

CBD & Medical Cannabis

Enabling the Value chain

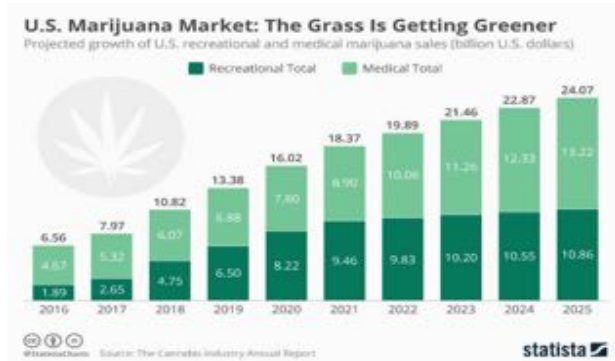
April 2021

The new cannabis/hemp/CBD Eldorado is creating a buzz among local farmers, business investors, start-ups, traders, distributors, logistics providers, and pharma giants.

In exploring this jungle, we can better understand both current constraints and market drivers and develop a successful supply chain model for the future.

Booming Markets & Growth (\$)

The legalization or depenalization of CBD (non-psychoactive cannabinoid) or low THC (psychoactive tetrahydrocannabinol) based products in various states or countries is creating huge business opportunities. The market is expected to evolve in US and Europe with double digit growth over the years to potentially reach 100B\$ by 2030.



The Cannabinoid market has created an appetite for investors and start-up companies. We see end-to-end (seeds to sales) business models, while other players are starting to partner internationally, taking advantage of technical expertise and the regulations changes (i.e.: *Cannasure and DanCann Pharma*).

While there's only yet a few approved drugs to treat specific pathologies such as type of sclerosis or seizures, the pharma industry is investing massively (i.e.: *GW Pharma 7.2B\$ deal*).



Product Diversity & Complexity

Apart from the recreational use of cannabis products allowed in Canada and more than 16 states in the US, we see an amazing variety of new CBD based products arriving on the market.

At this stage, the medical cannabis (under doctor prescriptions) remains marginal in Europe due to lack of specific regulations and clinical evidence. This will dramatically change in the coming years with many ongoing clinical trials.

Cannabinoids have multiple healing benefits, such as reducing stress, help sleep, recover hunger, relieve cancer treatments, improve mood, etc. We can find almost any forms of products, such as concentrated oil, cosmetic cream, edible gummies or even pet food.

Without proper medical guidance, the industry is marketing their products for wellness, health-food, or naturopathy. For consumers, it is a bit of a jungle, how to trust a specific brand and assess specific posology... try (if) it works!



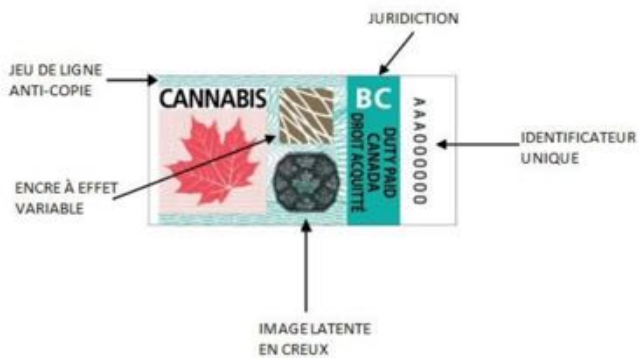
Supply Chain Operations

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Quality & Regulations

In most European countries, Cannabinoids with less than 0.2 to 1% of THC is considered legal. Countries or states opening their regulations to cannabinoids usually require license or permit to either, grow, import, export, manufacture, distribute or sell cannabis. This applies to CBD derived products as well as for medical or recreational products where legal.

Apart from Canada that has a labeling standard (see picture below) allowing certification and an integrated supply chain approved products, there are no global regulations that will help someone understand the exact composition or usage of the products.



In most countries, certificate of analysis can be found via QR codes and manufacturer are starting to follow renowned standards such as ISO 22716 for cosmetics, GMP's and even using the Pharma Product Number (PPN) in search of quality and safety recognition.

In the short to mid-term, the product acceptance and market openings will be driven by the medical and scientific sectors. Building credibility with the authorities, the professionals and the public is key to facilitate the trade compliance aspect, first locally, then nationally as well as internationally in the coming years.

With global standards, smart labeling and bar coding, an end-to-end traceability will be possible, allowing trade across the countries and geographies.



Blockchain solutions already exists to enable and certify the various transactions, increasing the level of trust and reducing cash management risks related to the high value.

Last but not least, many governments are looking at a great opportunity to control the market, collecting money from tax, to help protecting youth against drug abuse or toxic dosage or substances, as well as reducing the illegal channels and its criminal cartels.

The Logistic Challenges

The high value of cannabinoid products, raw or finished goods, requires specific handling to preserve its quality and reputation. Packaging and storing conditions are different whether handling seeds, oil, or flowers. Temperature, humidity, exposure to light can deteriorate the active substance, as well as the "terpenes" providing the various aroma and flavors.

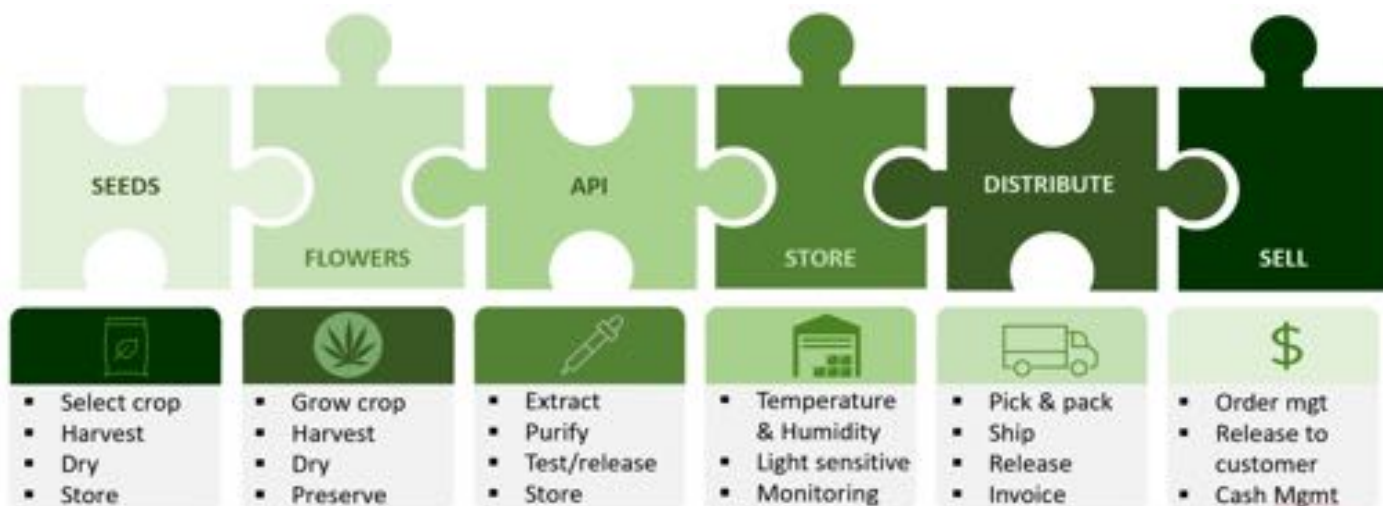
At an average of 10 US\$/gr, the cannabinoids require safe or secured logistics, whether shipping a thousand seeds with an end market value worth 10K\$, or distributing to special shops, pharmacies, or dispensaries a few bags of flowers.



In Canada, the cash management company Brinks has already established end to end solutions, securing shipments and enabling safe payment: *from seeds to sales*. Apart from the above example, logistics providers and 3PL are not yet ready to fulfill all elements of the value

and the supply chains

By using various existing solutions, specific network can be designed or customized to support and protect product storage and delivery.



Designing your Supply Chain

With the product diversity, its quality, the regulations, and the consumer demand, it requires a professional and flexible supply chain strategy to sustain over the coming years.

Whether suppliers are growing outdoor hemp to be transformed into oil for cosmetics or food or manipulating indoor species to fully control and extract a particular substance for therapeutical purpose, an up-stream and down-stream examination of the supply chain will be needed to guarantee success.

The yielding of the harvest, for seeds, flowers or CBD concentrate may be unpredictable, and testing results may be another constraint. To protect the supply against a volatile demand of the new market, an inventory plan and product preservation guidelines (i.e., expiration) is needed to ensure quality and batch-to-batch consistency.

“Planning is everything”, and there is a strong need of normalized data to avoid waste and set a service level above 90%. Data are also required to track and trace, understand market behavior, and avoid *Bullwhip effect*.

To enable data-driven planning and monitoring, the use of ERP and/or CRM are essential to keep a stable supply chain and maintain pricing stability. This will be key in the future to support global brands and lead in such a fragmented market.

In terms of distribution and retailers, most products will be able to follow the e-commerce model and their parcel services. Other will choose to follow the pharmacy deliveries, expectation is to get it over the counter or within 24 - 48h. This multi-billion-dollar market is set for a flowering of products, hence an important amount of stock to store, preserve and replenish.

For international shipping, a strong expertise in trade compliance is required. Some countries have better climate to grow the plants, some have the technology to transform the API, others the regulations to support the growth, and many are engaged to improve healthcare with new therapies.

It is becoming global, and if you are considering entering the market, build a strong and agile Supply Chain.

Yves Guisolan, for *Supply Chain Operations SA*

