THE HIGHS AND LOWS OF STARTUPS IN THE CANNABIS INDUSTRY: A PESTLE ANALYSIS OF THE CURRENT ISSUES

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SUMMARY: With recreational cannabis now legal in ten US states, illegal cannabis growing operations are increasingly being replaced with regulated, taxed, and licensed businesses. Sales are predicted to increase roughly 35% from 2017, to more than $8 billion by the end of 2018, and to $22 billion by 2022. Projections like these have contributed to a startup boom in the cannabis industry unseen since the tech boom of the late 1990s. The aim of this paper is to highlight the unique issues faced by startups in the cannabis industry. We examine the elements that influence the cannabis startups by using the PESTLE framework which includes political, economic, social, technological, legal and ecological factors. We identify three types of cannabis startups and provide a brief analysis of differences between them as well as the challenges that they all face.

Introduction

With recreational use of cannabis currently legalized in ten US states, illegal cannabis growing operations are steadily being supplanted with regulated, taxed, and licensed businesses. Companies operating in these states are now able to legally produce and sell marijuana in their respective states. The 2018 Marijuana Business Factbook predicts sales to increase roughly 35% from 2017, to more than $8 billion by the end of the year (Marijuana Business Daily, 2018). By 2022, sales in the United States are projected to increase by 250%, to $22 billion. Projections like these have contributed to a startup boom in the cannabis industry unseen since the tech boom of the late 1990s.

A startup is defined as "a human institution designed to create a new product or service under uncertain conditions" (Ries, 2011, p. 8). The aim of this paper is to highlight the uncertain conditions faced by startups in the cannabis industry. Thus far, 33 states have some version of legalized cannabis (i.e., recreational and medical) and at least a half dozen more states expect to legalize cannabis within the next two years. Even with this current mass trend toward legalization, cannabis remains a Schedule I substance - equal to drugs like heroin and LSD - under the Controlled Substances Act, meaning it is prohibited under federal law to possess, use, manufacture, distribute, or sell cannabis. This means that growers, processors, and retailers cannot open accounts or access lines of credit from federally insured banks. They cannot write off business expenses when filing their taxes, and it is difficult to purchase crop insurance. As a result, this makes starting and operating a cannabis business arguably more challenging than other kinds of business. Among many unexplored areas in the business literature on this topic are the classification of cannabis startups and the unique challenges they face.

Inspired by Gartner's (1985) framework for new venture creation we conducted a PESTLE (Political, Economic, Social, Technological, Legal, Environmental factors) analysis of the cannabis industry in an effort to determine the factors that affect cannabis startups and to discuss challenges that cannabis entrepreneurs should consider. In the absence of much rigorous academic research on the topic of the cannabis business we relied on business trade publications, newspaper articles, and online sources for this paper. We also interviewed two informants from the industry: a director of marketing for a large cannabis company and the CEO of a media agency that specializes in business-to-business cannabis marketing. We synthesize their views with our secondary sources.

Cannabis and Its Legalization in the United States

Cannabis is a tall plant with a stiff upright stem, divided serrated leaves, and glandular hairs that is indigenous to Central Asia and the Indian subcontinent (keytocannabis.com). It is used to produce hemp fiber and as a psychotropic drug. "Marijuana refers to the dried leaves, flowers, stems, and seeds from the *Cannabis sativa* or *Cannabis indica* plant which contains the mind-altering chemical tetrahydrocannabinol (THC) and other similar compounds" (NIDA, 2018). Throughout this paper we use cannabis and marijuana interchangeably to break monotony. Cannabis can be consumed in many different ways. Cannabis-based products include the broad categories of flower, edibles (e.g., candy, popcorn, cookies), topicals (e.g., lotion, pain relief, sunscreen, transdermal patch), dabbing (e.g., oils for use in bongs), and concentrates (e.g., vape pens, tinctures). Price varies based on product category and other attributes, such as quality, supply, and THC content. Prices for flower are between $200-300/ounce at a dispensary and $250-300/ounce on the street. Prices for edibles range between $10-15/100mg, topicals $10-100/gram, dabs $20-60/gram, and concentrates $10-50/mg. Cannabis products can be purchased at legal dispensaries and through illegal street sales. There are strict restrictions to the way marijuana is promoted legally, and promotion regulations vary for other cannabis-based products like cosmetics and edibles. Social media, especially Instagram is widely used by illegal businesses to showcase their products.

In 1973, Oregon decriminalized and legalized recreational cannabis, and throughout the years other states including Alaska, California, Colorado, Maine, Massachusetts, Nevada, Vermont, Washington, and Michigan also legalized its use as of November 2018. One of our informants stated that only 10% of businesses selling cannabis flower are legal, the rest preferring to avoid the hefty and cumbersome legal work and licensing. These last two issues are among the many challenges legal cannabis startups face.

Cannabis Startups

Gartner (1985) introduces a conceptual framework for new venture creation which "integrates four major perspectives in entrepreneurship: characteristics of the individual(s) who start the venture, the organization which they create, the environment surrounding the new venture, and the process by which the new venture is started" (1985, p. 696). First, the individual differences refer to the differences in human capital such as knowledge, education, and skills (Deakins and Whittam, 2000) and in psychology such as personality characteristics (e.g., locus of control, need for achievement, risk-taking), cognitive approaches (i.e., how information is perceived, processed, and communicated), and motivational patterns (i.e., the impetus for the startup) (van Gelderen, Thurik, Bosma, 2005). Second, the process refers to "how aggressively people pursue the completion of start-up activities," (van Gelderen, Thurik, Bosma, 2005, p. 368) whether they work on their start-up full-time or part-time, and whether they work with a business plan or not. Third, *organization* refers to the structure of how the business will be set up. Lastly, the environmental factors that affect startups can be classified into network, financial, and ecological. Here Gartner's (1985) use of the word *environmental* is a more encompassing term than a narrow understanding of the climate, and refers to the "relatively fixed conditions imposed on the new venture from" the outside of the business (p. 700). *Network* refers to the relationships between individuals (van Gelderen, et. al., 2005). Successful entrepreneurs have a diverse network of strong relationships with various people who can help them access resources (Aldrich, 1999; van Gelderen, et. al., 2005). *Financial* refers to the source and size of capital of the startup (van Gelderen, et. al., 2005). For example, a startup may have access to funds from a bank but may be exposed to too much risk from lenders which could limit the startup's success and growth. *Ecological* refers to the environmental conditions that impact startups.

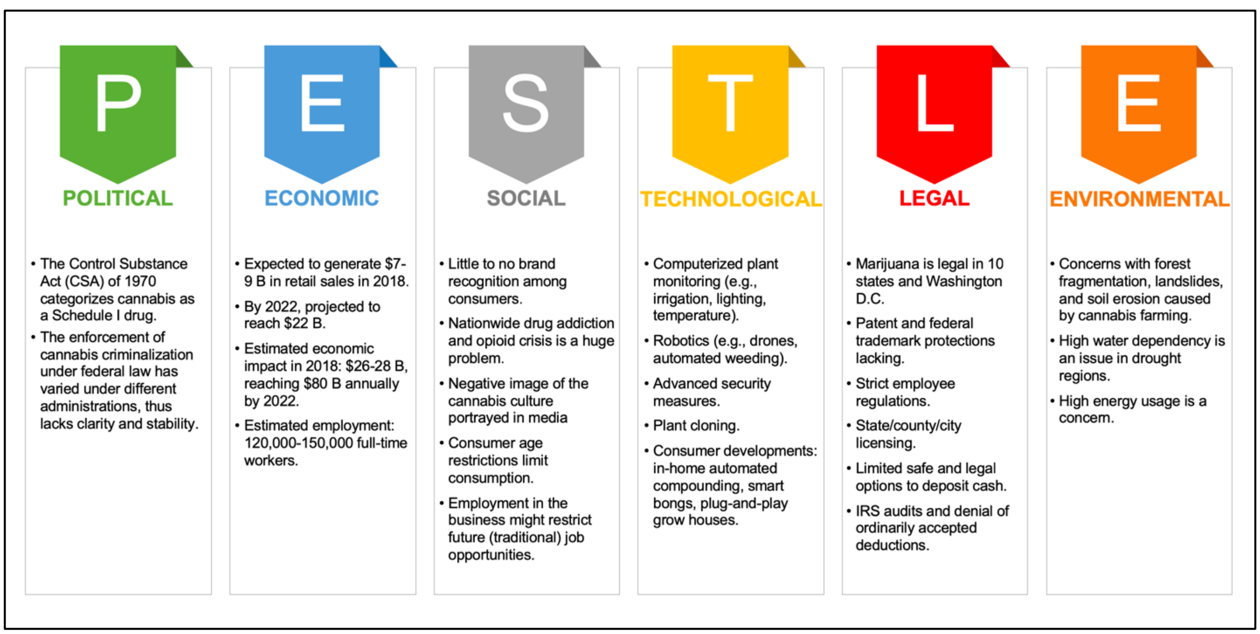
Due to recent decriminalization and legalization of recreational cannabis, we focus our analysis on the environmental factors within Gartner's (1985) framework that affect cannabis startups. We use the PESTLE analysis to organize our findings.

PESTLE Analysis for Cannabis Startups

PESTLE is the acronym for a framework which analyzes the Political, Economic, Social, Technological, Legislative, and Environmental (mostly in the ecological sense) factors that have direct and indirect impacts on a business. In this section, we present a brief analysis of each element in relation to the cannabis industry. For an overview of the analysis, please see Figure 1.

Figure 1

A PESTLE Analysis of Cannabis Startups



Political

The political landscape around marijuana appears to be divisive with no signs of reconciliation. The Control Substance Act (CSA) of 1970 categorized various plants, drugs and chemicals into five "schedules" depending on the medical use and potential for abuse and addiction (Titus, 2016). Marijuana remains as a Schedule I drug which indicates that it has no medical benefits and high potential for abuse. One path to legalizing marijuana is to demonstrate its medical benefits through extensive research and large-scale clinical trials. Unfortunately, the illegal status of cannabis makes it highly problematic for researchers to conduct such studies. The Federal Government and its administration could be the catalyst to spearhead this process. Based on the current political milieu, it seems unlikely that Congress will reschedule marijuana. Various new acts have been proposed by both Democratic and Republican senators and congressmen but have all been rejected by the Senate and House Committees (Titus, 2016).

The enforcement of cannabis criminalization under federal law has varied under different administrations and lack clarity and stability. These mixed messages threaten new and existing cannabis industries, as well as individual users, within each legalized state. For instance, under the Obama administration, the federal government was generally more relaxed and did not pursue prosecution among states that have legalized cannabis, but instead issued federal memorandums that serve as guidelines and advice to federal prosecutors and law enforcement agencies. In contrast, under the Trump administration, Attorney Jeff Sessions rescinded the previous memorandums (Gurman, 2018) and began a "new war on marijuana legalization" (Lopez, 2018). While the Trump administration has publicly dismissed the Justice Department's threat to interfere with the marijuana-related affairs of each state (Halper, 2018), "White House documents and interviews reveal the Trump administration has formed a committee tasked with objectives including smearing public support for marijuana" (Blake, 2018, para. 2).

Economic

The marijuana industry continues to grow exponentially. According to the 2018 Marijuana Business Factbook (Marijuana Business Daily, 2018), the industry is expected to generate $7 billion to $9 billion in retail sales in 2018, up from approximately $1 billion in 2011. It is on pace for a 35% increase over 2017. Sales in the United States are projected to reach $22 billion by 2022, a 250% increase from 2017. However, the rate of growth is abating in some key markets, including Colorado and Washington. The size and structure of cannabis companies run the gamut from single mom-and-pop dispensaries generating $200,000 in annual revenue to the large, multimillion-dollar retail chains running commercial-scale grow facilities and operating dozens of stores. In 2018, the industry is projected to create $26 billion-$32 billion in economic impact, reaching $80 billion annually by 2022. Employment in the cannabis industry is estimated at 120,000-150,000 full-time workers. This number is expected to reach 375,000 by 2022, a year-over-year growth rate of 22% (Marijuana Business Daily, 2018).

Social

As more marijuana startups enter the marketplace, entrepreneurs face unique marketing challenges. It has been only six years since recreational cannabis has been legalized in the states of Colorado and Washington and barely a month in Michigan at the time of our analysis. This is a very short time for brand recognition and brand loyalty to be formed among consumers, especially when the promotion of the products is highly regulated with social media accounts routinely being shut down.

Because of the disparate feelings that consumers have towards marijuana, there are concerns that working in the cannabis industry may stigmatize those who might want to pursue ‘traditional’ professions in the future (e.g., politics, law enforcement). However, as the cannabis industry gains mainstream acceptance, the stigma around working in the industry will likely dissipate (Furore, 2018).

Moreover, marijuana is reported to be the most-abused drug in the United States, particularly among young people (SAMSHA, 2016). The National Institute on Drug Abuse (NIDA) (2016) reports that marijuana use has short- and long-term effects and despite being rare, it is possible to overdose on marijuana. While hallucinations, delusions and psychosis are among short-term effects when taken in high doses, marijuana affects brain development in the long run (NIDA, 2016).

Technological

There have been wide-ranging technological developments targeting both companies and consumers within the marijuana industry. Examples of developments targeting companies include computerized plant monitoring (i.e., irrigation, lighting, temperature), robotics (e.g., drones, automated weeding), advanced security systems, and plant cloning. Consumer developments include in-home automated compounding, smart bongs, and plug-and-play grow houses.

Legal

Despite the growing movement towards state legalization, marijuana remains illegal at the federal level. For example, the Federal Government (i.e., the Department of Justice and the Drug Enforcement Administration) continues to crack down on marijuana dispensaries by way of raids and arrests (Fishman, 2018). Currently, the Internal Revenue Service (IRS) is getting involved and this is affecting marijuana-related businesses. Federal regulations regarding money-laundering and criminal activity, for instance, deter most banks from accepting deposits from marijuana business owners. While banks are not prohibited from working with cannabis businesses, the requirements necessary to avoid penalties and charges outweigh the benefits. For instance, banks must submit lengthy and detailed “suspicious activity reports” to the government and adhere to a laundry list of regulations set by the IRS and the Financial Crimes Enforcement Network (Klein, 2018). Despite this, “more than 360 banks and credit unions work with marijuana-related businesses, filing more than 2,000 suspicious activity reports a month (Klein, 2018).” However, major banks and credit card companies remain cautious and refuse to service marijuana-related businesses to avoid penalization and loss of business (Staggs, 2017). As such, many cannabis businesses are limited in their options to safely and legally deposit their cash.

The IRS has also “begun enforcing a little-known law adopted in the 1970s that bars tax deductions for business expenses incurred by drug dealers” (Fishman, 2018). Because marijuana dispensaries are considered illegal and seen as drug dealers, the IRS does not allow these owners to deduct business expenses that are permitted for other businesses such as cost of goods sold (related to the trafficking of marijuana), rent, advertising, depreciation, legal fees, wages, utilities, and security services. Since 2008, the IRS has audited major marijuana dispensaries and denied them these deductions (Fishman, 2018).

Environmental

Bauer et. al (2015) report that "[t]he environmental impacts associated with marijuana cultivation appear substantial, yet have been difficult to quantify, in part because cultivation is clandestine and often occurs on private property" (abstract). While it has been difficult to measure the environmental impacts of the marijuana industry precisely since many farming practices have been underground, according to Wang et. al. (2017), cannabis agriculture has been found to be detrimental to the livelihood of diverse ecosystems surrounding it. Due to its illegal nature, the cannabis crop has been traditionally grown in remote locations such as forests, which are hard to reach by law enforcement agencies. This has led to forest fragmentation, stream modification, soil erosion, and landslides (Wang et. al. 2017).

Moreover, cannabis agriculture has a high ecological footprint with its high demand for electricity and water necessary to grow the crops indoors under lamps, ventilate and air condition the farms as well as grow the water-hungry plants. It has reported that "[a] study by scientist Evan Mills, with the Lawrence Berkeley National Laboratory, revealed that legalized indoor marijuana-growing operations account for 1% of total electricity use in the US, at a cost of $6 billion per year. Annually, such consumption produces 15 million tons of greenhouse gas emissions (CO2), equal to that of three million average cars" (Sevcenko, 2016, para. 5).

A Typology of Cannabis Startups

Once we gained a better understanding of the macro environmental factors affecting cannabis startups, we sought more insight from those within the industry. We interviewed two business professionals: a director of marketing for a large cannabis company and the CEO of a media agency that specializes in business-to-business cannabis marketing. The interviews lead us to identify and define three types of cannabis startups.

Existing and Pursuing Licensing (EPL)

EPLs are businesses with an existing license to operate in the medical marijuana industry prior to the date that recreational cannabis was approved in their respective state. These companies are currently going through the legal process to sell recreational cannabis. EPL companies know the business intimately. They have an advantage because they are used to operating in this quasi-legal environment. For years, and in some cases, decades, EPLs operated their businesses in an environment where cannabis was tolerated but unregulated. EPL companies rely heavily on established trust networks. Having survived, they have mature marketing skills. They know the industry and their consumers well; however, they often practice more traditional branding and marketing techniques.

New and Pursuing Licensing (NPL)

NPLs are businesses without a license to operate in the medical marijuana industry before the date that recreational cannabis was approved in their respective state. Like EPLs, these companies are currently going through the legal process to sell recreational cannabis. Many NPL companies enter the marketplace with no prior cannabis experience. However, they bring with them advanced marketing and business skills. NPL companies focus on the financing, regulations, and marketing before entering the industry or manufacturing products. Their lack of experience requires a learn-by-doing strategy. Hence, NPL firms rely heavily on consultants and experts.

Guerilla Operator (GO)

GOs are businesses that operate outside of the current regulations in states where cannabis is legal or illegal. GOs do not want to go through the licensing process. Reasons for noncompliance include punitive regulations, cost, effort, and time. Because of state track and trace programs, these firms routinely sell their goods in states where recreational cannabis remains illegal; however, they remain staunch competitors to EPL and NPL firms in states where recreational cannabis is legal. Guerilla operators often use "burner phones" that cannot be traced back to the caller and Gmail to communicate with consumers. They use social media accounts, generally Instagram, to market products. GOs display products, but do not indicate that they are for sale. Rather, they write "DM (direct message) for details" on product posts. GOs cater to those who do not want to buy cannabis from legal outlets or in states where recreational use remains illegal.

Figure 2

Typology and Comparison of Cannabis Startups

TYPE OF STARTUP	EPL EXISTING & PURSUING LICENSING	NPL NEW & PURSUING LICENSING	GO GORILLA OPERATORS
MAIN CHARACTERISTICS	Existing license to operate in the medical cannabis industry prior to the date that recreational cannabis was approved in their respective states.	No existing license to operate in the medical cannabis industry prior to the date that recreational cannabis was approved in their respective states.	Operate outside of the current regulations in states where cannabis is legal or illegal.
MARKETING	Tried-and-true marketing techniques.	Advanced marketing techniques.	Use burner phones, email, and social media. Do not list products for sale.
CONSUMERS	Appeal to long-standing cannabis users who know these companies and their products.	Appeal to consumers new to cannabis.	Cater to those who do not want to buy cannabis from legal outlets or in states where cannabis remains illegal.
STRENGTHS	Have developed large trust networks. Know their customers well. Are used to operating in a quasi-legal environment.	Focus on financing, regulations, and marketing before entering the industry or manufacturing product.	Have developed large trust networks. Lower operating costs and higher margins.
WEAKNESSES	Often practice dated branding, marketing strategy, and business techniques.	Many enter the industry with no prior cannabis experience. Learn-by-doing strategy. Rely on consultants and experts.	Marketing and business strategies limited by decision to operate illegally.
CHALLENGES	Surviving with staunch competition from NPL and GO companies.	Surviving while establishing themselves in a crowded industry with little experience.	Surviving while skirting federal and state regulations.

Challenges Facing Cannabis Startups

Based on the PESTLE analysis and interviews, we present some of the major challenges cannabis startups face, how they are affected by these factors, and how they operate within these constraints. We summarize these under the categories of laws and regulations, business operations, and marketing. The challenges cannabis startups have, in many ways, are different from other startups. In particular, the fact that marijuana is illegal at the federal level and yet legal only in some states creates its unique problems when it comes to operating the business and marketing the products.

Laws and Regulations

Federal illegality, a myriad of state, county, city regulations, and licensing issues are the key challenges in the cannabis industry; however, there are several others. The principal challenge is that the federal government defines cannabis as a Schedule I drug under the Controlled Substances Act. Although the federal government has mostly refrained from intervening in states that allow legal marijuana businesses, its ambiguous legal status creates unique legal challenges and an uncertain future. As of 2015, the latest available data shows 12.4 % (11,533) of the 94,678 federal inmates incarcerated for a drug violation as their most serious offense are serving time for violating cannabis laws, with an average sentence of 88 months (Taxy, et.al., 2015).

The number of state agencies regulating the cannabis industry range between one in Oregon and Washington and seventeen in California. Most states have decided to divide oversight among numerous agencies, each of which requires a separate permit and fee. Additionally, there are county and city cannabis regulations, which may vary drastically within a particular state. Separate licenses are required for each of the following business types: growers, manufacturers, wholesalers, testing facilities, retailers, distributors, and microbusinesses. In some states (e.g., Washington), one business cannot hold all types of licenses available.

Business Operations

Security procedures are generally regulated at the state level. These procedures include employee background checks, roles and responsibilities of all employees, inventory management systems, how access points (i.e., doors and windows) will be secured and types of locks used, types of cameras and video storage equipment, the number and placement of cameras, the security alarm company, and the number and hours of on-site security personnel.

Conventional banking is often inaccessible to cannabis companies. Growers, processors, and retailers cannot open accounts or access lines of credit from federally insured banks. Many dispensaries struggle with payroll issues. It is still common for cannabis companies to pay employees in cash, which can potentially create dangerous situations for both companies and workers. However, electronic payroll options that cater to the cannabis industry are becoming more prevalent (Mihelich, 2017).

Waste removal is a challenge generally not associated with startups. Because waste byproducts may still contain federally regulated substances, cannabis waste is currently considered a medical byproduct or hazardous waste. Waste removal companies must be specifically licensed to transport, handle, and process cannabis material.

Marketing and Promotion

Many types of startups attempt to protect their intellectual property with patents. Moreover, startups use federal trademarks to protect branding elements. Because of the federal illegality, cannabis companies are not afforded these protections. However, cannabis startups can obtain trademark protection at the state level.

The process of getting product to market is protracted. In many states, manufacturers cannot introduce product directly into the market. The process will often resemble this: 1) manufacturer sends product to distributor, 2) distributor sends product to testing, 3) lab tests product and returns product to distributor, and 4) distributor sends the product to retailers. If a manufacturer operates a distribution operation, it must be physically separate from the manufacturing facility. Labs cannot be owned by the manufacturer. Regulations often restrict the dollar amount of product onboard any one vehicle.

Promotion and packaging present challenges. Retail products must be child-proofed. The amount of THC in edibles cannot exceed established limits per piece (e.g., 10 mg). In the case of multipacks (e.g., six brownies), each item in the pack must be at or below the established limit.

Restrictions on promotion vary by state, but share several commonalities. Generally, products cannot represent curative or therapeutic use, specifically target individuals under the age of 18-21, including cartoon characters or similar images, be located within 500-1000 feet of child centers, on a public facility or vehicle, and post-secondary campuses. Retail outlet signage and product labels must convey the detrimental effects of cannabis usage. Social media accounts are routinely shut down due to platform-specific violations, making it difficult to present a consistent message across platforms.

Conclusion

As laws regulating the cannabis industry are rapidly changing, they are creating new challenges to the various types cannabis startups. In this paper, we analyzed the industry based on a number of factors and provided a typology of cannabis startups. The topic is ripe for future academic research to provide new theories for startups operating in unchartered territories where the legality of the product changes depending on the state and federal governments.

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