

Black Market to Blue Chip

The Futures of the Cannabis Industry in Canada

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Submitted to OCAD University in partial fulfillment
of the requirements for the degree of Master of Design
in Strategic Foresight and Innovation

Toronto, Ontario, Canada, April, 2018
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Abstract

The world is changing its mind on cannabis, and we are not in the same world we were in 1923 when Canada first made marijuana illegal to smoke. Culture, technology, knowledge, and people have changed. We have a lot more research, seen first-hand how cannabis can help and hurt people, and heard other's similar and different stories. How do we apply what we've learned about strategy, business, and design to turn a prohibition policy into a regulatory framework?

Legalization of cannabis in Canada has been delayed to after August, if all things go smoothly and there are no additional setbacks. Legalization creates a unique opportunity for Canada to become a global leader in innovation, policy, research, and regulation. While there will be many changes happening simultaneously in the future, the principle domains of inquiry for this research project will be understanding the systems connections and impact of scientific research, technological innovation, regulatory frameworks, short- and long-term economic growth strategies, agricultural and environmental regulations, and cultural change strategies on the possible futures of the cannabis industry in Canada.

Designing the policy that will create the boundaries for such a complex system means that we need to know all the different moving parts. By understanding the current environmental context and the changes in these systems, a greater understanding of the complexity of connections and the different future scenarios of cannabis legalization can be achieved. These scenarios will provide policy makers, educators, and entrepreneurs with plausible futures that they can use to develop and test drive short- and long-term strategies through, in hopes of turning Canada into a global leader in cannabis and policy innovation.

The Government of Canada assembled a Taskforce to advise the government on how best to move forward. Within their report, the taskforce identified nine public policy objectives. It's safe to say that any system that has nine policy objectives is not a simple task and that solution will not happen overnight. In order to protect Canada's youth from the black market, a system that is accessible, resilient, sustainable, and profitable must take its place. If it is not accessible, people will go back to the black market. If it is not resilient or sustainable, it will not outpace the black market. If it is not profitable, it will not attract participants that are willing to be regulated. If we do not eradicate the black market, they will continue to sell to youth.

Canada should be considering more than two goals, reducing underage access and keeping profits out of the hands of criminals, by casting a wider set of goals that cover more of the legalization ecosystem. By putting environmental restrictions and constraints around cannabis production, Canada can push for innovation in a nascent market. Cannabis agri-tech innovations could then be applied to broader social issues such as food insecurity and climate change. In short, Canada needs to be more ambitious and consider that they are not simply legalizing a plant. They have the opportunity to take a resilient underground market and flip it into an innovation powerhouse.

Acknowledgements

First, I am forever grateful to all my professors in the SFI program, and my advisors Ian Clarke and Stephen Davies for the countless hours, time, and energy dedicated to helping me develop and understand everything in this paper. Through this guidance, I have come to understand the world, and my place in it, differently.

Thank you to all my SFI classmates who have taught me so much and pushed me to never settle for less. Thank you to Lisa, Ziyang, and Fran for giving their Friday night to push me forward.

Thank you to my besties Andrea, Siobhan, Brett, Genevieve, and Gigi who were always there, and gave me the words of encouragement when I needed it most.

Thank you to my sisters, Pansy and Maggie, my dad, Jen, Jacob, and Sol for all your support.

Last but certainly not least, thank you mom for giving me everything I needed to succeed in my life.

Dedication

To cannabis activists and enthusiasts everywhere.

To all the writers that have taken the time to write about the cannabis space, and to all the people who sat with me, gave me their time, their stories, and answered all my questions to make my work better.

This work is dedicated to you.

Your courage, voice, and contributions have made legalization, and this paper, possible.

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Glossary

All definitions are used in the context of cannabis and may be different when applied in a different situation.

Decriminalization: people caught in possession of cannabis will no longer receive a criminal record or jail sentence but can be subject to other penalties such as fines, or mandatory rehab

Legalization: consumers face no penalty if they are producing, retailing, or purchasing within the regulatory framework.

Regulation: the boundaries, policies, and guidelines that designate what is legal (no-penalty) and what is illegal (subject to penalties including criminalization). This affects both consumers and supply side of the cannabis industry for cultivation, transportation, retail, possession, and consumption.

Prohibition: a regulatory system in which the cultivation, transportation, retail, possession, and consumption of cannabis is illegal and prohibited. Canada's marijuana prohibition has been in effect since 1923.

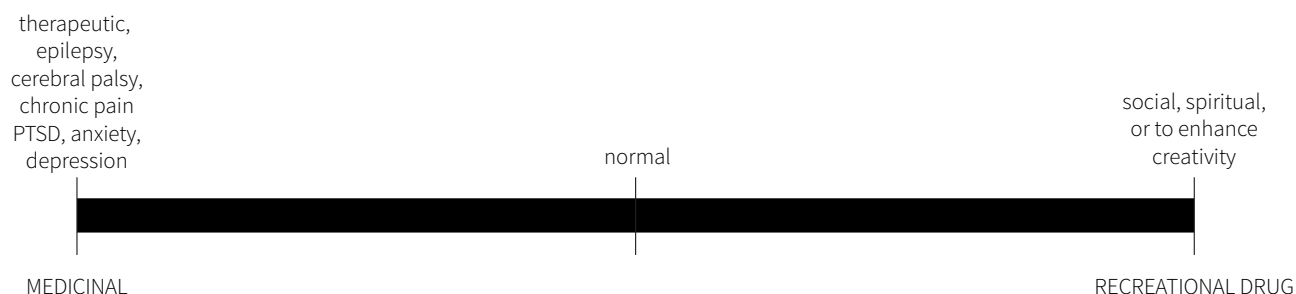
Medical: a case for consumption that is supported by a physician that allows people access to cannabis for use as a medicine for approved diseases, conditions, or symptoms. Medical users consume with the intent to reach a state of normal (Jackson, 2017).

Like so many other people, I use it to “get normal.” To do things that most people take for granted. I rarely feel high. I do get to feel joy, in ways I had never been able to my entire life.

— *Stephanie Karasick, Toronto, Ontario*

Recreational: consumption with the intent to go from normal to an altered mental and/or physical state outside of a medical condition. Reasons for non-medical use can range from therapeutic, social, spiritual, or to enhance creativity (Blackstone, 2015).

Figure 1. Medical use versus recreational use



Hemp: refers to *Cannabis sativa* and has extensive uses in food, oil, fibre, paper, and textiles. Industrial hemp generally contains less than 1% of the psychoactive ingredient Δ^9 -Tetrahydrocannabinol (THC) in the plant (Health Canada, 2017).

Cannabis: refers to *Cannabis indica* and contains 3-15% of the psychoactive ingredient Δ^9 -Tetrahydrocannabinol (THC) in the plant (Rahn, 2014). While the legal classification refers to *Cannabis indica* and *Cannabis sativa* as two different plants, the term indica and sativa are now used to describe the different kinds of high experiences associated with different strains of cannabis; indica strains produce a physically sedative high and sativa strains produce a euphoric cerebral high (Rahn, 2014). Colloquially cannabis is also called Aunt Mary, BC Bud, Blunts, Boom, Chronic, Dope, Gangster, Ganja, Grass, Hash, Herb, Hydro, Indo, Joint, Kif, Mary Jane, Marijuana, Mota, Pot, Reefer, Sinsemilla, Skunk, Smoke, Weed, Yerba (DEA, n.d.)

Grey market: cannabis operations that possess both legal and illegal elements (Kane, 2018)

THC: Δ^9 -Tetrahydrocannabinol (THC) a compound found in the cannabis plant and is the ingredient responsible for the psychoactive effects

CBD: stands for cannabidiol, a nonpsychoactive component of the cannabis plant that is thought to have therapeutic such as anti-seizure, anti-inflammatory, analgesic, anti-tumour, anti-psychotic, anti-anxiety, and in the treatment of substance abuse disorder (National Institute on Drug Abuse, 2015).

Introduction:
Why write a
research paper
on marijuana?

There is a popular innovation tactic created by Jay Doblin in 1982 called Flipping Orthodoxies (Nagji & Walters, 2011) that is often used to develop strategy for driving change. The basic premise is to look for deep rooted assumptions, unquestioned beliefs, and/or entrenched knowledge that no one seems to question and to flip them on their head. We study many business cases and see how flipping orthodoxies can be disruptors in an industry, but it's not very often that we see this kind of innovation tactic happen with an entrenched belief that is almost 90 years old. In 1923, Canada was among the first countries to make smoking cannabis illegal. Fast forward to July 2018, 95 years later, and Canada could be the second country to legalize cannabis.

Canada isn't legalizing cannabis because it believes we've gotten it wrong all these years and that cannabis is harmless and safe for everyone. The orthodoxy it's flipping is that prohibition may not be the best way to keep people from using cannabis. Asking the question 'why not?' and 'how might we' is the key to understanding why legalization, and in turn regulation, may be the better strategy.

***The prohibition model hasn't worked, plus it puts the entire trade into the hands of gangs,"
"If you had a regulated market, the same way we do with alcohol and tobacco, you can
control the price, advertising, point of sale, quality, and run full public health education
campaigns.***

— James Shaw (The New Zealand Herald, 2017)

After 95 years of prohibition, the results are in. According to the United Nations, Canada ranked number one for underage access to cannabis (Ingraham, 2016), and Statistics Canada estimated the 2015 Canadian black market to be a \$6.2 billion industry (The Canadian Press & Business News Network, 2017) — maybe it's time to change our paradigms and try something different.

These statistics have become the basis for the two main mandates set by the government of Canada; first to keep cannabis out of the hands of youth, and second to keep profits out of the hands of organized crime (McLellan, et al., 2016).

The Government of Canada assembled a Taskforce to advise the government on how best to move forward (Mas, 2016). Within their report, the taskforce identified nine public policy objectives (McLellan, et al., 2016). The nine objectives can be split into four groups: Public Health and Safety, Justice System, Black Market, and Research.

With so many moving parts to legalization, we have to remember that the journey to a safe (objective 1, 5, 6, 7, and 8), accessible (objective 8) cannabis regulatory framework that aims to divert profits from organized crime (objective 2), and reduces the burden on our justice system (objective 3 and 4) will not happen overnight.

Figure 2. Nine policy objectives grouped by system domains. From Calla Lee, original for MRP.



Designing the policy that will create the boundaries for such a complex system means that we need to know all the different moving parts, what different futures lay ahead of us, and what barriers or unintended consequences we may encounter.

If the Government of Canada decides to prioritize one, or even two of the mandates, the design question that they are asking provinces to solve is ‘How might we redesign Canada’s black market cannabis subculture into a blue chip industry that is legal and safe?’

In order to protect Canada’s youth from the black market, a system that is accessible, resilient, sustainable, and profitable must take its place. If it is not accessible, people will go back to the black market. If it is not resilient or sustainable, it will not outpace the black market. If it is not profitable, it will not attract participants that are willing to be regulated. If we do not eradicate the black market, they will continue to sell to youth.

The question that they should really be asking is ‘How might we redesign Canada’s black market cannabis subculture into a blue chip industry that is legal, safe, sustainable, profitable, accessible, and equitable?’

In order to achieve this, the Government of Canada must recognize and consider the requisite variety of stakeholders that they are designing for beyond just youth. It must also recognize the success and failures of the current medical marijuana system that has treated cannabis as a drug more than a medicine (Giroday, 2016), forced medical users to partake in the black market, and created a perverse motivation for the black market to infiltrate and control both the distribution of medical and recreational cannabis.

Methods

The methods described below fall within the limits of what can be done within the scope of this MRP, and not necessarily within what should be done due to the current legal status of cannabis. As of August 2017, the government has not released any information regarding research, amnesty, or a transition plan for legalization and as such, limits the safety of subjects, users, and experts that could be involved in primary research. Without access to stakeholders in both the legal and illegal market, it is not possible to understand the societal impacts of legalization that would help create a strategic plan or direction that is collaborative, user-centred, and unbiased. Ideally, stakeholder interviews would be the primary method for data collection, and a co-creative workshop with stakeholders from all parts of the industry for data synthesis and strategy development would be conducted. Instead, a thorough literature review will be done that includes news articles, public stakeholder interviews, and industry reports. No primary data collection involving human subjects will be done and this major research project will not be seeking REB approval.

DATA COLLECTION

Historical Context

As previously stated in Section 3, cannabis has a long and complicated history. Looking at the history of prohibition, its influences, and its motivations may help to illustrate the social barriers that exist and how they have evolved over time.

Data Required: historical documents, new reports,

Environment Scan

With so many moving parts to a system, an environment scan will help to identify past and current trends that have and will shape the landscape of the future in Canada. Using a STEEPV (social, technological, economic, environmental, political, value) framework will ensure that there is sufficient variety in data points to provide a clear understanding of the system from multiple perspectives.

Data Required: literature review, industry relationships, import/export transactions, revenue streams, social media scan, different jurisdictions, phases

Competitive Scan

In order to determine how Canada can become a global leader, major global players and regulatory changes in global market leaders, such as Uruguay, Israel, Amsterdam, China, and the United States. The environment scan will identify key global stakeholders that Canada will compete against in the global economy, policy formation, and regulatory frameworks. This scan will also uncover successes, unintended consequences, best practices, and backdoor solutions. Using a STEEPV framework in this case will also provide a clear understanding of the systemic changes that can be anticipated.

Data Required: literature review, regulatory frameworks, cultural differences

Figure 3. Example of a influence diagram using Beckhard and Harris' Change theory. From Assessing Readiness for Change at CANES, by Annie Constantinescu, Calla Lee, Kelly Payne, and Lisette Useche, 2017.

- D - dissatisfaction of the status quo
- V - vision of a better future
- A - actions to reach that vision

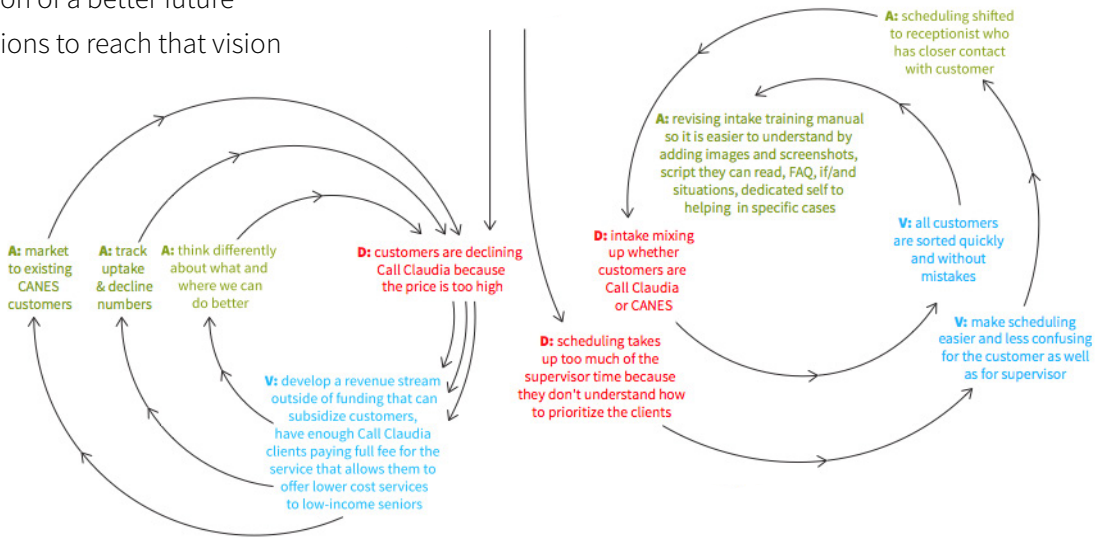
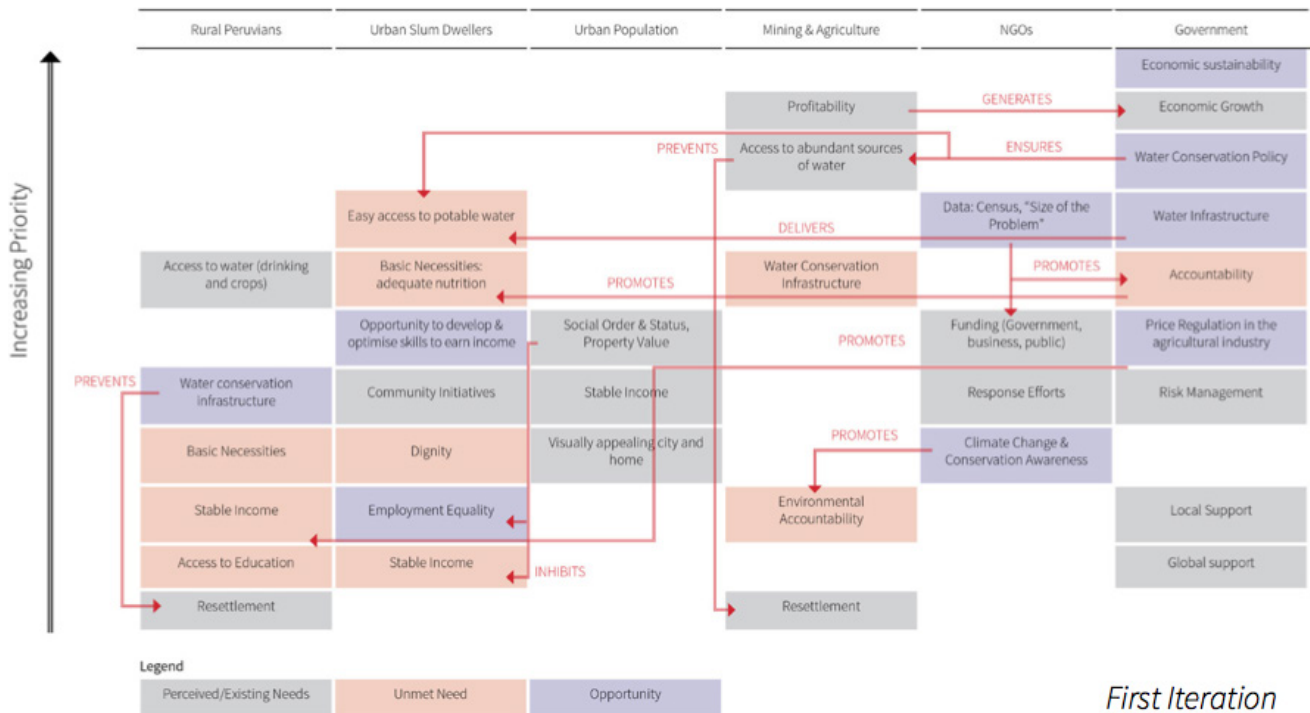


Figure 4. Example of a Stakeholder Matrix detailing the needs of different stakeholders. Needs are categorized in three categories: Perceived/existing needs, unmet needs, opportunities. From Assignment 1: Knowledge Synthesis, by Calla Lee, Christine McGlade, Melissa Tullio, Sanam Samanian, Tyler Calder, 2015.



DATA VISUALIZATION

Influence Diagrams & System Archetypes

With the data collected from the environment and competitive scans, multiple influence diagrams will be created to understand and identify major relationships that will impact the regulatory landscape of the future. These diagrams will be cross-referenced with Peter Senge’s systems archetypes to better understand the intersection of political, economic, and social systems.

Synthesis Tools: STEEPV categorization

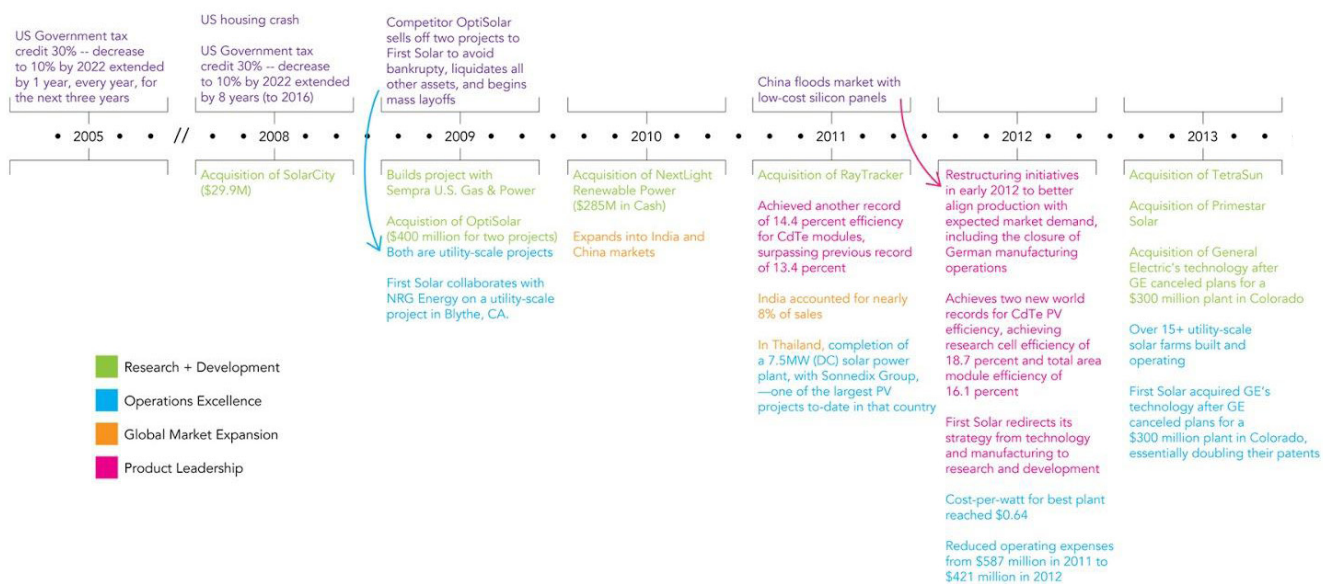
Stakeholder Analysis

Key stakeholders found in the environment and competitive scan will be mapped along with their needs in a stakeholder matrix (Figure 4). Needs will be listed in ascending order and matched to priorities and needs in other stakeholder categories. Gaps that occur in stakeholder needs identify opportunities for other stakeholders while long lists tend to identify barriers for other stakeholders.

Timelines

Data points collected from both the environment and competitive scan, will be mapped out along a time line (Figure 5). This will collect the multitude of strategies at play at different levels of the system and governance allowing us to determine significant events, changes, and hypothesize cause and effect relationships.

Figure 5. Example of a timeline documenting different strategic events of a company (bottom) and external events that influence the competitive environment that it exists in. Strategic events are categorized as by four different tactic types: research and development, operations excellence, global market expansion, and product leadership. From Project 1: First Solar Strategy Map, by Calla Lee, Kelly Payne, Lisa Hart, Ziyain Hossain, 2016.



FORESIGHT

Four Generic Alternative Futures

Jim Dator's four generic alternative futures was chosen as the method for scenario generation as it allowed for the exploration of multiple critical uncertainties and driving forces to coexist in the same scenario. The four generic alternative futures help bring to life the scenario that future strategies will exist in, and give insight into the complex connections that exist in a system rather than its individual silos. Creating multiple scenarios, with different time horizons can surface elements that repeat themselves or unexpected events that the industry needs to be resilient against. The four different types of scenario are continuation, collapse, discipline, and transform.

Continuation scenarios focus on the growth or renewal of economic systems through governments, educational systems, and organizations. These three aspects help to develop and grow people, institutions, and technology to keep an economy vibrant and growing.

Collapse scenarios center around the idea that economies cannot possibly grow indefinitely in a finite world and that different factors can cause our fragile, complex system to fall into decline. Collapse can be economic, environmental, moral, ideological, resource, will or imagination and can be caused by external forces such as invasions, or environmental disasters. Dator warns that not all collapse scenarios should be considered 'worst case scenarios' as some stakeholders may welcome the end of an era as it can usher in new perspectives and ways of life.

Discipline scenarios often arise when continuation scenarios are seen as undesirable or unsustainable and wish to preserve or return to places, processes or values that they feel are more important or significant than economic flourishing, wealth, and consumerism. Discipline around fundamental values of such as spiritual, religious, natural, political or cultural becomes the dominant theme in these scenarios.

Transform scenarios pinpoint the transformational power of technology such as robotics, artificial intelligence, genetic engineering and space settlement to name a few. These scenarios anticipate and welcome a complete change in all life and often imagine humans in a "posthuman" form.

Historical Context

Cannabis is a plant with a complicated history. What started as an ancient medicine has turned into a drug that is regulated at every level of governance. It crosses global barriers, cultures, economic, and environmental systems. It carries with it different assumptions, stigmas, stories and legal issues. It can be seen as both medicine and drug; as a right or as breaking the law. It has been identified in civilizations across the world with uses in rituals, as medicine (Jiang et al., 2006) and recreational. Today, cannabis is regulated at every level of governance ranging from international organizations such as World Health Organization (Hall, Renström, & Poznyak, 2016) and the United Nations (Leggett, 2006) down to the municipal level (Richmond Hill, 2017).

The genus *Cannabis* is more commonly referred to as marijuana, hemp, and cannabis. Hemp refers to *Cannabis sativa* and has an extensive use in food, oil, fibre, paper, and textiles. Industrial hemp is distinguished from marijuana, *Cannabis indica*, by the percentage of Δ^9 -Tetrahydrocannabinol (THC), the ingredient responsible for the psychoactive effects, present in the plant. It should be noted that today, *Cannabis indica* and *Cannabis sativa* are both grown for recreational purposes. While the legal classification refers to *Cannabis indica* and *Cannabis sativa* as two different plants, the terms indica and sativa are now used to describe the different kinds of high experiences associated with different strains of cannabis; indica strains produce a physically sedative high and sativa strains produce a euphoric cerebral high (Escondido, 2015).

Hemp was a vital crop in North America during the early 1600's and at the time, it was the law of the land to grow it in Virginia in 1619 (Lutz, 2007). However, in 1923 Canada was among the first countries to make smoking marijuana illegal when the Act to Prohibit the Improper Use of Opium and other Drugs was introduced by William Lyon Mackenzie King, Canada's Prime Minister at the time.

Soon after, the US passed the Marijuana Tax Act, in 1937, effectively marking the death of the industrial hemp industry. Harry Anslinger, the founding commissioner of the Treasury's Federal Bureau of Narcotics (FBN) passed the act giving the U.S. Treasury Department all regulatory control for both industrial hemp and cannabis in 1937. Anti-marijuana campaigns were developed to spread fear and paint marijuana as a drug that induced "delirious rage" that led people to commit "violent crimes" (Anslinger, 1937).

The anti-marijuana sentiment continued to build internationally with Canada agreeing to two international treaties: the 1961 Single Convention on Narcotic Drugs, and the 1988 Convention Against Illicit Traffic in Narcotic Drugs and Psychotropic Substances (Cullen, 2016).

The US began its 'War on Drugs' in 1971 with Richard Nixon, and continued with it until violent crime rates fell between 2001-2009, while under George W. Bush when prosecutions started easing up to not continue overcrowding prisons (Gunter, 2017). Barack Obama continued to move away from the War on Drugs by further guiding prosecutors away from prosecuting low-level offenders (Gunter, 2017). However, with the Trump administration, the US has started tightening the reigns again.

Mr Sessions sent out his own memo last month to prosecutors, instructing them to use “every tool we have”, including targeting drug users, in a new crackdown on violent crime. But many of those who fought and studied the first war on drugs say it was a proven failure.

— *Joel Gunter, 2017, BBC News*

Despite the ‘War on Drugs’, Canada has been slowly changing its mind on cannabis use over the past 50 years (Savas, 2001). In 1994, Canada began issuing research licenses to grow industrial hemp for experimental research. During this time, the distinction between cannabis and hemp was becoming clearer. Research identified that hemp could be grown as a separate entity from marijuana (Health Canada, 2017). Four years later, Health Canada legalized the commercial production and cultivation of industrial hemp (Laate, 2012), which contains 0.3% or less tetrahydrocannabinol (THC), the psychoactive ingredient responsible for the euphoric high.

The legalization story actually starts with a court case in 2000 that allowed exemptions for dried cannabis for medical purposes. Following that, Canada became the first country to regulate the use of medicinal marijuana in 2001.

THE BIG CANNABIS DEBATES: Medical versus Recreational

One of the big debates around cannabis is whether it is a medicine or a recreational drug.

Medicinal cannabis is a case for consumption that is supported by a physician that allows people access to cannabis for use as a medicine for approved diseases, conditions, or symptoms. Health Canada acknowledges the therapeutic uses of cannabis for HIV/AIDS, multiple sclerosis, and chronic pain. Medical users consume with the intent to reach a state of normal (Jackson, 2017).

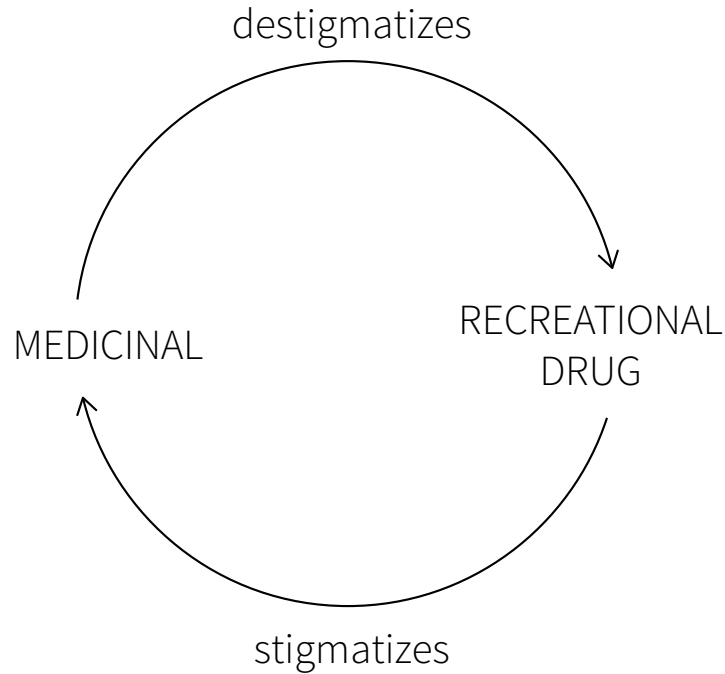
There’s so much stigma that surrounds cannabis use. It’s still predominantly thought of as a recreational thing. I have found that many people still think when you consume cannabis, it’s to get high. Like so many other people, I use it to “get normal.” To do things that most people take for granted. I rarely feel high. I do get to feel joy, in ways I had never been able to my entire life.

- *Stephanie Karasick, Toronto, Ontario (Jackson, 2017)*

Given the above definition, then recreational cannabis is a case for consumption with the intent to go from “normal” to an altered mental and/or physical state outside of a medical condition. Reasons for non-medical use can range from social, spiritual, or to enhance creativity (Blackstone, 2015).

Each of these cases carries its own stigma but the stigma of one ultimately has an effect on the other. The ‘stoner’ stigma for recreational users is quickly applied to medicinal users who get stigmatized for just wanting to get high

Figure 6. Impact of medicinal use on recreational use on social stigma. By Calla Lee, original for MRP.

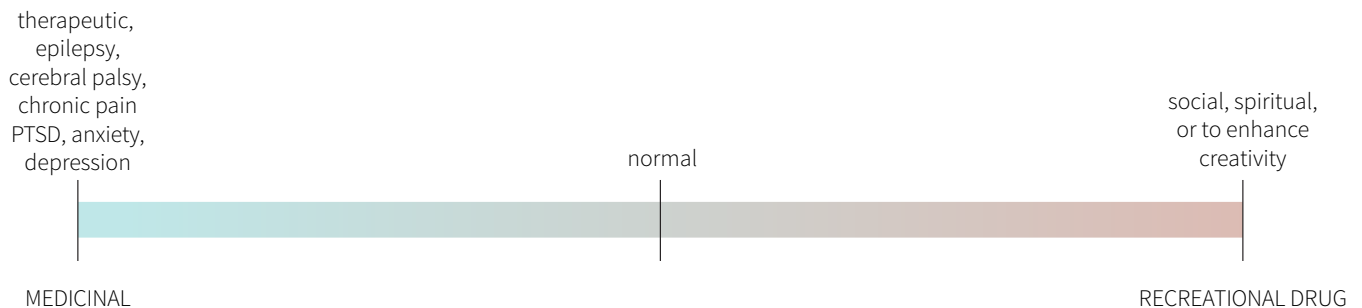


(Jackson, 2017). Medicinal patients can experience backlash from their family, friends, employers, and teachers. However, medicinal cannabis education has been making strides to normalize its use and remove this stigma. This in turn can destigmatize cannabis use for some recreational users who may be self-medicating and using it to treat undiagnosed issues.

The distinction between recreational and medicinal use however, is not as black and white as we might think it is. Some users may in fact oscillate between the two categories, with normal being the mean difference. Rather than see it as two separate categories, consumption lays on a subjective spectrum, that can vary between users and intent.

As previously mentioned, following a court case in 2000 that allowed exemptions for dried marijuana for medical purposes, Canada became the first country to regulate the use of medicinal marijuana in June 2001. However, the

Figure 7. Perceived differences of use as a spectrum as opposed to two distinct categories. By Calla Lee, original for MRP.



Medical Marijuana Access Regulations (MMAR) failed to address recreational use. Medical users were finding specific strains that worked well for their medical needs but often were unable to find a continuous supply of that specific strain. In 2003, Ottawa introduced a plan to provide dried cannabis to smoke and seeds to medical patients to allow them to grow their own cannabis at home or designate a licensed producer to grow for them. The bigger problem was still access and finding a doctor to support a user's exemption (Perkel, 2013) and prescribe smoking as a treatment. The system flip flopped for several years between 2001 to 2008 with many Ontario court cases that challenged reasonable access to supply (CanLII, 2007), often with contradicting regulations between criminalization, possession, and medicinal use (Khoo, 2004).

2008 – 2013 Ontario v. Mernagh

In 2008, Matt Mernagh was arrested for growing his own marijuana after he was unable to find a doctor who was willing to support his case for medical marijuana to treat his fibromyalgia, scoliosis, seizures and depression (Perkel, 2013). In 2011, after three years in court, Mernagh won his case where they ruled in his favour and gave the Government of Canada 90 days and three options moving forward; to amend their regulations to make it easier for medical patients to access, challenge the ruling and bring it to the Supreme Court of Canada, or do nothing and effectively legalize marijuana in Ontario for both medical and recreational. The deadline was extended until the Ontario Court of Appeals could hear and make a decision on the ruling. In 2013, the 2011 decision was overturned on the basis of insufficient evidence. Following this decision, the Conservative party in government at the time, replaced the MMAR with the new Marijuana for Medical Purposes Regulations (MMPR) which revoked the 2003 home growing framework (Federal Court of Canada, 2016).

Figure 8. After 71 years of prohibition, Canada legalizes medical marijuana in 2001, but does not fully capture the needs of patients, driving them still to purchase from the black market. By Calla Lee, original for MRP.



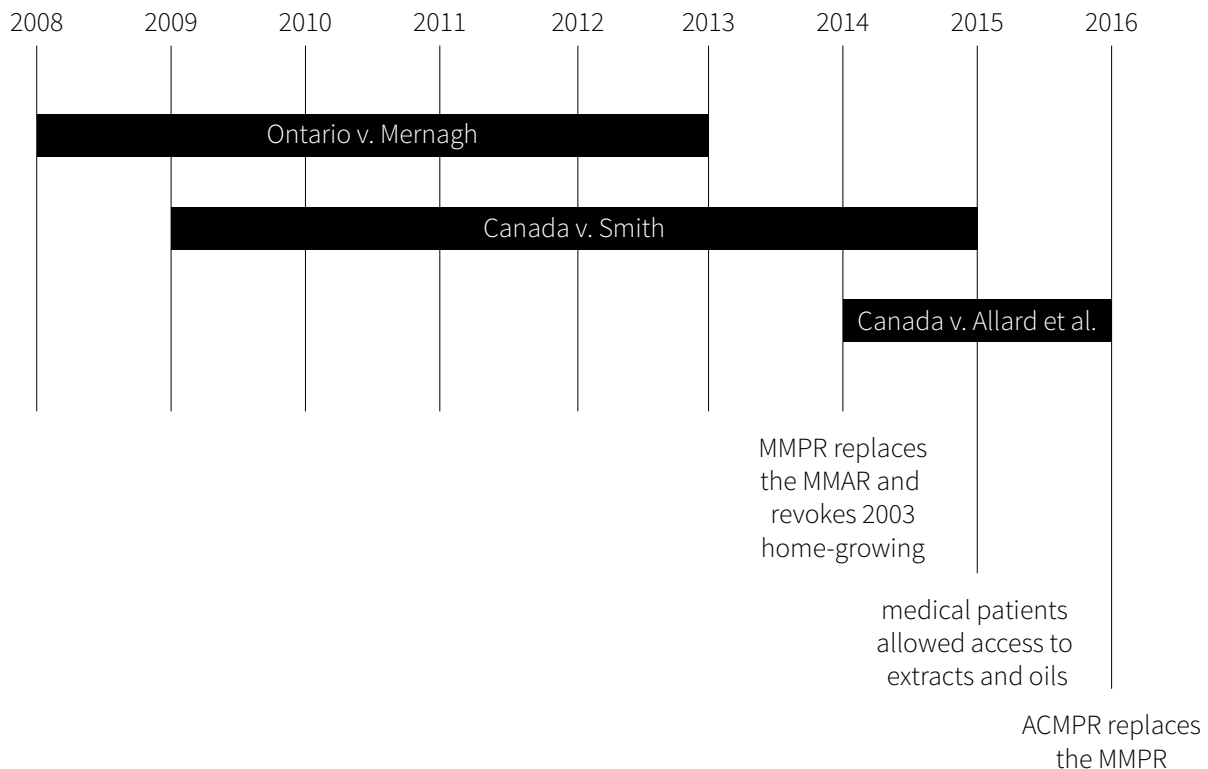
2009 – 2015 Supreme Court of Canada v. Smith

Users still unsatisfied with the quality and variety of strains provided by the government, and that they are only allowed to access to dry bud were still partaking in the black market to meet their needs for edibles food items and products that are infused with cannabis (Health Canada, 2017). In 2009, Owen Smith was arrested (CBC News, 2009) for taking legal medical marijuana, creating illegal derivatives such as oils and concentrates for use in infused edibles, and selling them out of his clinic. This sparked a court case that resolved itself in July 2015 with the Supreme court ruling that the prohibition of derivatives was unconstitutional and regulations were updated to allow medical patients access to extracts and oils (CBC News, 2014).

2014 – 2016 Supreme Court of Canada v. Allard et al.

The biggest case in 2016 of four medical patients versus the Supreme Court of Canada was one ultimately one that would lead to the discussion of legalization in Canada. The federal courts ruled in favour of the patients stating the MMPR's ban on growing caused an unreasonable barrier to access (Hayward, 2016). The Federal Court Justice Michael Phelan went on to note the scarcity of evidence, and gap in knowledge and data in respect to cannabis' uses and effects, despite the lengthy period of medical marijuana regulations in Canada, particularly on the part of the government, caused marijuana to be treated as a drug more than a medicine by statute, regulation, and policy (Giroday, 2016). This spurred the replacement of the MMPR to our current system today, the Access to Cannabis for Medical Purposes Regulations (ACMPR) in August 2016.

Figure 9. Timeline of select Canadian medical marijuana court cases and resulting changes to regulatory frameworks. By Calla Lee, original for MRP.



Experts such as Andrea Hill, a Toronto-based corporate commercial lawyer commented that the case shined a light on the MMPR’s “unprecedented creation of a brand new industrial space” and had “given rise to a phenomenon of business activity” (Hill, 2016).

She further notes the incongruence between supply and demand suggest that the medical marijuana ecosystem was preparing itself not simply for medical patients, but for the future of marijuana legalization for recreational purposes (Hill, 2016).

The capital markets provide the most visible evidence of this. In many cases, the market capitalization attributed to licensed producers and even applicants – tens, sometimes hundreds of millions of dollars – is vastly incongruous with the available purchasing power of the 60,000 or so authorized medical users of marijuana in Canada. This disconnect between market size and capitalization only makes sense when an exponentially larger purchasing power – such as a public market for recreational marijuana – is assumed to be imminent, and licensed producers are thought to be the frontrunners to supply it. The market has anticipated from day one that medical patients were not the ultimate destination.

— Andrea Hill, 2016, *The Globe and Mail*

Medical Leading the Charge for Cannabis Reform

Cannabis reform is not isolated to only Canada or North America. It is quickly gaining traction across every continent in various aspects with Peru (Drug Policy Alliance, 2017) and New Zealand (Barrett, Nicolaci Da Costa, & Fernandez, 2017) as the latest countries to come forward with medical marijuana frameworks. One big differentiating factor between Peru’s and Canada’s medicinal framework is that Peru has legalized oils (Omand, 2017), but not cannabis flower that must be smoked, which doctor’s in Canada have opposed (Omand, 2017).

One of the main voices pushing for reform in Peru have been mothers with sick children (Reuters, 2017). After police arrested and dismantled a cannabis lab of women who were creating cannabis oils to treat their children’s seizures and psychotic episode, these women found themselves in the public eye, fighting for cannabis legalization. The Peruvian Congress and health ministry were unable to ignore the gaps in their laws that did not provide support for this stakeholder group. Many mothers were taking the risk to treat ailments such as treatment-resistant childhood epilepsy and schizophrenia.

In 2013, a report published in the journal *Epilepsy & Behavior*, surveys were given to a Facebook group of parents dedicated to sharing information about treating their children’s severe epilepsy such as drug-resistant Dravet, Doose, and Lennox-Gastaut syndrome. Of the 16 parents who reported a reduction in seizure frequency while taking cannabidiol (CBD), the nonpsychoactive component of the cannabis plant, two (11%) reported complete seizure freedom, eight (42%) saw a reduction in seizure frequency greater than 80%, and six (32%) reported a seizure reduction of 25-60% (Porter & Jacobson, 2013).

Figure 10. Survey results of seizure frequency for 19 parents who administered cannabidiol to children with severe drug-resistant epilepsy. By Calla Lee, original for MRP.



These findings point to a need for more research to determine the safety, efficacy, and tolerance for use in pediatric treatments. Without this kind of research to support the case for legalization of medical marijuana, we leave patients in need of care and their caretakers in a precarious conundrum of not receiving medical treatment or risk being arrested and charged for a criminal offence.

Decriminalize versus Criminalize

While cannabis is illegal, how different jurisdictions deal with infractions is the key to this debate. In a criminalized system, perpetrators can receive criminal records, or jail time. In a decriminalized system, people caught in possession of cannabis will no longer receive a criminal record or jail sentence but can be subject to other penalties such as fines, or mandatory rehab.

According to a 2001 survey by the Fraser Institute, the growing liberal view of baby boomers from the 1960s is a mindset that is being passed down to their children. By 1997, more than 50 percent of people in Canada between

Figure 11. People pro-decriminalization in Canada by age group in 1987 and 1997. By Calla Lee, original for MRP.

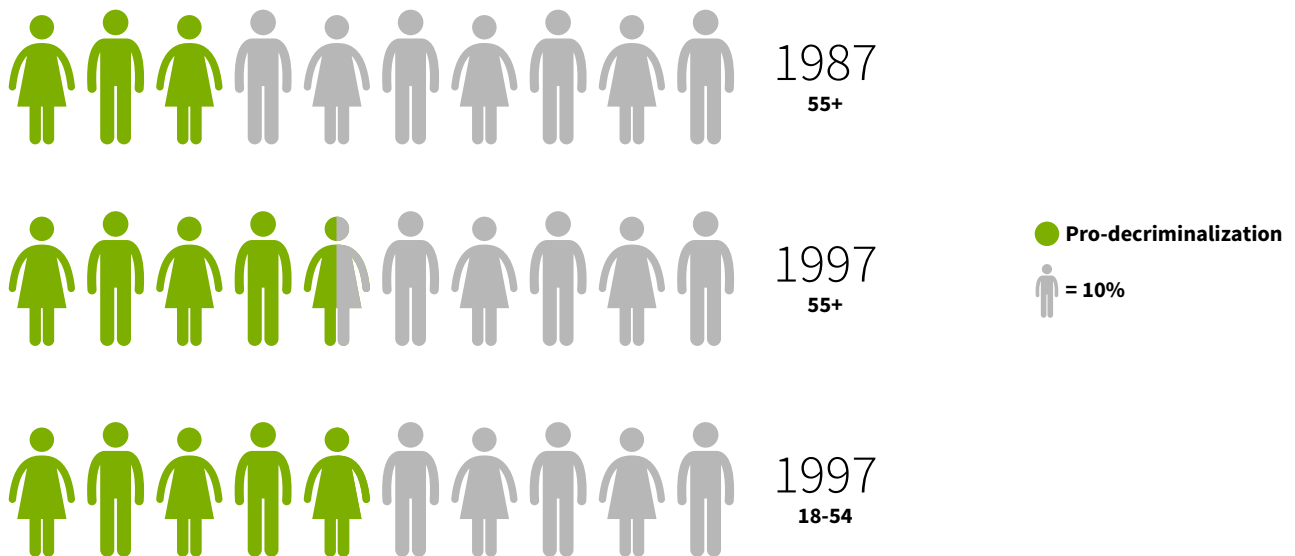
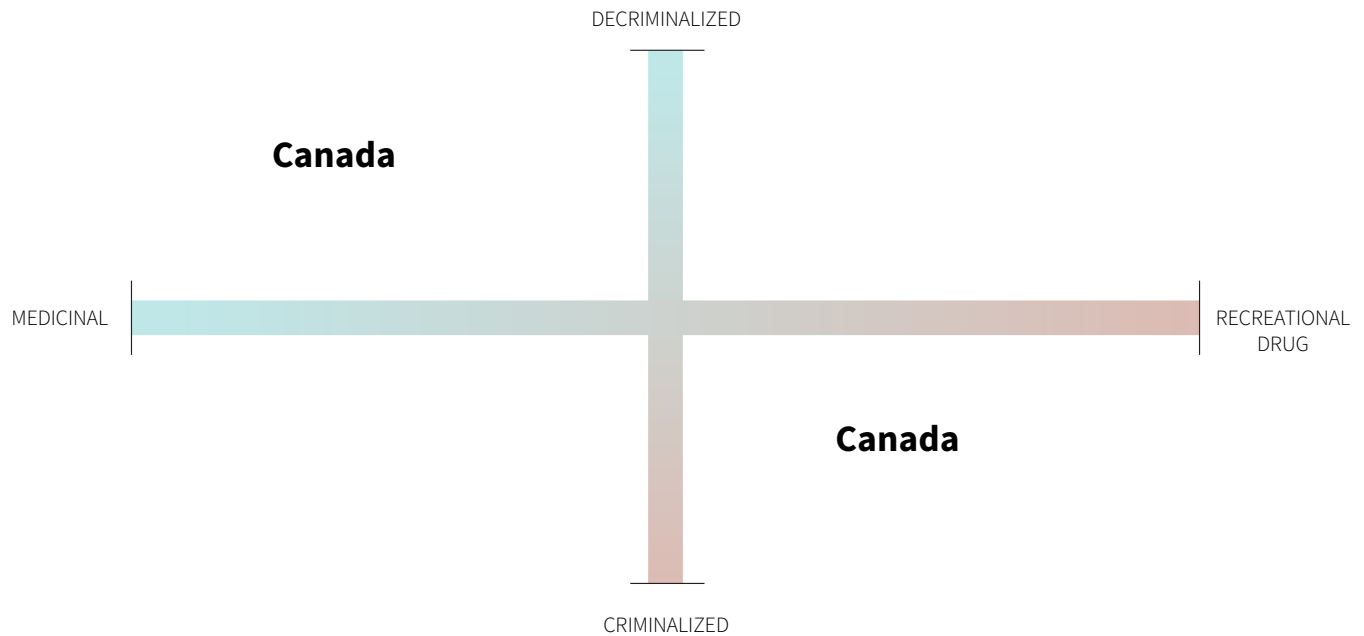


Figure 12. 2x2 matrix of possible criminalization options by type of user. By Calla Lee, original for MRP.



the ages of 18 to 54 were pro decriminalization, with age group 55 and older at 46 percent, up from 29 percent in 1987, the peak of Ronald Reagan’s ‘War on Drugs’.

When intersected with the medicinal versus recreational drug debate we are presented with 4 options: decriminalized medicinal, decriminalized recreational, criminalized medicinal, which was the case in Peru, and criminalized recreational.

Currently in Canada, our policies reflect decriminalized medicinal and criminalized recreational use.

Canadians are also changing their minds on whether medical users should be criminalized. The Fraser Institute further concludes that 71 percent of Canadians who believed in criminalization for recreational, did not believe that the use of medicinal marijuana should be a criminal offence (Savas, 2001).

For countless years, drug policy and criminalization of recreational marijuana have been used to perpetuate systemic racism in the United States (Chambers, 2008). The Drug Policy Alliance has acknowledged that the deeper issues associated with prohibition are racism, inequality, burden on the justice system, incarceration, public health, and economics (Drug Policy Alliance, 2018). Many jurisdictions have moved forward with decriminalizing recreational use after recognizing the damage it was wrought on the lives of people and their communities.

Current Context

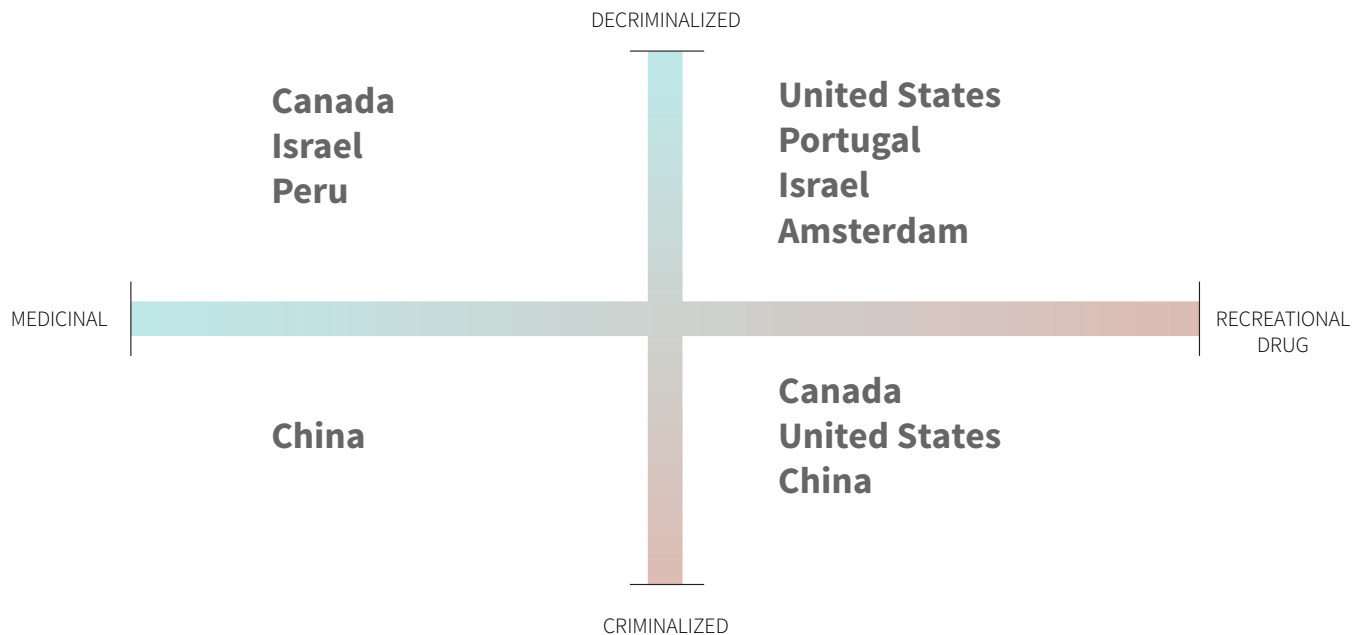
Many other jurisdictions have decriminalized such as Portugal in 2001 (Oakford, 2016), Israel in 2017 (Liebermann, 2017), and 22 states as of 2017 (NORML, n.d.), demonstrating that opinions regarding cannabis legalization are changing. Uruguay’s legalization in 2013 (Blatchford, 2017) became further proof that views on prohibition are beginning to flip at a global level.

INTERNATIONAL

As the first country to adopt a formal medical marijuana system, Canada has been innovative in regulatory policy before and it is time to step up to the challenge again for legalization. Canada will not be the first to legalize nationwide--Uruguay having legalized in 2013 (Blatchford, 2017). However, there is still an opportunity to become a leader with innovative policies that can turn Canada’s thriving subculture, into a global leader in the cannabis industry. Canada will not be the only country looking to become a global leader in the cannabis industry.

Many different countries are currently test driving different models that Canada can begin analyzing and improving on. One method is harm reduction which treats drugs as a health issue rather a criminal issue. One example is Portugal which decriminalized all drug use in 2001 and put in place harm reduction measures such as syringe and needle exchange programs, rehabilitation, prevention, and substitution programs (Ponté, 2015). They have since seen their drug-induced death rates fall five times lower than the European Union average (Oakford, 2016). According to a Transform Drug Policy Foundation report, while many opponents feared a rise in usage, it failed to materialize (Murkin, 2014).

Figure 13. 2x2 matrix of possible criminalization options by type of user. By Calla Lee, original for MRP.



Uruguay

Uruguay's legalization model in 2013 existed similarly to Canada's first iteration of the medical marijuana program. Cannabis was legal but access was an issue. At the onset, while smoking cannabis was legal, it was illegal to purchase or grow creating unreasonable access as demonstrated by the Ontario versus Mernagh case in 2008. This was amended in 2014 when home growing and cannabis clubs were introduced and cannabis users could join a collective to grow and harvest together. In 2014, while reports that prices in the black market were decreasing, there was an increase in black market activity as the excess from growing clubs were infiltrating the illegal market. The higher quality, regulated excess is beginning to displace cannabis illegally coming from Paraguay that the black market has previously relied on as a supplier (Carless, 2014). In July 2017, the government of Uruguay licensed pharmacies to begin selling government grown cannabis to citizens and legal permanent residents, with prices meant to undercut the black market and limits to quantities a person can purchase per week (Londoño, 2017). One of the barriers that pharmacies encountered were banks unwilling to work with companies linked to cannabis due to violations they would incur from the United States Patriot Act (Londoño, 2017) and the Financial Action Task Force's (FATF) international anti-money laundering regulations.

One benefit that legalization has had on Uruguay is that it has opened up the portal for research for medical purposes. Since Uruguay's legalization, companies in Canada (Torres & Murphy, 2018) and the United States have been investing and partnering with Uruguayan companies to begin research for the development of patents for intellectual property, and begin research for testing and trials (Marketwired, 2014). This puts them in competition with Israel for the title of global medical marijuana research hub.

Israel

Israel, backed by its Ministry of Health, has been gearing up to turn cannabis into a major medical export (Fisher, 2017), by encouraging research and innovation (Liebermann, 2017). Saul Kaye, CEO of iCan, a cannabis entrepreneurship incubator, believes that while research and innovation will not legitimize use, it can "reduce the negative perception of the plant as 'immoral or 'criminal', increasing openness to its outstanding medicinal and wellness properties" (Liebermann, 2017). Israel is already known around the world for its agri-tech industry (Lungen, 2017) and has been the established global leader for cannabis-based medical research (Gedo, 2017).

According to Grand View Research, a U.S. based market research and consulting company, the global medical marijuana market is expected to be valued at USD \$55.8 billion by 2025. Currently Israel has over 120 research studies ongoing with clinical trials for medical cannabis on autism, epilepsy, psoriasis, and tinnitus (Lubell & Back, 2017). Push for the decriminalization of cannabis in Israel peaked in January of 2017 where proposals urged Israel to adopt the 'Portugal Model', to decriminalize and treat cannabis as a health issue (Wootliff, 2017). In February 2017, Israel's Finance and Health ministries approved the export of medical cannabis from Israel. Since then, over 500 growers have applied to for a license to grow and export (Siegel-Itzkovich, 2017). By March 2017, Israel had decriminalized recreational use.

In August 2017, Breath of Life Pharma is opening the world's largest medical marijuana production, research, and development facility with one million square feet of cultivation fields, a 35,000-square-foot production plant, and 30,000 square feet of grow rooms and labs (Schwartz, 2017).

Israel is becoming the offshore greenhouse for American cannabis companies seeking to overcome the federal roadblocks.

— *Yardena Schwartz, 2017, Rolling Stone*

Partnerships between Canada and Israel are already underway. MedReleaf, one of Canada's largest medical marijuana producer, has partnered with Tikun Olam, Israel's pioneer in the development of medical-grade marijuana.

Amsterdam

Amsterdam's coffee shop system, which focused on decriminalizing and separating cannabis from riskier illegal drugs has left the country with both success stories and unintended consequences (Rolles, 2014). While the country has decriminalized a small amount for adult use and possession, it has not created a legal supply source, leaving shop owners to still interact with an illegal production system. This pseudo legalization put Amsterdam on the map as the place for drug tourism and brought troves of tourists from international and neighbouring countries to its doorstep. In 2011, bans on selling to non-residents came into effect. By 2012, coffee shops which had adopted this ban found increased street dealing, and the ban was later reversed in late 2012.

China

While China has been known for its tough laws regarding cannabis such as lengthy prison sentences (Johnston, 2014) and even the death penalty (Chen, 2017), China is in fact one of the largest producers of hemp in the world according to the Food and Agriculture Organization of the United Nations (FAO, 2014). As of 2014, Chinese firms had filed for over half of the 606 patents relating to the plant (Johnston, 2014). It should come as no surprise considering the use of the plant has a long-documented history in China. The earliest known hemp relic dates back 10,000 BC from Taiwan (Liu, Hu, Du, Deng, & Yang, April 2017). Hemp has been found in tombs dating back 4000 years ago to the Han dynasty (Langford, 2009). The use of its seeds and leaves has been found in ancient Chinese medical texts dating back 2000 years that point to the use of CBD and THC for therapeutic uses (Brand & Zhao, 2017). While the Communist Party classified the plant as an illicit drug and proposed strict rules around its production, trade, and consumption, the South China Morning Post states that research into the plant began around the 1970s. Studies included its use as a fibre for military uniforms as well as uses in field hospitals (Chen, 2017). Since then, there has been a growing trend of Traditional Chinese Medicine growing in the West (Global Health Institute, 2010) and China is poised to take advantage of this opportunity and its intersection with medical cannabis and recreational legalization.

In China today, farms growing both low-THC hemp and higher-THC cannabis strains are for the most part illegal. A few provinces have legalized growing such as the Heilongjiang and Yunnan province, which began regulating in 2003. Prior to that, authorities in the province were known to turn a blind eye to its production considering its large profit potential. China is currently facing challenges in regulation as enforcement could lead to large-scale protests from farmers.

For the farmers, the crop is green gold – hemp brings in more than 10,000 yuan (US\$1,500) per hectare, compared to just a few thousand yuan for more common crops like corn. It also has few natural enemies so there’s little need for expensive pesticides.

— Stephen Chen, 2017, South China Morning Post

Today, the acreage dedicated to growing the plant is considered a national secret. Companies are working with the military to develop commercial pharmaceutical uses for export. Beijing-based Hemp Investment Group currently has offices in the United States with plans to branch out to China, Israel, Japan, and Europe (Chen, 2017).

United States

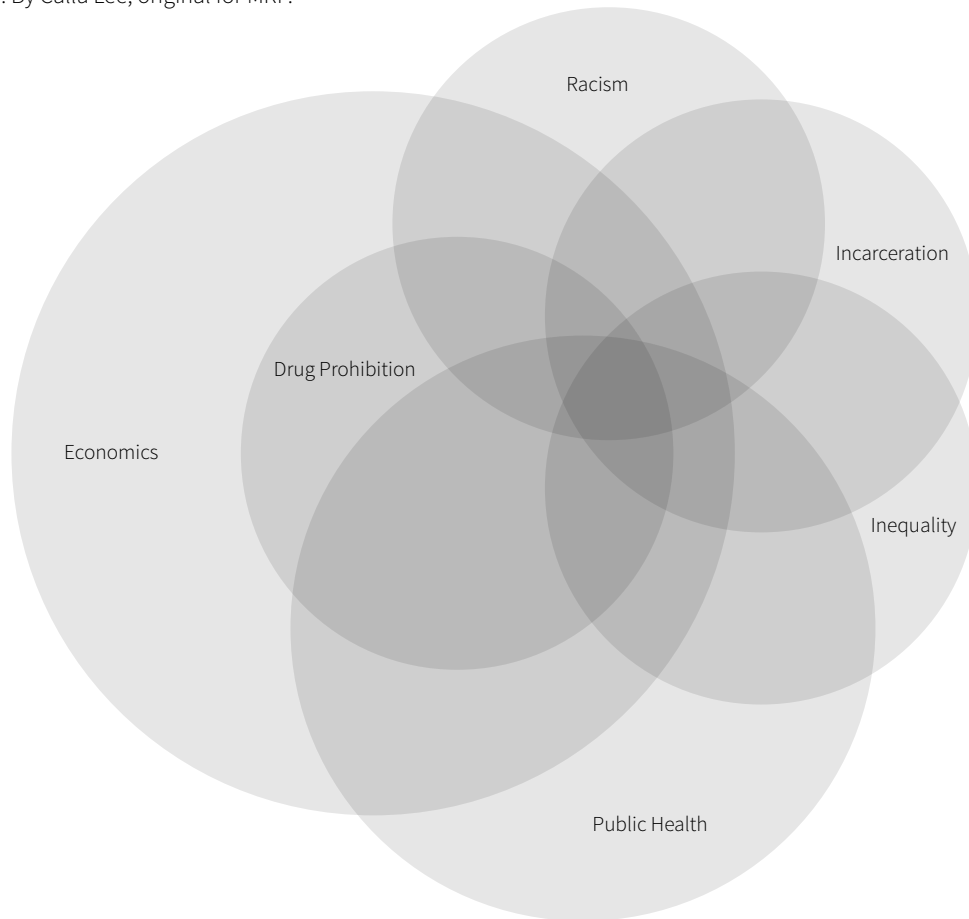
With the Trump administration’s prioritization of federal law, they rescinded Obama’s policy that discouraged prosecution of cannabis charges in states where it is legal under state laws (Savage & Healy, 2018). With the number of states allowing and regulating the production and retail of cannabis growing, while still operating under an illegal status of federal law, it is leaving the cannabis industry and enforcement in a state of uncertainty. This legal paradox positions Canada to step up to becoming the second country in the world to legalize cannabis for recreational purposes.

However, a big difference between Canada and the United States has been our enforcement strategies leading up to this paradigm shift. In the United States, report after report, story after story, has shown us the impact that the war on drugs and drug policy has had on systemic racism by perpetuating a stigma and stereotype (Rosich, 2007) that has damaged communities (Fellner, 2009) and taken lives (Lopez, 2014).

While the United States are trailblazing in state level policies, Canada can build upon their 16 years of experience with a medical marijuana system, as well as from the baseline research, case studies and experiences of the 29 states, particularly California, and Colorado, and the District of Columbia. While contexts between cities can never be replicated, case studies offer insights into human behaviour and allow us to see future possibilities and problems that can be anticipated and designed for.

In California, research found that closing illegal, unregistered dispensaries was more likely to increase criminal activity, that is usually deterred by bystanders and neighbourhood walkability scores, in the surrounding areas (Chang & Jacobson, 2017). Patterns are similar to those found with restaurant closures where it reduced the number of “eyes on the street” that can reduce some types of crime.

Figure 14. Visual concept depicting the systemic complexity of the impact of the war on drugs as described by the Drug Policy Alliance (High Times, 2017). By Calla Lee, original for MRP.



When we combine findings from this study with the previously mentioned dispensary study, we begin to see the system of problems that action without research, or even actions that ignore these case studies can have. Without research or insights from other existing systems providing guidance in decision-making, the first actions that are taken between announcement and legalization can have many short- and long-term unintended consequences that will affect stakeholders at every level, while also forcing policy play catch up and iterate quickly.

CANADA: THE GREY AREA BETWEEN ANNOUNCEMENT AND LEGALIZATION

The Big Debate: Public Health or Black Market Eradication

Canada is currently moving forward with legalization since Justin Trudeau's September 2015 announcement of his intent for legalizing cannabis in Canada. In April 2016, Health Minister Jane Philpott announced its plans to introduce legislation to legalize cannabis in Canada (Frisk, 2016).

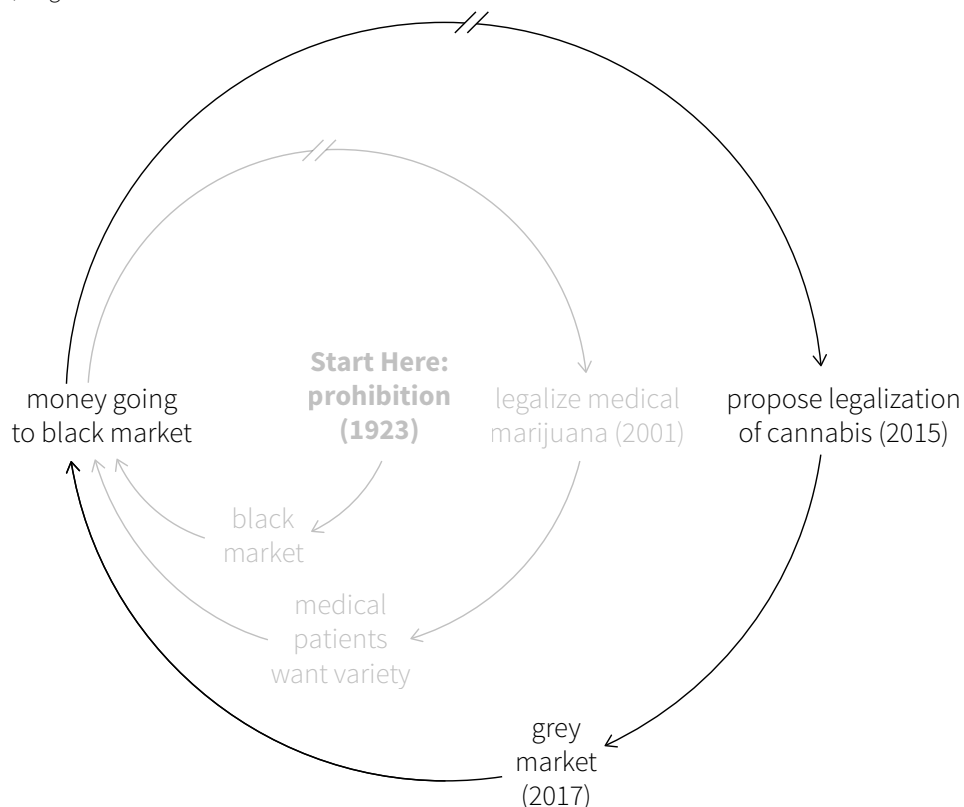
Since Trudeau's announcement of his intent to legalize cannabis in Canada, grey markets across the provinces have emerged hoping to get ahead of the curve and competition (Benzie, 2016). The Government of Canada set out two distinct mandates to support this intent: one, to keep access away from youth, and second, to stop the flow of billions of dollars into the black market.

With no explicit intent to create economic growth, the government has left out an important direction for which the supporting economic ecosystem that will accompany this policy should look like. Instead, it has left this decision up to provinces to decide how to handle the growth, processing, retail, and distribution of cannabis. This Spray and Pray strategy, generally rates as low in effectiveness (Clampitt, Berk, & Williams, 2002) as it floods decision makers with information but leaves them to sort out the significant from insignificant details about what the economic model that will support the objectives of legalization will look like. Canada’s legalization of medical marijuana can be considered a small-scale example of what recreational legalization could look like. Having spurred a flurry of businesses to support the policy, it would be prudent to take lessons learned from the business ecosystem that was created and extrapolate and give direction to the business activities that will become the foundation for successfully achieving the Taskforce’s nine public policy objectives.

It is important to recognize that in their unprecedented creation of a brand new industrial space, the MMPR have given rise to a phenomenon of business activity. Thousands of companies have been organized. Hundreds of construction projects have been initiated. Millions of dollars in financings have been raised, often in conjunction with independent investment banks and retail investors.

— Andrea Hill, 2016, *The Globe and Mail*

Figure 15. Justin Trudeau announces intent for legalization of cannabis in Canada in 2015 and sparks the emergence of the grey market. By Calla Lee, original for MRP.



The big choice provinces have to make is whether to allow private industries, a public crown corporation, or a blend of the two to regulate cannabis. Whichever business model the provinces choose, all participants in the industry must obtain licenses from Health Canada.

As of December 2017, only 7 out of Canada’s 10 provinces and 3 territories have announced regulatory frameworks for the cultivation, processing, distribution, and retail of cannabis. The territories have taken a longer research driven approach and as of December 2017 are still researching and seeking consultation.

The West coast of Canada, considered as Manitoba and all provinces west of it, who have announced frameworks, British Columbia, Alberta, and Manitoba, is looking to extend amnesty to its current cannabis community by creating private retail licenses that they could apply for to be included in the industry (CBC News Canada, 2017). These

Table 1. West coast regulatory frameworks as of January 2018. By Calla Lee, original for MRP.

| | British Columbia | Alberta | Saskatchewan (Unannounced) | Manitoba |
|-------------------------------|---|---|-------------------------------|--|
| General Model: | Unveiled: "mixed model" in which both private and government-run stores would sell marijuana. | Public Private: government responsible for any online retail marijuana sales. But the private sector isn't being shut out — retail locations would be operated by private companies. | | Hybrid sales model: Manitoba's liquor board will distribute legal marijuana to private retailers Priority: Getting rid of the black market" |
| Production: | | Alberta Gaming and Liquor Commission would be responsible for oversight of private retail, and details on licensing | | Liquor and Gaming Authority (LGA) will regulate the purchase, storage, distribution and retail of cannabis while the Manitoba Liquor and Lotteries Corporation (MBLL) will secure and track supply of cannabis sold in the province. |
| Age of Access | 19+ | same as the province's legal drinking age, 18 | | |
| Purchaser Restrictions | adults allowed to possess up to 30 grams of non-medical cannabis | provincial offences for youth possession of cannabis, consumption inside a vehicle and other prohibited locations. No possession limits in private residences." | | |
| Vendor | "All operations will only be allowed to sell cannabis products, except in rural areas. Children will not be allowed to enter the building and samples will not be allowed. licence and approval from the city and from the province of B.C." | | | |
| Outlet | "liquor stores will not be allowed to sell cannabis, with the B.C Liquor Distribution Branch (LDB) creating and operating a new standalone network of public retail stores. could mean complete bans on marijuana outlets in some municipalities, but it would not impede access because online sales would be permitted — though only for the public retailer." | "ban the sale of cannabis alongside alcohol, pharmaceuticals or tobacco. The province will also set a range for opening hours, which can vary by municipality." | | "doesn't know yet how many stores will be allowed private retailers may be able to sell pot online, but there's been no real detail on that front at yet." |
| Marketing | | province intends to pinpoint setback distances through future regulation. | | freedom to market the product, with certain restrictions, and set competitive prices. |
| Driving | | add cannabis impairment to the Traffic Safety Act an adequate roadside test doesn't yet exist. | | |
| Home Growing | Adults will be allowed to grow up to four cannabis plants per household, but they may not be visible from public spaces, and landlords and strata councils will have the right to ban cultivation. | Up to four plants. Outdoor growing will be banned. | | |
| Usage | Only where tobacco is allowed Smoking and vaping of non-medical cannabis will be banned in beaches, parks, playgrounds and other places "frequented by children," not be allowed inside vehicles (unless in a sealed package or an inaccessible place) caught driving while impaired will be given a 90-day prohibition." | Only where tobacco is allowed outlaws use in places ranging from schools and daycares to hospitals smoking or vaping cannabis will be prohibited in the same public locations where smoking is banned, including bars and restaurants. Consumption will be banned on school properties, daycares, hospital grounds, and places where children frequent, like pools, playgrounds and sports fields. | | |

Table 2. East coast regulatory frameworks as of January 2018. By Calla Lee, original for MRP.

| | Ontario | Quebec | New Brunswick | Newfoundland & Labrador |
|-------------------------------|---|---|---|---|
| General Model: | Government controlled model: crown corporation a subsidiary of the Liquor Control Board of Ontario will produce, supply, and retail cannabis. | | "Government controlled model: crown corporation a subsidiary of the NB Liquor will produce, supply, and retail cannabis. Priority: Public health and safety" | |
| Production: | Production licences are granted by province to companies that pass background checks and meet specified security and quality control criteria | the Société Québécoise du Cannabis (SQC) will buy pot from a producer and deal with transportation and storage of the product | | |
| Age of Access | 19 - same as alcohol | at least 18 years old (like several other provinces, this age mirrors the legal age for buying alcohol). | 19 - ID presented at door | minimum age of 19 to buy and use marijuana, in line with its current drinking age. |
| Purchaser Restrictions | | | limit on how many grams a person can carry | |
| Vendor | | | | |
| Outlet | initial rollout includes 80 stores, but the province says online shopping will cover the province. | 15 stores scattered around the province, and online sales will also be on offer. | | "Pot will be sold in approved private stores distribution handled by the Newfoundland and Labrador Liquor Corporation (NLC). In some areas, though, NLC may be the retailer, too. Online sales will also be an option." |
| Marketing | won't be able to browse the aisles and grab what they want, the province says. Instead, there will be a behind-the-counter setup similar to what's seen now when buying cigarettes. | | "Up to 20 government-run stores will be established with strict policies in place: they will be located at least 300 metres away from schools, will only display products under glass, and customers will need to show identification to prove they are of legal age There's no word on what the stores will be called or what the price will be, but we do know that online sales will be allowed." | |
| Driving | | | "No advertising or window displays. Products locked in glass cases" | |
| Home Growing | | ban people from growing cannabis for personal use at home | | |
| Usage | ban people from smoking anywhere but their private residences.No consumption allowed in cars, parks, etc (similar to alcohol) | limit smoking to the same places where people can currently light up a cigarette. | "At home, people can store however much they like, but they have to keep it in either a locked-up room or a locked container. keep their stash in a locked container or room in their home to prevent minors from getting at it. no smoking in public places " | barred from smoking pot on public property |

provinces have set their priority as eradicating the black market by legalizing and regulating their existing community (the private model).

In contrast, the East coast of Canada, considered as all provinces east of Manitoba, who have announced frameworks, Ontario, Quebec, New Brunswick, Newfoundland and Labrador, and Nova Scotia, have taken a different approach. With their proposed regulatory frameworks, cannabis would only be retailed through a crown corporation (the public model). These provinces have set their priority on public health and safety.

This system looks to replicate a model used for alcohol such as the Liquor Control Board of Ontario (LCBO), which currently operates 651 stores and 210 agency stores (LCBO, 2018). As the largest purchaser of alcohol in the world, the LCBO almost exclusively retails wine and spirits in Ontario and in the case of beer, The Beer Store, owned by three foreign parent companies Labatt, Molson, and Sleeman (Benzie, 2015), has a monopoly on retailing 24-cases. Between these two companies and the few off-winery stores, a C.D. Howe Institute report comments that they have held a "quasi-monopoly" since 1927, that has restricted competition, caused higher retail prices for consumers,

and impacted government revenue and Ontario's wineries and craft brewers (Masson & Sen, 2014). In an effort to modernize alcohol sales in Ontario (Ministry of Finance, 2015), the province opened up beer sales to select grocers in April 2015 (Strauss & Morrow, 2015). Following the beer reform, wine and cider were added to grocery stores in February 2016, with a promise of an additional 300 stores by 2025 (Csanady, 2016). Retailers are still beholden to publicly-owned LCBO who will set both minimum prices and margins, as well as be their supplier (Strauss & Morrow, 2015).

By looking at how the province has iterated and opened up its stronghold on the alcohol industry, the public model may only be the first iteration of cannabis retail. As baseline research and the retail and regulatory landscape begin to stabilize, Ontario may very well begin moving towards a public-private partnership similar to the recent changes in alcohol retail. However, the uncertainty lies in how long the province will need before considering opening up retail; industry players can only hope is that it will be sooner than 85 years later.

Setting single priorities to guide decision-making in a complex system will create many unintended consequences as well as resistance to change among many stakeholder groups. One of the biggest unintended consequences that arise from prioritizing public health and safety may be the growth of the black market, conversely, prioritizing the eradication of the black market may promote and normalize cannabis consumption.

Many have remarked that there is an inherent tension between these objectives. On the one hand, establishing a system with adequate protections that would seek to curb access to cannabis by youth suggests adopting a more restrictive model with numerous controls and safeguards, such as establishing higher age limits, adapting pricing strategies to discourage consumption, and imposing limitations to minimize promotion and commercialization. On the other hand, seeking to displace the illicit cannabis market requires the establishment of a legal market that is competitive with the existing illicit market, including safe and reasonable access, price, variety of product choice and adequate consumer education. Therefore, excessive restrictions could lead to the re-entrenchment of the illicit market. Conversely, inadequate restrictions could lead to an unfettered and potentially harmful legal market. Both extremes jeopardize the viability of the new system for cannabis.

— *The Task Force on Cannabis Legalization and Regulation*

What seems to be missing from these conversations is that among the population, cannabis is already normalized as indicated by high use rates, social tolerance, and broader cultural acceptance of its use in many countries (Hathaway, Comeau, & Erickson, 2011). Fears of furthering normalizing cannabis by restricting marketing and advertising messages may have little impact given the extensive cultural environment that is being shown in movies, music, and celebrities (Yagoda, 2017). While most people assume that cannabis usage will increase with legalization, many legalized states are seeing a statistically significant decrease in usage by youth (Angell, 2017).

With the announcement of the provincial plans, the public model provinces also announced enforcement strategies that would expunge the existing culture and environment for the crown corporations to roll out retail locations. In order for them to be able to execute on this regulatory framework, they must first eradicate the currently organized cannabis community. This warning to the existing illegal dispensaries is clear; conform or die; shut down shop or risk criminal charges and fines.

In late 2017, dispensary raids swept across Toronto and Ottawa (Pfeffer & Dumont, 2017) again with charges being mostly given to front line workers (Krishnan, 2017). The raid at Green Tree Dispensary in Ottawa saw 21-year old Selena Holder-Zirbser and at least eight other low-level employees with multiple charges.

At first, getting paid \$12 an hour to weigh and sell weed seemed like an easy way for Holder-Zirbser and her colleagues to make some cash. But the dream quickly soured, leaving them broke and facing serious legal repercussions that could prevent them from finishing school and finding gainful employment.

— Manisha Krishnan, 2017, Vice

While Selena was initially charged with ten counts of possession for the purpose of trafficking, which were later dropped to one for which she pleaded guilty, and one count of possession of the proceeds of crime, which was also dropped.

However, the dispensary owners, usually the masterminds behind the initiatives, have yet to receive penalization other than a loss of profit (Pfeffer & Dumont, 2017). Many front-line workers, having been promised by their employers the safety of legal representation should they be arrested and charged, have been left to find their own way through the legal system, carrying a criminal record that prohibits them from finding further employment or for some, without enough money to stay in school, and the additional legal fees (Krishnan, 2017).

The mandates of the legalization of cannabis was intended to keep youth from accessing, using, and to keep money away from organized crime. However, an unintended consequence is the criminalization of youth, a problem that the different states have been trying to rectify with amnesty. An example is Oakland, California's 'Equity Permit Program' (2017) which will be allowing recently incarcerated residents to be eligible for half the permits issued under the new program in hopes of moving towards reparations due to the war on drugs (Alsop, 2016). The amendment specifically states that "certain low-income communities and communities of color have been negatively and disproportionately impacted by disparate enforcement of cannabis laws" and "individuals arrested or previously incarcerated for cannabis related offenses face significant barriers to obtaining employment, financial aid, housing, and other economic opportunities" (2017). This demonstrates that cannabis prohibition has had significant negative impacts on the community.

Holder-Zirbser told VICE her plans of being a vet technician are probably dead. She is hoping for a conditional discharge, but will find out her fate this month. If she winds up with a criminal record, she'll have to wait years before she can apply for a pardon.

I can't be a vet tech with a criminal record," she said, noting she can't afford to go back to school this fall and has already been turned down for a few jobs, she suspects because of the arrests. She's fearful that without the opportunity to make something of herself, she'll be trapped in a cycle of poverty.

— *Selena Holder-Zirbser, as told to Vice.com*

With the US's long history of prohibition and its recent reform at the state level, there are many lessons to be learned from a prohibition style enforcement strategy. These lessons are not simply what to do, but also the failures and unintended consequences of these strategies. Zero-tolerance enforcement could be leading to bogs in the criminal justice systems as anticipated by criminal lawyers (Valiante, 2017).

Since the announcement of legalization in 2015, the Liberal party has been clear on its decision with not decriminalizing cannabis possession or infractions as it would provide a legal stream of income to criminal organizations (Frisk, 2016) and allow the black market to temporarily control cannabis distribution. Daniel Bear, a professor in criminal justice at Humber College comments that that would not be different from the current prohibition strategy that is in place. Bear suggests an interim solution that could reduce the impact on individuals while keeping community safety intact (Bear, 2017).

A temporary decriminalization would protect users, but leave the status quo in place for distributors, who could still be pursued by police if they represented a harm to local communities.

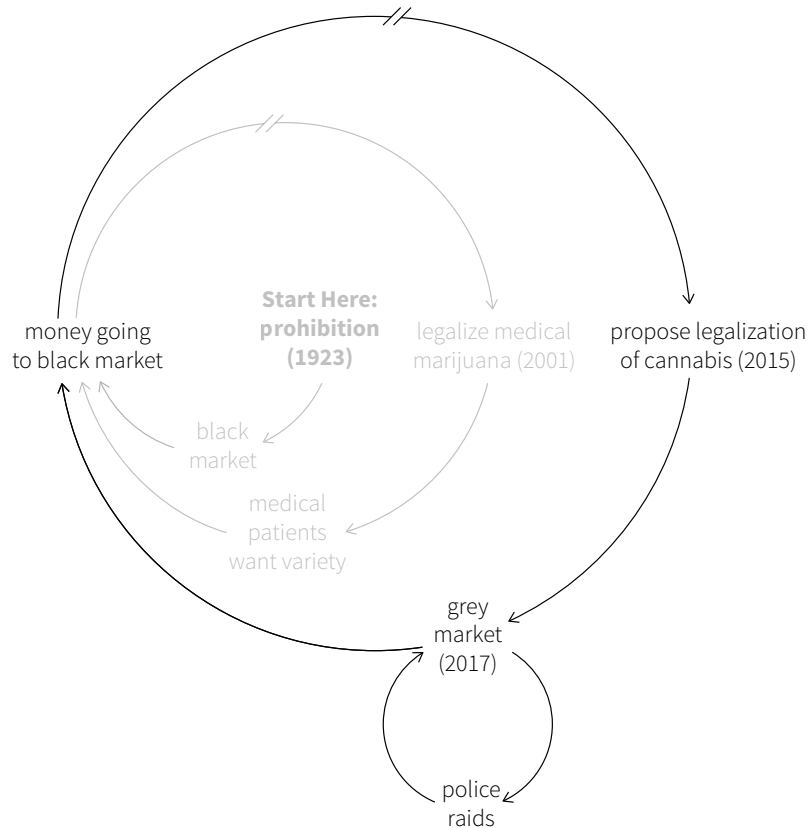
— *Daniel Bear, 2017, The Globe and Mail*

The debate continues as to whether enforcement should continue (Culbert, n.d.) considering the convictions that enter the justice system during this limbo period between announcement of legalization and its eventual passing, would no longer be a crime by the time their sentences would finish (Bear, 2017).

To paraphrase former U.S. Secretary of State John Kerry when he appeared before congressional hearings in 1971 to advocate for the end of the Vietnam War, how do you ask a person to be the last person arrested for a mistake?

— *Daniel Bear, 2017, The Globe and Mail*

Figure 16. Police raids are introduced to balance the rapid growth of the grey market. By Calla Lee, original for MRP.



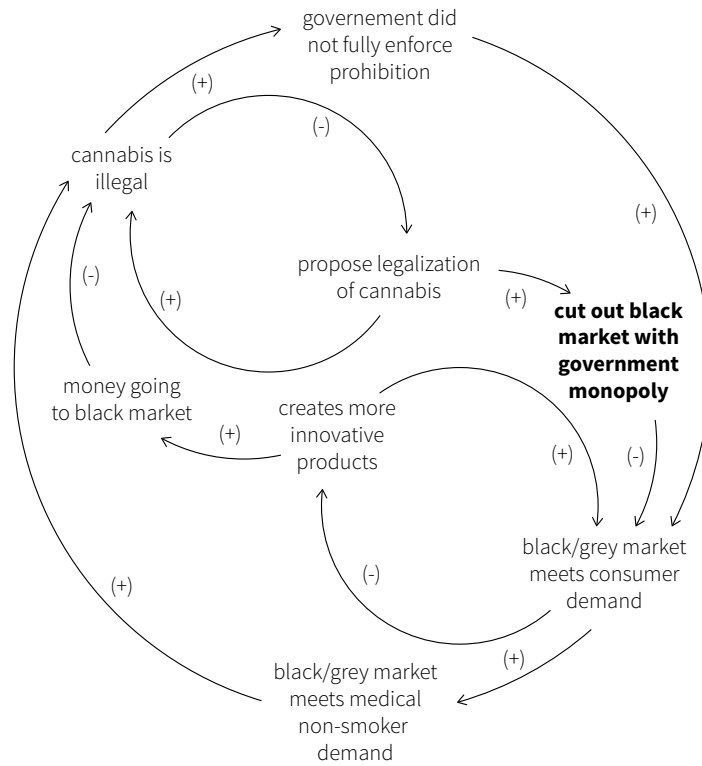
Without decriminalization or a clear timeline for legalization, regulation of the existing grey market is being left to the police to use their discretion (McGillivray, 2017). On May 26, 2016 a series of raids on 43 Toronto dispensaries, dubbed Project Claudia, resulted in 90 arrests, and 257 charges laid (Westoll, 2017). Raids and arrests have been occurring on a weekly basis since (Dankr, 2017).

While this intended to add a limit to growth for the grey market, many dispensaries that have been raided are able to reopen within days in cities such as Ottawa (Miller, 2017), and Toronto (Dunn, 2017).

While the Government of Canada released a preliminary framework for legalization, as of this proposal, they have yet to broach the topic of amnesty for the grey and black market. Many activists, consultants, and experts have warned the MPs against choosing government monopolies over a cannabis industry that is inclusive of the current grey and black market. In fact, choosing a government monopoly can lead to the systems archetype ‘accidental adversaries’ (Braun, 2002) in which one party’s action, the Ontario government, offends another party, the black market, and turns what could have been a partnership, into a competitor and retaliatory and escalating actions are often taken.

While the call for an inclusive industry is growing, Eugene Oscapella, a lawyer who has specialized in drug policy for three decades, tell us that from Colorado’s experiences, it is easier to start strict and loosen the rules (Dyer,

Figure 17. Choosing government monopolies over inclusive industries could turn grey and black markets into adversaries. By Calla Lee, original for MRP.



2017), similar to the precautionary principle as described the Canadian Environmental Law Association which denotes a duty to prevent harm even when all the evidence is not available (Canadian Environmental Law Association, n.d.). While the public model has been criticized for having undertones of prohibition (Valiante, 2017) and vestiges of *Reefer Madness* (Dyer, 2017), the cost of change would be burdened first by the government before a more sustainable, evidence-based framework that is designed from research and lessons learned can be introduced. Additionally, rescinding privileges from the private market later could cause undue damage and losses to investors small and large.

In April 2017, the Cannabis Act, Bill C-45, was introduced by the Canadian Government with the intent “to prevent young persons from accessing cannabis, to protect public health and public safety by establishing strict product safety and product quality requirements and to deter criminal activity by imposing serious criminal penalties for those operating outside the legal framework. The Act is also intended to reduce the burden on the criminal justice system in relation to cannabis.” While the Act focuses on safety, and deterring criminal activity, it must also recognize the Canada’s recreational market that has been active and well known for decades (Wenzel, 2016). Hailing from the 60’s and 70’s, British Columbia’s industry grew significantly (Johnstone, 2017) with Vancouver grown product being referred to as ‘BC Bud’ (DEA, n.d.). Many known cannabis activists such as Marc Emery have been paving the way with dispensaries and seed exports to jurisdictions where cannabis was illegal (Johnstone, 2017). Additionally, Canada is home to the largest medical marijuana producer, Canopy Growth Corp (Freeman, 2016) and Aurora Cannabis Inc (Wingrove & Skerritt, 2017) who are already exporting to Brazil, Germany, and Australia respectively.

With Canada prepping for legalization, its industries are following suit with many attempting to be ahead of the curve. However, without a collaborative understanding of the needs and changes within each industry, regulatory changes could cause undue conflicts, complexity, and bureaucracy for individuals in an emerging market. Using foresight methods and learning from the changing landscape in the neighbouring and overseas countries, Canada can begin prepping for cohesive change and reduce the impact on individuals and their surrounding communities.

In order for Canada to develop a robust implementation strategy for legalization, it must understand the current state context, and find solutions that exist within this complex system for stakeholders with interests that span multiple economic, legal, social, cultural, environmental and political levels. Given the numerous court cases that challenged Canada's medical marijuana policies and resulting lack of action to provide reasonable access, this Spray and Pray strategy could lead to multiple conflicting strategies at play simultaneously.

With the Trump administration's prioritization of federal law over state law (Savage & Healy, 2018), analysts are already predicting the rapid growth of Canada's cannabis industry over the United States (Hager, 2016). Canada's unique subculture is primed to become a thriving economy while also achieving the intent of the Cannabis Act. The grey market that has emerged in Canada demonstrates the current tension between the government, the medical community, and the economic players that will make up the cannabis industry. Since the announcement of legalization in Canada, Vancouver has seen a rapid growth in dispensaries, easily reaching over 100 in 2016 (Hutchinson, 2016). This growth comes even after an attempt to curb the enthusiasm, when Vancouver became the first Canadian city to introduce bylaws in 2015 that would regulate and permit businesses to sell cannabis (Lee, 2015). Taking inspiration from Colorado and Washington State, bylaws included an annual administration fee of \$30,000, and annual criminal record checks (Quinn, 2015). Additionally, the bylaws prohibit dispensaries from operating within 300 metres of other dispensaries, schools, and community centres (Lee, 2015).

“It is because the federal medical marijuana laws are absolutely unworkable. Here is a case in which you had people who used to grow their own and do their own thing, and we had no complaints and only a few shops in Vancouver,” Jang said.

“All of a sudden we're told to destroy their plants, they've got to buy it by mail, they have to smoke it and not eat it. So quite frankly, the federal government's own laws, this prohibitionist approach, has created the vacuum these medical pot shops are filling.”

— Kerry Jang, Vancouver, British Columbia's City Council

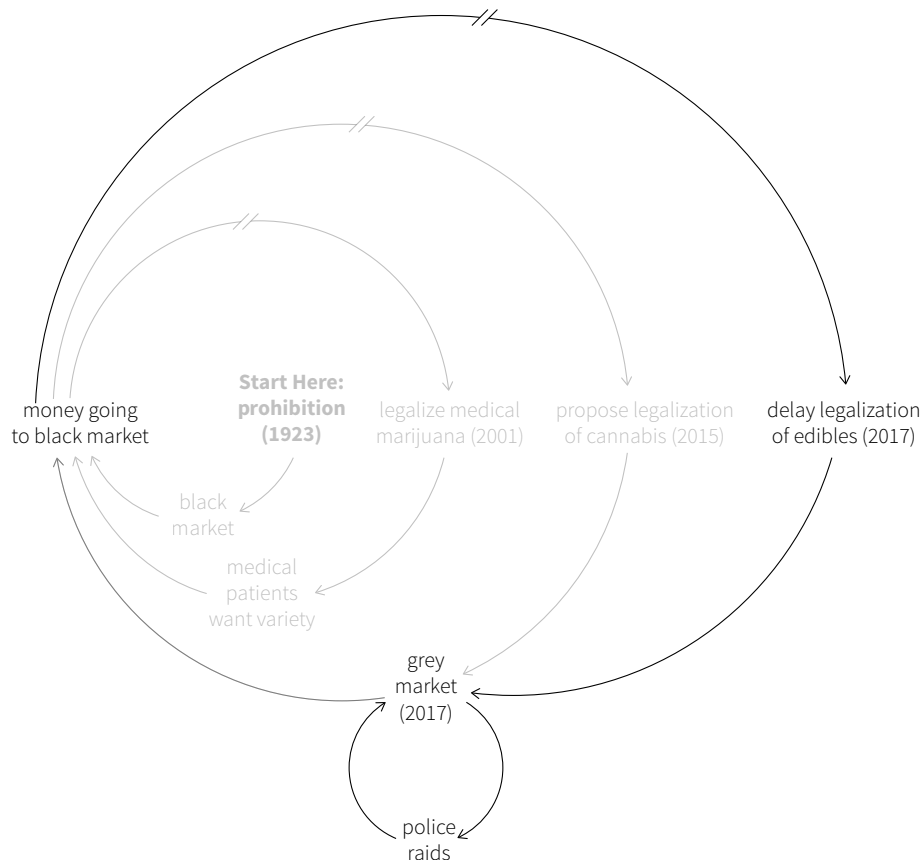
With its rapid growth in major cities across the country, the black and grey market offers an opportunity for policy innovators, entrepreneurs, and educators to learn from this longstanding prototype. Using Ron Adner's wide-lens perspective (Adner, 2012) on innovation strategy, we can see that the black market has been able to employ an execution focus that has delivered the full-value proposition to consumers. Studying and understanding the black market will not only reveal what has worked in the past, but also weak points in the system to target with a legal framework. The grey market offers many stakeholders through which user research can be gathered, as well as business cases

that can serve as lessons. For example, Canada's choice to first keep edibles illegal was met with heavy criticism that it would in fact leave a need open to the black market to further capitalize on (Forrest, 2017). In response, the task-force decided to add legalization of edibles for July 2019, a year after dried flower, cannabis oil, seeds, and plants would be legal in Canada. The year delay of the legalization of edibles has been met with heavy criticism. With one of the mandates being to stop the flow of money to the black market, grey market participants and activists have warned MPs that they will continue to sell edibles in their dispensaries during the delay (MacDonald, 2017).

Fulfilling mandates to eradicate the black market will not happen overnight as many experts have indicated (Forrest, 2017). Other jurisdictions, such as Colorado, have found that legalizing may have the unintended consequence of making organized crime easier (Wyatt, 2017). One of the loopholes that was exploited was Colorado's plant limit for home-growing. Originally set as high as 99 plants for medical or recreational use (Eason, 2017), this loophole has allowed the proliferation of growing black market cannabis in private residences (Eason, 2017).

In order to eradicate the black market, the Government of Canada must first understand the many strategies that it has used to grow and stay resilient over the past 95 years, and identify weak points in the black market ecosystem that can be targeted with a legal framework. Enforcement one strategy, but is not the only one at the government's disposal.

Figure 18. Delays of legalization of edibles will continue to inject money into the black market. By Calla Lee, original for MRP.

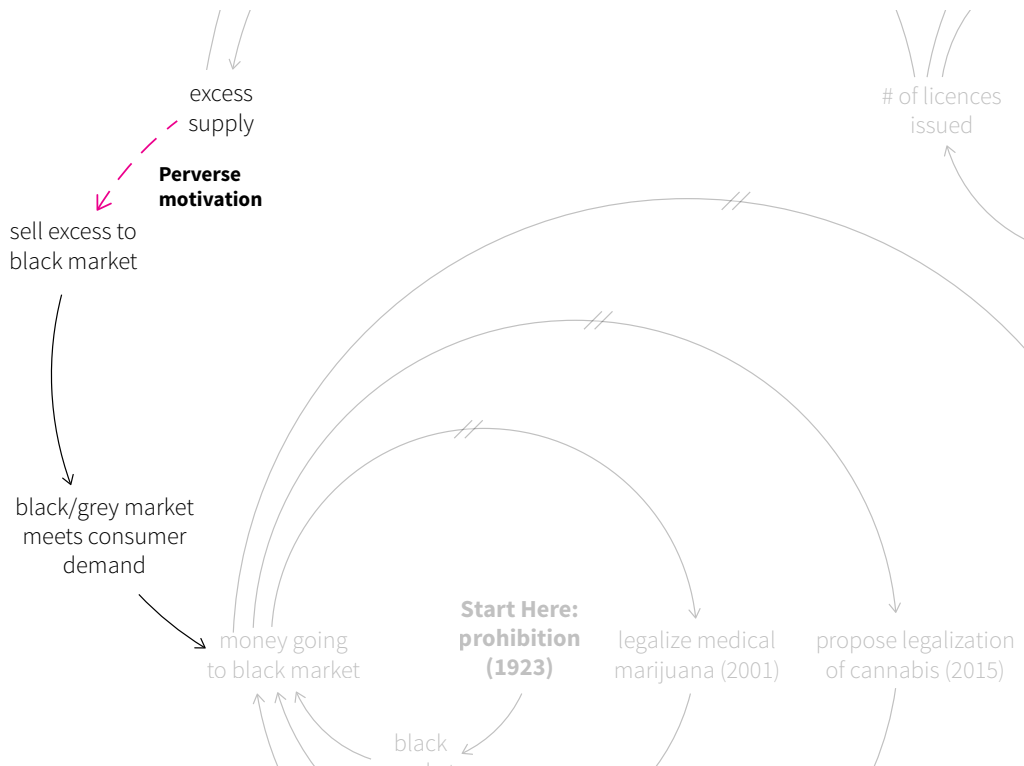


The Big Debate: Enforcement or Amnesty

The case to incorporate or penalize the grey market, business that possess both legal and illegal elements has been a hot debate.

In Canada, outspoken activists that boast their non-violent and peaceful nature, Marc and Jodie emery have positioned themselves as the poster children for this movement. Cannabis Culture, the dispensary franchise owned and operated by the Emerys was a clear portrayal of Canada's many regulatory loopholes that have allowed both well-intentioned entrepreneurs and organized crime, such as the Hells Angels (Pfeffer & Dumont, 2017), to operate semi-legally as well as in plain sight. Many of the individual grower licensed by Health Canada have been suspected of stocking many dispensaries (England, 2017) as Health Canada has been trying to shift the responsibility of managing and regulating the numerous individual growers by creating large-scale production licenses. In essence, Health Canada's abdication of responsibility of managing the individual licenses it issues has created the unintended consequence that has allowed licensed producers and organized crime to legally produce large amounts of cannabis undetected within the law. Licensed producers are designated a specific amount they are allowed to produce and any excess supply is expected to be destroyed. With a lucrative black market that is valued at \$6.2 billion, this regulation creates a perverse incentive not to destroy what could be a secondary profit stream. In fact, many licensed producers do not destroy their excess supply (England, 2017), instead choosing to sell illegally to illegal grey market dispensaries (Pfeffer & Dumont, 2017). The consequences of the exploitation of this loophole is now the responsibility of the justice system to enforce and penalize.

Figure 19. Connection of medical market to black market. By Calla Lee, original for MRP.



Prior to legalization, enforcement on cannabis users themselves varied by province. Enforcement on drug users range from, RCMP ski patrol teams that crack down on smoking hillside in Alberta (Culbert, 2017), to unsanctioned daylong parties, in celebration of April 20, in Vancouver where officers witness, but do not arrest, juveniles purchasing cannabis or their sellers (Postmedia News, 2016).

The Government of Canada has made it clear. Current prohibition stands; enforce the law (Benzie, 2016).

Law professor Daniel Weinstock warns that the optics of low enforcement could make the politicians and police seem soft on drugs and the ensuing charges could be leading to bogs in the criminal justice system (Valiante, 2017). He further notes that the more restrictive prohibition approach, the more incentive to contest charges given out during this transition period. In order to avoid repeating pitfalls that other jurisdictions have experience as well as from our medical marijuana framework, Canadian policy should be looking at other models and asking if we want to be in the position to rectify past mistakes, or to leap frog and decide to create an inclusive framework from the beginning.

With state-level legalization and regulation spreading across the United States, regulations to address reparations for the undue damage from systemic racism on the lives of people and their communities are already being put in place. California offers some answers to the questions of what happens to current, present and future charges. For instance, in late 2016, people currently and previously incarcerated or convicted of cannabis-related offenses, can apply to have their sentence reduced or resentenced. Many of California's cannabis-related adult felony offenses were reclassified as misdemeanors punishable by up to six months in jail such as possession with intent to traffic outside of the regulatory framework, as well as possession above and beyond the permitted limit. Certain offenses qualify for removal or reduction of the conviction in hopes of reopening opportunities for people in which their conviction or arrest posed a barrier. As of December 14, more than 4,800 people have applied through this program with several hundred thousand to nearly a million could be eligible to have their criminal records reclassified (Patterson, 2016).

In addition to cleaning people's criminal record, Oakland, California has also proposed the 'Equity Permit Program' (2017) which will be allowing recently incarcerated residents to be eligible for half the permits issued under the new program in hopes of moving towards reparations due to the war on drugs (Alsop, 2016). The amendment specifically states that "certain low-income communities and communities of color have been negatively and disproportionately impacted by disparate enforcement of cannabis laws" and "individuals arrested or previously incarcerated for cannabis related offenses face significant barriers to obtaining employment, financial aid, housing, and other economic opportunities" (2017).

In Washington, rather than scrub criminal records, a point system is used to evaluate previous offences and does not necessarily disqualify applicants from being awarded a license so long as they are reported when applying.

Laws and policies are reflections of the values and beliefs of our times. Innovative policies such as this demonstrate that actions and beliefs that our policies are based on can often have unintended consequences depending on the environment in which they exist, but policy can also be used to fix the mistakes of the past. They may not be perfect the first time, as demonstrated by the numerous court cases following Canada's first attempts at medical marijuana regulation, but policies evolve over time as edge cases present themselves and greater knowledge of how peoples, businesses, and policies co-exist will emerge.

The Big Problem: Action before Research

While Canada was the pioneer for medical marijuana, its policies, especially in research, have in many cases fallen behind. Because of its illegal status, medical researchers are also not able to access the plant in full and often times must rely on derivatives. Within the pool of studies that have been done, the applicability may not completely reflect the reality of cannabis outside the study due to the discrepancy of THC content. Some studies use cannabis with a THC content of 3.5% to 9.4% (Ko, Bober, Mindra, & Moreau, 2016) while strains from the black market can contain 15% to 30% (Government of Canada, 2018) THC content.

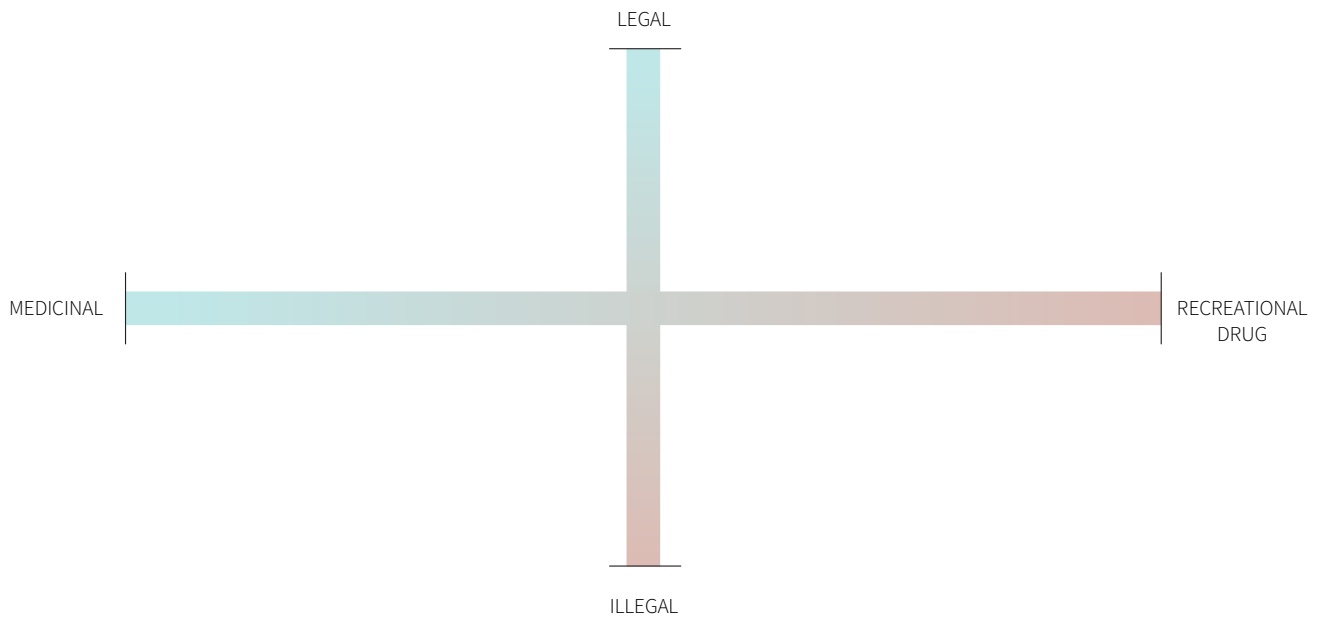
During consultations, the Task Force on Cannabis Legalization and Regulation found lack of scientific evidence as a dominant theme among the medical community with doctors (Allen, 2017) and researchers (Eggertson, 2017) who felt unable to provide information regarding dose and appropriate strains. The current dosing strategy for medical cannabis is to start low dose and increase gradually as needed (Eggertson, 2017). This lack of research leaves medical patients relying on their own anecdotal evidence and allows claims (Fox, 2017) and websites to run rampant such as Cure Your Own Cancer (Horsley, n.d.).

In order for decisions to be made that are safe, they must also be researched and evidence-based. As such, Canada's barriers to cannabis research must be revamped in order to meet the public policy objective 9 stated above in the introduction; to enable ongoing data collection, including gathering baseline data, to monitor the impact of the new framework. As of January 2018, the federal government announced that it would be allocating \$1.4 million toward 14 research projects being conducted through hospitals and universities (Global News, 2018) to better understand the health effects of cannabis, and the behavioural, social, and economic implications of legalization and regulation. Using the tobacco industry for comparison, Health Canada summarized that the direct cost of prevention and research was \$78.1 million in 2002, and \$10.7 million in 2012 (Dobrescu, Bhandari, Sutherland, & Dinh, 2017). While \$1.4 million is a start, cannabis legalization is a paradigm shift and in turn research must be done at a systemic level which will require more than 10 percent of the cost of tobacco prevention and research.

Social, Behavioural, and Economic Research

Social and behavioural research can take many different angles. As demonstrated in the matrix below, user's experiences currently exist in three quadrants: legal medical, illegal medical, and illegal recreational. By looking at the user experiences in the illegal market, we can understand some of the attractive aspects of the black and grey market that can be emulated in the creation of the legal recreational market in terms of price, quality, and access, the necessary competitive components in displacing the black market according to Bill Blair (Valiante, 2017).

Figure 20. User experiences of by type of user and legal status. By Calla Lee, original for MRP.



A study from University of British Columbia’s Okanagan campus looked at the experience of illegal dispensary users and compared it to those who accessed cannabis through self-production and illegal sources. The study concluded that the dispensary model, while illegal, has worked well and has indeed served medical users and the chronically ill quite well and offers many lessons that the government could emulate in the legal market (UBC Okanagan, 2017).

Capler calls the current method a ‘natural experiment’ that’s been underway for decades and says law makers should this keep in mind when addressing regulation policies.

— Rielle Capler, 2017, Eureka Alert

User experiences compared purchasing over a variety of factors such as quality of product, safety, availability, efficiency and feeling respected. Dispensaries rated highly among these factors, however price was rated below that of street dealers.

Environmental Research

Researchers at the University of Guelph have started researching how to optimize the growth of medicinal cannabis indoors through an agricultural and pharmaceutical lens (Casey 2017). While findings and insights from this research will also go to benefit other industries such as urban farming, research has yet to focus on the environmental impacts of legalizing an agricultural commodity.

We treat it like a medicine, we treat it like a drug, but we don’t treat it like what it is which is a regular old agricultural crop with a fleet of environmental implications.

— Jake Brenner, associate professor of environmental studies at New York’s Ithaca College, 2017, Vice

Whether a cultivator chooses indoor or outdoor cultivation, both must worry about energy and water consumption and contamination.

Indoor operations tend to have high energy bills (Oldham, 2015) from high-intensity lights, air conditioners, industrial fans, and dehumidifiers (Kane, 2018). It is estimated that indoor cannabis operations account for 9 percent of household electricity usage in California (Mills, 2012). In Colorado energy demand grew by about 2 percent post-legalization (Hansen, 2017). While there was an initial spike in energy usage, growers are starting to see some decline (Martin, 2017). Previously, many black market cannabis cultivators grew indoors to hide their activities from police, but with legalization and regulation, cultivators are able to take advantage of technologies available from being in a regulated market or could choose to move operations outdoors (Kane, 2018).

That's partly because the once-illicit business may no longer have to keep plants hidden from law enforcement and producers are upgrading to energy-efficient lights, pumps and cooling systems.

— Chris Martin, 2017, Bloomberg News

With outdoor operations, water contamination and irrigation systems have been diverting water from local sources which can heavily affect local ecology (Ithaca College, 2016). While moving outdoors can replace high energy uses from lighting in California, this energy saving tactic is not a possibility for Canadian cultivators. Therefore, baseline research must go beyond the social and economic impacts, but must also incorporate environmental impacts that have never been regulated in the black market.

Given the lengthy process required for research to provide conclusive insights, and the slower rate of change at the policy level, change at the economic level is afoot and businesses continue to march on. The allure of cannabis' profit potential and the delay between announcement and legalization has enticed both illegal and legal businesses to establish themselves prior to legalization and begin capturing market share and gaining competitive advantage.

The Cannabis Innovation Ecosystem

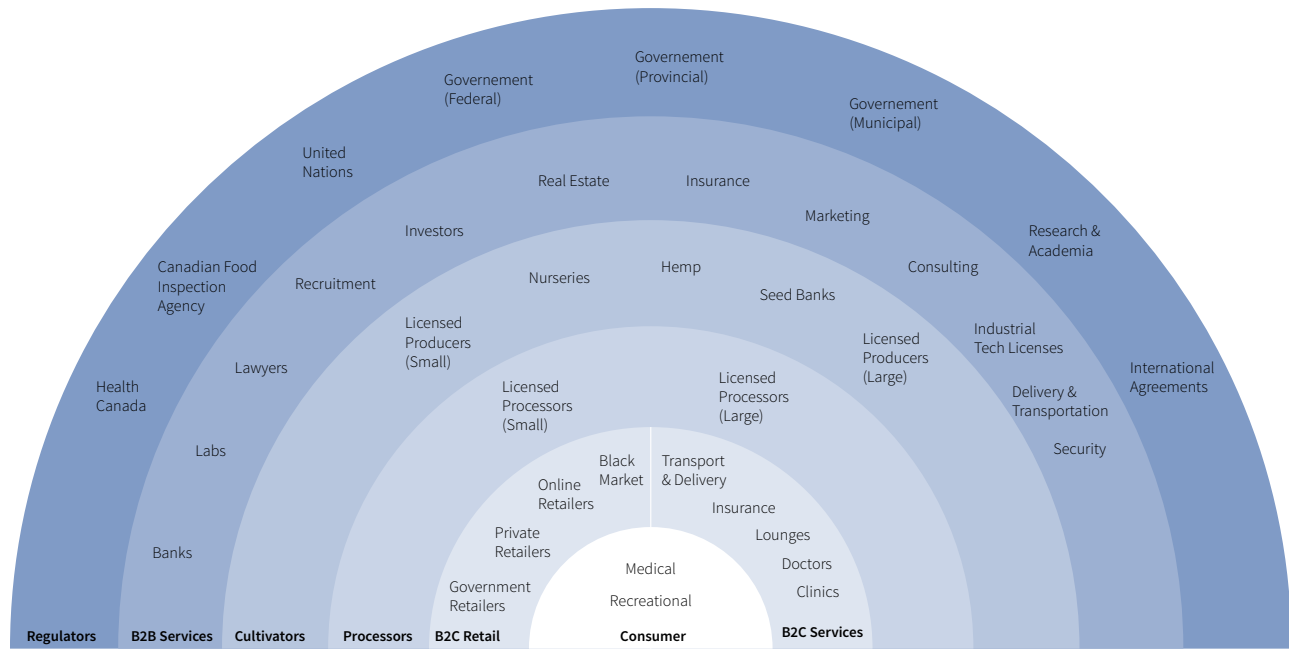
While legalization of the end product will have changed, the existing ecosystem has in many ways successfully and unsuccessfully supported this disruption. Changes in regulatory environments such as tax, real estate, insurance, and safety to name a few, have yet to create a manageable landscape for entrants into the industry. However, there has been a growth in the innovation ecosystem surrounding cannabis, with services such as recruitment, lawyers and consulting firms focused specifically on cannabis to help navigate gaps or confusing regulations. In June 2017, Marijuana Business Daily estimated that the US cannabis industry employed 165,000-230,000 full- and part-time workers. That figure exceeded those employed as dental hygienist, bakers, and massage therapist to name a few (McVey, 2017).

The Canadian Greenscape graphic below, while missing a few categories such as education, identifies a large supporting ecosystem in the private sector that has developed before legalization has even passed. In Canada's cannabis strategy, the co-innovation risk is low as many of the supporting innovations came from the creation of the medical marijuana system and have successfully commercialized. The adoption risk and execution risk however are high. Federal and provincial partners are racing against the black market in these two categories. The black market has deep tacit knowledge of the processes and consumer. In an unregulated environment, every consumer need is capitalized on; every type of consumer is served. The legal regulated market must address all areas of the ecosystem, while also building a solid foundation in order to upend and replace the existing black market, while also staying competitive.

Figure 21. The Canadian Greenscape V3 as of Feb 2018. From The Canadian Greenscape, by Aaron Salz, Mason Brown, Amir Torabi, Jeff Hergott, Katherine Webb, Matt Webb, Chris Sukornyk, 2017, http://canadiangreenscape.ca/wp-content/uploads/2018/02/Canadian-Greenscape_V3.0-Feb2018.jpg. Copyright 2017 by The Canadian Greenscape.



Figure 22. Stakeholder types grouped by ecosystem level. By Calla Lee, original for MRP.



In a country that fell behind the rest of the developed world in terms of support for research at the hands of the previous Conservative government, it means that Canadian marijuana-industry players, and those that can establish themselves as such, have a unique opportunity to pull ahead of their competitors in the international marketplace and fill the historical innovation deficit in this country.

— Ashley Dumouchel, 2017, *Globe and Mail*

SIGNALS OF CHANGE

During the trend analysis phase of foresight methods, certain actions and events can be considered signals of change in the ecosystem. These are clear instances that inform us that change is afoot. 2017 showed many signals of change in different parts of the economy and a few ‘first time’ events.

Reallocation of Resources

One strong signal of change is the reallocation of resources. With legalization, one of the signals is when tax revenue from cannabis sales flows back into the community. In the case of Colorado, the tax revenue from legal cannabis sales were reallocated to opioid addiction treatment center in counties where they are most needed (Rahhal, 2017). In Canada, 70% of Canadians believe that the tax on legal cannabis sales will benefit all Canadian resident with the additional benefits of also reallocating police forces towards the opioid crisis and other crimes, rather than policing small possession charges and traffickers (Canseco, 2016). The Canadian government has allocated 75 percent of cannabis tax revenues, projected at \$400 million, to provinces to fund issues, such as enforcement, that may arise from legalization (Dormer, 2018).

Another resource that is being reallocated is investment money, often dubbed as the ‘Green Rush’ (Kaplan & Schatzker (2018). Early investments into the cannabis industry are gaining steam but are still considered risky given the plant’s legal status (Milner, 2017).

Welcome to one of the many pitfalls awaiting those tempted to leap into the biggest horticultural investing craze since the Dutch went wild over tulips in the 1630s.

— *Brian Milner, 2017, Globe and Mail*

Investors are reallocating their investments from other commodities such as oil and gas into a nascent agricultural commodity (Southwick, 2018). In February 2018, the NASDAQ listed its first cannabis shares on a major US exchange (Kaplan & Schatzker, 2018). The American medical cannabis market was worth \$4.7 billion in 2016, and is expected to grow to \$13.3 billion in 2020. Their recreational market was worth \$2.6 billion in 2016, and is expected to grow to \$11.2 billion in 2020 (Rolph, 2017). In Canada, recreational cannabis is estimated to be a \$22.6 billion industry (Posadzki, 2016).

Consolidation in Canada has been happening since late 2017 with mergers and acquisitions happening on a regular basis (Armstrong, 2017) which may produce large industry players before legalization even passes.

Job Creation

A nascent industry can only be valued at billions if there is a sufficient demand and economy to support it.

According to CEO Ian Siegel, the cannabis industry has shown a 68% increase in job opportunities since 2015, and positions like “soil scientist,” “bud mentor,” “marijuana cultivator,” “bud-tender retail associate,” and “post-harvest and packaging supervisor” are among the job titles with the largest increases.

— *Lydia Dishman, 2017, Fast Company*

While many industries are able to rely on traditional talent acquisition processes such as LinkedIn, the legal status of cannabis still denied it using legitimate channels. In 2016, a company named Vangst, a cannabis recruitment company, was created by Karson Humiston, while studying at St. Lawrence University in upstate New York (Dishman, 2017).

Unlike so many other fields, Humiston soon realized, the cannabis industry has high growth potential and lots of opportunity for career development—even if a candidate had no prior experience.

Other companies had positions such as marketing associates, retail store managers, and others—all of which could be filled by people who didn’t have experience in the cannabis industry, but could utilize transferrable skills.

— *Lydia Dishman, 2017, Fast Company*

As stated previously, in June 2017, Marijuana Business Daily estimated that the US cannabis industry employed 165,000-230,000 full- and part-time workers. That figure exceeded those employed as dental hygienist, bakers, and massage therapist to name a few (McVey, 2017).

Unexpected Allies & Stakeholders

In times of change, the people who become representatives of a cause and the support of communities and allies can be a significant boost that spurs change. In the case of cannabis, if we look back at the portrayal of the cannabis community in films and media, we can find everything from Cheech and Chong to Mexican drug cartels. Today however, the modern-day Cheech and Chong could very well be Martha and Snoop (Judkis, 2017). In the news, we read about mothers of children with chronic diseases who want medicine for their children, the ‘Chardonnay Mom’ (Stanley, 2017), who is an older, more affluent first-timer, and the medical patient who is suffering from a myriad of chronic illnesses or pain, to name a few.

Additionally, lobby groups and non-profit organizations are organizing to help push legalization forward.

Today, doctors realize that you don't have to be pro-marijuana to oppose its prohibition. Doctors for Cannabis Regulation is an organization whose time has come, serving as the voice of physicians guiding our nation along a well-regulated path to cannabis legalization. If you are a physician who wants to ensure that our government controls and regulates cannabis responsibly, then join us.

— *Doctors for Cannabis Regulation, 2017*

Women Grow was created to connect, educate, inspire and empower the next generation of cannabis industry leaders by creating programs, community and events for aspiring and current business executives. Founded in 2014 in Denver, Women Grow is a for-profit entity that serves as a catalyst for women to influence and succeed in the cannabis industry as the end of marijuana prohibition occurs on a national scale.

— *Women Grow, 2017*

With cannabis' global culture and it also being a nascent industry, it is also intersecting with trends for diversity and inclusivity.

According to the MJ Business Report, 19% of cannabis businesses have been founded by racial and ethnic minorities. Women hold 27% of executive-level roles in the industry overall, but in certain sectors those numbers are higher. For example, 42% of the executive positions at ancillary services companies are women, and 35% are women at medical dispensaries and recreational stores.

— *Lydia Dishman, 2017. Fast Company*

In May 2016, the city amended its existing local medical marijuana regulation ordinance to provide more opportunities for people of color to open their own dispensaries. Most importantly, under the new equity permit program, people with prior convictions for weed-related crimes would have first dibs on getting a city license.

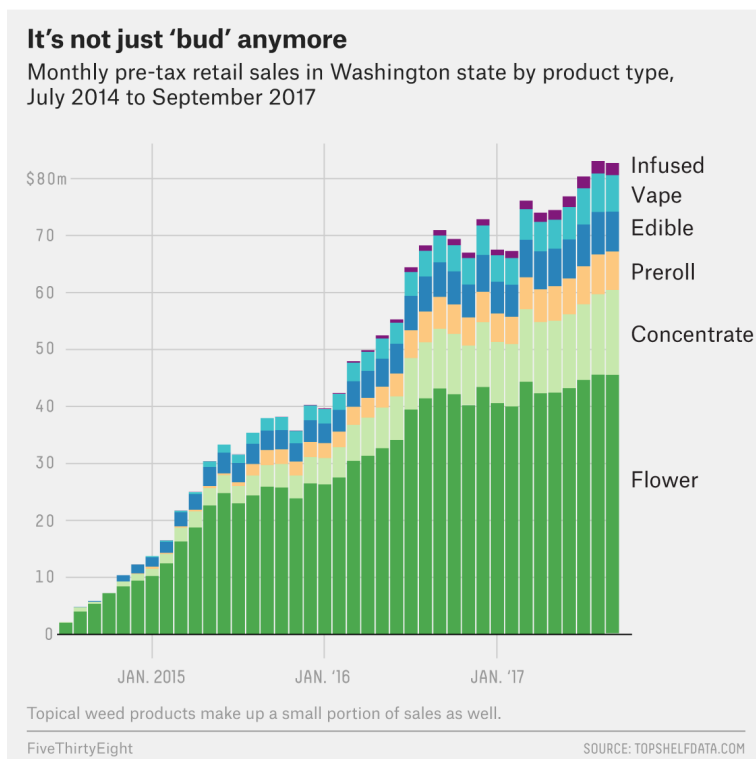
— Brentin Mock, 2017, CityLab

Stakeholder groups and allies help to inform and bring visibility to an issue that challenge perceptions and stigma. Coupled with research, one signal of change that indicates that paradigms are indeed shifting is the removal of CBD from the 2018 list of banned substances by the World Anti-Doping Agency (WADA, 2017).

Product Diversity

When medical cannabis was legalized in Canada in 2001, patients were able to get access to dried flower only. In 2018, months before legalization, the diversity of products, paraphernalia, and consumption methods available has grown significantly. According to data from Top Shelf Data, a Washington based cannabis data company, five new product types have entered the Washington state market to compete with smokeable dry flower since 2014: concentrate, preroll, edible, vape, infused (Black, 2017). Across North America, products range from infused candles (Buzzbasketz, 2018) to transdermal patches (Wilcox, 2017) and infused sexual lubricants (Foria, 2018) can be found in legal and illegal grey market retail stores and online.

Figure 23. Monthly pre-tax retail sales in Washington state by product type, July 2014 to September 2017. From It's not just 'bud' anymore, by Lester Black, 2017, <https://fivethirtyeight.com/features/legal-weed-isnt-the-boon-small-businesses-thought-it-would-be/>. Copyright 2017 by FiveThirtyEight.



Many of these new innovations stem from the intersection of technology and cannabis. With conversations of legalization, the cannabis industry is now able to take full advantage of industrialization and technological advancement like never before. For instance, powdered cannabis concentrates began hitting the cannabis scene in 2016 (TR, 2016). Cannabis concentrates prior had usually come extracted as a thick sticky substance similar to honey, or infused in oil. But powdered cannabis uses the same technology as sports drink powders allowing it for ease of use when infusing other products. Prerolls, premade joints previously made by hand, are now being made by machine. Vaping, has seen a resurgence as the healthier way to smoke in the community as the rise of e-cigarettes makes smoking less acceptable. Product innovation in the cannabis market is growing as entrepreneurs from all walks of life are asking the question “What if we put cannabis in it?” and turning out infused products in sectors such as health, beauty, skincare, food, beverages (Findling, 2018), and even pet products such as calming CBD treats (Nichols, 2018).

Research & Academia

One of the government’s biggest concerns with legalization is public health and safety. The ecosystem for research and testing has been growing quickly in multiple avenues: lab-testing for potency and quality, roadside testing for enforcement, inspectors for license violations, and eventually health inspectors for food and safety in the upcoming legalization of edibles.

On a macro scale however, research at the system level to determine if the legalization of cannabis has larger adverse health effects or if it could possibly reduce opioid use is still in its early stages. Preliminary data shows the first trend reversal came out of Colorado who started selling recreationally in 2014. One study has shown the beginnings of a reduction of 6.5% in opioid related deaths in Colorado (Livingston, Barnett, Delcher, & Wagenaar, 2017), and another, a reduction over five years in states where medical marijuana laws have been implemented (JAMA, 2014). However it is still too early, and there are too many external factors to directly link cause and effect. The studies are looking to find other states who have legalized recreationally to replicate the results for a longer period of time. Robert Valuck of the Colorado Consortium for Prescription Drug Abuse Prevention cautions that the data is exciting, but is only the beginning (Matthews, 2017).

Another study sought to understand whether alcohol would be a substitute for cannabis, in which marijuana legalization should produce lower sales of alcohol, or a complement, in which marijuana legalization should produce higher sales of alcohol (Drum, 2017). The study found that counties with legal medical marijuana laws had a reduction in alcohol use. While this is a positive note, similar to the opioid studies, findings would need to be replicated in other jurisdictions with similar and different methods of measurement.

As stated earlier, research on the impacts of cannabis legalization must happen at the system level and should cover not only the social and economic impacts, but also the environmental impacts. Objective research and academia will be a necessary piece in addressing future strategic decisions, but also instrumental in challenging stereotypes, stigma, and systemic bias that often inform our choices (Touy, 2017).

“Everybody wants the answer now because we want to know if this is a good idea or not,” Valuck said. “But the truth is we don’t have the answer, and it’s going to be a while until the jury comes back in.”

— Robert Valuck, 2017, *Newsweek*

As mentioned previously in *The Big Debate: Action Before Research*, the federal government announced that it would be allocating \$1.4 million toward 14 research projects to better understand the health effects of cannabis, behavioural, social, and economic implications of legalization and regulation (Global News, 2018). Partners in research will not only be hospitals but also universities who have been innovative in reacting to the paradigm shift of cannabis legalization.

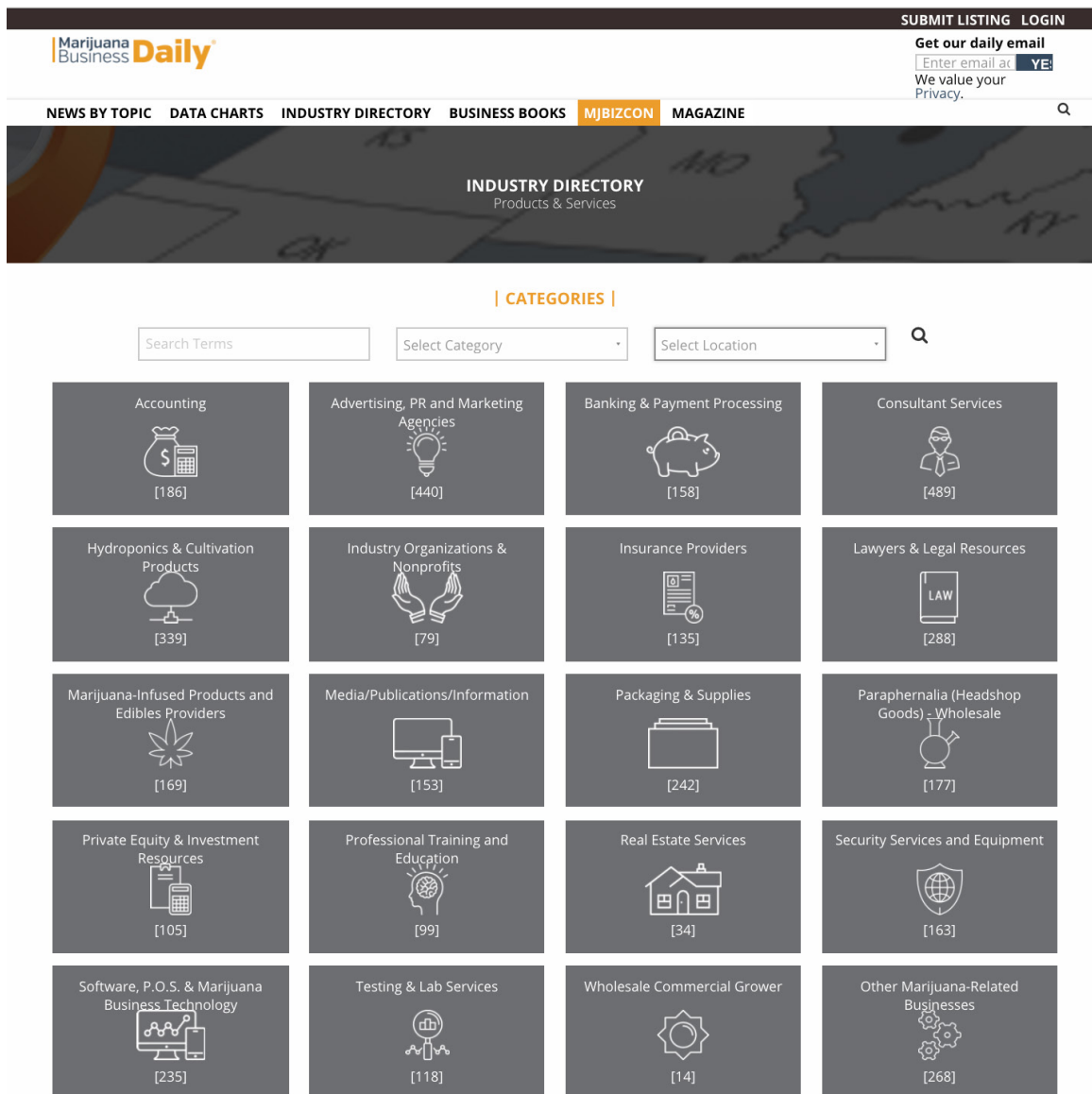
In September 2017, Niagara College introduced the first Canadian post-secondary program for Commercial Cannabis Production (2017). A few months later, Durham college added a course for skilled professionals with a business background looking to take part in the medical marijuana field (2017). These new additions to post-secondary programming will begin laying the education groundwork in the supply chain, and it won’t be long before we start seeing credits, certificates, and continuing education courses related to the professional services in support of other ecosystem partners such as human resources, insurance, real estate, entrepreneurs and lawyers.

Services

The service industry has still become a prominent player in the innovation ecosystem that bridges the gap between licensed producers and commercial industry and its consumers. Entrepreneurs have capitalized on services in both the business-to-business (B2B) and business-to-consumer (B2C) as shown in the Canadian Greenscape graphic above. With months to go before legalization, provinces and businesses are working to get their supply chains and services ironed out and ready to be the first ones out the door (Karstens-Smith, 2018). Looking through Marijuana Business Daily’s industry directory, over 20 different product and service categories can be found for companies who specialize in industry specific knowledge of the ever-changing regulatory landscape.

Services in B2C were quick to pop up to meet consumer demands in the grey market. Weedmaps (Weedmaps, n.d.), a medical marijuana community and directory based out of California has become one of the most prominent online directories and product reviewers. In terms of delivery, mail order cannabis has been a channel that the illegal grey market has quickly capitalized on given Canada Post’s regulatory loopholes that do not allow police to seize mail unless there is a national security risk (Sanderson, 2016). Canada Post has already served the medical community and their guidelines have been quickly appropriated for the currently illegal recreational market. Currently what is missing from the service industry are safe consumption spaces that can properly educate consumers on public health concerns, guide both medical and recreational consumers through the process. With many provinces choosing to regulate recreational usage in the same vein as tobacco, it forces many consumers to consume in their own home. However, restrictions for consumption in vehicles (Ferguson, 2017) and parks (McElroy, 2018) has been banned in some provinces, and consumption in residences are still subject to rental

Figure 24. Screenshot of Marijuana Business Daily's online industry directory category page. From Marijuana Business Daily, March 5, 2018, <https://industrydirectory.mjbizdaily.com/>. Copyright 2018 by Marijuana Business Daily.



restrictions (The Canadian Press, 2018). As of March 5, 2018, provinces completed public consultations to gather feedback for allowing cannabis lounges (The Canadian Press, 2018).

“It (would be) really leaving people with nowhere to go,” Natasha Grimshaw, a manager at a Toronto marijuana dispensary, said of landlords banning pot in units. “You have more freedom (to smoke) now when it’s illegal than you will when you’re supposed to be free to smoke it.”

— The Canadian Press, 2018

Not all services are new entrants to the industry, some are existing companies that pivot, add subsidiary arms, such as the Cannabis Marketing Lab, born out of Miranda Marketing Labs in San Luis Obispo, California, after the company found that the industry was in need of a market innovator (Cannabis Marketing Lab, 2018). Others are forced to expand their existing services to incorporate cannabis regulations.

Insurance and workplaces are quickly reworking policies to account for medical coverage and recreational usage guidelines prior to legalization. According to Canadian Occupational Safety magazine, workplaces are having difficulty finding a balance between workplace safety, testing, and human rights (McLean, 2017). According to an Insights West survey, 62 percent of respondents believed that Canadian companies should be allowed to administer drug tests to their employees post legalization (Insights West, 2016).

The challenge of marijuana in the workplace is one of balancing rights and obligations. An employer has a duty to ensure the health and safety of a workplace and to ensure its workplace is free of discrimination on protected grounds — but not as far as humanly possible; only as much as reasonable. The key to dancing on the line between discrimination and due diligence is investigation, accommodation consideration and documentation.

— Rob McLean, 2017, Canadian Occupational Safety

Insurance companies are creating workarounds to incorporating coverage as it cannot be simply added as a drug benefit. Since its legalization in 2001, medical cannabis has yet to be approved by Health Canada's Food and Drug Act and as such, has not received a drug identification number (DIN) (Huncar, 2017). Despite medical marijuana being legalized 17 years ago, Health Canada has yet to fully incorporate cannabis into its regulatory ecosystem which critics argue could lead to patients who are unable to afford licensed producer prices to head to the black market (Huncar, 2017). Licensed producers have also found workarounds for employers looking to cover their employees by assigning their products a Product Identification Number (Israel, 2017).

Coverage in the industry is happening but at a very cautious pace. In March 2017, Loblaw companies for select conditions to a tune of \$1500 per year (Israel, 2017). In February 2018, Sun Life Financial Inc. added medical marijuana as an option to their group benefits plan due to an increase in interest and demand from their clients (Ligaya, 2018). As of September 2017, Canada's medical marijuana program had over 235,000 registered in their system, up from roughly 98,500 in 2016 (Ligaya, 2018).

Starting March 1, plan sponsors will have the option to add medical cannabis coverage to extended health-care plans, ranging from \$1,500 to \$6,000 per covered person per year.

Medical cannabis coverage will be available for specific conditions and symptoms associated with cancer, rheumatoid arthritis, multiple sclerosis, HIV-AIDS, and palliative care.

Sun Life will also conduct periodic reviews of the growing body of clinical research supporting the use of medical cannabis for other conditions, and update its criteria if necessary, the company said in a document updating their client base.

— Armina Ligaya, 2018, Financial Post

This shift in larger companies to recognize the legitimacy of cannabis as a medicine for consumers are signals that a paradigm shift is indeed underway in the B2C space but insurance companies however will still need to consider coverage and policies for B2B partners.

In the case of California's forest fires that swept through 30 to 40 percent of the state's cannabis growers. With investments into their operations of up to \$80,000, growers in the area are experiencing losses and are often uninsured stating it is either too difficult or prohibitively expensive (Kerr, 2017). Thankfully, with Canada's medical marijuana system specialized insurance companies, such as ACD Insurance, will cover commercial and industrial growers who can apply to be covered for property insurance and liability given that they are compliant with all Health Canada Access to Cannabis for Medical Purposes Regulations (ACMPR) and additional safety requirements.


Reparations with Indigenous Communities

One area where Canada has the opportunity to replicate reparations being done in Oakland and California is with respect to our Indigenous communities. First Nations communities have felt the adverse effects of colonialism, systemic racism, alcohol, addiction, trauma, and the opioid crisis. While marijuana is seen as a medicine in some communities (Monkman, 2018) it is still seen as a drug in many cases as well. The rate of cannabis use in Indigenous adults among males and females is 64% and 89% in youth (Thunderbird Partnership Foundation, 2017). Various Indigenous communities use it in distinct ways and caution its interaction with other medicines. Cultural knowledge, context, and use can vary from the urban Canadian perspective and as such, has a very different contextual environment in which legalization will exist. Cultural relevancy is a key distinction that must be considered (Thunderbird Partnership Foundation, 2017).

In October 2017, RCMP raided a community-owned and supported Tobique First Nation dispensary in New Brunswick that resulted in a protest and blockade. Negotiations resulted in no charges and the dispensary reopened within hours. The raid left the community angry and their sovereignty, disrespected (MacKinnon, 2017). This case documents the tensions that exist around regulatory jurisdictions and self-governance.

“We strongly believe in self-government and self-determination,” he said. “We regulate and license our own gaming, our own alcohol, our own tobacco and our own marijuana, and we do it efficiently.”

— Tobique Chief Ross Perley, 2017, CBC News



With provincial regulations rolling out, some First Nations communities may not feel obligated to comply and would prefer to jurisdictional control over their own community regulations (Galloway, 2017). While they recognize the economic benefit of creating jobs and earning revenue in a nascent industry, the communities simply do not have the funds or support to deal with the adverse health risks that could accompany legalization. Inclusive and appropriate support in this part of our regulatory policy could go a long way in the Canadian government's commitment to the United Nations Declaration on the Rights of Indigenous Peoples (Government of Canada, 2017).

While communities that are closer to urban areas are already beginning to take advantage of the emerging industry, many smaller reserves lack the funds to create their own industry or even establish safe cannabis education (Galloway, 2017). Partnerships between licensed producer Cronos Group and Indigenous-owned medical marijuana company, Indigenous Roots, plan to supply prescription cannabis to First Nations communities and split profits evenly (Karstens-Smith, 2018). Cronos Group plans to hire and train First Nations employees to run the Indigenous Roots branch and allow it to operate as an Indigenous-operated company (Karstens-Smith, 2018).

Which trends will
shape our world in
the upcoming years?

In order to understand the possible futures that exist in front of us, an environmental scan of trends in different parts of the system, such as social, technological, economic, environmental, political, and values (STEEPv), can help build a well-rounded understanding of what could be. Used in conjunction with the aforementioned signals of change, the different possible ecosystems that cannabis legalization will exist in start to take shape.

SOCIAL

Silver Boom

One of the largest trends that will change the way we live is the global growth in the senior population (United Nations, 2015), driven by the successes and innovations in healthcare that have allowed the population to have a longer life expectancy (Senthilingam, 2017). Both of these growing trends have also given rise to increase chronic conditions having an impact on the global healthcare system (World Health Organization, 2018). Counter to these growing trends, researchers are also finding evidence that while life expectancy has increased over time, humans could be reaching its limit as well (Dong, Milholland, & Vijg, 2016).

TECHNOLOGICAL

Industrialized IoT

In today's technology, they are not simply machines to be operated manually by humans. Instead they have crossed into a semi-sentient realm where artificial intelligence (Hintze, 2016) and pattern recognition lead to predictive analytics (Manyika, 2017), automation (Press, 2017) and the imminent adoption of driverless cars (Long, 2018). User experience designers are looking at making technology feel easy to use and frictionless so it blends seamlessly into our lives (Virtue, 2017). Tech is appearing in urban agriculture (Peters, 2017), homes (Higginbotham, 2017), and even cannabis with users in science, technology, engineering, and math (STEM), applying their knowledge to the cannabis industry (Griggs Lawrence, 2017). It won't be long before mass customization (Gandhi, Magar, & Roberts, 2013) enters cannabis as well in both recreational and medical as well as they have other industries (Nagle, 2017). Technology is also entering the home as scaled down versions for personal use similar to how printers have gone from industrial to residential (Pandell, 2015).

ECONOMIC

Flourishing Business Models

Economic and business theories have crossed with emerging consumer values to give birth to double, social enterprise (Batra, 2015), and triple, benefit corporations (B Corporations, 2018), bottom line businesses. Businesses can no longer prioritize just profit, but must consider their impact on the community and/or the environment. It is easier to start a company today than it has ever been before (Reeves, 2014). With the maturation of the digital age and lean startup business practices (The Lean Startup, 2018), unicorns in the tech space are becoming the darlings that everyone wants to be a part of (Bort, 2017). While there was a brief decline in vertical integration of businesses, Silicon Valley has repackaged the idea and relabeled it as innovation and full-stack businesses (Favaro, 2015). In order to be truly innovative, companies are looking at cross-pollinating ideas (Seelig, 2013) and developing interdisciplinary teams to develop the next best thing (Fleming, 2004).

ENVIRONMENT

Climate Paradigm

As technology and businesses march on, the planet finds itself at the brink of a climate crisis. With climate change comes more extreme and destructive environmental disasters (Fischer & Knutti, 2015), and the loss of arable land (World Wide Fund for Nature, 2018). Our own throw-away culture and consumerism has led to micro plastics killing marine life (Wright, Thompson, & Galloway, 2013) and garbage piling up in troves (Hoornweg, Bhada-Tata, & Kennedy, 2013). Countries are responding with policies intended to change how we consume, produce, and dispose of everything from energy (Neslen, 2016) and plastic (Lee, 2017), to food (Harris, 2016). Renewable energy is becoming a more viable option and as technology and investments grow. Sustainable design principles such as circular economy (World Economic Forum, 2014), Cradle to Cradle (McDonough, 2010), trash to treasure (Morris, 2008), and second life (Singh, 2012) are creating new business opportunities that are flourishing in today's economy. Consumers are more conscious of environmental impacts and are choosing to live vegan lifestyles more and more (Nguyen, 2017) to try and fight food insecurity (FAO, IFAD, UNICEF, WFP, & WHO, 2017).

Urban Jungles

Appreciation of greenery and plant life is a trend that is infiltrating many different sectors and values. Food insecurity (FAO, IFAD, UNICEF, WFP, & WHO, 2017) has driven innovations in indoor (Viviano, 2017) and outdoor agriculture (Esposito, 2014). A growing gardening trend of people looking to take back agency in the food supply chain is crossing with smart homes to make growing medical plants and food easier than ever such as the LEAF growing system that can be controlled with an app (LEAF, 2018). Architecture has grown to adopt greenery as something to build into buildings (Mazzucco, 2017) are indicating a possible shift of how humans view their relationship with nature. Millennials are bringing plant culture into their home and plants (Ramanathan, 2017) and animals have become the new pseudo-baby.

POLITICAL

Power Shifts

One of the major changes brought about the internet is the ability for groups to self-organize and create bottom up movements. Self-organization online can lead to cryptocurrencies or movements such as the Women's March. What both have in common are that they challenge traditional top-down power structures. Democratization is happening in a wealth of industries such as business, with social enterprises (Richmond, 2012), research, with open-access journals taking power away from traditional academic publishing (IAMCR, 2018), and flexible work giving choice and time back to the labour force (Kumar, 2017) at the cost of financial stability, job security, pensions, unions, and benefit programs. In 2013, KPMG noted a global megatrend of economic power shifting to developing countries which would change current foreign investments and turn the global south as the growth engine of the world (KPMG, 2013). With cryptocurrency and blockchain just starting to show its impact on the global economy, this decentralization has the potential to shift economic power and currencies to the masses (Guzman, 2018). At the heart of these disruptions is the idea of flipping orthodoxies and challenging the status quo of how the world creates and distributes opportunities. These disruptions have left to a rise in precarious work and higher job insecurity which ultimately affects people's short- and long-term decisions about large investments such as children (Semuels, 2017) and housing (Hilburn, 2018).

VALUES

Millennial Rising

Coming in to rapidly replace the aging population, as demonstrated by the social trend above, are millennials. And as demonstrated with the power shifts above, it is clear that the values of the environment in which they are growing up in are being challenged and redesigned. With millennials expected to outnumber baby boomers by 2019, as anticipated by the Pew Research Center (Fry, 2018), the values that they hold will play a dominant force in the shaping of our world and the decisions that businesses will make, as well as become the majority voting population in the 2020 elections (Brownstein, 2017).

The impacts of our materialism and consumerism is being challenged with their choice for smaller houses and minimalist lifestyles. While it is still too early to know if tiny homes will be a disrupting trend, some factors are making the choice seem very enticing. To name a few are the surrounding environment of expensive property tax, unaffordable homes (Hilburn, 2018), aesthetically pleasing Japanese interior design and technology (Michler 2015), and Marie Kondo's book, *The Life-Changing Magic of Tidying Up: The Japanese Art of Decluttering and Organizing*, what could be considered the minimalist lifestyle manifesto (Weinswig, 2016).

This devaluing of materialism is also exhibiting itself as a growth in the experience-based life. Millennials are prioritizing experiences (Saiidi, 2016) over material goods and see the world as an extension of their home (Weinswig, 2016). This prioritization also goes to affect the decision to have less or no children (Bakalar, 2017). This trend is found globally with many people finding the cost too high (Brunhuber, 2018) and job insecurity as a major factor. As demonstrated above, millennials are more likely to have pseudo-children in the form of pets (Paul, 2018) and plants (Kobayashi, 2017).

Additionally, fueled by the empowerment of women and discourses surrounding equality and equity, as exhibited by the Women's March in Washington, DC and globally on January 21, 2017, expectations for women in the workforce are changing giving them a choice in how they experience the world around them inside and outside of motherhood (Smith-Spark, 2017). Millennials are growing up in an environment where they can see both the action and inaction of social movements and pushing for change. Pushing the conversation further by demanding inclusivity of who gets to be a part of these conversations (Quarshie, 2018). Millennials are also growing up in an era of sexual orientation and gender identity diversification (SexInfo Online, 2018), which demonstrates an appreciation for diversity rather than the prioritization of a single culture and way of life. They are more willing to accept and understand mental health and prioritize equally as physical health in their personal and work lives (Samra, 2017).

Millennials are part of the 'Sandwich Generation' in which they will be responsible not only for their own health, but the health of their aging parents, and children all at once in their lifetime, and as such, are able to see the impacts of short- and long-term healthcare. This has had to a more holistic view of healthcare not just for their dependents, but for themselves (Tarantine, 2014). With drug-resistance (Lee Ventola, 2015) and opioid addictions on the rise (NIDA, 2018), distrust of pharmaceutical companies continue to also rise (LaMattina, 2013).

How might
cannabis
legalization
look in 2025?

Table 3. Matrix indicating which trends were used in each scenario. By Calla Lee, original for MRP.

| | | Social | Technology | Economic | Environment | Political | Value |
|---------------------|----------------------|--------|------------|----------|-------------|-----------|-------|
| Transform | RIP Culture | X | X | X | | | X |
| | Green Spirit | | X | X | X | X | |
| Discipline | Canna Counselling | X | X | | | | X |
| | Research Hoarding | X | | | | X | X |
| Continuation | Rise up, monopolies! | X | | X | | | |
| | Jungle Cities | X | X | | X | | X |
| Collapse | Climate Ignorance | X | | X | X | | |
| | Black & Blue Chip | | X | X | | X | |

Using Jim Dator’s generic archetypes of the future, the above signals of change, and environment scan, a total of eight mini scenarios were envisioned across the four generic archetypes. Combining multiple system trends and user perspectives to demonstrate pockets of the future, these visions of the future offer similarities and differences that can be used singularly or combined together to create fuller, more encompassing scenarios as we move through the ever-changing landscape of legalization and regulation.

WHO ARE WE DESIGNING FOR?

Cannabis legalization isn’t just a set of rules that govern a plant. Policies are the boundaries within which all other stakeholders must co-exist within. These boundaries will decide who gets to do what, what kind of opportunities exist, what businesses are created, how much money someone should invest, what consumers will have access to both in the legal and black market, and how consumers will access and be safe. In order to develop a well-rounded understanding of cannabis legalization, all stakeholders between policy regulators to consumers must be accounted for. The following scenarios will give a small excerpt of how might the ecosystem and select stakeholders look and act within the trends listed above.

Table 4. Grouping of different stakeholders and their respective concerns and needs. By Calla Lee, original for MRP.

| REGULATORS | | | | | | |
|--------------------------------------|----------------------|-------------------|-------------|------------------|-----------|--------------------------------|
| Government | Banks | Labs | Research | Clinics | Community | Landlord/ Facility Provider |
| Economic Growth/Stability | Degree of separation | Credibility | Funding | Patients | Safety | Realtors |
| Community safety regulations for LPs | Profit | Profit | Credibility | Doctors for hire | Buy in | Investment protection |
| Public health | | Credible research | | Consulting | Education | ROI |
| Disbanding black market | | | | Profit | | Low hassle tenant |
| Public safety | | | | | | |
| Subsidies for veterans | | | | | | |
| Regulations for growers | | | | | | |
| Regulations for patients | | | | | | |
| Regulations for doctors | | | | | | |
| Re-election | | | | | | |
| International Treaties | | | | | | |

Table 4. Grouping of different stakeholders and their respective concerns and needs. By Calla Lee, original for MRP.

| SUPPLIERS | | | | | RETAIL |
|-----------------------|---------------------------------|----------------------|--|-----------------------|---------------------------------|
| Seed Banks | Product Makers | LPs | Growers | Canna Processors | Dispensary |
| Access to growers | Marketing | Market share | Background check | Connection to growers | Marijuana lawyer (credible) |
| Distribution channels | Consistent supply of inputs | Profit | Security | ROI | Big license |
| Profit | Distribution channels | Shareholders | Insurance | Distribution channels | Marketing |
| | License | Secure facility | Seeds (from LPs, dispensaries, seed banks) | Equipment | Credible research |
| | Profit | Acquisitions | Equipment | Profit | Community buy-in (palatability) |
| | Community buy-in (palatability) | Product partnerships | Distribution Channels | | Customer |
| | Responsibility | | ROI | | |
| | Due Diligence | | Profit | | |
| | | | Responsibility | | |
| | | | | | |
| | | | | | |

Table 4. Grouping of different stakeholders and their respective concerns and needs. By Calla Lee, original for MRP.

| CONSUMERS | | | | | COMPETITORS | |
|---|------------------------------|--------------------------|-----------------------------|-----------------------------|-------------------------|-------------------------|
| Patients (big license) | Patients (small license) | Recreational Users | Functional Users | Health & Wellness | Tobacco Industry | Alcohol Industry |
| Trust in transaction service | Quality | Quality | Quality | Quality | Invest in resesearch | Protecting market share |
| Connection to processors and growers | Convenience | Variety | Variety | Variety | Protecting market share | |
| Medical relief | Variety | Recognition (popularity) | Repeatable high/ experience | Repeatable high/ experience | | |
| Connection to buyers (grey, dispensary) | Trust in transaction service | Fun | Productivity | Health | | |
| Profit | Save money | Novelty | Low cost | Medical relief | | |
| Health | Connection to growers | Low cost | Education | Education | | |
| | Medical relief | Big high | Product safety | Product safety | | |
| | Health | Education | Product testing | Product testing | | |
| | | Product safety | Accountability | Accountability | | |
| | | Product testing | | | | |
| | | Accountability | | | | |

TRANSFORM

RIP Culture, Hello Commodity

Trends considered: Social, Technology, Economic, Value

EVO Seed, the world's largest seed research and innovation company, has taken the cannabis industry by storm. Even prior to Canada's legalization in early 2019, EVO Seed has quietly been buying up growers and in 2020, owned over 15% of cannabis growing operations in North America and 20% in South America. With over 30 different hemp and cannabis strains, rumours of how EVO Seed managed to scale so many different strains in such a short amount of time have been flying around. Some people believe that prior to their acquisition period, EVO Seed had patented strains and strong-armed growers to either sell their operations to them, or face patent infringement charges.

In the following year, EVO Seed opened up its pharmaceutical subsidiary to work alongside their proprietary commercial and residential agri-tech growing and processing systems. With their patented cannabis strains, they have entered every cannabis niche.

In medical, they have strains specific for a multitude of illnesses and proprietary terpene blends. Their pharmaceutical processing systems, are able to extract, mix, and produce thousands of blends packaged in a variety of consumption methods such as nasal sprays, eye drops, skin patches, and capsules.

In recreation, their moodbuds are shown to produce 40% more buds and when smoked, give longer highs with no hangover effects the next day. Choose your moodstrain and simply drop it into EVO Seed home growing systems.

In textiles, EVO Seed crossed into the athletics industry to create a proprietary strain and processing machine to spin silky soft fibres for their latest athletic gear out of hemp.

But this year, their latest strain of cannabis really may turn this environmentally ugly industry around. This new strain, requires 50% less water than regular cannabis plants, and can be grown outdoors up to temperatures of -15 degrees. This could effectively bring an energy intensive indoor growing industry, back outdoors and increase the resiliency of EVO Seed's farmland.

Small craft growers have struggled and have been battling with not just EVO Seed but other large agri-tech monopolies who have since set their sights on cannabis. "We set ourselves apart with experience. You just can't beat the smell and taste that terroir can give you" says Xavier, a craft grower in the mountains of Panama who converted his coffee plantation to a cannabis plantation in 2019. "The richness of the soil, the high altitudes; they just can't be replicated by a machine or water system."

While the market is flooded with product from EVO Seed, Aurora, MedReleaf, and Israel's Cannavise Pharmaceuticals, consumers are starting to vote with their dollars. Xavier has been shipping his small craft supply to con-

noisseurs all over the world who are willing to pay top dollar for his organic cannabis. “Call me old school, but I love the excitement of smelling and tasting the different notes in my vaporizer. My friends and I used to have wine tasting parties, but many of us have switched over. We take turns hosting and meet every month to sample craft product together” says Fran, owner of CannaHotBox, a monthly paraphenelia subscription box that caters to millennials.

It’s no wonder craft cannabis is making a comeback now. With all the augmented reality stores, odourless vaporizers, and flavourless capsules, consumers have long been disconnected from the old cannabis culture of yore. Following the June 2018 raids across major Canadian cities, dubbed ‘the Cleansing’ by the grey market community at the time, and the two-year probation that followed many of those arrested, the EVO Seeds of the world started moving in and cannabis culture as we knew it started to fade away. “I voted for legalization and regulation. But I never thought that supporting it would mean I would be cut out of it. Had I known that regulation would mean the death of our culture, I would have fought it from day one” says Justin, a former dispensary owner in Markham, Ontario.

The government didn’t explicitly intend to kill cannabis culture, but retail policies such as the single proprietor policy, which only allows products from a single company to be sold in any storefront, essentially cuts out any non-vertically integrated company. “Who can possibly afford to be in business if you only have one product on the shelf? How is anyone supposed to compete with MedReleaf who can grow, extract, process, package, and stock an entire store?” exclaims Justin.

Main Takeaway: Culture is a powerful force; it includes the beliefs, language, rituals, behaviours and values that connect people and community. It evolves over time as it cross-pollinates with other influences. A century worth of cannabis culture is being flipped and rewritten and brands everywhere are looking to be a part of its new definition. In order to navigate the upcoming evolution of cannabis culture, industries in every part of the system will need to savvy on who they are speaking to, and what rhetoric they identify with. Finding ways to bridge cultural gaps will be a key component in areas such as public health and safety campaigns and marketing messaging.

Green Spirit

Trends considered: Technology, Economic, Environmental, Political

When you think of cannabis and sustainability, only one country should come to mind, Israel. Not only have they become the hub for medical marijuana with millions of dollars in exports of the world's top pain and chronic illness medications, the UN has awarded them the title of world's top sustainable agri-tech country at the 2025 Food and Agriculture Organizations Regional Conference. Since 2019, researchers from all sectors have been flooding into Israel's research institutions to take advantage of the country's progressive research policies and abundant funding. With research institutes, hospitals, business incubators, and a swath of tech giants in the area, such as Elon and Kimbal Musk's joint pilot project in cannabis vertical farming, the ecosystem of support to researchers and entrepreneurs alike have created a thriving innovation ecosystem for the green spirit flourish.

Many of Israel's growers have implemented water cleaning and recycling programs, use renewable energy for both indoor and outdoor operations, and produce virtually no waste as almost all parts of the plant are either processed or sold to other companies for use. Israel's Minister of Finance says "We knew we had to get ahead of the industry. You don't often get a chance to get it right at the beginning but we did with cannabis. We wanted to be the industry standard for growing cannabis and our policies reflected that from the beginning." With Israel's recreational legalization in 2018, many of the players in the medical industry had already adjusted to the strict environmental regulations set out allowing the recreational industry to start off on the right foot. He further commented "We saw the devastating environmental effects in California and Canada and knew that Israel would not survive the kinds of water issues they had. We had to be progressive and we had to be strict."

Today, 5 of 7 of the top cannapharmaceutical companies are located in Israel and export products all over the world. Vapure Pharmaceuticals was the first cannabis inhaler for patients on the market and has since expanded into sprays and ear drops. The company also boasts the use of 100 percent renewable energy in all their operations and has since reduced waste of their inhalers by offering the first inhaler collection and recycling program throughout the world. "We cannot claim to take care of people's health when our products were producing so much garbage and waste for our children to clean up" says CEO of Vapure, the world's leading medical cannabis vapour company.

While initially geared towards medical users, the country is capitalizing on the abundance of recreational consumers across the globe. "Cannabis pharmaceuticals are highly regulated and offer extremely dependable experiences. It is an easy adjustment for us to also cater to this demographic. People think differently about cannabis now. It's not just a drug, or just a medicine, it is both" says Jane, Director of Product at Aurora Inc. in Canada, who licenses and imports many products from Israeli companies. "Many of our users tell us that they use it every day to help them focus and be productive. Internally, we call this group of consumers 'Functional Stoners'. They may only make up a small percentage of our customer base, but they are also our highest revenue consumer."

In North America, cannabis companies have been quick to adopt research and global products. Initially focused on public health, Canada has had to quickly react to the normalization of cannabis thanks to the innovations being churned out globally, as well as the environmental setbacks that the growing community experienced in 2022. Since then, Canada has been sending researchers to Israel to understand environmental standards and how to adapt them for the Great White North.

South of the Canadian border, cannabis legalization managed to slip through after a record turnout of democratic voters headed to polling stations. Aligning itself with the #metoo, #timesup, #womensmarch, and #enough movements which banded together in solidarity, the US government found itself once again in a democratic majority. As the first steps in legalization, the United States have formed global partnerships with China, Israel, and Canada to catch their industry up to the world standard. “The cannabis industry has changed so much in the past 5 years. I remember when Colorado was a leader in the industry but now I don’t even know half of the machinery being used to make extractions” says owner of Lit Medical and experienced grower, Gigi. Based out of Colorado, Gigi stocks her shop with cannabis flower imported from Canada and Peru, and medical products through an Israeli brokering company. “I can’t afford to grow cannabis anymore; the cost to compete is just too high. Even with the low cost of renewable energy, machinery, lighting, irrigation equipment, land, licensing fees, security, and seeds cost too much to run. I’m hoping to invest in one of the bud towers that the Musk brothers are working on but that might be out of my price range too.”

While Israel’s industrialization of cannabis has certainly taken a toll on small craft growers, the upside can be seen by medical users around the world. With chronic illness affecting over 50 percent of the global population in some form, the multitude of medical cannabis treatments and options have been a saving grace. Unable to participate as a grower, Gigi has pivoted her shop to provide more than just product. In the past four years, Gigi has watched customers switch from smoking, to less invasive and healthier methods of consumption. Customers come to her store with a range of issues and budtenders give individualized attention to every person. “Many of our customers are new to cannabis so we’ve taken personalized and customized service approach to make each customer feel like we are their partner in managing their chronic disease. Our consumption lounge gives them a safe space to begin their journey where trained staff are around to guide you, keep you safe, and answer any questions along the way. We would never want anyone to do this alone for the first time.”

Main Takeaway: Our world today is seeing the beginning of trends that may end up flipping orthodoxies in the future. Values are flipping from a lifestyle of disposable indulgence and fast food flip to sustainable and plant-based food. Exercise and healthy lifestyles are being prescribed as prevention for chronic illnesses. Lifestyle is being used by every facet of marketing and cannabis will be no different. If anything, cannabis may be the ultimate brand-able lifestyle commodity. Multiply that with rapid industrialization at every leverage point, and black market competition nipping at industry heels, the rate of change in the cannabis industry will be exponentially faster than that of policy. In an era of ‘fail fast’ and ‘ask for forgiveness’, policy makers will have to find a way to get ahead of both resistance to change, accelerated change, and unintended consequences, simultaneously.

DISCIPLINE

Canna Counseling

Trends considered: Social, Technology, Value

Sometimes, you just have to admit that we didn't see the writing on the wall. If we compare the dispensaries of today to the dispensaries of 2017, the contrast is palpable. The rows of different strains lining the walls of dispensaries past have been replaced with digital displays of names and descriptions and prices. Choice is limited but there is variety. Augmented reality display cases allow you to zoom in and turn buds every which way, but can that ever really replace seeing and smelling? Budtenders have been replaced with security guards, similar to a bank visit. Customer service has been replaced with algorithms that track the purchase and sale of all cannabis, and user's consumption habits. If the algorithm flags your consumption as excessive, buyers are mandated to speak to an addiction counselor before their next purchase. If you are using recreationally and attending school with a lower grade point average, students must also see addiction counselors. Consumption is monitored in consumption lounges with dividers between each person; definitely not the place to socialize or build community amongst users.

Many experts will attribute this turn in recreational stigma to the increase of ridesharing and driverless cars on the road. CEO of the carpooling service Drive explains, "the initial fear for public safety regulations around impaired driving are becoming less and less relevant. In a time when people are simply not driving as much, it is also easier to always be high." While smoking in vehicles is still prohibited, there is a plethora of other consumption options that consumers can choose from. Driven primarily by innovations in the medical cannabis community, the divide between medical and recreational has never been bigger.

Medical cannabis comes in pills, candies, drinks, inhalers etc. Almost all companies market to one group of consumers, the Sandwich Generation who have to take care of senior parents, a dependent child, and even their own onset aging. "I have a mother who is battling cancer, a grandfather in a nursing home with chronic pain after a lifetime as a construction worker, a 10-year-old with ADHD, and my own chronic back pain from a sports injury. My trips to the pharmacy have never been more convenient and time consuming at the same time!" says Carrie, a mother in her 50's who has chosen to treat her whole family with cannabis. This choice is not uncommon anymore given the rise in opioid addiction that plagued the chronically ill back in 2021. "Illnesses are more complicated today than ever before" says Maria, an ER nurse in Florida. "People don't just have single issues anymore. They are more drug resistances and allergies to account for, and the number of pills and drugs that they need would have too many unpredictable side effects from drug interactions. Cannabis helps to reduce the number of prescriptions doctors are giving."

But coverage is minimal and many insurance companies are making it more and more difficult to make claims. In a world where everyone has chronic pain, Alzheimer's, and/or cancer, insurance companies have switched to incentivizing good behaviour to try and recoup the costs of the world's aging population. "Recreational users are starting to give a bad rep to the medical community. We shouldn't have to defend ourselves to prove that we

are not always getting high” says Brad Potter who is in the midst of suing his insurance company for rejecting his medical claim after being flagged for addiction by a dispensary algorithm. “If you’re a recreational user that is now experiencing a medical issue in which cannabis can be your medicine, your past will follow you. Why do we need to be one or the other?”

Main Takeaway: Our continual march towards efficiencies, time-saving, productivity, and convenience are making the world increasingly frictionless, fast, and easy. It may not be a bad idea to slow down and also ask ‘should we remove all the barriers?’ This question. hits the very core of behaviour design. When it comes to designing policy, provinces will have to consider where to add and remove friction, and for whom. Striking a balance between the two at multiple leverage points in a stakeholder’s journey will ultimately decide if the two mandates of legalization will be achieved.

Research Embargo

Trends considered: Social, Political, Value

Jumping through legal loopholes and claim restrictions may soon be a thing of the past! In an attempt to meet the demand for public health impact of global cannabis legalization, the World Health Organization called for all research embargos to be lifted from all cannabis-related research. There is no doubt that the world is in the throes of a global paradigm shift. Conversations about cannabis legalization are happening on practically every continent but without fully understanding the public health impacts, the possibility of facing a global health crisis is not a reality anyone wants to face.

While cannabis have been found in ancient cultures all over the world, the strains that existed back then are a far cry from the boutique strains of today. Since Canada's legalization in 2018, followed by Israel's legalization, and China's entry into the market, the landscape for access has dramatically changed. The market is flooded with high potency Canadian recreational cannabis, advanced, fast-acting Israeli medical consumption methods, and traditional Chinese infused medicinal treatments.

The new UN treaty to share government funded research on cannabis is the international body's solution to getting ahead of possible addiction and dependency challenges that could occur. This should come as no surprise to researchers as open source work is spreading throughout the industry and journals are becoming more decentralized. Pioneered by Canada's Social Sciences and Humanities Research Council, which called for all new cannabis research to be publicly available to support the nationwide legalization in 2018, Canada has been able to move forward with progressive policies that have spurred innovation for companies both small and large. "Canada's government has been taking a more bottom-up, user-centred approach in cannabis policy reform. By flipping our strategy, we have become better at meeting multiple stakeholder groups where they are" says Sara, an advisor at Health Canada. "This isn't to say we have pandered to every suggestion, but we have listened to those that are willing to be regulated and that has had a tremendous impact in displacing the black market."

Since 2021, Canada's cannabis black market has been shrinking. Previously valued at \$6.2 billion, industry experts believe it be around \$2.5 billion. There are still communities that do not want to be regulated, or taxed. "Our policies have created an environment that makes it possible for businesses of all sizes to thrive in while also using tax dollars to support new research and the growing opioid and hallucinogens crisis that has been pressuring our healthcare systems" says Sara. While many countries experienced a decrease in opioid use in the years following the onset of legalization, the black market seems to have shifted to fill the gap with cheaper hallucinogens. In recent years, there has been an upswing in microdosing of hallucinogens and stimulants with claims that it can increase productivity and enhance creativity.

Post-legalization, the conversation has started to shift and activists are pushing for legalizing other drugs such as LSD and cocaine. "If we continue to entertain this conversation, there will be no limit to this floodgate of drugs" says Paul, executive director of Safe Communities, Safe Youth which organizes community initiatives to divert

youth from drug usage. “It is still too early to tell if legalization has been effective. Canada has finally adjusted to cannabis legalization, but we are not equipped for more than that yet.”

Many countries have legalized medical cannabis, but the move to recreational legalization has been a slower moving process. Given the costly process for governments to regulate an economic market, a public health issue, an inspection and compliance framework, and environmental assessment, countries are just not interested in investing without more evidence and research. Countries such as Canada and Uruguay have both seen their systems challenged in election years but managed to just make the cut in many places. Canadian researchers were one of the primary voices in support of maintaining legalization during these conversations. “We are just starting to move past baseline research and into the years where we can start validating what is happening. Stopping now would be wasting all the time, effort, money, and knowledge that has gone into legalization without having conclusive evidence” says lead researcher at UBC Okanagan. “Research is slow and it’s hard to get conclusive answers with a problem this big. Israel may be the leader in medical cannabis research, but Canada is leading the way in socio-economic and environmental research on the systemic impact of drug reform. Why would we quit while we’re ahead?”

Main Takeaway: In an industry where research is either proprietary or hard to do, knowledge can indeed be power, especially when the subject of research is a global commodity, a medical treatment, a recreational drug, and its industry is valued at \$2.5 billion. With many anecdotal claims and entrenched stigma, evidence and research can turn into the weapon of choice against regulatory policies, product labelling, accessibility rights, and criminal cases. However, safeguarding knowledge may also increase competitive advantage. Considering that cannabis reform is happening on a global scale and poses a public health issue, it is important to ask:

- **Who decides what needs to be researched?**
- **Who is the gatekeeper of this knowledge, and for how long?**
- **Who gets access?**

CONTINUATION

Rise Up, Monopolies!

Trends considered: Social, Economic

If you've never had one of the new Starbucks's Calming Caramel Frappuccino, you haven't tasted the new wave of medicine that is sweeping through food products today. The drink features 30mg CBD infused caramel sauce is being marketed as the perfect post work lunch snack to help focus the remainder of the workday. Starbucks's new drink is one example of the many products that have come to market in the past couple of years that are bringing nutraceuticals and food closer and closer together. Every day there seems to be something new announced on Instagram. Today, you name a product or service, and there's a company that has put cannabis in it! Andrea, Chief of strategy at Bud Market, a global marketing agency, explains "Our clients range from a gardening company, and medical pet products, to skincare and a not-for-profit. We can work in almost any sector because our agency expertise is cannabis. Today's customer is looking for experience and cannabis plus anything gives them that."

Experts are contributing this to the CannaTech boom, a merging of industrial technology from all different industries, such as the commercial food industry, with cannabis processing. While the production of cannabis-infused food products requires many licensing stages and compliance checks, many companies are selling and advertising before their licenses have been approved. In a time when consumers are king and demand and excitement is rampant, companies are more than happy to pay the hefty regulatory fines to light their pipe. Andrea adds that "Companies are looking at cannabis' profit potential and see the regulatory fines as investments in being first to market. There is risk they are willing to absorb in order to recapture market share from the craft cannabis industries that has been siphoning from them since legalization."

The flurry of cannabis entrepreneurship and innovation seems to be slowing down as the marketplace becomes more saturated. Startups and small businesses from the onset of legalization began to enter scaling periods and sustainability phases of their business. Investors are cashing in on their investments leaving many companies struggling to maintain operations solely on revenue. "Many of the original cannabis startups paved the way and developed what the best practices in the industry are. Large companies are looking at this disruption and entering it after seeing the traction it has gained" says Kris, a professor at Niagara College's Cannabis and Entrepreneurship continuing education program. "Cannabis entrepreneurs have invested thousands if not millions of dollars into the ever-changing regulatory landscape that surrounds their business. The government is running them dry by constantly changing policies, and adding mandatory compliance checks. With no direction for cannabis businesses discussed at the onset of legalization, small business entrepreneurs have been setup to fail."

Since legalization, cannabis businesses have had to deal with changing tax rates, building and HVAC regulations, real estate zoning, and inspection and licensing setbacks. Businesses that received their licenses prior to legalization have had to pay with every regulatory change that occurs. New businesses applying for licenses are being asked to revise their proposals to meet new requirements before they are approved. With the government constantly adding bureaucracy, the wait for a license that new small businesses are experiencing gets longer every

day. “The government has basically turned the cannabis industry into a pay-to-play game” says Amira, who has had to revise her business plan twice and has waited for over a year for her application to be approved. “There has to be a better way to speed up the process and give businesses a chance to start operations while we are on the path to compliance.”

Small companies are being forced to choose between blue ocean strategies of being the first in the industry and paying to stake their claim of market share, or waiting until the ocean is red with competitors and fallen peers. “The only people who can afford to play are the large companies who can afford paying the fines of selling before licensing. Once the large monopolies step in, there will no room in the industry anymore” says Amira.

If we look at the original example, Starbucks managed to bypass licensing of their Calming Caramel Frappuccino by creating it as a limited time offer and using medical grade infusions that are already on the market. Starbucks has yet to remove this ‘limited time’ product from its offerings. While it no longer advertises it, baristas will make it for you if you request it. Since its launch last year though, cannabis infused coffee companies have already started feeling the competition. “We were one of the first infused coffee brands out there but that meant we are also limited to where we can sell,” says BuzzCoffee owner Cora, “But then Starbucks started selling their drinks everywhere, and people no longer needed to go to a dispensary to get my product. My orders dropped 25 percent last quarter.” Following the instore product, Starbucks is planning to launch their original to go bottled coffee with an infused product that will be stocked in dispensaries by summer 2026 pending their license approval. Whether they wait or launch and simply pay the fine, only time will tell.

Main Takeaway: For the past 95 years, the black market has been in control of the growth, processing, retail, distribution, and safety of cannabis. With legalization, it is crucial to decide who should be controlling the system? Government? Large companies? Small businesses? Pharmaceutical companies? A probable future could include one, or two, or all of them, or even more. Perhaps the questions shouldn't just stop at who, but could also ask how long before it opens up, or closes off other stakeholders. Looking at the multitude of transition states that exist between now and a preferred future would allow policy to decide what sequence of events and strategies to employ. Each part of the cannabis ecosystem will require different rates of change. Rather than see these delays as a problem, different sequencing strategies could look at filling these gaps with baseline measuring and research, or use these gaps to shift focus on other parts of the system.

Jungle Cities

Trends considered: Social, Technology, Environment, Value

Home growing pods, green walls in offices, salad walls in bright glossy restaurants, rooftop gardens, and balconies lined with stepped gardens—our cities are alive with greenery. Quinoa, cannabis, tomatoes, peppers, zucchinis and strawberries line balconies while apiaries and cricket farms dot the rooftop greenspaces. Every Sunday in the courtyard of the condo, building residents gather at their private farmers market to make trades. A jar of spaghetti sauce, made with tomatoes grown right in this very building, trades for ½ an ounce of Purple Kush grown by the retired couple on the 40th floor. A thick handful of basil leaves plucked this morning trades for some infused, protein-rich cricket brownies made by the woman on the 10th floor. Different floors are assigned different zones to ensure that the building grows enough quantity and variety to provide a quarter to half a resident’s monthly food consumption.

Two years into the Aurora and Concord Adex agri-itecture condominium pilot project, Home Grow, residents are starting to hit their groove. “We’ve taken the innovations from cannabis, agri-tech, and smart homes and put them together” says project lead, Lily. “Hyperlocal agri-itecture is not just a building, it’s a community that will change the way we live, work, play, and eat.” In an age when digital is everywhere and technology permeates our entire lives, Home Grow’s tech is surprisingly hidden from sight providing a seamless experience that feels devoid of technology altogether. UX designer Adam, who was not a part of this project, comments “The user experience is truly unique. It makes everything feel authentic and provides residents with just enough control while freeing them of the tediousness and anxiety that can come from large scale farming.”

The building is looking to expand the project in the upcoming years by adding in additional health and wellness services to the project. Project coordinators are in talks with a few franchises of cannabis friendly spas who offer unique experiences that cater to what the industry has dubbed ‘the millennial mama.’ This group is the new generation of mothers who have grown up in the digital social era and are well tuned to health and wellness as a habit. Lily describes this addition as the projects strategy to growing with their residents and allowing the community to bring health and wellness into the lives of the community in a convenient and holistic way.

Outside the lush green walls of the building, the project expansion has garnered criticism from the building’s waiting list of prospective renters and the general public for only addressing current resident needs, while ignoring the country’s food insecurity issues and desperate need for more affordable housing. “The city doesn’t need more services for the rich that disconnect them from the realities of the world. Properties like this should not just be available to the 1% who can already afford to live and eat well” say city councilors in the surrounding areas. The project has shown promising results and demand for more developments like Home Grow are rising.

Buildings like Home Grow can work to alleviate the growing income, food, and housing disparity by giving people a place to connect and take care of each other. Technology has advanced far enough that societies have all the tools necessary to start battling poverty, hunger, and inequality, but the choices on when and where they are used

tell us that our society has progressed technologically, but not ideologically. Until technology begins embracing social and environmental justice, innovation will continue to be a privilege and not a way of life.

Main takeaway: With food insecurity growing, agriculture is starting to infiltrate our lives everywhere we look. Humans have harnessed nature and strapped it to buildings in an effort to bring greenspaces and food to cities, hoping to reduce the carbon footprint of food and regain control of our food system. Innovation in the cannabis growing industry can provide significant knowledge at both the individual and commercial scale given the experience of its craft industries and economies of scale. However, who and how innovations trickle through the economy will certainly define how accessible it will become. The choice between bottom up or top down innovation will peg the future advancements as a game-changer, or as another wedge adding to inequality.

COLLAPSE

Climate Ignorance

Trends considered: Social, Economic, Environment

Black market cannabis has returned with a vengeance, serving the medical community, marginalized population, and the now legitimized recreational market. They show no signs of slowing, but these days, the black market is one of the governments lowest priorities. After another year of erratic Canadian weather, the country's food reserves have taken a hard hit. This year there was another record snowfall year, an early onset spring that caused large scale flooding, followed by a few extreme cold weather warnings, has left the city worse for wear. Although crown corporation farms have been producing and storing stocks of food for state of emergencies, the advancements in agri-technology was still no match to mother nature, and this year's crops have not survived. Along with desertification of existing farm land, agriculture is in a precarious situation. Grow outdoors and risk losing everything to unpredictable weather; grow indoors and pay the high cost of water and electricity, or worse, watch everything die during a power outage.

Many citizens are now criticizing the governments prioritization of cannabis legalization over environmental policies to curb imminent climate change. Masked as a public health crisis, many see cannabis legalization now as an economic cash grab at the cost of sustainability. A protestor at a climate rally exclaims "It's great that all those stoners got to have their fix and that the government can brag about our GDP's growth rate, but what good is that if everyone is starving and food prices are through the roof!" Climate protestors took to the streets of Toronto, Ottawa, Calgary and Vancouver to urge the government to put in place policies that force commercial cannabis operations to restrict water and electricity usage or switch their operations to growing food.

Almost all cannabis that is grown is currently destined for export for medical processing and returns home in the form of expensive pills, patches, and oils. Medical and recreational patients are forced to grow their own medicine at home or go to the black market.

Main takeaway: Cannabis is both a water and energy intensive plant. Given Canada's harsh winters, many commercial growing operations will undoubtedly be indoors. Without environmental regulations, Canada will continue to ignore the realities of climate change, while allowing the agricultural industry to draw from non-renewable resources. The long-term effects of this behaviour could lead to a Tragedy of the Commons system archetype where multiple stakeholders share from a common pool of resources. As demands of each stakeholder increase, the common pool becomes overloaded or depleted, leading to diminishing benefits until the common resources collapse. (Braun, 2002)

Black Market and Blue Chip

Trends considered: Technology, Economic, Political

It can be hard to admit when you're wrong but that just might be the case for the government. "It all started to seem very strange after they discontinued the medical marijuana program two years ago," says former licensed medical patient, Bryan. "I had fought my insurance company for months to cover my prescription; they had spent millions I'm sure drafting, and changing their regulations to cover medical cannabis. And for what? To have the system be shut down because it became too much work for Health Canada? It doesn't seem like these policies consider the people they are supposed to be serving."

While it's true that insurance companies spent years, and millions of dollars adapting their policies to meet cannabis legalization, the dissolution of the Canada's medical marijuana system may in fact save them from the unprecedented exponential growth in chronic illnesses. Without a medical cannabis systems, those seeking cannabis for medical have had to compete with recreational users at retail, sending prices for medical grade products out of range for those who need it most.

In response, black market cannabis companies and a handful of licensed private operations have rallied together to implement block chain tracking of their operations to demonstrate that the private cannabis industry can be its own self regulator. With more transparency and more equitable distribution of profits, the black market has been able to undercut government prices by half, providing medical users who have been priced out of their own medicine some relief. "I can grow my own medicine, but smoking is not ideal when you are already battling cancer and simply don't have the energy to make my own edibles" says Peter, a patient who used cannabis to control side effects from his chemotherapy treatments.

The public is now calling out government suppliers to show profit margins to defend their stance on legalization as a public health issue and not as a cash grab.

Main takeaway: For provinces that are looking to eradicate the black market rather than find a way to include them in the industry will most certainly encounter escalation tactics. This small scenario depicts what could be the last moment of solidarity to battle a common enemy by displaying the black market's ability to self-organize, and be agile. Government monopolies have chosen a worthy foe and will not be able to rely on the usual enforcement strategies. They will have to understand their competition well in order to jump ahead of them.

What are the next steps in cannabis legalization?

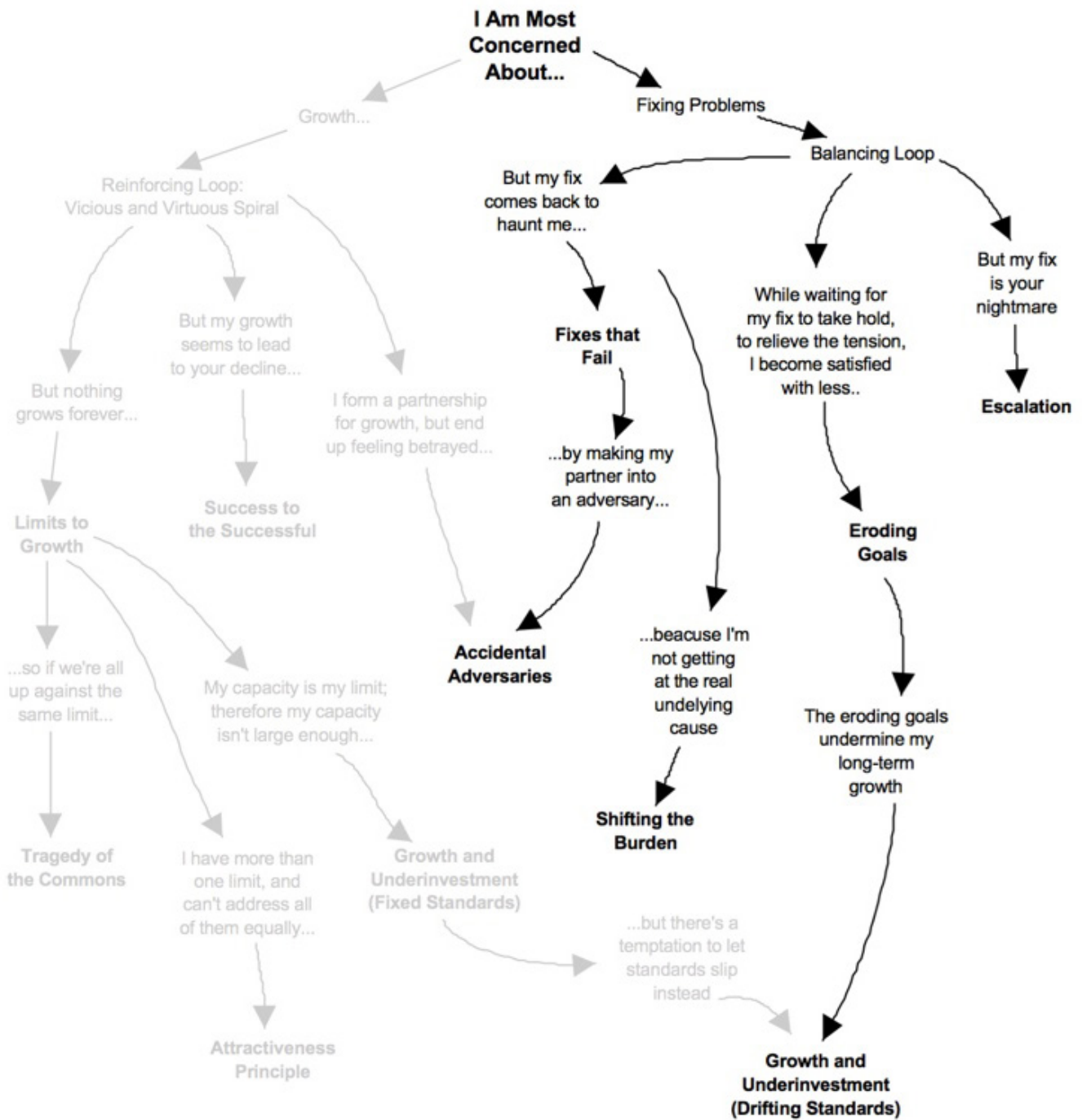
WHAT TO WATCH OUT FOR

By looking at cannabis legalization through the lens of systems archetype, we are able to see and understand the different incidences that are occurring in different places. However, it is the connections between the archetypes that tell a broader story. By using Michael Goodman and Art Kleiner's Archetype Family Tree, we can trace the above systems archetypes and find that it almost perfectly matches to the right side. Multiple balancing loops such as prohibition, enforcement, and legalization of medical marijuana have been tried, leading to fixes that fail. On the other side of the balancing loop, the black market has engaged in an escalation systems archetype that led to the \$6.2 billion illegal cannabis industry in Canada. With legalization, Canada had the option of turning the illegal grey market into a partner but instead, has created an accidental adversary. The grey market and enforcement entered into an escalation archetype which eventually led to a shifting the burden archetype when enforcement and the justice system were unable to mitigate the growth of the grey market.

Currently, as legalization has not passed, what can be anticipated or avoided is the Eroding Goals archetype and the subsequent Growth and Underinvestment Archetype.

However, Eroding Goals can also occur in the form of unintended consequences if the considerations of a system are not wide enough. To consider the entire ecosystem of the world is to adopt a triple bottom line approach that considers successes for people, planet, and profit. Given that the goals of legalization are to protect underage youth from accessing cannabis, and to eliminate the black market, the government has considered one group of people, and diversion of profits, but fails to address other stakeholder groups such as First Nation communities, and the planet.

Figure 25. Michael Goodman and Art Kleiner's Archetype Family Tree



RECOMMENDATIONS FOR NEXT STEPS

The research approach of a literature reviews, competitive scan, system mapping, environment scan, and scenarios uncovered the need for the Government of Canada to be considering more than two goals by casting a wider set of goals that cover more of the legalization ecosystem, and for industry players to start building long-term strategies to cope with the upcoming uncertainties.

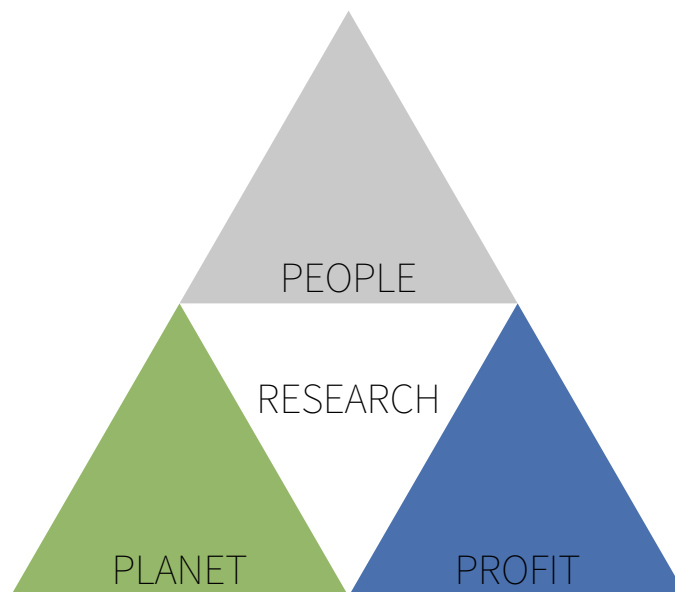
For the Government of Canada

At present, I believe the government needs to employ a triple-bottom line ecosystem approach

First, it must consider the requisite variety of different stakeholders that they are designing for, beyond just youth. Stakeholder groups such as new consumers, First Nations peoples, and the compassionate black market have been either left out of conversations or excluded from participating.

Second, it would be prudent to consider the current climate reality and put in place environmental regulations at the onset of legalization. Our world simply cannot handle another large-scale agricultural commodity that ignores the realities of climate change. Putting environmental restrictions and constraints around cannabis production and retail, Canada can level the playing field for market players at all levels, and push for innovation in a nascent market. Small businesses can take advantage of their agility and build the foundation of their businesses with environmental regulations and efficiencies from the beginning. Black and grey market entrants would have to invest in redesigning their existing business models, processes, and products to comply with new regulations. Large market players would have to invest to update their existing operations, giving smaller businesses time to gain some competitive advantage. Cannabis agri-tech innovations could then be applied to broader social issues such as food insecurity and climate change.

Figure 26. A triple-bottom line strategic approach with research at the center. By Calla Lee, original for MRP.



Third, they need to provide better support for industry players if they are about to introduce regulatory frameworks as complex as system-wide regulation. It could be as simple as setting up incubator/accelerators in provinces to help new and existing businesses achieve regulatory compliance. The incubators could gather baseline data on market share, changing consumer preferences, profitability, and have greater control over products entering the market. This research could help the Government better understand the impacts of cannabis legalization and in turn, inform the next iteration of policy.


Finally, baseline research and measurements must also be set up before the onset of legalization in order to sidestep many of the aforementioned archetypes. As previously mentioned, the Government of Canada must revamp the barriers to cannabis research in order to meet the public policy objective nine stated above in the introduction; to enable ongoing data collection, including gathering baseline data, to monitor the impact of the new framework. As encountered in the planning of this research paper, the associated barriers of the legal status of cannabis did not allow me to conduct primary research as it limited the safety of subjects, users, and experts that could be involved. As previously stated, without access to stakeholders in both the legal and illegal market, it is not possible to understand the societal impacts of legalization that would help create a strategic plan or direction that is collaborative, user-centred, and unbiased, that would lead to an inclusive market. Ideally, I would have liked to conduct stakeholder interviews as the primary method for data collection, and conduct co-creative workshops with stakeholders from all parts of the industry for data synthesis and system mapping for future strategy development.

For industry players

The plethora of scenarios offered illustrates the multitude of scenarios that could exist when orthodoxies are flipped. Cannabis policy will be highly iterative for the foreseeable future as baseline research is gathered and different policies, regulations and models are tested. This level of uncertainty will undoubtedly burden industry pioneers with the costs of change, in exchange for market share.

For industry players willing to take the risk of a highly volatile environment, it would be advisable for them to choose from the four different strategic approaches for designing with scenarios, as suggested by Steven P. Schnaars (van der Heijden, 1997):

- 1. Robust strategy: perform well over the full range of scenarios**
- 2. Flexible strategy: keep options open for as long as possible**
- 3. Multiple coverage strategy: pursue multiple strategies simultaneously until the future becomes clear**
- 4. Gambling strategy: select a strategy which is known in advance to lead to suboptimal results if some of the possible scenarios develop, but produces more than proportional returns in others.**



In order to choose a strategy, industry players must be self-aware and understand their appetite for risk, their financial and human resource realities, the capabilities of their current state, and the existing context of their ecosystem. Resiliency and agility will be a capability that all industry players must have or develop for the upcoming years directly following legalization in order to survive the changing landscape and moving goalposts that will characterize the legal cannabis space. If the Government of Canada does indeed push for innovation, industry players will have to be equally capable to meet those demands.

In short, Canada needs to be more ambitious and consider that they are not simply legalizing a plant. They are in fact creating an ecosystem that will permeate almost every aspect of our economy. They have the opportunity to take a resilient underground market and flip it into an innovation powerhouse but first, they must acknowledge the scale of the current industry, and the normalized attitude that currently exists in different segments of its stakeholders. Only then will evidence be available to fully consider whether Canada should strive for an industry inclusive or exclusive of the current black and grey market, which will allow industry players to better decide their short- and long-term strategies.

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