



Executive Summary

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Executive Summary



Troy Dayton, CEO
The Arcview Group



Tom Adams,
Editor-in-Chief

It is my pleasure to present to you the Executive Summary of Arcview's 5th edition of The State of Legal Marijuana Markets. This will give you a solid glimpse of what we elaborate on in much more detail in the full report.

It's hard to imagine a more unique industry than the cannabis industry, or one that is growing and changing faster.

If you are looking to make decisions regarding your involvement in this nascent, but fast-maturing industry, you deserve access to the best data and analysis to plot your course. Arcview has helped people like you navigate this complex business and political environment since 2010.

As the leading publisher in researching and understanding the legal sale and distribution of cannabis, Arcview Market Research brings unparalleled expertise and insight to the task. In an effort to stay on the cutting edge of data and analysis we are pleased to partner with BDS Analytics on this edition. We chose BDS Analytics because they have a comprehensive and meticulous data set backed up by point-of-sale transaction data.

I'm also excited to introduce you to Tom Adams, Arcview's new Editor-In-Chief. Tom Adams created the projections and analysis that pioneers of the home video revolution and later the broadband internet revolution relied on. He now brings that tremendous experience and insight to today's business boom.

As the leading group of high net worth investors in the cannabis industry, The Arcview Group believes that investment in quality market data and analysis will pay dividends in a market where mistakes can be costly and where getting up and staying up to speed quickly is crucial.

I invite you to consider ordering the full 200+ page report that will be released in a few weeks. If you do, you will also get a robust mid-year update later in the year. For the cost of an hour or two of a top expert's time you can access the data and analysis that are the result of thousands of hours of painstaking effort.

At Arcview, our mission is to forge a principled and profitable cannabis industry from the ashes of prohibition. I look forward to working with you to build a new kind of industry.

Sincerely,
Troy Dayton,
CEO The Arcview Group

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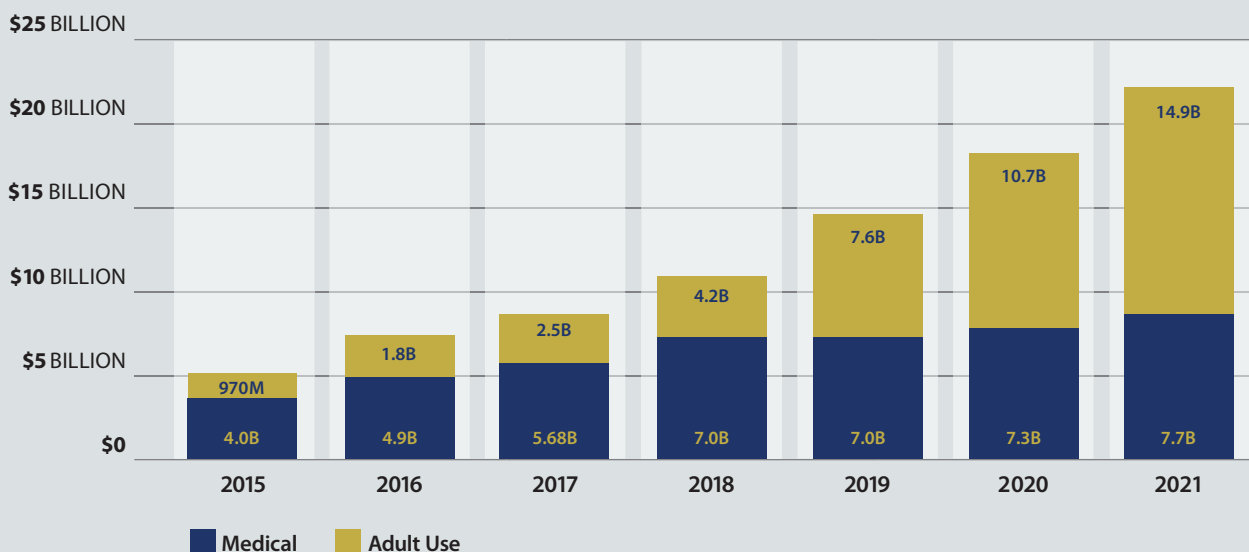
A Year Of Substantial Gains Across The Industry

The legal cannabis industry accelerated at a remarkable pace in 2016. North American consumers spent \$6.7 billion on legal cannabis products, up 34% from 2015.

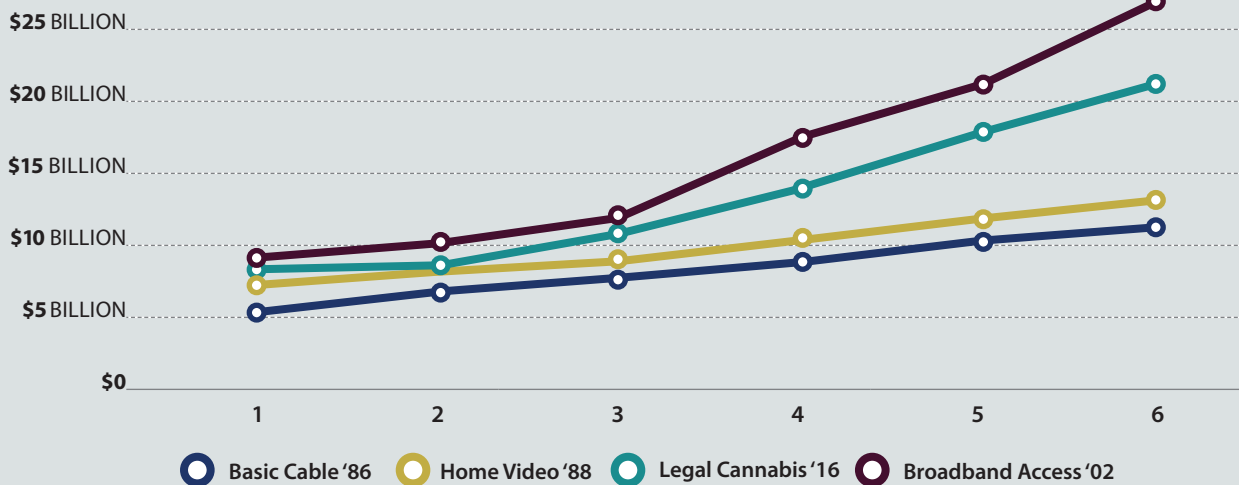
Cannabis is now legally sold in state-of-the-art retail dispensaries with computer-based inventory and sales tracking, fully regulated and taxed by their state governments just like any other product category. Entrepreneurs are modernizing the product just as quickly. Many successful brands have launched extracts, edibles, topicals, and other types of products that are leading consumers to spend more and, in cutting-edge Colorado, they have

reduced traditional dried flowers to less than 56% of the business. More states passed laws to open new markets and expand existing ones in 2016 than in any previous year. These new markets will drive sustained revenue growth in the years ahead. The legislatures of Pennsylvania and Ohio legalized medical cannabis in those major swing states, while voters in California, Maine, Nevada, and Massachusetts passed adult-use initiatives and Arkansas,

► North American Legal Cannabis Spending 2015-2021



► 5-Year Growth in \$5-Billion-Plus-Industries



North Dakota, Florida, and Montana voters passed medical cannabis laws. The blistering 34% compound annual growth rate (CAGR) from 2014 to 2016 was driven primarily by Colorado and Washington initiating adult-use sales. This rate of growth will subside somewhat in 2017 to 22%, as the eight states that voted to open or expand their cannabis markets on Election Day in November 2016 work to implement the new programs. But Arcview Market Research forecasts growth will reaccelerate beginning in 2018, as adult-use sales ramp up in Canada, California, and Massachusetts along with medical sales in Florida. That will grow the \$6.7-billion market of 2016 at a robust 27% CAGR to \$22.6 billion in 2021 (see graph prior page).

Very few consumer industry categories reach \$5 billion in annual spending and then post anything like 25% compound

annual growth across the following five years. Cable television came close, growing 19% annually in the late 1980s as national networks like CNN and HBO proved to be wildly popular. Broadband internet subscription spending grew

Very few consumer industry categories reach \$5 billion in annual spending and then post anything like 25% compound annual growth across the following five years.

29% per annum in the early 2000s as it became almost as much of a “must-have” utility as electricity or television for the modern home. What became the ubiquitous home video business that birthed the great Blockbuster success story only grew at a 12% CAGR after reaching \$5 billion in revenue in 1988 (see graph, above).

Cannabis, meet capital.

Prohibition is crumbling. Invest in what comes next.

137

Funded Companies

\$103M+

Invested

\$2.9M+

Raised for Legalization

625+

Investor Members



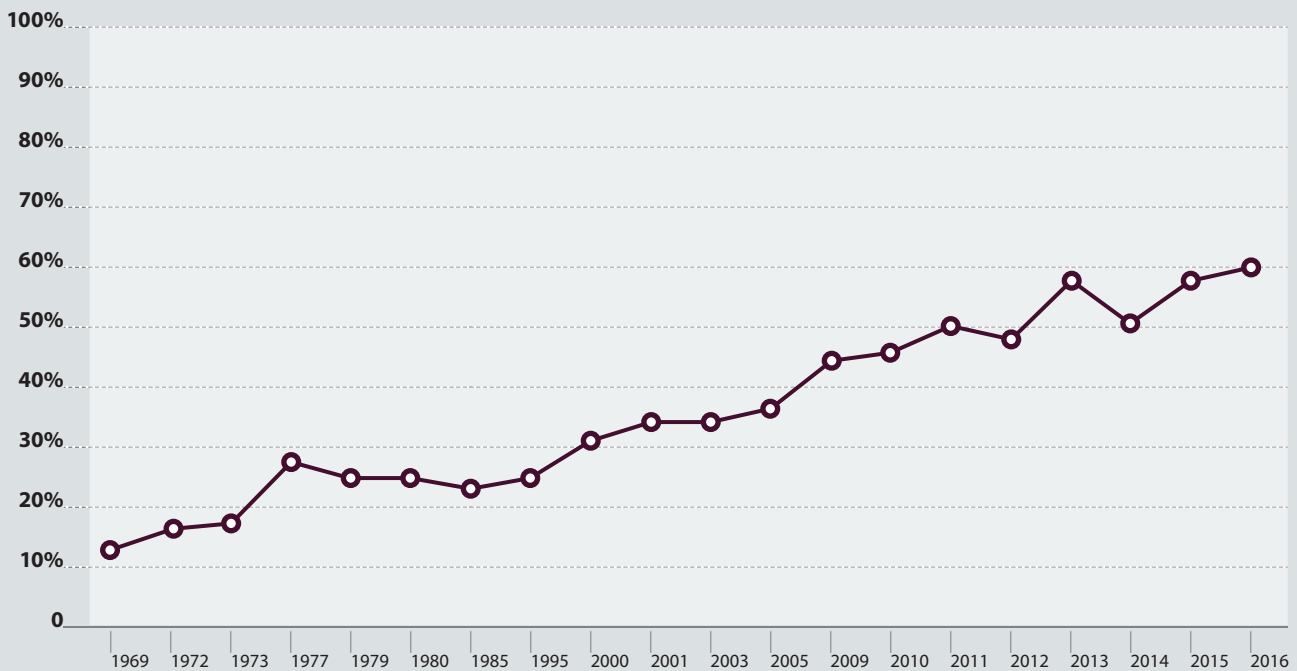
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Arcview is the #1 source of deal flow in the fastest growing industry. If you qualify as a high net worth accredited investor or if you are an entrepreneur raising capital, Arcview might be right for you.

That 20+% annual growth rate is likely to continue for many years past 2021 as more states and countries legalize cannabis. Arcview includes 30 states plus Canada with active legal markets by 2021 in its model, but in many of the largest markets, like New York and Florida, sales are expected to remain limited to medical-use. In the 2021-2026 period, however, many of these states will build robust legal adult-use markets, and all but a few states will make medical cannabis available legally. It's also likely that US federal prohibition will be repealed during that period, which would fuel explosive growth.

Canada and Mexico are included in Arcview's North American market projections for the first time and analyzed throughout this 5th Edition of *The State of Legal Marijuana Markets*. The expected roll-out of Canada's adult-use market is analyzed in Chapter 3. The U.S. northern neighbor may be the world leader in moving toward a well-regulated legal cannabis industry. Countries around the world are already responding to the state-by-state dismantling of prohibition in America—the chief exporter of the “War on Drugs” for decades—by moving to allow medical use (as in Australia, Germany, and Colombia) or to outright legalization (as in Uruguay).

► Gallup Poll: U.S. Support for Legal Marijuana

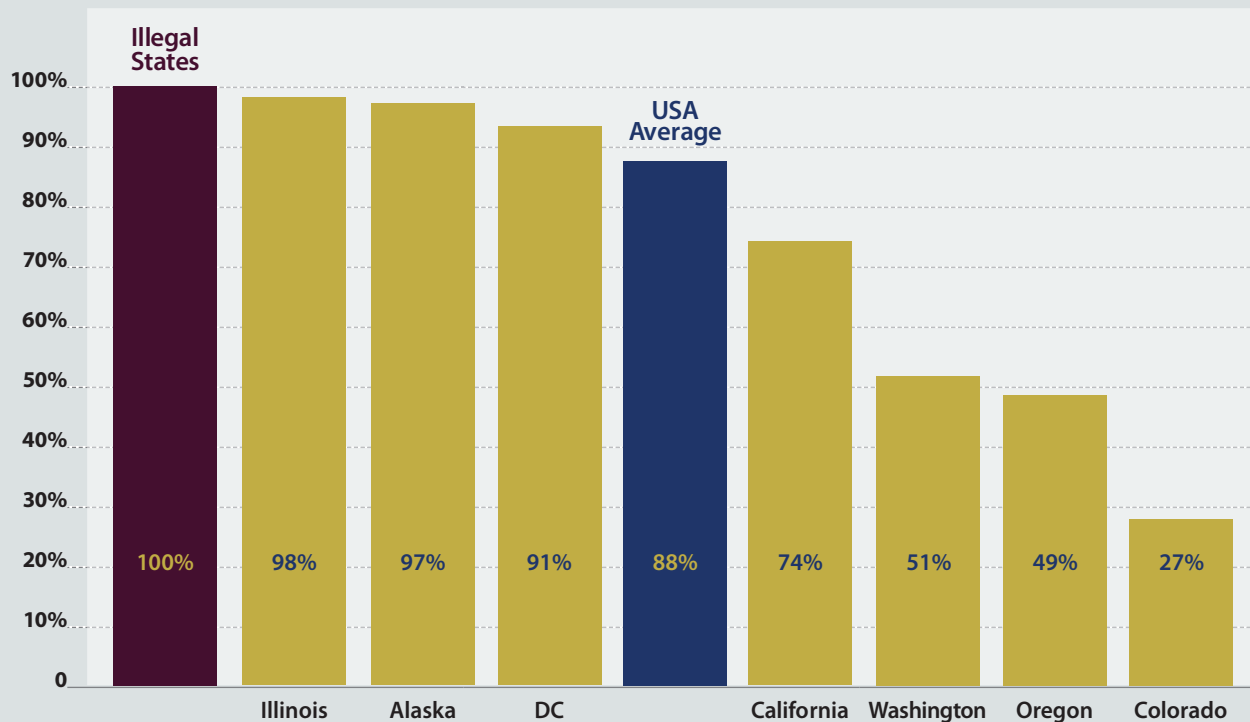


Executive Summary

Robust growth through 2021 and beyond in the United States is predicted even if the US Justice Department opposes the cannabis industry. Chapter 2 provides a detailed analysis of why that kind of reversal in policy is unlikely, but a major one is the popularity of legal cannabis. Polls show that 80% of Americans approve of legal access to medical cannabis and 60% approve of full adult-use legalization (see graph, prior page). That level of agreement is rare on any policy issue and it's allowing elected officials across the political spectrum to start to move past the stigma previously associated with this issue.

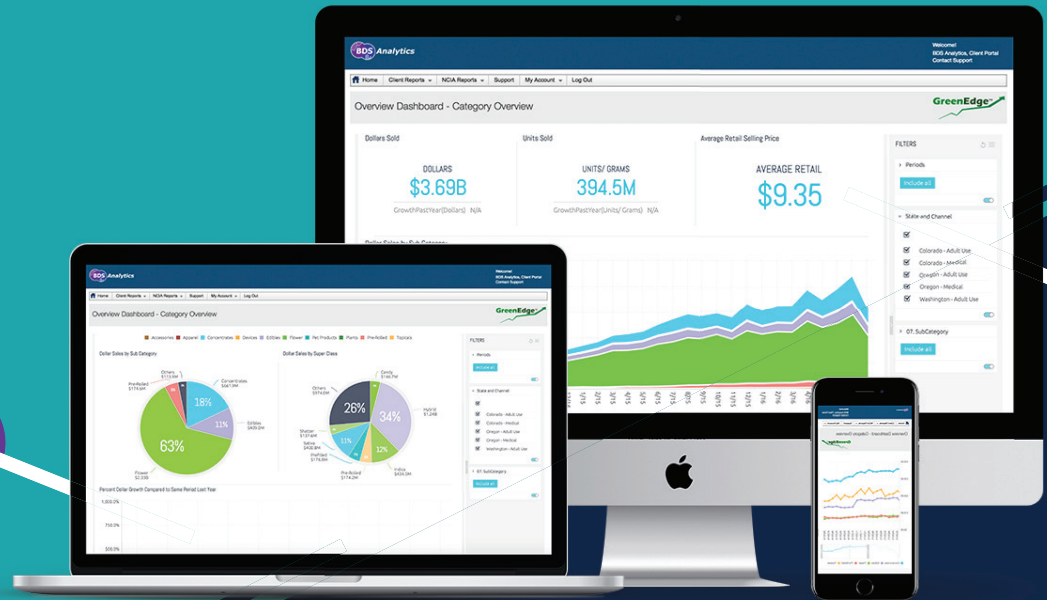
One key reason support for legalization is spreading so rapidly is that it is accomplishing a key goal: the illicit market is shrinking. The illicit market grew steadily throughout the last 40 years of the War on Drugs to what Arcview estimates was a North American total of \$46.8 billion when adult-use sales first began in 2014 in Colorado and Washington. Illicit sales are now being rolled back at the fastest rates in those states with the most mature legal adult-use markets (see graph, below). Most dramatically, what Arcview estimates was a \$1-billion illicit market in Colorado is now less than \$500 million, which represents just 27% of a \$1.8-billion overall market.

► Illicit Cannabis Trade As Percent of Total Spending



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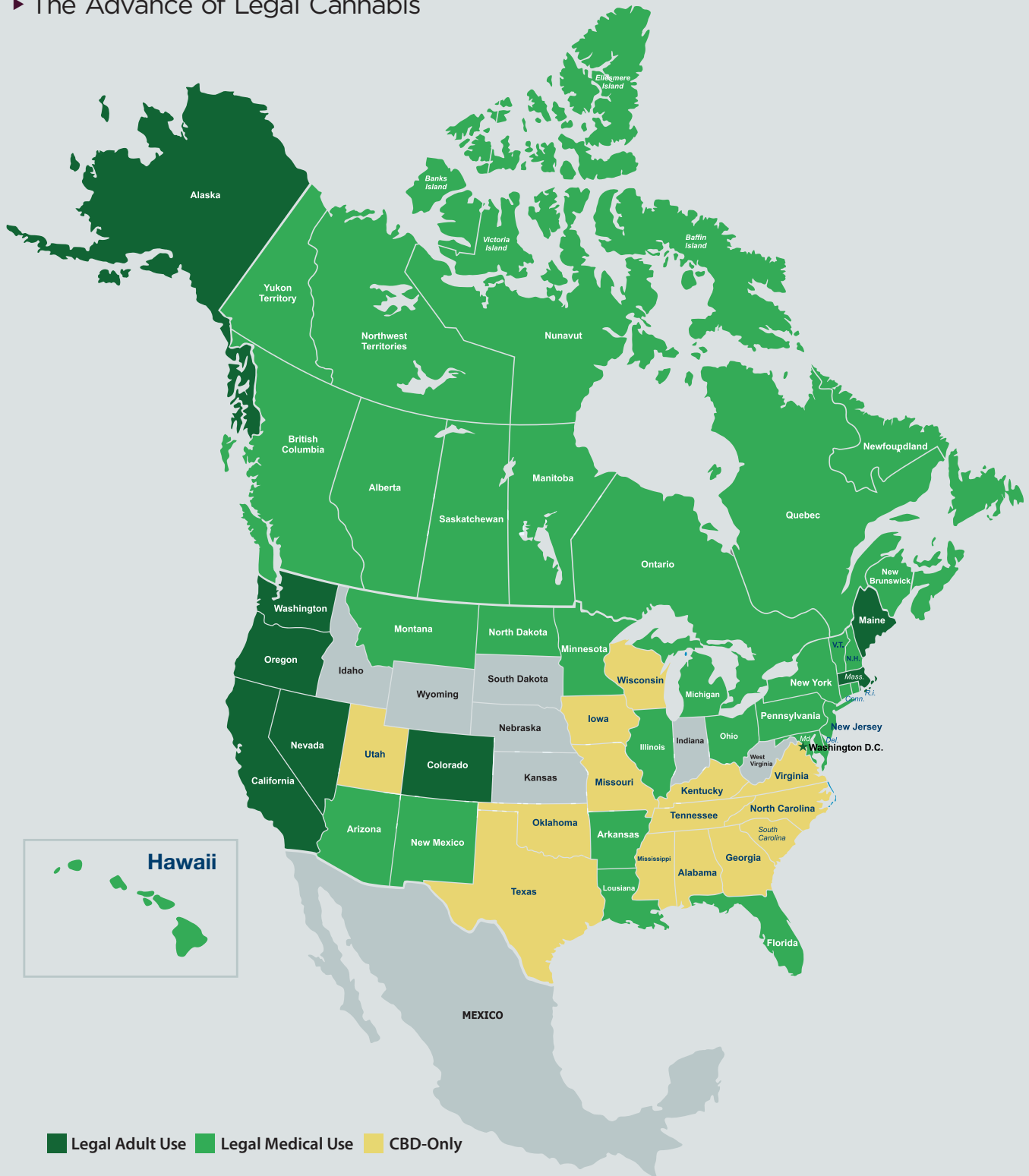


BDS Analytics provides industry-leading cannabis business intelligence and market-share tracking services to investors, brands, dispensaries and policymakers alike. Our data and market insights are derived by analyzing millions of point-of-sale transactions – more than 100 million legal-state transactions to date.

Learn more at bdsanalytics.com.

Executive Summary

► The Advance of Legal Cannabis



Election Results

President Donald Trump said in 1991, “You have to legalize drugs to win that war.” He backed away from that position in his campaign for president but was remarkably consistent in his support for medical access to cannabis and his belief that cannabis policy should be up to the states. But once elected he appointed dedicated drug warrior Jeff Sessions for Attorney General. Sessions remarked “Good people don’t smoke marijuana” at a 2015 Congressional hearing.

Despite conflicting signals from the new administration, investors and entrepreneurs have many other reasons to be hopeful:

- **The newly elected Prime Minister of Canada, Justin Trudeau, took office in late 2015 and immediately started the formal process of legalizing adult use.**
- **In the US November elections, voters in eight of the nine states voting on cannabis measures approved them, bringing to 63% the portion of Americans living in medical use states and 21% those in adult-use states.**
- **For the first time, the Presidential nominees of both major U.S. political parties felt free to speak approvingly of the medical use of cannabis and the right of states to experiment with different cannabis policies.**
- **In December, the Mexican Senate voted overwhelmingly (98-7) to send a medical-use legalization bill to the Chamber of Deputies.**

These developments were inconceivable just a few years ago.

The biggest political win of the U.S. election came in California. California pioneered the modern cannabis policy reform movement in 1996 when voters passed Proposition 215, the Compassionate Care Act. Though voters failed to approve adult use in 2010, they voted overwhelmingly in 2016 to make adult use legal in a state that represents the world’s sixth-largest economy. Nevada also voted to legalize adult use, though a similar initiative failed narrowly in Arizona. Massachusetts and Maine also passed voter-generated initiatives to legalize the adult use of cannabis, joining District of Columbia voters in showing the continent-wide breadth of the movement (see graphic, prior page).

The formalizing of medical-use rules in Montana, and the approval of medical cannabis sales in Arkansas, North Dakota, and Florida (where it garnered 71% of the vote) showed that cannabis policy reform is hugely popular, even in red and swing states that voted for Trump. Earlier in the year, big swing states Ohio and Pennsylvania saw medical legalization come to pass via legislative action.

The two most significant votes may have come in the smallest jurisdictions: citizens of Denver narrowly approved on-site usage in licensed clubs, and Pueblo, CO, voters rejected opponents’ efforts to pass what was essentially an industry shutdown. In both cases, cannabis supporters prevailed against the early betting. These votes show that experience with legalization can lead voters to pass even more open laws, and reject efforts to roll it back.

On The Federal Front

Retail sales taxes in state-sanctioned cannabis markets totaled more than \$500 million in 2016 in Colorado, Washington, and Oregon alone, and \$836 million since adult-use sales began in 2014. Nearly 1.9 million North Americans are legally using cannabis to manage conditions as severe as polymorphic seizures and as common as chronic pain, while millions more are consuming it legally in adult-use states with little or no negative impact.

But the effort to repeal cannabis prohibition at the Federal level remains complicated. Richard Nixon tried to stem the rising popularity of cannabis by equating it to heroin on 1970s Controlled Substances Act (CSA) Schedule 1 list of drugs that 1) have no medical use, 2) have high potential for abuse, and 3) are unsafe to use even under medical supervision.

The DEA's stance makes the Rohrabacher-Farr budget amendment protecting medical marijuana states from federal intervention even more important to the industry's suitability for investment.

There was a glimmer of hope in late 2015 when the Drug Enforcement Administration (DEA) announced it would reconsider its 45-year-long classification of cannabis as a Schedule 1 controlled substance. Some advocates were hopeful it would be removed from CSA schedules completely, and become legally considered akin to other mildly psychoactive products like

coffee, alcohol, and tobacco. Others were concerned that rescheduling it to Schedule 2, along with cocaine, would lead to the "pharmaceuticalization" of the plant, as it would be forced into strict Food and Drug Administration testing protocols and distribution rules. In retrospect, it was unrealistic to hope the nation's chief drug-law enforcers would advance the cause of legalization with either step.

In August 2016, the DEA reiterated its Schedule 1 classification, though it did loosen the rules to allow more researchers to study the potential medicinal value of cannabinoids. Even that move was apparently too much for some inside the bureau; in December new rules were announced clarifying that the agency even considers non-psychoactive cannabidiol (CBD) extracts Schedule 1 controlled substances.

Rohrabacher-Farr

The DEA's stance makes the Rohrabacher-Farr budget amendment protecting medical marijuana states from federal intervention even more important to the industry's suitability for investment. The amendment, a piece of legislation first introduced in 2003 and finally passed on December 16, 2014, was renewed in December of 2015 when the US House of Representatives approved a continuing resolution that funds the federal government until April 28, 2017 and includes the Rohrabacher-Farr language.

In August 2016, Rohrabacher-Farr received a favorable ruling by the Ninth

Circuit Court of Appeals in United States v. McIntosh, which further buttresses the amendment's ability to protect people and businesses involved with the medical marijuana industry from legal or criminal actions at the federal level. But, as a budget amendment, lawmakers must approve the language every year. By the summer of 2017, Congress will begin wrestling with the new appropriations bill, possibly reopening the Rohrabacher-Farr amendment discussion and considering expanding the protections to cover adult-use states.

Attorney General Jeff Sessions, while speaking vehemently against cannabis legalization, has indicated that he thinks the Cole Memorandum is largely sound and that he is not planning a large scale crackdown.

But he hinted that he may be much more stringent about the guidelines set out in the Cole Memo and possibly make the guidelines more strict. He has also reiterated many times that anybody selling or possessing cannabis is violating federal law.

The Cole Memorandum

The other key federal protection the industry has from the full implications of the CSA, which makes it illegal under federal law to manufacture, distribute or dispense marijuana, is the Cole Memorandum. On August 29, 2013, US Department of Justice (DOJ) Deputy Attorney General James M. Cole issued a memorandum to all United States Attorneys providing updated guidance to federal prosecutors concerning

marijuana enforcement under the CSA. The Cole Memo guidance applies to all of the DOJ's federal enforcement activity, including civil enforcement, and criminal investigations and prosecutions, concerning marijuana in all states.

Sessions, while speaking vehemently against cannabis legalization, has indicated that he thinks the Cole Memorandum is largely sound and that he is not planning a large scale crackdown.

The Cole Memo essentially provides a series of guiding principles that businesses must address to avoid federal intervention. If businesses follow the laws of the state, do not divert product out of state, keep product out of the hands of children, do not support cartels, and do not launder monies, then the federal government will take a hands-off approach to cannabis law enforcement. With more states expanding their medical programs into adult use, the question remains whether the DOJ will continue to be tolerant as the cannabis industry continues to grow.

During his January testimony, Sessions told Sen. Patrick Leahy (D-VT) that while he, "won't commit to never enforcing federal law," enforcing federal law in regards to cannabis nationwide is "a problem of resources for the federal government." He also told Sen. Mike Lee (R-UT) that, "it's not the Attorney General's job to decide what laws to enforce," and suggested if Congress wants marijuana to be legal, it should vote to make it so.

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Banking Issues

Beyond the threat of prosecution and asset forfeiture, the chief federal-level issue faced by cannabis businesses is lack of access to the banking system. While it is not actually illegal for banks to provide services to cannabis businesses, the regulatory burden for banks seeking to support cannabis businesses is so onerous and costly that the major players do not see a workable business model and so have shunned the cannabis industry.

In some states, this void in banking services is being filled by community banks and credit unions. Some of these smaller financial institutions, however, are unable to process the volume of cash deposits that larger cannabis businesses make on a regular basis. In response, a variety of tech start-ups are developing ways to make it less burdensome for banks to embrace cannabis business clients. This cobbled-together approach of using cash, small banks, and technology work-arounds is inadequate for a swiftly-growing, multi-billion-dollar industry.

Fortunately, the industry's banking situation is improving. Just two years ago, the US Department of the Treasury permitted banks to work with cannabis businesses, provided they follow a series of guidelines. In 2014, only 51 banks and credit unions worked with cannabis companies; that number vaulted to 301 in 2016. That's an improvement, but it represents less than 3% of the nation's 11,954 banks and credit unions.

The Tax Issue

Internal Revenue Service (IRS) rule 280E seriously impacts profitability and cash flow for cannabis businesses. The IRS wrote 280E into the tax code to punish drug traffickers. The rule prohibits taking expenses associated with selling illicit substances (read: operating expenses) as deductions on federal income tax statements. As a result, many cannabis businesses pay effective tax rates of up to 70%, while most other businesses pay rates closer to 30%.

“More than two-thirds of Americans now live in jurisdictions that have legalized either the medical or adult use of marijuana. It’s time for the federal government to catch up,” said Blumenauer

In April 2015, two Democratic members of Congress from Oregon, Rep. Earl Blumenauer and Sen. Ron Wyden, introduced the Small Business Tax Equity Act of 2015, which has bipartisan co-sponsors in both houses of Congress. The bill would remove the burdens of 280E from legal cannabis businesses.

“More than two-thirds of Americans now live in jurisdictions that have legalized either the medical or adult use of marijuana. It’s time for the federal government to catch up,” said Blumenauer. In March, Americans for Tax Reform’s Grover Norquist indicated that he was hopeful that the tax issues facing the cannabis industry could be fixed in the upcoming Congressional overhaul of the tax code.

In the States

Despite mixed signals from Washington, D.C., the cannabis legalization experiment pushed forward in the states. In the rapidly growing cannabis industry of 2016, investors, regulators, and businesses hoped to glean important information from the first-movers. Other states are using Colorado, Washington, and Oregon as models as they expand into the medical or adult-use space. Key lessons have been learned from the roll-out in each state:

None of the direst warnings from opponents of legalization have come to pass.

Excessively high taxes drive a wedge between the regulated market price and the illicit one. If a neighboring state has a better tax rate, consumers will take their business across the border. Keeping taxes low helps consumers move from the illicit market to the regulated one. Washington made this mistake, and Oregon came close; other adult-use states can learn from those mistakes. Keeping taxes between 10% and 15% seems to generate the highest tax revenue.

Regulations and compliance costs can crush an industry before it gets out of the gate. Implementing regulations that are too onerous can inhibit the growth of legal markets. Oregon's retailers and growers were crushed twice in 2016 due to over-regulation and scores of companies went out of business as a result. Regulators must balance protecting public safety against the economic development, jobs, and tax revenue from this lucrative start-up industry.

The medical industry can be a tremendous asset to a state wanting to expand into the adult-use space. Colorado did it right, by offering the first adult-sales licenses to medical operators who have the knowledge and experience to ensure a successful adult-use roll out.

Seed-to-sale tracking data is required to regulate this industry and avoid federal intervention. However, actionable data on consumer preferences is the next green rush in auxiliary cannabis businesses as consumers explore new cannabis options like consumables, topicals, and tinctures.

After realizing that protectionist, resident-only licensing policies were limiting the growth of the industry, Oregon opened the cannabis market to outside investment. Colorado and Washington are now playing catch-up. Standardized testing is essential to ensuring public safety as well as consistency and quality. Oregon was the first to move in this direction, but testing requirements that went into effect October 1 without adequate lead time were among the regulator-inflicted wounds Oregon delivered to the industry in 2016.

Each of the three major adult-use states have had their regulatory successes, but missed the mark on certain issues which hampered the development of the business. Unintended consequences have been rife, but their experiments have created a body of work from which others may learn. Many of these lessons are analyzed in the report that follows.

In Society

The conflict between law and attitudes regarding cannabis can be seen across society. Outgoing Attorney General of the United States Loretta Lynch admitted last year that marijuana is not a gateway drug that leads to abuse of harder drugs like heroin. Instead she suggested that “the family medicine cabinet” is the gateway through which youth often discover opioids.

According to two major public health agencies in separate studies published last year, none of the direst warnings from opponents of legalization have come to pass. The annual Survey on Drug Use and Health from the Department of Health and Human Service’s Substance Abuse and Mental Health Services Administration (SAMHSA) shows that even as reported adult use rose in Colorado in the first two years of legal sales, teen use of cannabis declined.

Additionally, a study was accepted in November for publication by the American Public Health Association showing that “Both MMLs (medical marijuana laws) and dispensaries were associated with reductions in traffic fatalities, especially among those aged 25 to 44 years.” Also in November, the journal of the American Association for the Advancement of Science published a study finding that the annual rate of deaths due to overdose on opioid painkillers was nearly 25% lower in states that permitted medical marijuana, and that the effect had grown stronger in the five years after states approved medical marijuana.

Yet Facebook and other social media sites responded to the continued federal prohibition by removing the pages of cannabis businesses around the country from their services early in 2016. Retailers were severed from important connections with online communities. These challenges grew more pressing throughout 2016, as some of the largest social media companies increased the pace of account deactivations for cannabis firms.

California accounted for 27% of the 2016 legal market in North America, Colorado represented 20% and Washington represented 11%.

In early 2016, Marijuana Business Daily reported that at least 100 Facebook accounts had been shuttered during the previous month alone. The same story elicited a rare email response from a Facebook spokesperson who said that the company forbids content that “promotes the sale of marijuana regardless of state or country. This includes marijuana dispensaries.” Marijuana-related content that does not promote the sale of cannabis is permitted.

Cannabis firms can petition social media companies, particularly Facebook and Instagram, to reinstate their accounts, and sometimes they succeed. But the process can be unwieldy and time-consuming, and the outcome is uncertain.

Because cities and states across the nation with legal cannabis regulatory regimes implement different rules about how (and whether) cannabis firms can

advertise their businesses, the loss of social media access is another hurdle cannabis firms face as they develop their brands and try to engage consumers.

In response, entrepreneurs have created social media platforms dedicated entirely to cannabis, including MassRoots, TokeWith, HighThere, and more. These sites give cannabis companies safe places to build brands, but they lack the commercial power and reach of Facebook and Instagram, which boast more than 1 billion and 500 million active users, respectively. MassRoots, the largest of the cannabis social media networks has just 900,000 users.

In the Retail Market

North American consumers spent \$6.7 billion on legal cannabis products in 2016, up 34% from \$5.0 billion in 2015. The growth continues a robust pattern that Arcview estimates will lead to a \$22.6-billion market in 2021 at a 27% compound annual growth rate. While Canada is included in Arcview's market view for the first time, the United States represented 87% of legal spending in 2016. California accounted for 27% of the 2016 legal market in North America, Colorado represented 20% and Washington represented 11%.

Of the top 10 markets, three already have adult use sales (Oregon, Washington, and Colorado), three have just won legalization elections (California, Massachusetts and Nevada), and four more (Michigan, Arizona and Canada) are expected to have implemented adult-use programs in the next five years.

The implication is that population does not necessarily correlate with the size and scope of the opportunity in these early years. Eventually, the population of the states will determine which cannabis markets are the largest, but for the next five years (barring a significant shake-up in the legalization timeline) the leading markets have already emerged. California, Colorado, Canada, Washington, and Michigan remain on track to lead in sales volume.

BDS Analytics' retail tracking data allows a deeper dive into three of the most important markets: Colorado, Washington and Oregon. Analysis of the retail channel shows strong opportunities for both existing and new businesses in each state. In 2016, cannabis sales averaged \$1.98 million per retail location in Colorado's adult-use market and \$896,000 per location in the medical channel. In Washington state where medical dispensaries were shut down in favor of the adult-use market, the 357 remaining retailers averaged \$1.55 million in sales per location. Oregon's 350 retail outlets selling cannabis to adult shoppers generated \$238 million in sales or nearly \$672,000 per location, and Oregon's 381 medical dispensaries experienced average sales per location of \$294,000 over the same period (see table, page 18). While Oregon, Washington and Colorado are relatively small states in terms of total population, an existing tourism market and their first-mover status in the adult-use market will help them maintain their leadership in terms of market size and investment opportunities.

In addition to tracking the state of the legal market, and to better assess the full potential of that market, Arcview

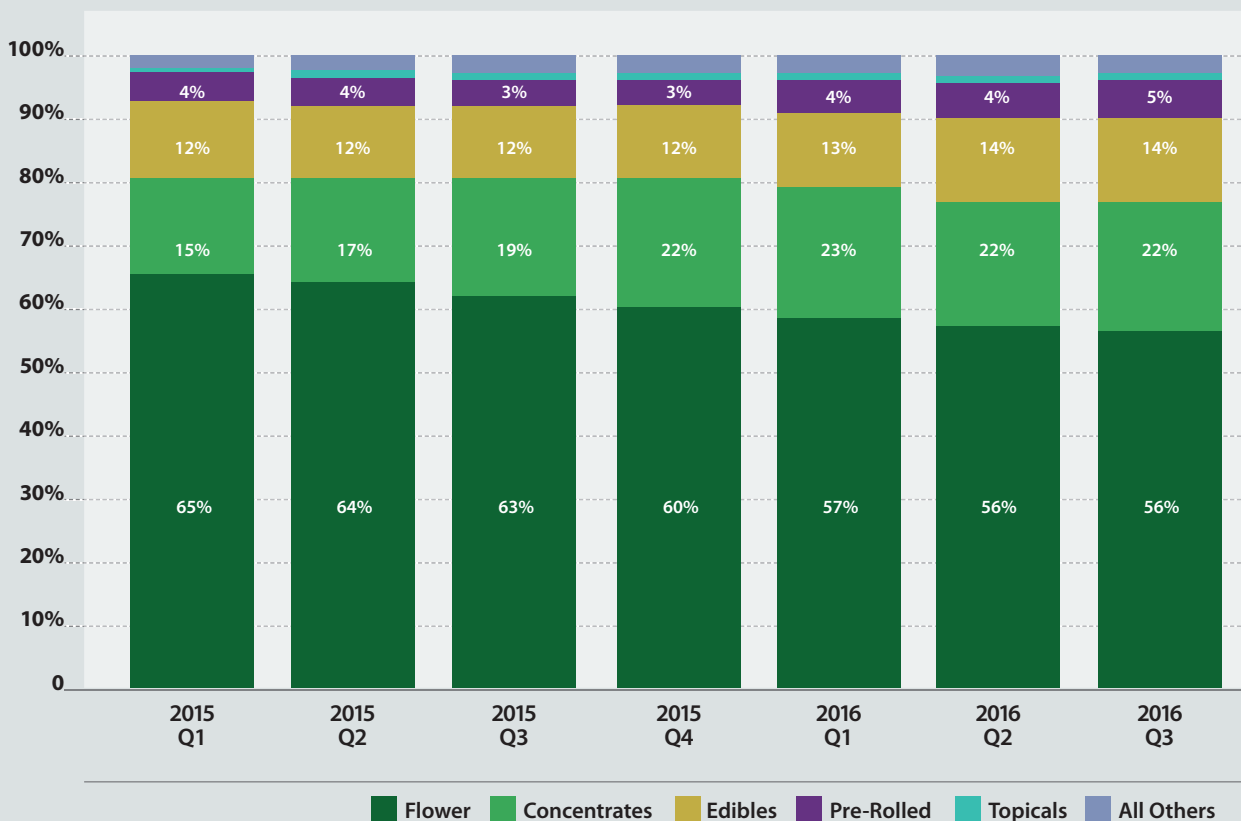
developed state-by-state estimates for the biggest component of consumer spending on cannabis: illicit sales. This component of today's market is important to investors because it helps to quantify the opportunity for legal cannabis sales. Including the illicit market, consumer spending on cannabis in North America amounted to an estimated \$56.1 billion in 2016, 88% of it outside legal channels.

This enormous amount of illicit consumer spending sets cannabis apart from most other major consumer-market

investment opportunities throughout history. In contrast to comparable markets which quickly grew from zero to tens of billions of dollars, such as organic foods, home video, cell phone, or the internet, the cannabis industry doesn't need to create demand for a new product or innovation - it just needs to move demand for an already widely-popular product into legal channels.

According to Arcview's estimate for 2016, based on the 2015 SAMHSA annual survey, 8.8% of Americans are using cannabis on a monthly basis. However,

► Colorado: Category Share by Quarter



Executive Summary

► Average Sales per Dispensary

State	Sales*	Dispensaries	Average Sales per Dispensary
Colorado (Adult)	\$834 M	420	\$1.98 Million
Colorado (Medical)	\$440 M	491	\$896 Thousand
Washington	\$554 M	357	\$1.55 Million
Oregon (Adult)	\$238 M	350	\$672 Thousand
Oregon (Medical)	\$112 M	381	\$294 Thousand

* Rolling 12 Months ending 11/16

19

legitimization of existing demand for smokable flower is just the beginning for the legal cannabis market. The early sales results from the first adult-use markets in Colorado, Washington and Oregon point to a significant, untapped market opportunity for alternative methods of consumption.

Adult-use legalization and the normalization of cannabis consumption is prompting development of a variety of different ingestion methods, which are broadening the appeal of cannabis. A closer examination of sales trends in the bellweather state of Colorado provides insight into the future opportunity of these alternative cannabis products.

According to BDS Analytics' retail sales tracking data for 2014-2016, Colorado's retail sales in adult-use and medical dispensaries grew from \$675 million in 2014, to over \$1.3 million in 2016. While all categories of cannabis products enjoyed healthy growth, alternative

methods of consumption outpaced traditional flower sales. In Q1 2014 when adult-use launched in Colorado, over 70% of sales came from dried flower; in Q3 2016, that was down to 56%. In contrast, concentrate sales were \$20 million in Q1 2014, or 13% of sales. By Q3 of 2016 they had quadrupled to \$80 million and 22% of sales. Edibles (including candy, beverages, tinctures, and all food) more than tripled during the same period, from \$17m to \$53m, moving from 11% to 14% of sales. Vape pens and vape products, candy, and other portable and convenient methods of consumption are especially popular with Colorado consumers (see graph, prior page).

Similar trends occurred in Washington State. By Q3 2016, 21% of Washington cannabis sales were concentrates, 9% were edibles, and 10% were pre-rolled marijuana cigarettes, with dried flower accounting for only 59%. In Oregon where concentrates and edibles were only allowed for the first time in the

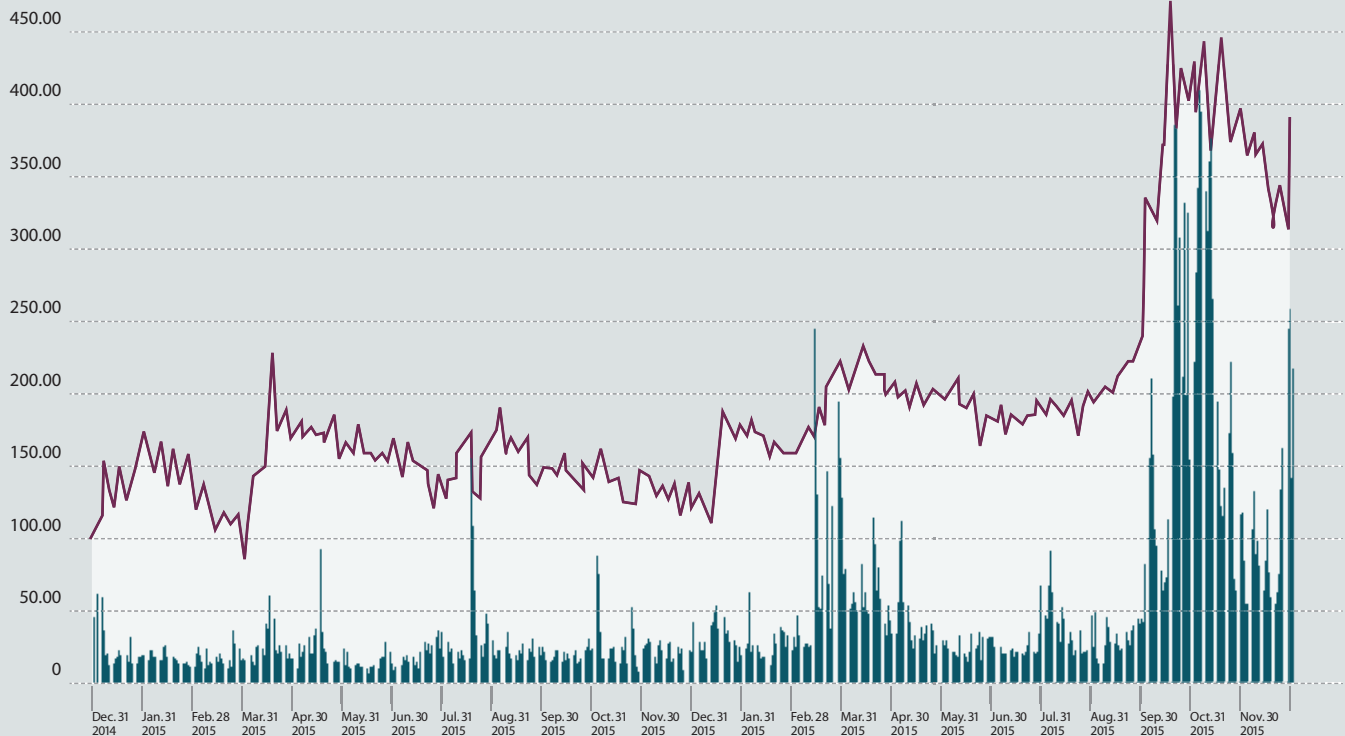
adult-use channel in July 2016, the transformation in category happened almost overnight. Concentrates quickly picked up 19% of the market, while pre-rolls took 8% and edibles 7%.

In addition to new types of products, the mainstreaming of the industry is also bringing brand marketing to the business. According to BDS Analytics' tracking, almost all edibles, concentrates, and topicals sold in Colorado are branded, while very little flower is branded (other than by the retailer). This rapid growth and category evolution

means that by Q3 2016 over 40% of all products sold, representing over \$150 million, were branded. That's a 260% increase from only 27% of sales (\$42 million) just 2 ½ years earlier.

With concentrates occupying the #2 share position, and growing faster than any other major consumption method, entrepreneurs see it as an attractive area for additional investment. In the first nine months of 2015, 465 brands had some form of concentrate sales in Colorado, Oregon, or Washington; in 2016, that number jumped to over 975. There is

► BDS Cannabis Average and Volume



much volatility in these early markets as players jockey for marketshare. Of 2016's top 10 concentrates brands, only five were in the top 10 in 2015. The largest brand in concentrates maintained its position from 2014 - 2016; but while its sales rose 84% percent in 2016, it gave up some marketshare as new entrants crowded the field. Other top ten brands grew dramatically faster with the second largest growing 400% and the eighth and ninth growing at over 1,000%.

At the end of 2016 the prospects for increasing private and public investment in 2017 were very strong

Anticipating the conversion of the flower business into legal channels and the expansion of the market through new product types, the Arcview forecast model projects \$22.6 billion in legal consumer spending in 2021. The legal market could be substantially bigger, and the illicit component smaller, if 1) the federal government ends prohibition, 2) more states legalize either medical or adult use, or 3) regulators cooperate as outlined in strengthening the competitive position of the legal market.

In the Capital Markets

Legalization momentum in 2016 carried over into the capital markets for cannabis companies. As advocates qualified an unprecedented nine state ballot initiatives, trading in public cannabis companies' shares heated up. Prices soared starting in September as the polling numbers improved.

The shares of 33 representative companies from all industry sectors in the BDS Analytics Stock Average eventually posted a 195% gain for the full year.

The rally marked a substantial turnaround for public cannabis equities from the boom-bust cycle of 2014. In retrospect, the 2014-2015 era had one upside for the industry: it divided the pack of hundreds of stocks that soared with adult-use legalization in Colorado and Washington in early 2014 into 1) the companies that lacked substance and 2) the real cannabis companies with business models, revenue or the prospect of it, and audited financials. Those were the beneficiaries of the latest electoral-inspired rally.

Private equity investors were more reserved in 2016 as they waited for November election results. A record amount of capital—\$41 million through the Arcview Group network alone (see graph below)—was put to work in 2015 in companies founded in the wake of Colorado and Washington's 2014 roll-out of adult-use retail.

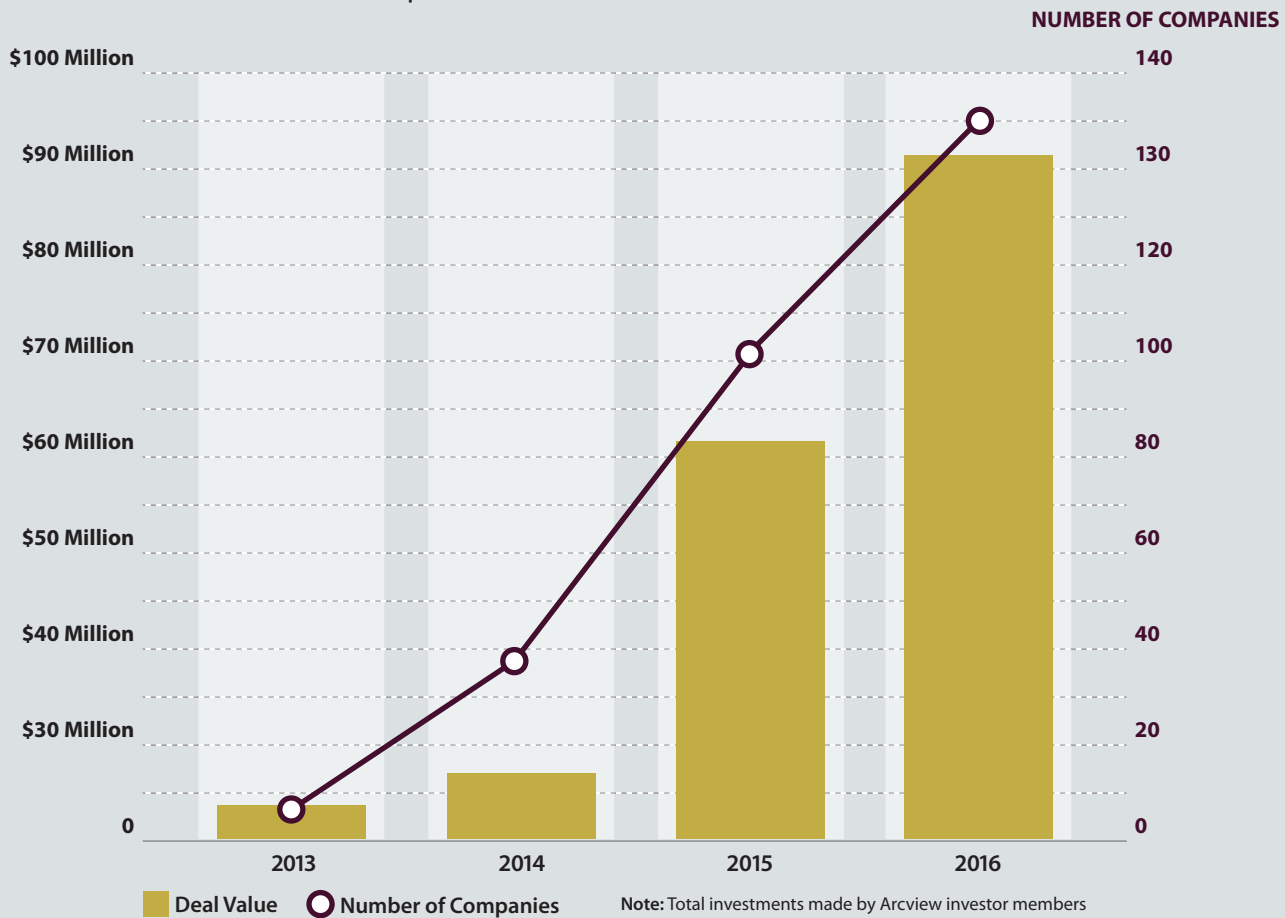
In the 2015-2016 period, public and private companies completed a total of \$2 billion in capital raises according to Viridian Capital Advisors. At the end of 2016 the prospects for increasing private and public investment in 2017 were very strong, supported by steady progress in generating revenue by many pioneering companies, plus the prospects opened up by the progress toward nationwide legalization. While uncertainty about

the Trump Administration has hurt public stocks, and institutional players may hang back, the administration is unlikely to have much impact on the projected growth of the market. This could be a time-limited opportunity for other investors to get good deals on companies while perceived uncertainty has reduced valuations.

Unprecedented interest from Wall St. was seen in 2016. Although Merrill Lynch published the first research

report on cannabis in 2015, it was very narrowly focused on the opportunity for life science tool (LST) makers to sell equipment to state-mandated testing facilities. On September 12, 2016, Cowen & Company published "The Cannabis Compendium", the first comprehensive analysis by a Wall St. firm, in which 10 analysts across consumer, regulatory, and health care sectors analyzed the potential of companies in the event of full federal legalization.

► Cumulative Arcview Capital Raises



In May 2016 NASDAQ rejected MassRoots' effort to become the first exchange-traded company involved principally in cannabis, but by the end of the year that barrier had fallen. Innovative Industrial Properties announced November 17 that the New York Stock Exchange had agreed to list its shares.

In May 2016 NASDAQ rejected MassRoots' effort to become the first exchange-traded company involved principally in cannabis, but by the end of the year that barrier had fallen. Innovative Industrial Properties announced November 17 that the New York Stock Exchange had agreed to list its shares. The company acquires specialized real estate assets used by state-licensed cultivators for growing medical-use cannabis. Canada's Toronto Stock Exchange went a step further, agreeing in July to list Canopy Growth Corp., one of that nation's licensed vertically integrated suppliers to medical cannabis consumers, making it the first "plant-touching" cannabis company to be traded on a major exchange anywhere in the world.

Pharmaceutical companies with cannabis-based products also provide an opportunity for investment in medical cannabis, with the major exchanges remaining agnostic on the source of the compounds they are testing and marketing. Hence UK-based GW Pharmaceuticals was able to raise \$290 million from the July sale of American Depository Shares through an A-list group of investment banks (Cowen and Company as lead manager, Piper Jaffray as manager, and Morgan Stanley, Bank of America, Merrill Lynch, and Goldman, Sachs & Co. acting as joint book-running managers).

Large, diverse, multi-national corporations that deliver products and services into many different vertical markets also targeted cannabis in 2016. In January, Phillip Morris announced an investment in Syqe Medical, an Israeli start-up developing inhaler technology. In June, Microsoft Corporation announced a partnership to support the development of start-up Kind Financial's seed-to-sale tracking software with Azure, the Microsoft Government cloud. Kind will be competing with several other software companies for coveted deals to provide states with cannabis tracking for compliance and taxation purposes. And Scotts Miracle-Gro, with \$3 billion in revenue, announced multiple deals tied to its plan to invest \$400 million in gardening supply companies with a cannabis focus.

In Chapter 5 of this 5th Annual The State of Legal Marijuana Markets report, investors will find a guide to key public and private companies in eight business-model-based categories. Though many continue to struggle with the challenges inherent in being pioneers in a new product category, many benefited in 2016 as marginal operators fell away, and the survivors saw their growth prospects expanded dramatically by an electorate that now seems intent on legitimizing the cannabis market.