We work with cannabis collectives, cooperatives, cultivators, dispensaries, infused product manufacturers, physicians, and marijuana advocates to protect their assets, employees and customers. Maintaining a deep-sector focus allows Cannasure to provide unparalleled depth of knowledge, comprehensive risk assessments and unique product offerings to the evolving cannabis industry.

**Cannabis saw its first US\$5-billion company this
past year; Canadian licensed producer Canopy**

**Growth reached that lofty capitalization at the end of
2017, in which it generated US\$54 million in revenue**

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Executive Summary

It has been a tumultuous time for the cannabis industry since the watershed election day of November 8, 2016. In the 18 months leading up to April 2018:

- Fifty-nine million adults in the United States have had their access to legal cannabis improved, either via voter initiative or, most recently in West Virginia, by legislative action—an encouraging development for legalization prospects given the fact that most states without medical cannabis have no voter initiative process.
- The Canadian government established the rules that will govern the cannabis market when legal, adult-use sales commence later this year.
- Eighty-two million Germans have gained access to medical cannabis through the country's 20,000-plus pharmacies.
- Unrepentant drug warrior and Alabama senator Jeff Sessions was appointed attorney general, tried to unleash his army of US attorneys on the cannabis industry, and was ordered to stand down by the President of the United States.
- Other long-time Republican opponents of legalization, including conservative Utah Senator Orrin Hatch and former Speaker of the House John Boehner, had changes of heart and came out for medical-use legalization.

A Three-Fold Increase by 2022

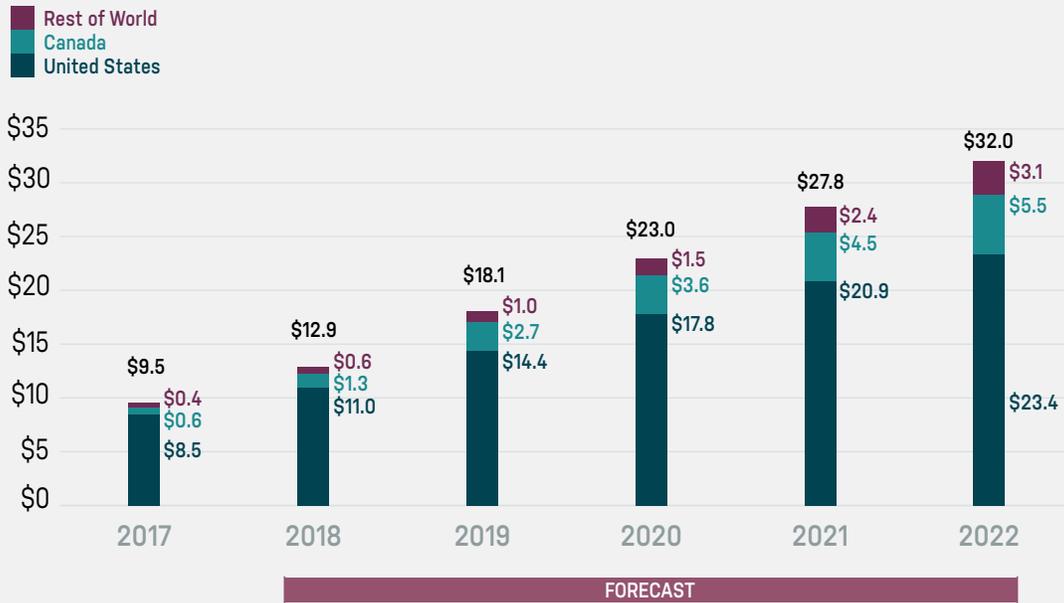
The political tumult (see Chapter 1) happened against the background of a legal cannabis industry that enjoyed 37% growth in 2017 to reach \$9.5 billion in consumer spending around the world. The lion's share of that spending, \$8.5 billion, was generated in the US, where 31% growth was driven largely by the five states—Colorado, Washington, Oregon, Alaska, and Nevada—that had adult-use retail stores operating by year's end.

On January 1, 2018, in the state of California adult-legal sales began. This brought up the number adults legally able to purchase adult-use cannabis products globally from 17 million (including sales in five US states and Uruguay) to 47 million—a nearly three-fold increase. That headcount will jump to more than 75 million later in 2018 with the much-anticipated addition of Canada to the ranks of markets where cannabis can be sold to all adults.

Adult-use markets will be the key drivers of a tripling of consumer spending around the world by 2022 to \$32.0 billion (a 27.5% compound annual growth rate); spending in the United States will grow to \$23.4 billion (22.3% CAGR).

The legal cannabis industry has been transformed dramatically since 2013 when it was “medical-only” and amounted to less than \$3 billion in spending. Adult-use legalization is such a growth driver that in 2014, the first year of adult-use sales in Colorado and Uruguay,

Legal Cannabis Spending (In Billions)



Source: Arcview Market Research/BDS Analytics

those countries accounted for 10% of worldwide legal cannabis spending.

Now the pace of change is picking up speed. In fact, the medical portion of the market, which had trended down to 71% of total legal spending in 2017, will immediately plummet to 41% in 2018 as the Nevada, California, and Canada adult-use markets explode (and the California medical market implodes—see Chapter 6). The medical component of worldwide legal sales will shrink to just 35% in 2022 due to continued substantial growth in those three markets, plus the launch of new adult-use markets already approved (Maine and Massachusetts) and those expected to launch during the forecast period (Arizona, Connecticut, Rhode Island, and Vermont—see Chapter 2).

The US will remain by far the biggest component of the legal cannabis market during that forecast period, and this report details the regulatory picture and forecasts the legal revenue in 31 states. The widely divergent adult-use regulatory approaches of Canada's ten provinces are also outlined in developing the country's national-level forecast of spending in the medical and adult-use markets. Profiles and forecasts of the nascent (primarily medical-only) markets in 21 other countries are also provided.

For the first time this year, Arcview Market Research's cannabis market model (developed in partnership with BDS Analytics) contains the whole world, estimating global spending in 2017 at \$9.5 billion, growing at a 25.7% CAGR to \$30.0 billion in 2022 (for a deeper dive into all 30 countries in the model and an extended worldwide

The Politics of Legalization

The growth of medical use legalization is happening around the world against the backdrop of the United Nations Single Convention on Narcotic Drugs of 1961 in which, at the insistence of the US, cannabis was included in the same class of substances as opioids. The treaty, however, allows the distribution of even such Schedule IV drugs under license for specific purposes, such as medical use.

Cannabis also shares the company of heroin (plus LSD, ecstasy, methaqualone, peyote, and others) in Schedule I of the United States' Controlled Substances Act (CSA) as “drugs with no currently accepted medical use and a high potential for abuse.” Many other opiates—such as hydrocodone (Vicodin), fentanyl, and oxycodone (OxyContin)—are classified in Schedule II of the CSA, meaning they also have a high potential for abuse, but have accepted medical uses. Allowance of medical use by the federal government in the US could happen by simply rescheduling cannabis out of Schedule I. Adult-use legalization would require the descheduling of cannabis—essentially treating it as no more dangerous than alcohol, coffee, melatonin or a host of other substances people consume.

That prospect seemed to grow remote when newly elected President Donald Trump rewarded Alabama Senator Jeff Sessions for being the first member of Congress to endorse his long-shot 2016 campaign by naming him attorney general. The former US attorney made clear his dim view of cannabis legalization, and in January 2018 retired the Cole Memo's internal Justice Department guidance that local federal prosecutors should not prosecute companies operating under state-level legal medical-use regimes.

But during Sessions' tenure it has become clear that the attorney general is increasingly alone in his stated belief that “good people don't smoke marijuana.” In October 2017, Gallup reported that a record 64% of Americans believe cannabis should be legalized. For the first time in Gallup's nearly 50 years of polling, a majority of Republicans agree, including stalwarts like former Speaker of the House John Boehner—who as recently as 2011 was “unalterably opposed” to legalization. In April 2018, Boehner came out in support of state-level medical-use legalization and, going a step further, has joined the board of a cannabis company (see Chapter 6).

In September 2017, conservative Utah Sen. Orrin Hatch joined fellow Republicans Cory Gardner (CO) and Thom Tillis (NC), along with several Democrats, in sponsoring the Marijuana Effective Drug Study Act of 2017. In a cannabis-pun-filled Tweet, Hatch said, “I have high hopes that this bipartisan initiative can be a kumbaya moment for both parties.” In April 2018, Gardner announced he would lift his three-month blockade of Justice Department appointments in exchange for President Trump's agreement to back “federalism-based legislation that allow US states to decide how they want to regulate cannabis,” according to Gardner.

Sessions eventually opened up a chink in his armor: Shortly after an April 24, 2018, open letter from CNN chief medical correspondent Sanjay Gupta urging him by name to allow research into the medical benefits of cannabis, Sessions told the Senate Appropriations Committee, “there may well be some benefits from medical marijuana” and said it's “perfectly appropriate to study” the possibility.

Segmenting the Opportunities

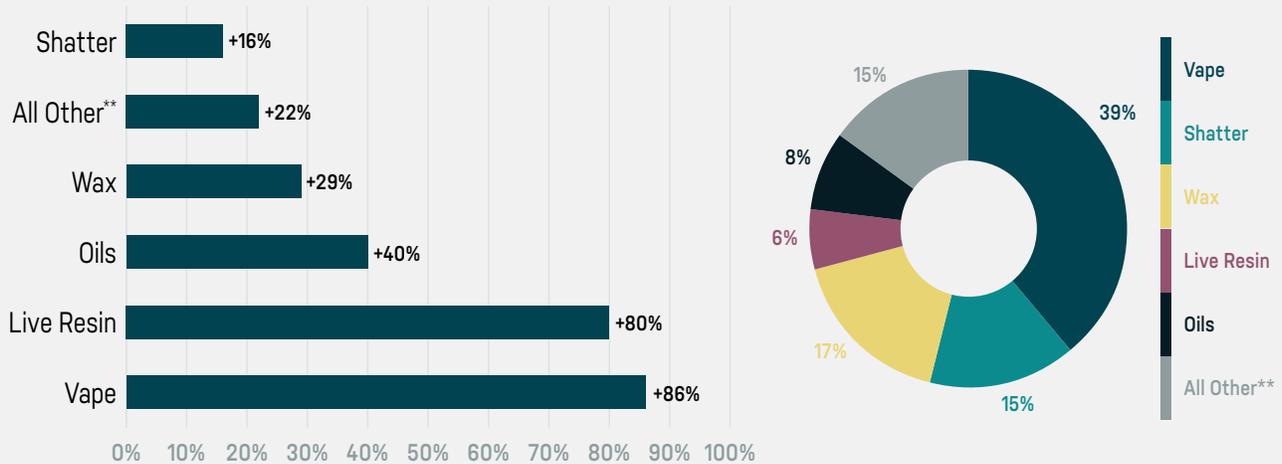
With the industry moving towards legally regulated operation, the various sectors of the industry have been able to take advantage of the many business and technological advances available in legal industries. As the sectors of the cannabis industry integrate these advances, businesses have transformed from small, amateur operations to highly advanced, industrial-scale organizations capable of supplying the diverse needs of a rapidly expanding market.

With the tide of legalization, the retail and cultivation sectors have evolved dramatically from their grassroots beginnings in the illicit and early medical cannabis markets. Cultivators that once were forced to hide small outdoor grows on woody hillsides are now free to operate massive greenhouse or warehouse grows capable of pulling in multiple harvests a year. In the most developed adult-use markets,

small, tucked-away dispensaries have dropped off in favor of large chain retail operations on major thoroughfares.

Edible and extract manufacturing that was once done by amateurs in a garage or kitchen has moved into industrial-grade laboratories producing highly-refined, lab-tested and quality-controlled products. With flower's share of total sales relative to other products falling in the largest legal states, targeting the subsectors of concentrates and edibles that have growing appeal to consumers, according to BDS Analytics' GreenEdge point-of-sale tracking, will be key to success for brand-marketers moving forward (see Chapter 4). One example of this can be seen in California's extract market, where the vape subsector comprises 71% of all concentrate sales, which makes high quality vapes a hot opportunity for companies looking to enter the market.

Total CO, WA, OR Concentrates, 2017 vs 2016 % Growth



** All other includes bubble hash, crystalline, hash, kief, rosin

Source: GreenEdge by BDS Analytics

Cultivators Chasing a Likely Tripling of Demand

The superior growth of concentrates and edibles in no way means the end of the popularity of smoking cannabis flower. As happened long ago in the tobacco business, more of that consumption is shifting to pre-rolls from loose flower, based on trends already apparent in GreenEdge. And, of course, concentrates and edibles growth will drive flower demand too.

With the advent of adult-use legalization in 2014, cannabis cultivation began evolving rapidly. Some of those changes are regulator-driven, but most are simply business decisions made to capitalize on consumer demand in a market that is forecast to grow from \$9.5 billion in consumer spending in 2017 to \$32.0 billion in 2022.

A cultivator's first key decision is the general method that will be used for growing. In some markets, specifically highly regulated medical ones, that decision is made by regulators. In markets where there is a choice, however there are three effective methods for productive cultivation: indoor, outdoor, and greenhouse growing. Choosing the best method for a given operation is largely dependent on location, demand, and, most importantly, the relative costs of starting and operating such grows (see Chapter 4).

Cannabis Investment Grows Up

Cannabis saw its first USD\$5-billion company this past year: Canadian licensed producer Canopy Growth reached that lofty capitalization at the end of 2017 in which it generated USD\$54 million in revenue. Despite a pullback since 2018 began, the top four Canadian LPs were valued at a total of \$10 billion at the end of April, about twice our 2022 forecast for the consumer spending in the entire Canadian market.

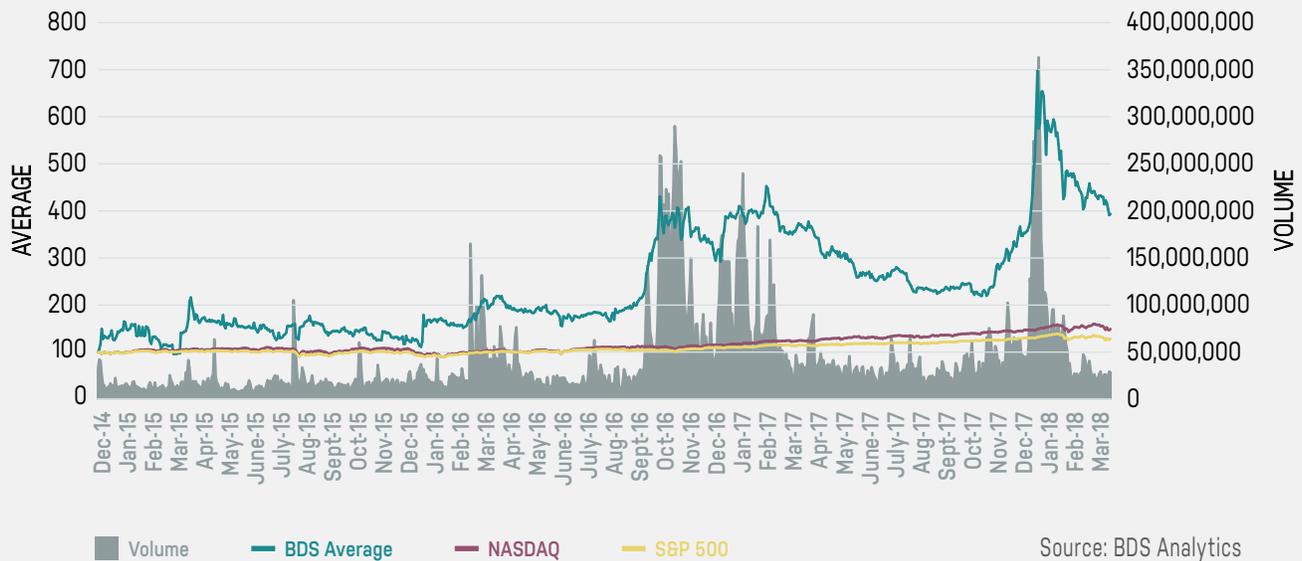
As with cable TV values in the 1980s or Internet values in the 1990s, there are no earnings-per-share bench-marks, and even revenue multiples don't much matter to investors focused on one thing alone: Cannabis is going legal worldwide in the years ahead. While US federal prohibition lasts, the stocks of the Canadian LPs are the only exposure investors can get to that upside, and hence have driven an enormous bull market in cannabis stocks for several years now.

The real risk in such valuations is not in market prospects but political ones. Hence the index of US and Canadian stocks we track had a generally rough 2017. In part, that was simply a pullback from the huge gains posted in 2016 as the prospects of eight states advancing legalization looked ever stronger. A modest post-election correction turned into a 40% rout as Sessions' Justice Department looked more menacing and Congress dithered before renewing the Rohrabacher-Blumenauer amendment blocking enforcement action in medically legal states. A fourth quarter run-up was punctured by the January 3 news that Sessions was setting aside the Cole Memo.

In the US, public equity markets have generally been closed to plant-touching cannabis companies—they have typically turned to the private equity markets for financing—but things are changing quickly in the US. There are now hundreds of private equity funds, family offices, and high-net-worth individuals replacing the friends-and-family investors of just a few years back, and they have made available several billion dollars in seed and expansion funding to both plant-touching and ancillary companies in the hopes of a big payoff when federal prohibition ends.

The sharp delineations of investment landscapes in Canada and the United States are starting to blur with the first listing of a plant-touching entity's shares on

Arcview/BDS Cannabis Index — Average and Volume



a major US exchange. Canadian LP Cronos Group listed its shares on the Nasdaq in February 2018. In March, the company formed a joint venture with Los Angeles-based retailer MedMen to develop branded products and open stores in Canada. Meanwhile, the cannabis-friendly Canadian Securities Exchange—the third largest Exchange in Canada after the Toronto Stock Exchange and the TSX Venture Exchange—lists about C\$5 billion in cannabis related companies out of a total of nearly C\$9 billion market capitalization in 354 companies. That group features the shares of 23 companies that are US-based or have interests there, with a total market cap above C\$2 billion.

In both Canada and the United States, the public's money is starting to finally find its way into cannabis

investments. Staying on the safe side of “the green line” separating plant-touching companies (who by taking possession of a controlled substance risk federal repercussions) from those who don't, hedge-fund giant Tiger Global led an April 2018 \$17-million Series A round into Green Bits, a retail data-tracking and compliance software company. Crossing the green line—but north of the border in Canada—beverage giant Constellation Brands bought a 10% stake in the largest Canadian LP, Canopy Growth, for \$191 million in October 2017.

Smaller operators suffered a setback however, when the Small Business Administration in April 2018 expanded its rule against government-backed loans to plant-touching companies to include ancillary companies that don't cross “the green line.”

Where the Market Goes from Here

The legalization and regulation of cannabis sales is a trend that is spreading around the globe. In the last few years, many countries either loosened regulations to expand their existing medical markets or established new medical programs. The trend reached a new milestone with Germany's move in April 2017 to begin sales of flower and other cannabis-derived products in pharmacies.

A few markets have gone beyond medical programs and have implemented or are about to launch regulated adult-use markets. Regional trends are becoming clear. While North America is expected to continue to generate the lion's share of legal spending, top international markets are significantly contributing to spending as well.

South America has some of the most liberal medical programs and is the home of the first federally legal adult-use market in the world in Uruguay. Germany has made strides to position itself at the top of European legal markets, and it is expected to remain there throughout the forecast period. While the United Kingdom and France are currently very limited markets, we expect their programs to broaden within the forecast period.

Outside of Europe and South and North America, there are a handful of other countries contributing to legal spending; some of the smaller emerging markets represent the biggest growth opportunities for investors (see Chapter 7).

The common wisdom has long been that federal legalization in the US will mean nothing but upside for legal cannabis companies. However, the two largest legalization processes of the past year—in California and Canada—show how uncertain the effects of prohibition's end can turn out to be, with strict regulatory regimes likely to limit the legal market's ability to compete with well-established illicit markets.

Historically, governments have often sought to profit from consumers' tastes by taxing the sale of their favorite sub-stances, or even, in the case of the British Empire in Asia, by itself going into the business of selling them. Clearly, a much more nuanced view of history is needed for companies and investors to properly prepare for the future of cannabis regulation around the world (see Chapter 8).

Whatever stance various governments adopt in what is ever-more-certain to become a post-prohibition world, the legal situation for both consumers and those who provide them cannabis is going to improve. Prices will come down, availability in attractive retail environments will expand, and smart businesspeople who prepare now will be looking at a once-in-a-lifetime opportunity to build a new kind of industry.

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\$190M+

Invested

\$3M+

Raised for Legalization

600+

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"GreenEdge enables us to provide essential data and charts to our sales team so they can demonstrate to dispensaries the increased sales and customer satisfaction that will come from carrying and prominently presenting our products." - Kevin Halloran, Chief Financial Officer, Kushy Punch

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