



2019 GLOBAL CANNABIS OUTLOOK

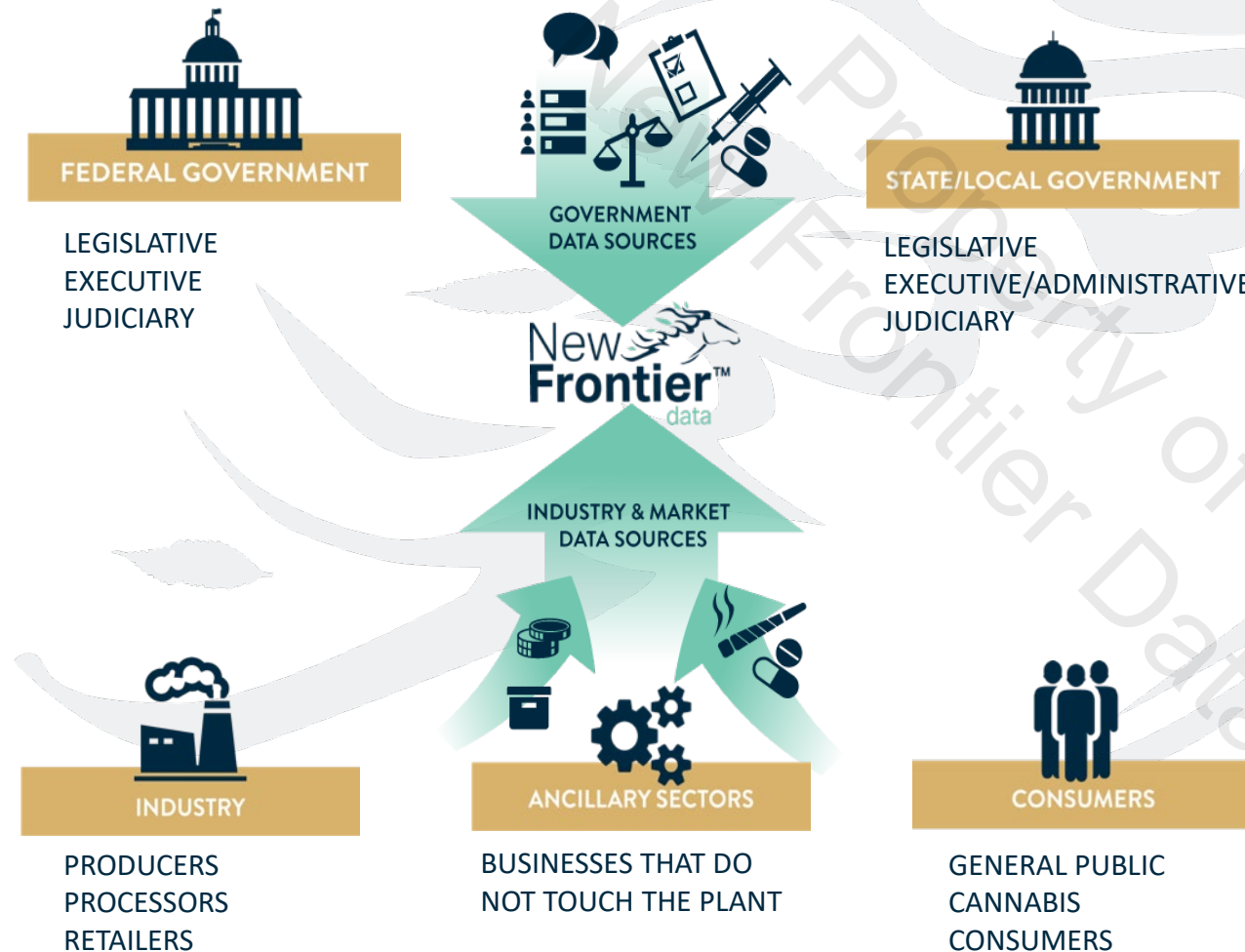
ICBC Berlin
April 2, 2019

ABOUT NEW FRONTIER DATA



- New Frontier Data is an independent, technology-driven analytics company specializing in the cannabis industry. It offers vetted data, actionable business intelligence and risk management solutions for investors, operators, researchers and policymakers.
- New Frontier Data's reports and data have been cited in over 82 countries around the world to inform industry leaders. Founded in 2014, New Frontier Data is headquartered in Washington, D.C. with additional offices in Denver, CO, and London, UK, Bogota, Colombia, and Sydney, Australia.
- New Frontier Data does not take a position on the merits of cannabis legalization. Rather, its mission and mandate are to inform cannabis-related policy and business decisions through rigorous, issue-neutral and comprehensive analysis of the legal cannabis industry worldwide.

OUR DATA COLLECTION APPROACH



**DATA COLLECTED ACROSS
ALL FIVE DIMENSIONS IS
CRITICAL TO
UNDERSTAND AND
EVALUATE THIS NEW
SECTOR**

OUR CLIENTS



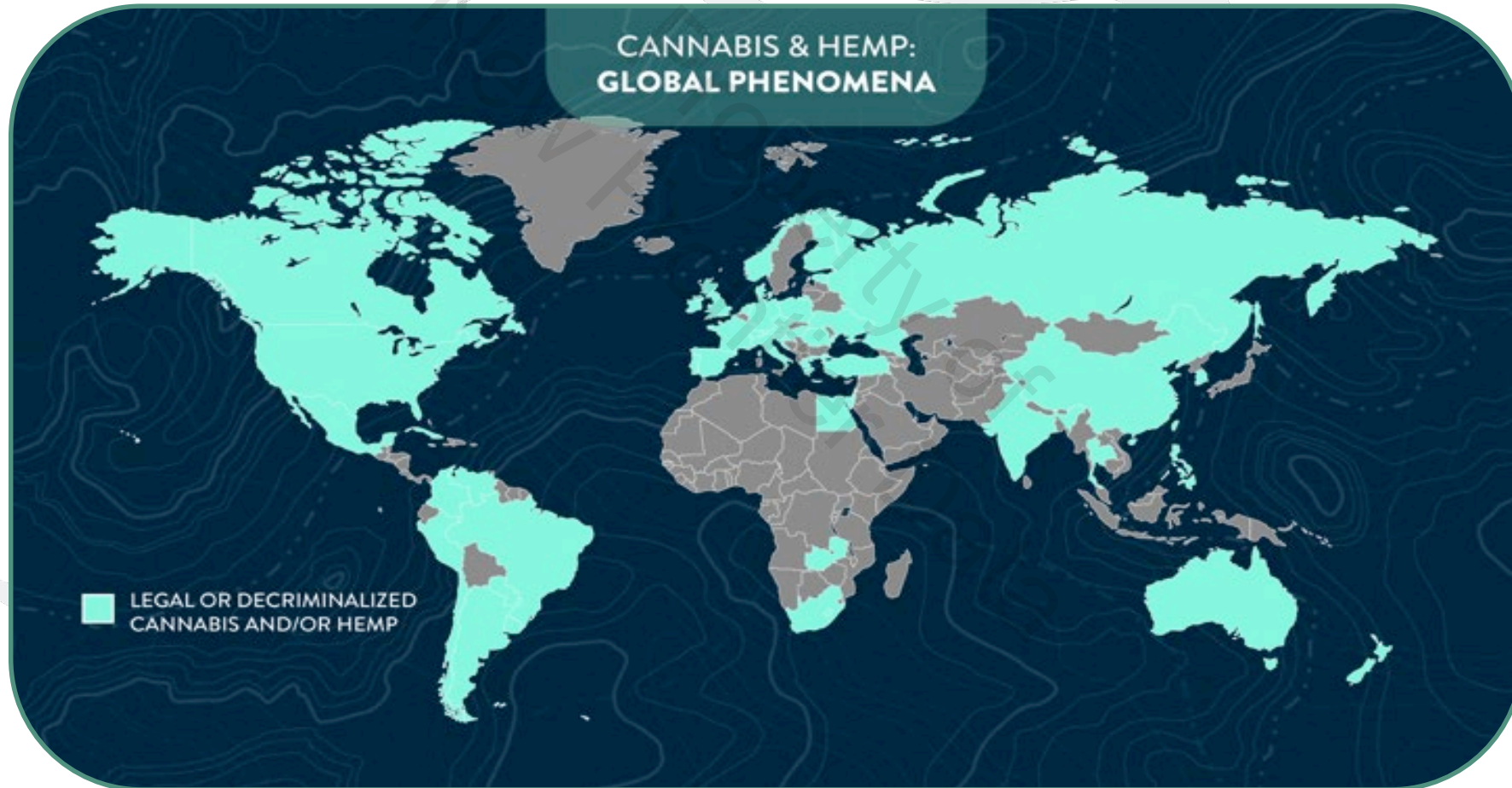


THE 2019 GLOBAL CANNABIS UPDATE

LEGAL CANNABIS IS GOING GLOBAL



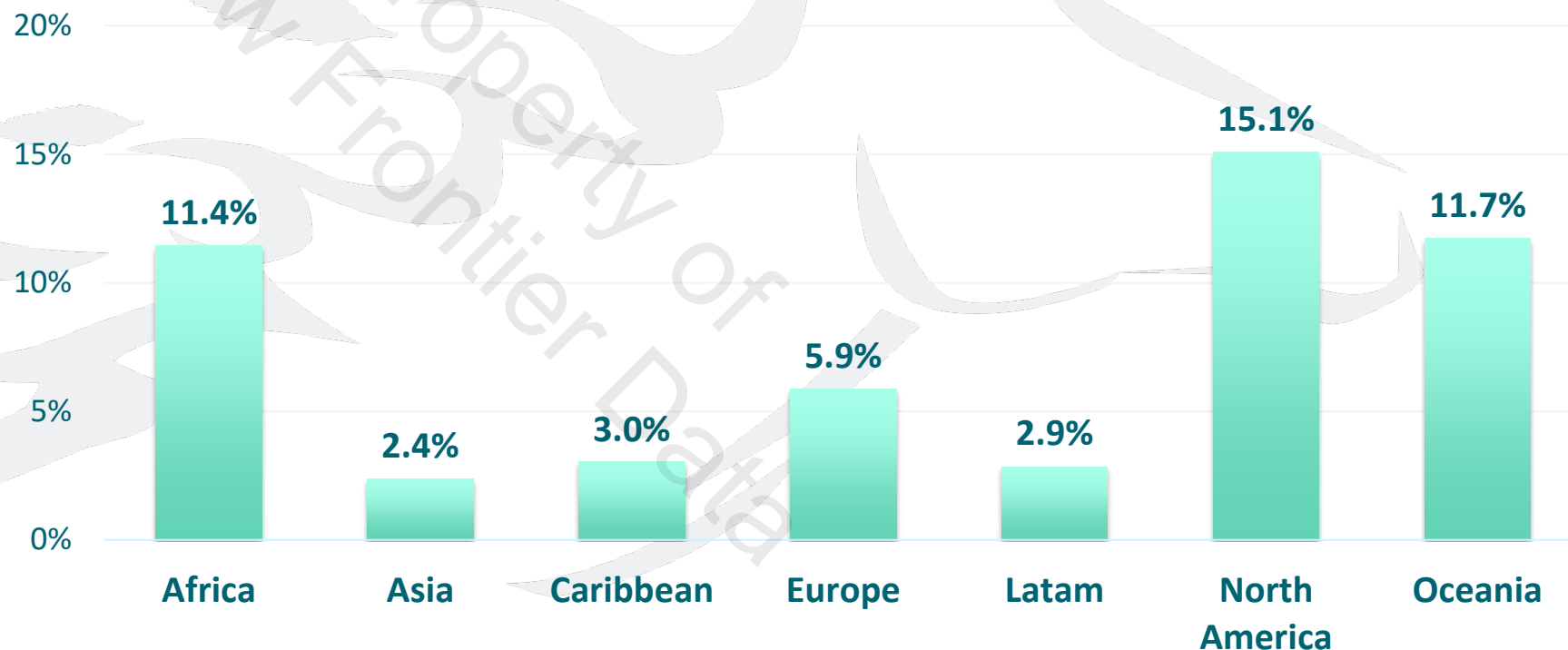
Over 60 countries around the world have now legalized medical cannabis and industrial hemp



THE ARE MILLIONS OF CANNABIS CONSUMERS GLOBALLY, BUT USE VARIES WIDELY ACROSS REGIONS



Regional Average Past-Year Cannabis Use
(2018, Age 15+ Years)



6.0%

Global average past-year cannabis users
(15+ years)

263 Million

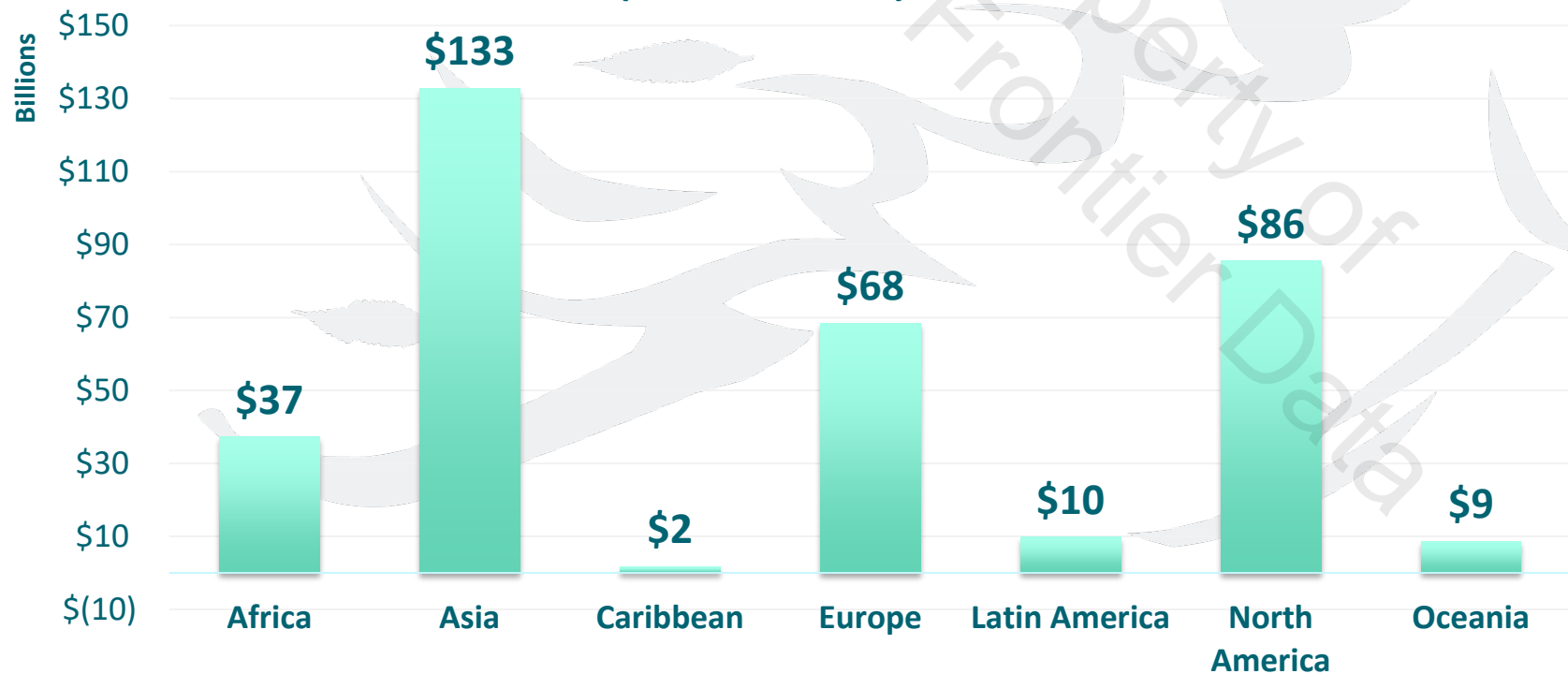
Past-year cannabis users globally

CANNABIS IS CURRENTLY A \$344 BILLION GLOBAL CONSUMER MARKET ANNUALLY



Today's legal markets represent just the tip of a very large iceberg. The total market value will continue to grow as consumers transition from illicit, unregulated products to higher value, regulated products.

**Global Cannabis Retail Market Value
(2018 Estimate)**

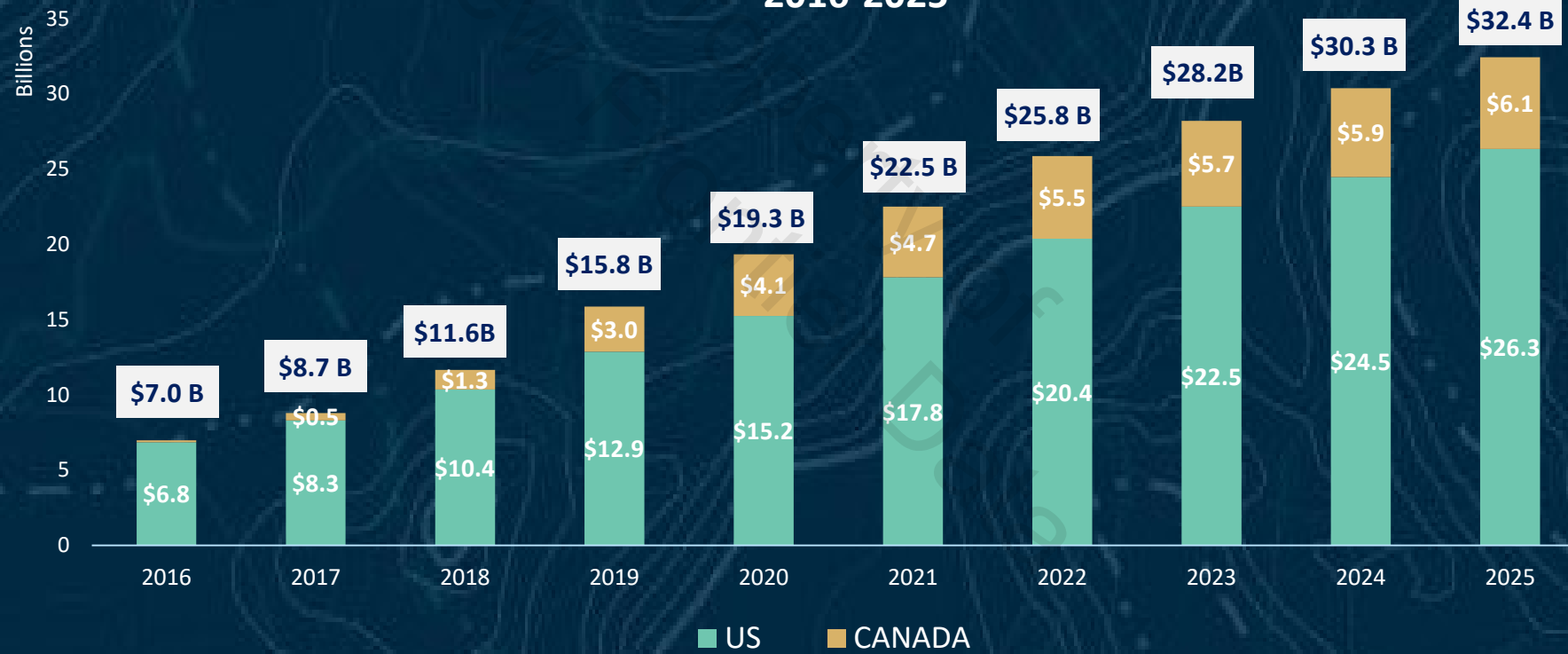


\$344 Billion
Global Estimated Cannabis
Consumer Expenditures
(Estimate range:
\$194 Billion - \$481 Billion)

THE U.S. WILL LEAD CANNABIS SALES REVENUE IN NORTH AMERICA

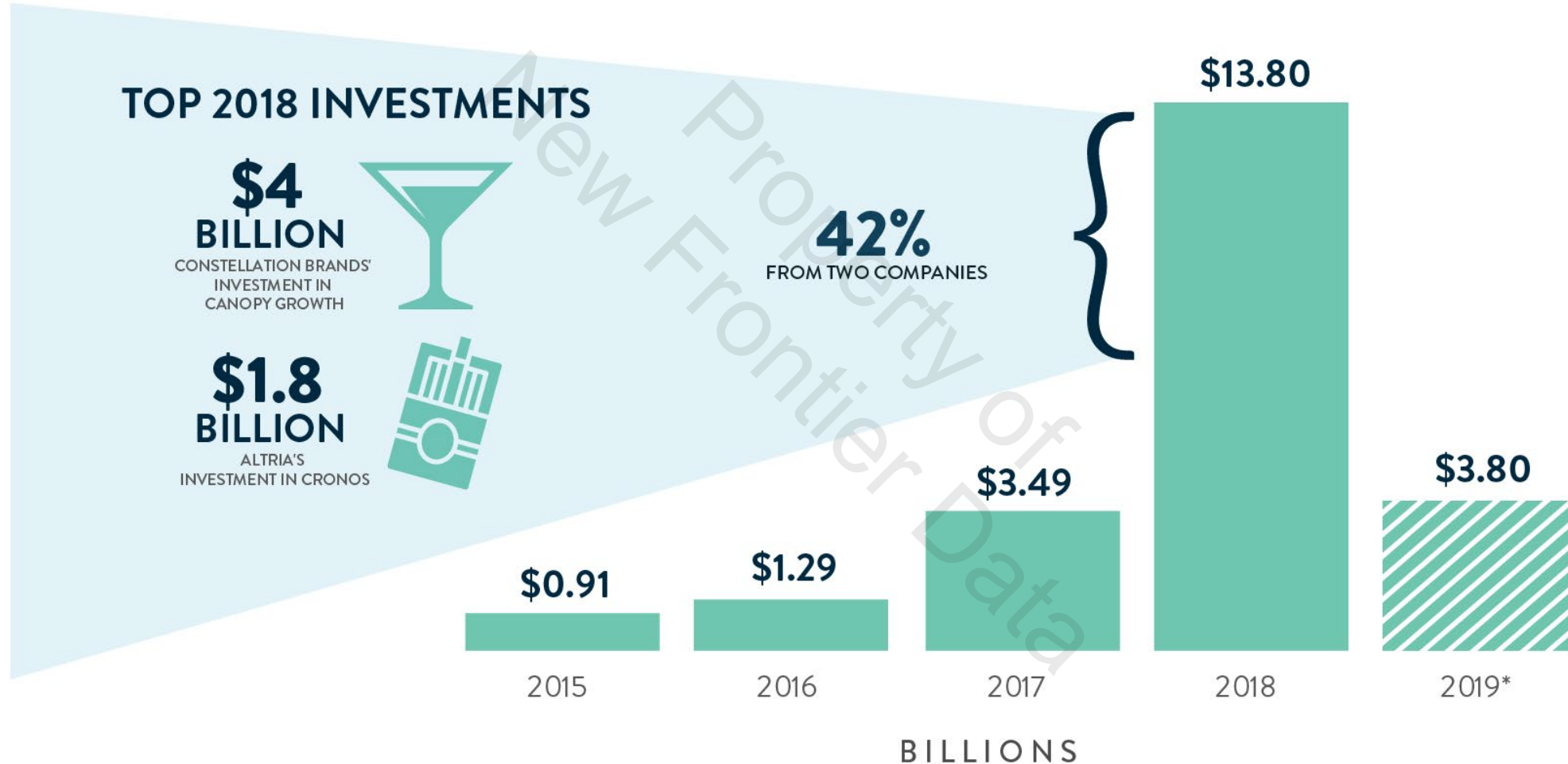


U.S and Canada Combined Legal Cannabis Markets
2016-2025

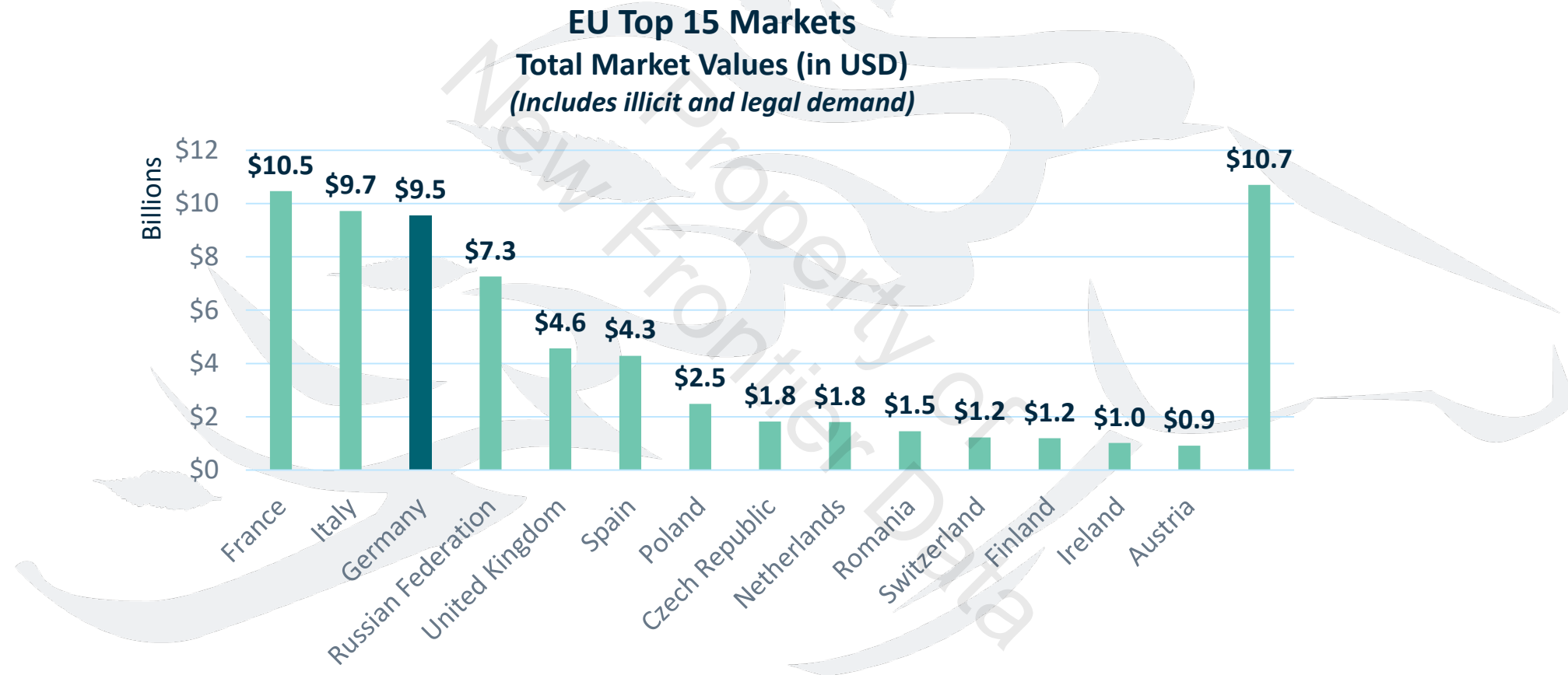


By 2025, the combined U.S. & Canadian cannabis markets will generate over \$30 billion in sales.

SURGING INVESTMENT IS FUNDING EXPANSION & SCALE



THE EUROPEAN MARKET HAS MANY STRONG MARKETS



- The European market is already established but has strong growth potential.
- The European Total Market Forecast is estimated to be \$68 billion, with a range from \$59 billion to \$79 billion.
- Based on total consumers and current pricing levels, France, Italy and Germany are the top three markets
- This demand includes Illicit, medical and adult-use spending, does not include industrial cannabis (Hemp)

TECHNOLOGY IS DISRUPTING ALL SECTORS, DRIVING EFFICIENCY & DIFFERENTIATION IN HYPER-COMPETITIVE MARKETS



Cultivation



Processing



Business Operations



MJ FREEWAY

TILT

Briteside

BAKER

green bits

SEA HUNTER THERAPEUTICS

ROOT VENTURES

trellis

HEADSET

Genomics

PHYLOS
BIOSCIENCE

SUNRISE GENETICS
HEMPGENE & MARIJUANA

Marketing & Consumer Engagement

growersnetwork

duby

High There!

Classy JOINTS

HelloMD

Grasscity forums

KALOGIA

MassRoots

Product Ingestion



NEW FRONTIER DATA'S 9 ARCHETYPES: A REVOLUTIONARY APPROACH TO CANNABIS CONSUMER SEGMENTATION



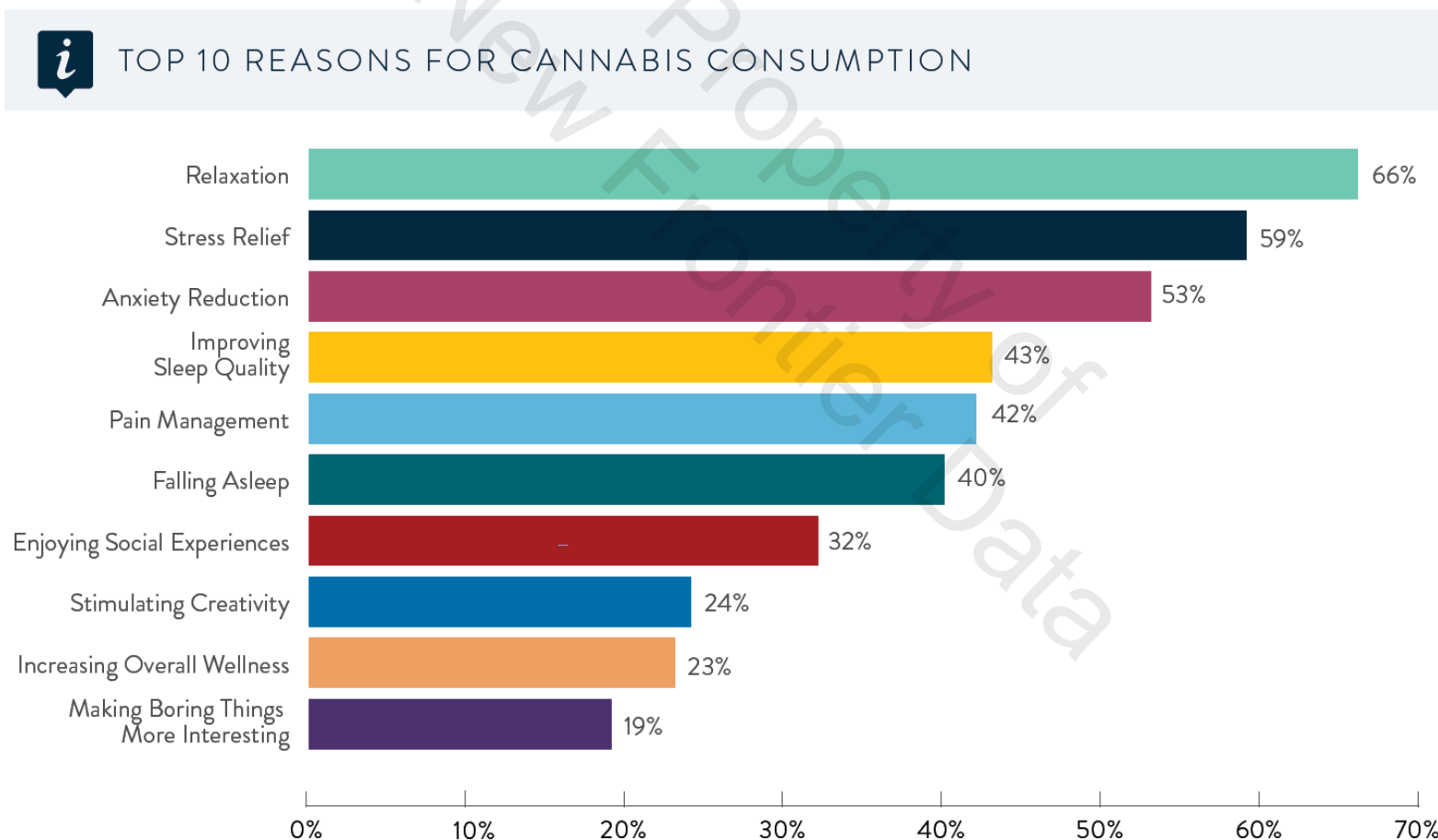
The industry must look beyond “medical & recreational” consumers, and understand the diverse and nuanced segments within the market.



UNDERSTANDING CONSUMERS: WELLNESS AND HEALTH, NOT SOCIAL ENJOYMENT, ARE THE MAIN REASONS FOR USE



Social use is not a primary driver for recreational consumers. Understanding why consumers use cannabis is key to identifying the right target consumers and the best-suited products and messaging to reach them.



DOES MEDICAL CANNABIS WORK? PATIENTS OVERWHELMINGLY BELIEVE IT DOES



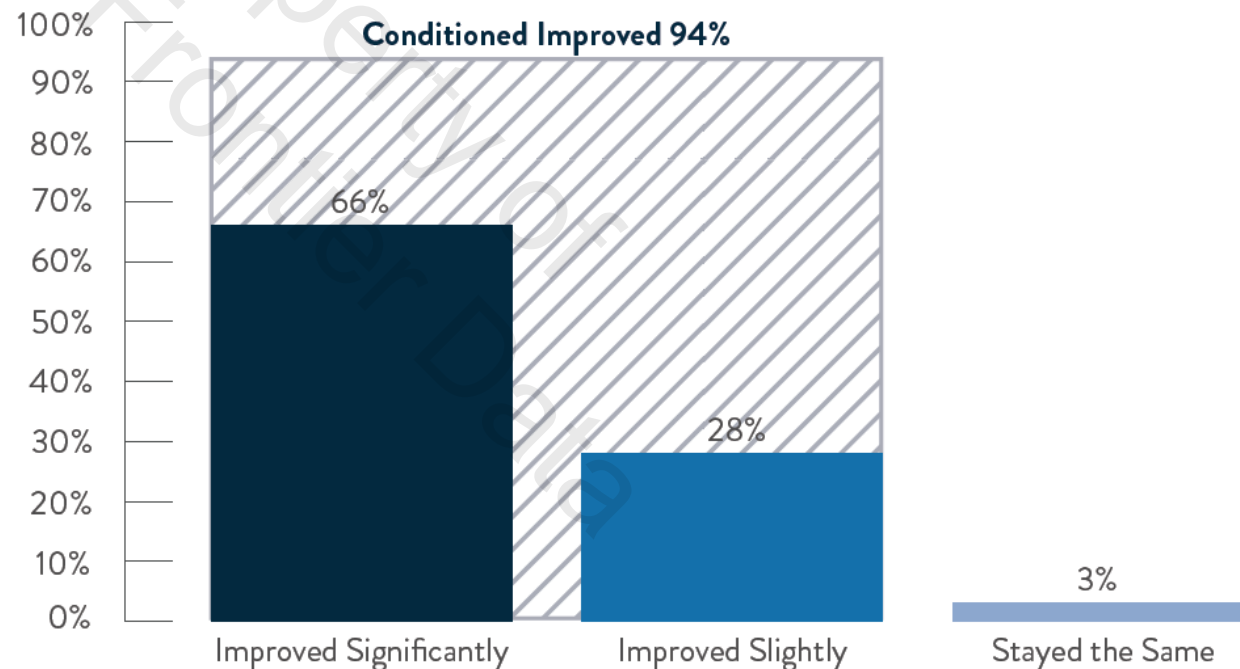
More consumers are using medical cannabis as research affirms its efficacy, and an overwhelming majority say it works. Demand for therapeutic and pharmaceutical cannabis will grow significantly as more countries legalize medical use, clinical research advances, and new delivery methods are developed.



IMPROVEMENT OF MEDICAL CONDITIONS AMONG MEDICAL CONSUMERS

73%

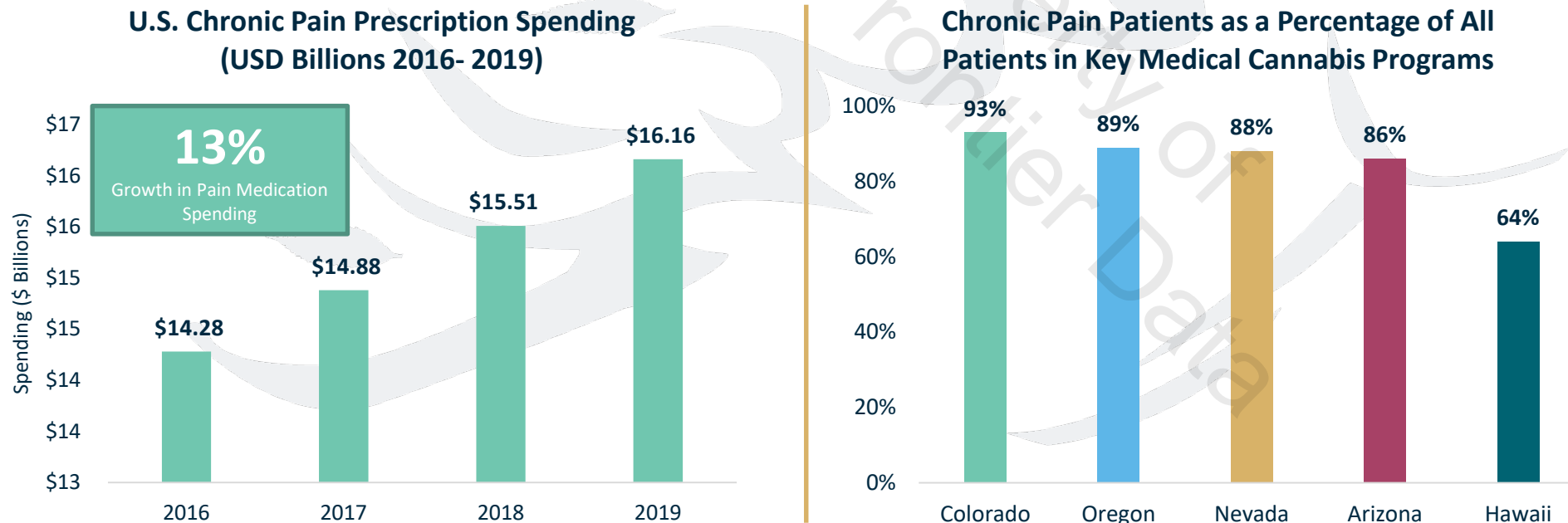
Have used cannabis as a
substitute or alternative to other
medicines
(Among medical cannabis
patients)



HEALTHCARE IMPACT: LEGAL CANNABIS USE IS DISPLACING PRESCRIPTION DRUG SPENDING



- U.S. National Academies of Sciences which concluded there is “substantial evidence that cannabis is an effective treatment for chronic pain in adults”.
- In medical cannabis states where pain is a permitted qualifying condition, pain patients make up the vast majority of program participants and spending on pain related medications was 11% lower in non-medical use states.



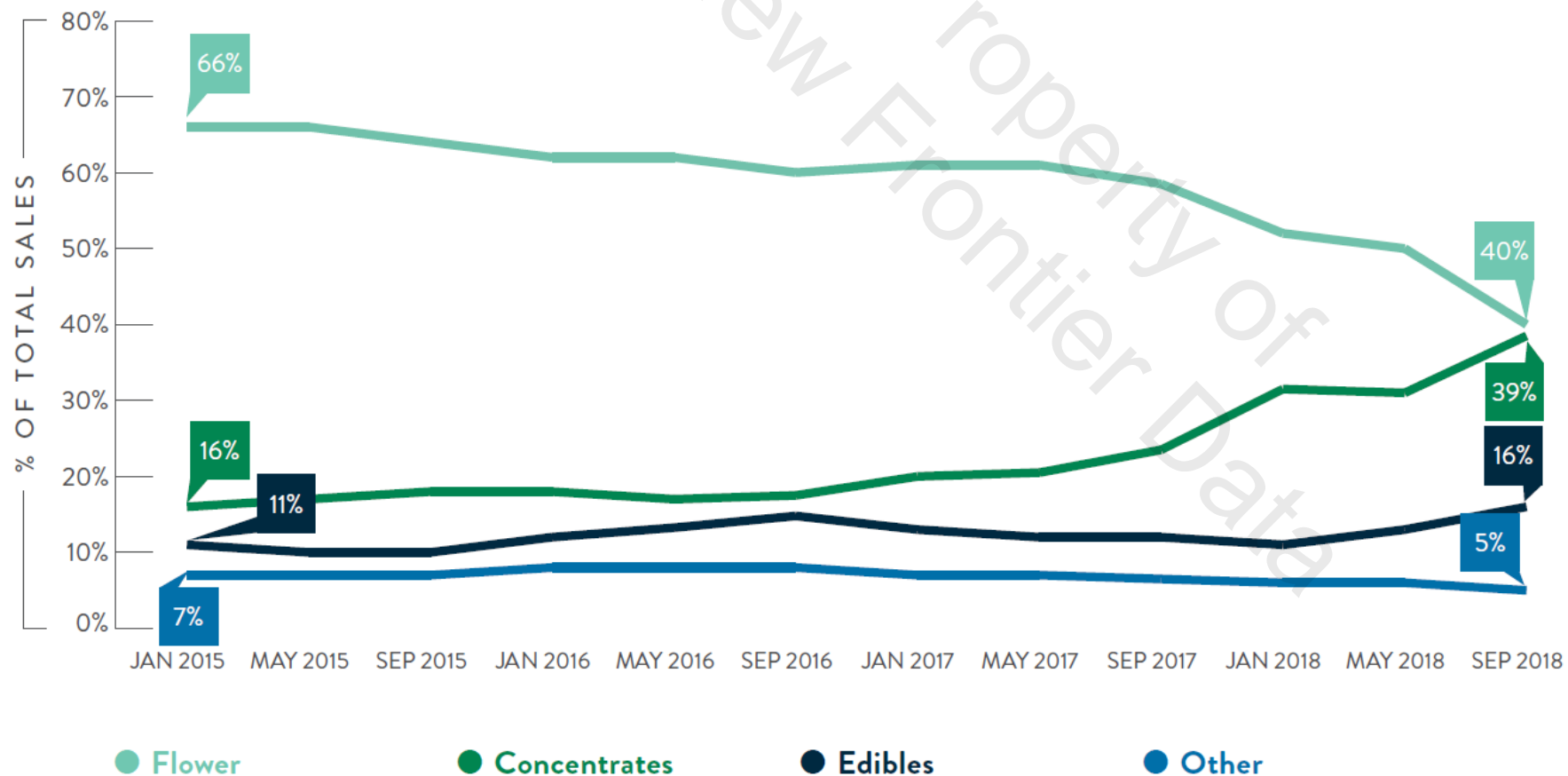
-11%

Reduction in Government Pain Medication Spending in U.S. Medical Cannabis Markets vs Non-Legal Markets

OPERATORS MUST INNOVATE AS CONSUMERS EMBRACE NEW VALUE-ADDED PRODUCTS



SHARE OF U.S. CANNABIS RETAIL SALES BY PRODUCT CATEGORY JAN 2015 - SEP 2018



Change in Market Share by Category

-39%

Decline in Flower

+144%

Growth in Concentrates

+45%

Growth in Edibles

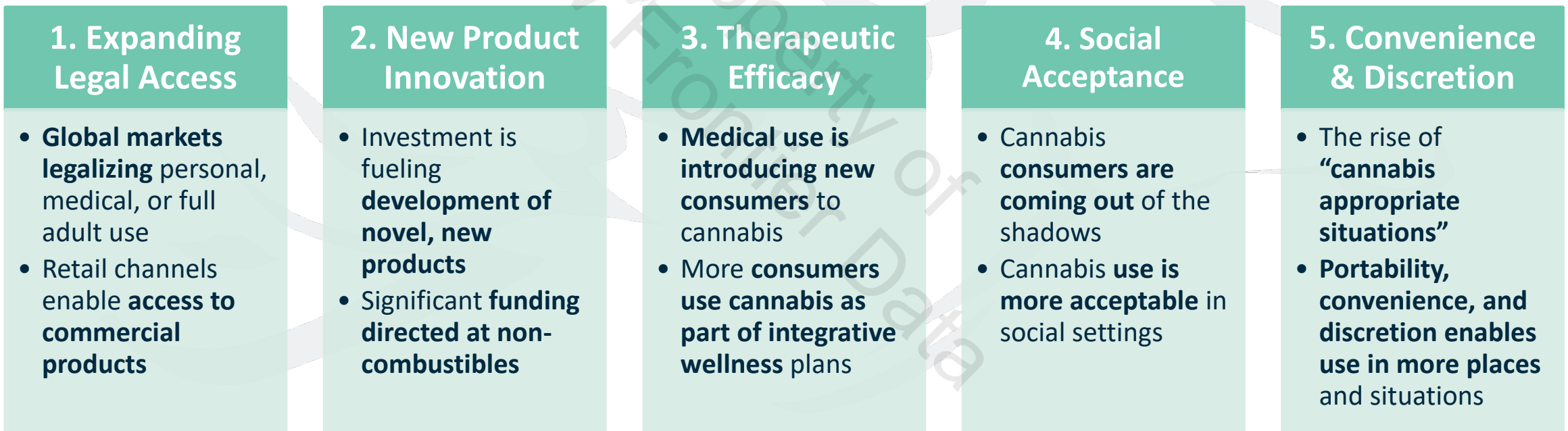
-29%

Decline in Other

5 FORCES DISRUPTING THE CANNABIS CONSUMER MARKET



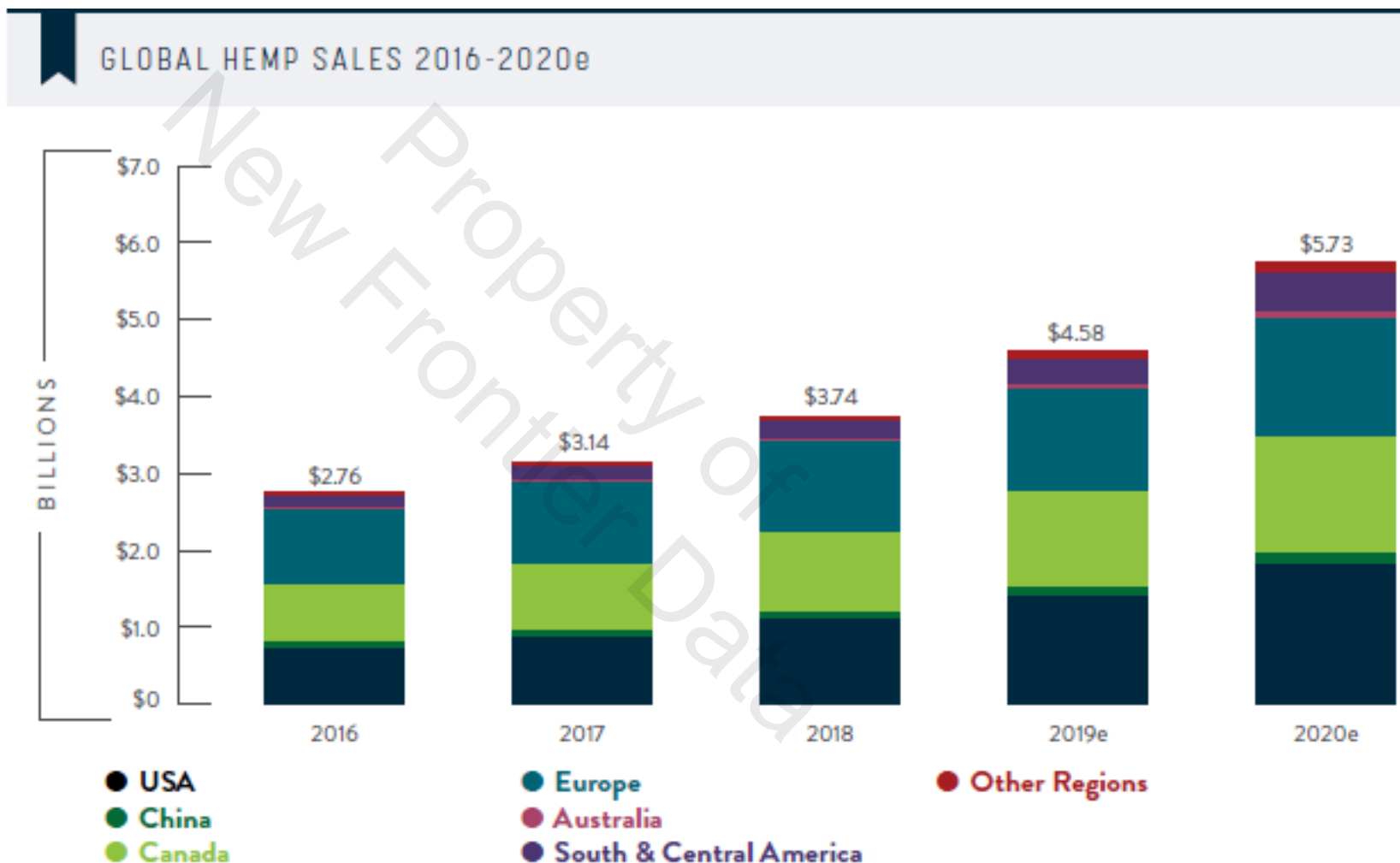
The evolution of the cannabis consumer is being shaped by convergent forces including, expanding legalization, innovative new products, increased proof of medical cannabis's effectiveness, and rising public acceptance. Collectively, these trends are transforming both who consumes, and what, where and how they consume.



GLOBAL HEMP SALES EXPECTED TO INCREASE SIGNIFICANTLY



Under the current market environment, global hemp sales will near \$6 billion by 2020 but expanding legalization of hemp will grow the sector will grow significantly beyond current estimates.



Source: Hemp Business Journal estimates (\$ bil., consumer sales)

THERE ARE MANY USES FOR HEMP BEYOND EN VOGUE CBD



INDUSTRY SECTORS BREAKDOWN



Food

- Dairy
- Bread
- Grains
- Beverages
- Snack Foods
- Packaged Foods
- Prepared Foods
- Condiments



Supplements

- Dietary Supplements with hemp that do not contain CBD



Personal Care

- Soap
- Beauty Products
- Lotions
- Balms
- Salves



Consumer Textile

- Clothing
- Uniforms
- Socks
- Blankets
- Other



Other Consumer

- Pet Food
- Pet Supplements
- Household Cleaners
- Paper
- Jewelry/Crafts
- Other



Industrial Applications

- Automotive
- Green Building
- Industrial Textiles
- Bedding Materials
- BioFuels
- BioPlastics
- Oil Wells
- Other



"Hemp" CBD

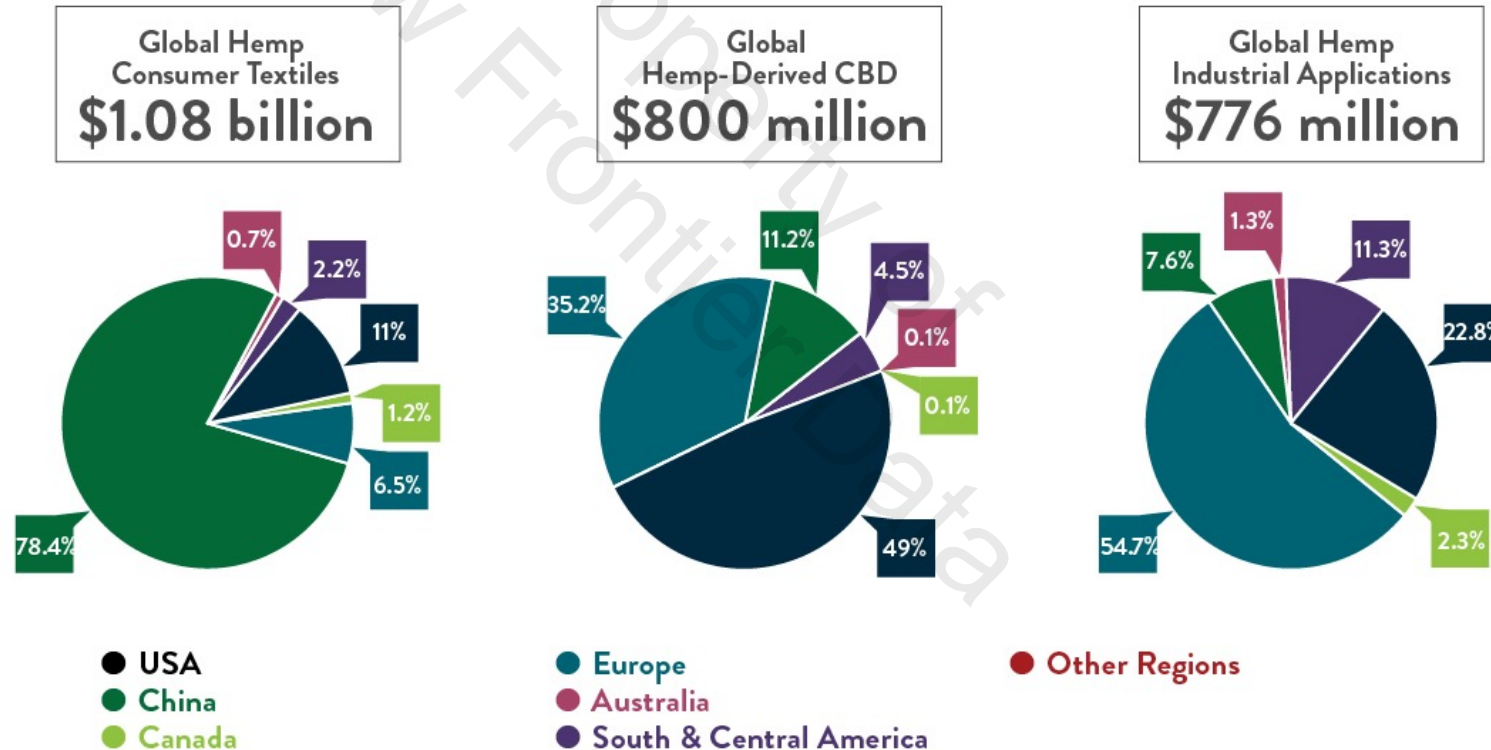
- Supplements
- Topicals
- Food/Drink
- Pet Products

HEMP INDUSTRY IN EUROPE IS FARTHER ALONG THAN IN THE U.S.



Whilst Europe may be farther along in terms of market development, look for the U.S. to start flexing its might
Suppliers and distributors must be mindful of pricing changes and supplier risk coming from other regions

GLOBAL MARKET SHARE & SALES BY HEMP PRODUCT CATEGORY IN 2018

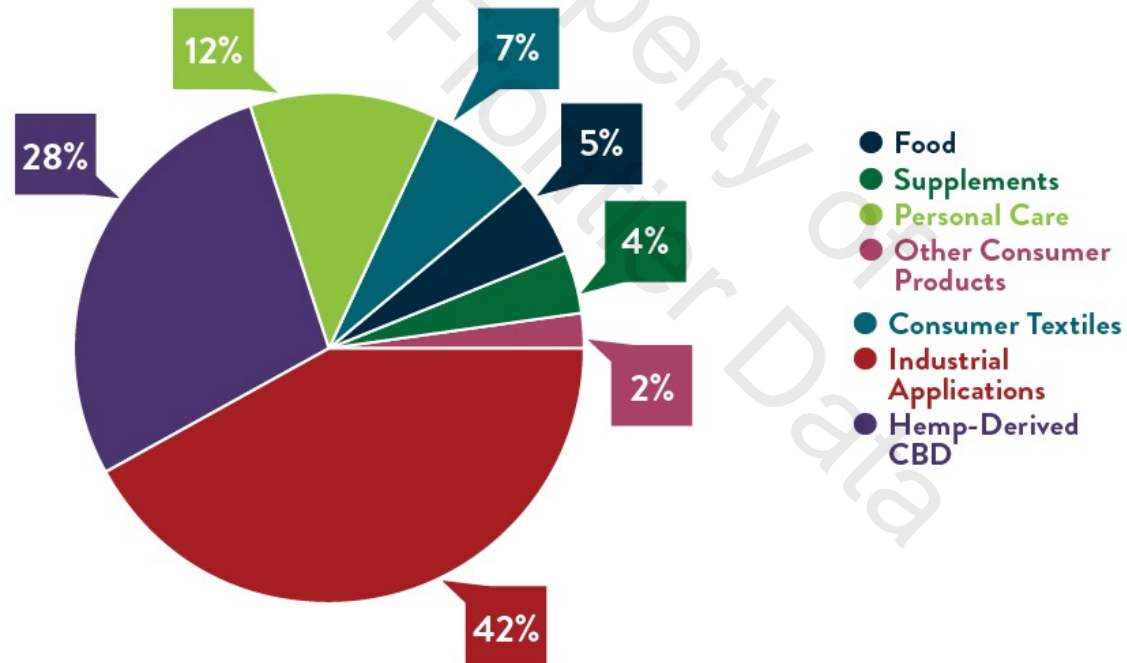


EUROPEAN HEMP MARKET IS DIVERSE AND MULTI-FACETED



Although the European market is already diversified, look for a surge in consumer products and wellness over the next 3 – 5 years in the larger more established markets.

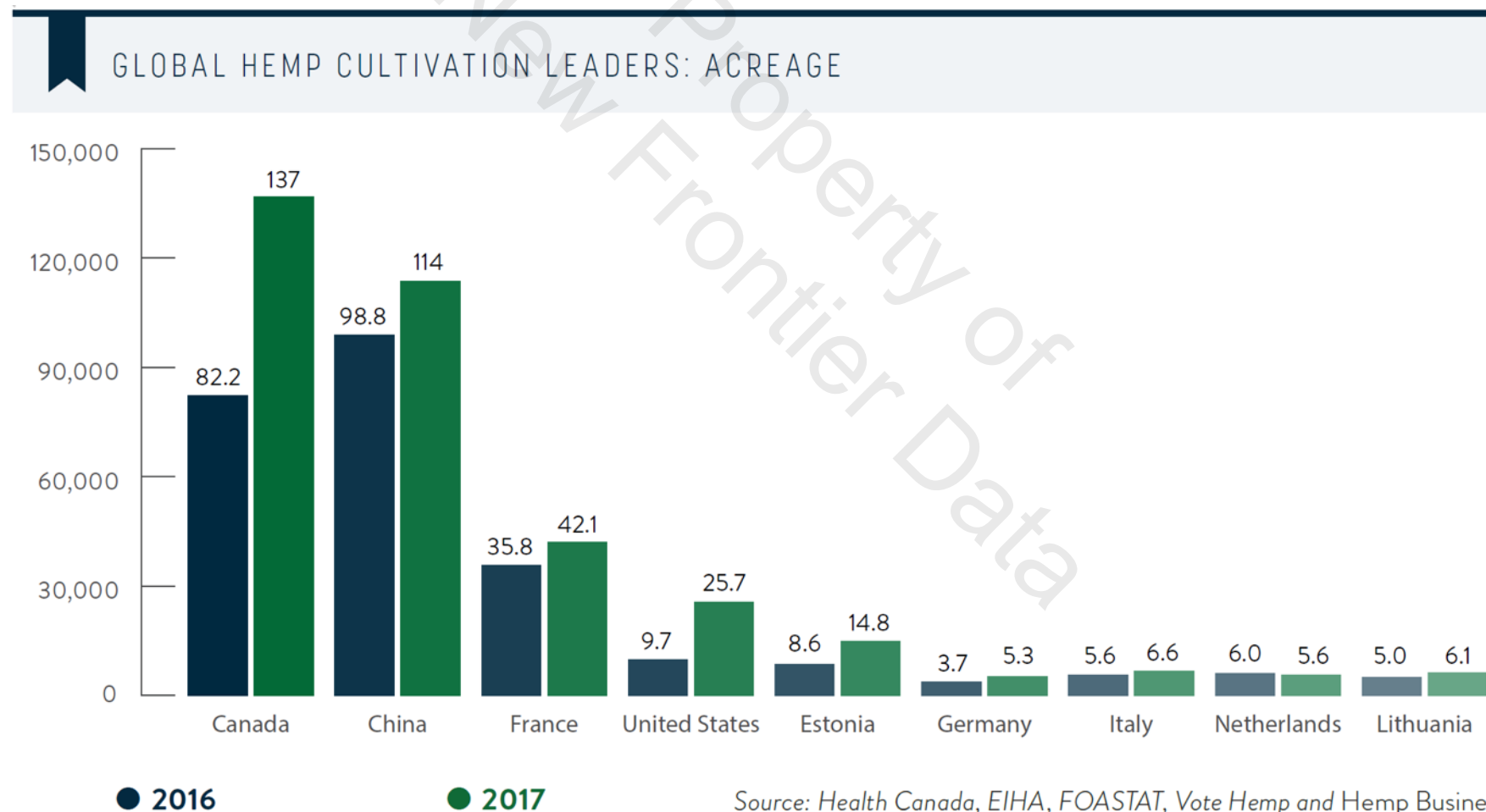
\$1.01 BILLION EUROPEAN HEMP MARKET BY PRODUCT IN 2017



THE DEVELOPING WORLD LAGS IN HEMP CULTIVATION, BUT IS WELL POSITIONED TO GAIN SHARE



While Canada and China currently lead the world in hemp cultivation, low cost production in developing countries with well-suited climatic conditions, widely available productive land, and comparatively low-cost labor will enable those countries to quickly gain share of the global market.



Source: Health Canada, EIHA, FOASTAT, Vote Hemp and Hemp Business Journal

KEY TAKEAWAYS

KEY TAKEAWAYS



1. **Millions on consumers use cannabis globally**, laying the foundation for a significant market opportunity.
2. Surging investment into cannabis, especially by **CPG entrants (alcohol, tobacco and pharma)** will give market leaders **liquidity to acquire assets** and capture market share.
3. The most **professionally run and efficient operations** are going to be **prime targets for M&A** activity in an increasingly competitive market.
4. **Technology will be key to building operational efficiency**, including streamlining new product development, lowering production costs, optimizing the supply chain, and more effectively targeting and engaging consumers.
5. **Cratering wholesale prices are remaking the economics of cannabis**, flushing out the least efficient and undifferentiated operators.
6. **The European Market is the target for many suppliers**, which will fuel explosive growth, but presenting risks of commoditization of prices. Watch out for low cost suppliers from Africa, South America and Asia
7. **The cannabis consumer is not a monolith**; they have widely varied reasons for consuming cannabis creating significant opportunity for segment-specific products and marketing strategies.
8. Product **preferences are trending quickly away from flower**, even in markets where cannabis is not legal.
9. **Medical consumers believe it works**, but much more science is needed to understand *how* and *why* it works. Europe is a fast growing medical market, with significant growth opportunity
10. **Think global, build global, but ACT local**. Aligning business strategies to reflect local political, business and social cultures will increase brand resonance and effectiveness.



THE GLOBAL CANNABIS REPORT

2019 INDUSTRY OUTLOOK

NewFrontierData.com/global-report

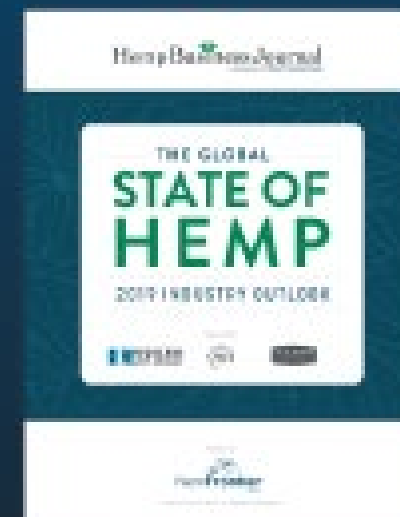


CONQUER THE WORLD OF CANNABIS

THE GLOBAL STATE OF HEMP

2019 INDUSTRY OUTLOOK

NewFrontierData.com/StateofHemp



CONTACT US



Beau Whitney
VP and Senior Economist
bwhitney@newfrontierdata.com
503-724-3084

www.NewFrontierData.com



@NewFrontierData



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