

Cannabinoids and Health

Module 2

Lecture 5: Business Models – Are Marijuana
Companies Rolling in Cash?

Cannabis Business

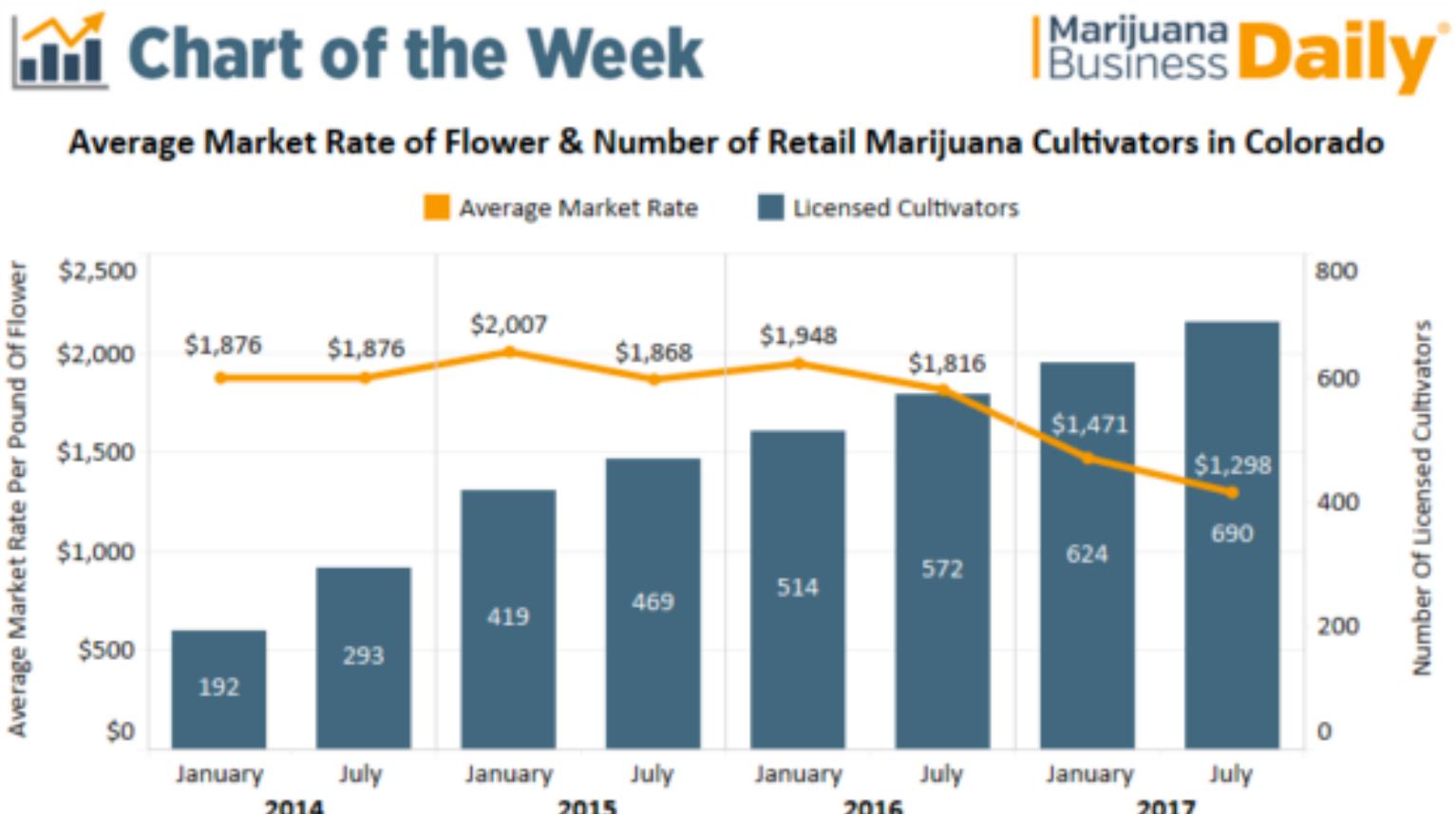
- Three main categories
 - Medical and Recreational Cannabis
 - Big Pharma and plant derived pharmaceutical products
 - Hemp and CBD



Colorado Data

- 11 million units of edibles sold, 1 million units of topical products sold, and 28,000 pounds of concentrate – or 4.5 million units in 2017
- The number of new marijuana business licenses and number of renewals also shows a booming adult use side of the state's marijuana business
- Adult-use licenses made up 77 percent of new licenses in 2017
- Adult-use business licenses increased by 167 from January to December of 2017, while the number of medical establishment licenses fell by 38
- The number of plants grown in Colorado grew by 121,000 more plants cultivated per month in 2017 than in 2016

While outlets increase, price has been decreasing



Source: Colorado Department of Revenue

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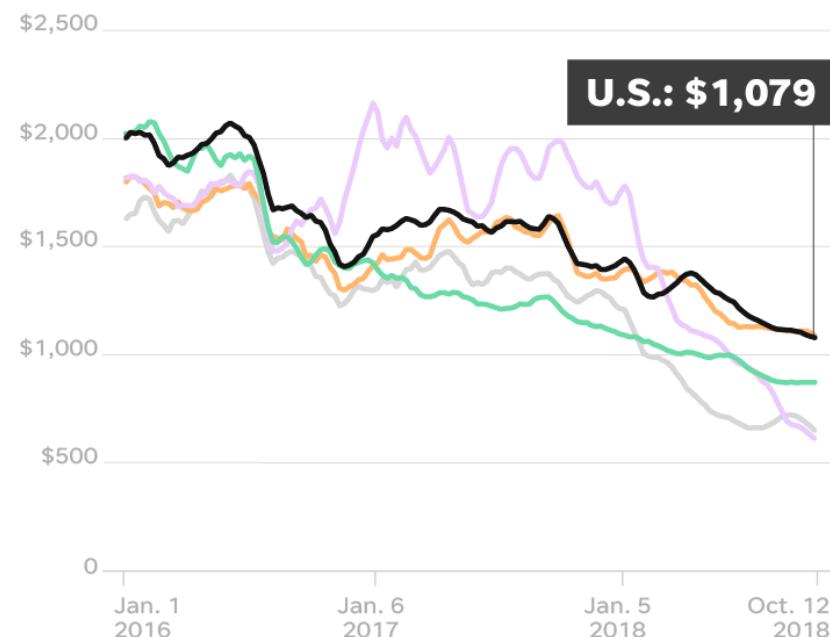
Trend across nation

- Business experts describe this as race to bottom
- Wholesale price dropped from \$2,000 a pound in 2015 to \$1,300 a pound in 2017, according to *The Economist*
- Price will bottom out at some point
- State tax systems based on price will also take a hit
- Question: Will big business begin to take over in order to squeak out profits with bigger scale?

Legal marijuana prices declining around the U.S.

(Trailing 4-week average wholesale cost per pound)

● U.S. ● California ● Colorado ● Oregon ● Washington



SOURCE Cannabis Benchmarks
Frank Pompa/USA TODAY

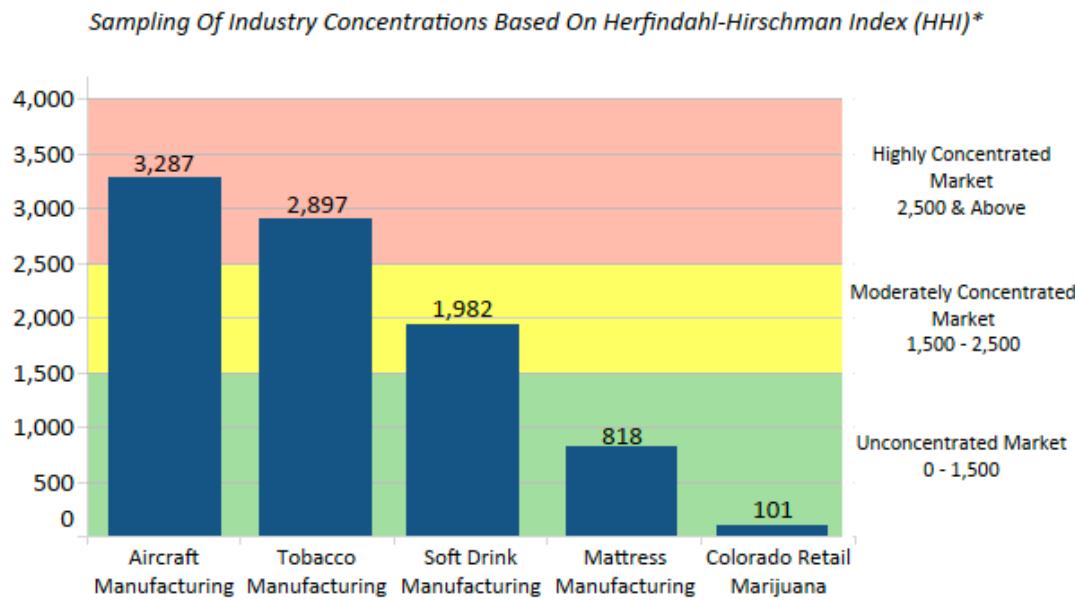
Not true yet – still very competitive even in more mature market like CO



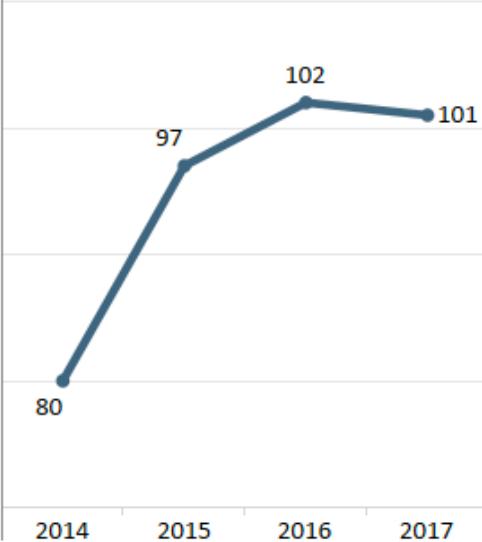
Chart of the Week

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Concentration Of Colorado's Retail Marijuana Market



Herfindahl-Hirschman Index (HHI) For Colorado's Retail Marijuana Market By Year*



*The HHI is a widely accepted measure of market concentration. A higher number indicates a more concentrated and less competitive market.

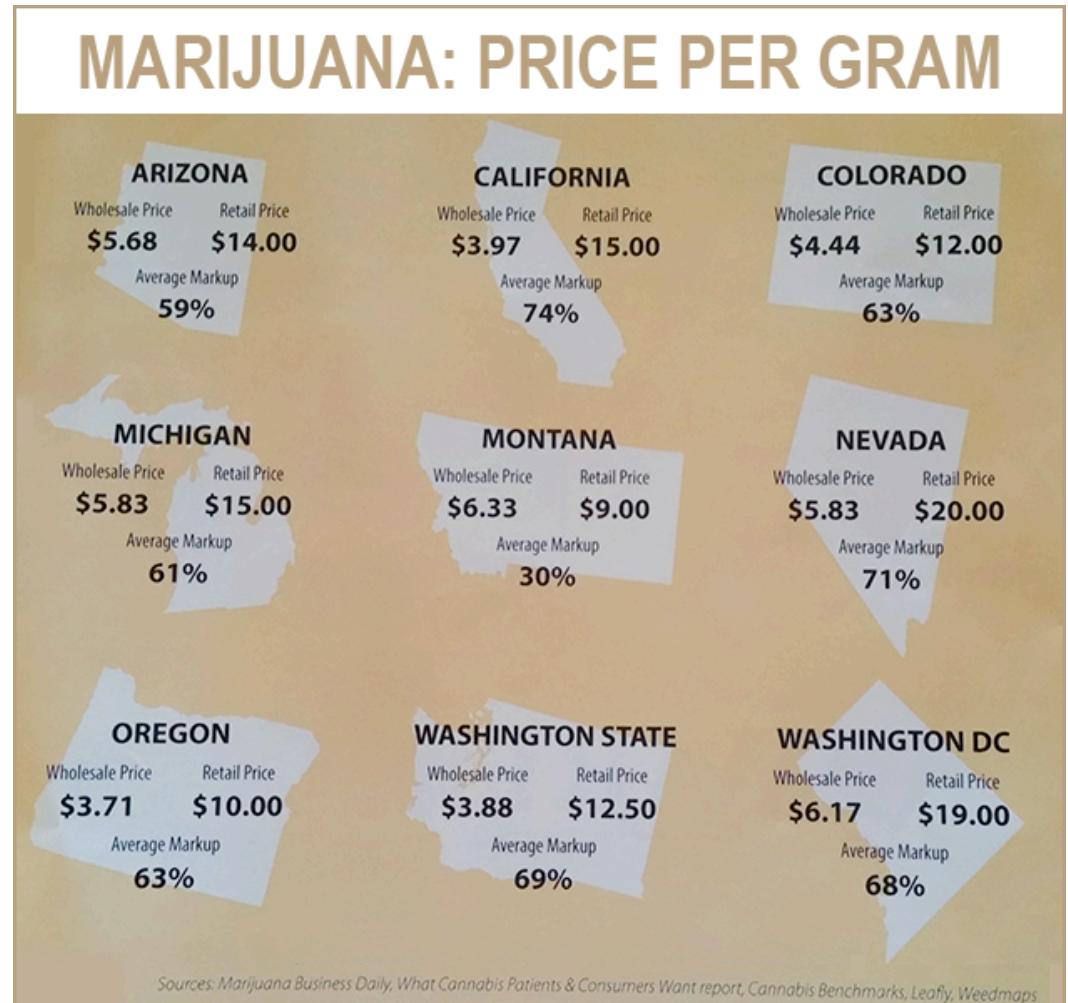
Note: HHI for Colorado's retail marijuana market calculated by number of companies, not licenses.

Source: Marijuana Policy Group, University of Colorado-Boulder Leeds School of Business, 2012 Economic Census of the United States, The Atlantic

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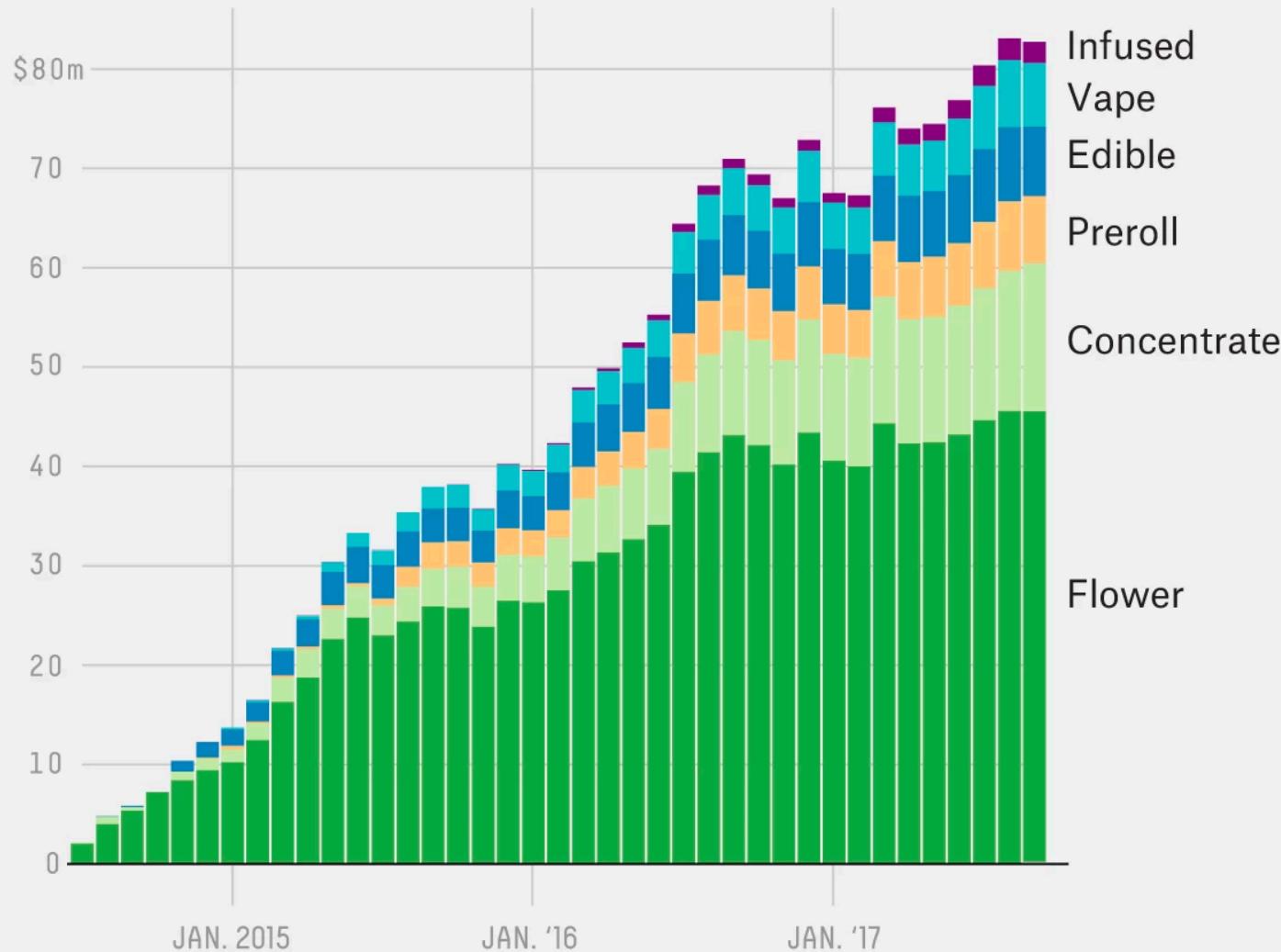
Wholesale/retail markup

- But 30% sales tax in CO (15% excise, 15% sales)
- Similar taxes in CA
- 37% tax in WA
- 17% tax in OR
- 25% tax in NV



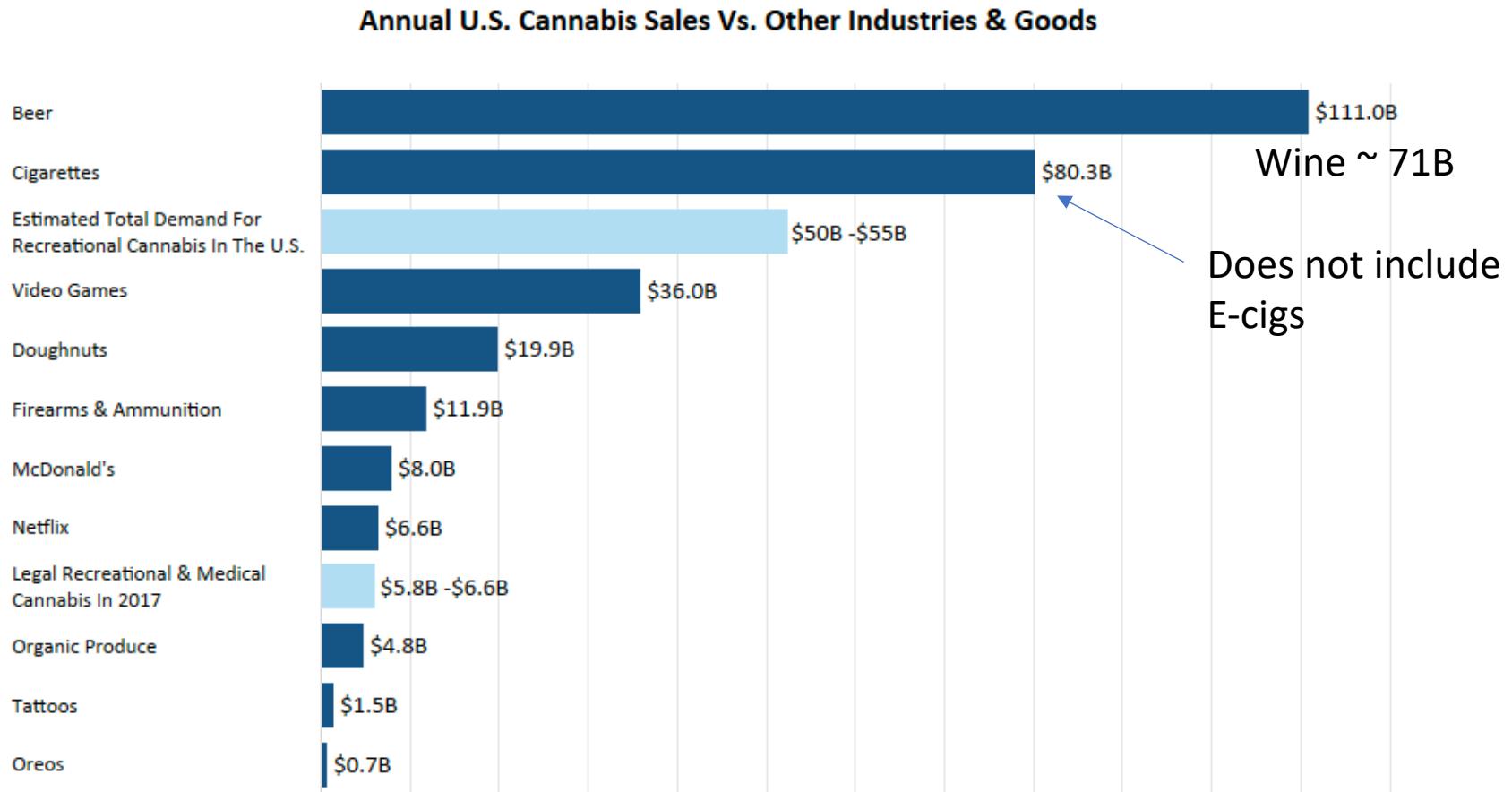
It's not just 'bud' anymore

Monthly pre-tax retail sales in Washington state by product type,
July 2014 to September 2017



Topical weed products make up a small portion of sales as well.

Comparing cannabis to other industries



Source: Brewers Association, Alcohol & Tobacco Tax & Trade Bureau, Entertainment Software Association, Goldstein Research, IBIS World, Netflix, Nielsen, Nabisco
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Big Pharma?

- GW Pharma is the major player although there are others that are working in a similar space (e.g., Tilray)
- These companies work within the FDA rubric and have achieved or are pursuing FDA approval to market drugs like other big pharma companies
- Stock prices have skyrocketed recently
- Cost of Epidiolex (CBD) will be about \$32,000 per year for children with severe epilepsy – to be paid by insurance and/or Medicaid

Big Pharma-ish?

- GW valuation ~ \$3.28 Billion
- Tilray valuation ~ \$8.94 Billion



Facilities

- GW Pharma - 40 acres of indoor grow space in glass buildings in the UK – can see it from space
- Others like Tilray, Aurora not far behind



Pharma Business As Usual

- Cost of Epidiolex (CBD) will be about \$32,000 per year for a child with severe epilepsy – to be paid by insurance and/or Medicaid (i.e., to be paid by all of us)
- Company is very careful about who can (or cannot) do research with epidiolex because of fear that adverse effects in a different patient group might cause problems with the FDA
- Sativex not approved in the U.S. and may not be for a long time because difficult and expensive to go through FDA
- Companies like Tilray (not 100% committed to the pharma route) may have a competitive advantage working in both spaces (and market cap may reflect that)

Hemp and CBD Industry

- Recent farm bill legalized production of hemp and CBD
- FDA currently attempting to design regulatory framework (more on this in future modules)

HEMP vs. MARIJUANA

CANNABIS

A plant family that includes many species such as Hemp and Marijuana. Although Hemp and Marijuana come from the same plant family, they have distinctly different purposes and uses.



HEMP

Hemp and Industrial Hemp refer to the strain of cannabis plant that is grown for agricultural products such as textiles, seeds, and oils.

AVERAGE THC CONTENT: < 1%.
Industrial Hemp regulation restricts any THC yield greater than 0.3%



MARIJUANA

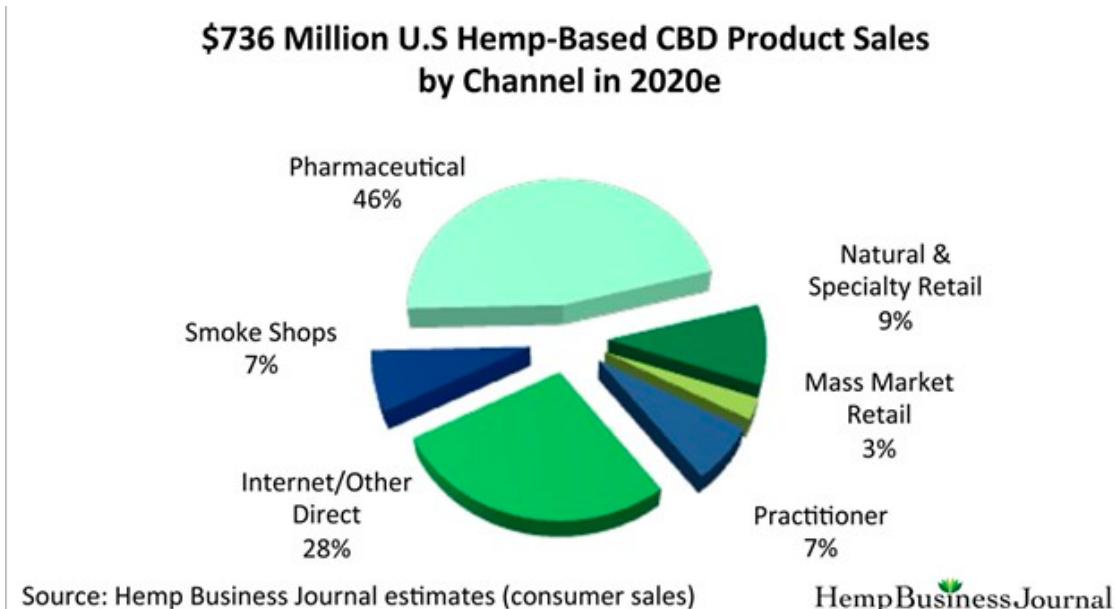
Marijuana is known for its flowering tops of the plant. the flowers are typically bred to have a high THC content.

AVERAGE THC CONTENT: > 10%.
Growing marijuana is illegal without licensing in participating states.

Information obtained from: www.gocureco.com/hemp-vs-marijuana

Hemp and CBD Industry

- Rapid growth in hemp and CBD sales is expected
- In Colorado, CBD is regulated like a food additive and can be found on store shelves



Conclusions

- Prices will continue to drop as more states and countries legalize
- The fastest way to get rich in the cannabis space is to profit off of other people's belief that they can get rich off of cannabis
- Early adopters made more money when margin was greater
- Now, margins are smaller so sales volume must be greater - some small business may struggle
- Easy to grow – hard to imagine a lot of money being made on flower – money will be in custom products
- Tobacco is unlikely model
- Beer industry may be most likely model but only time will tell
- Complementary/alternative medicine likely to show the strongest growth
- Research needed to understand whether complementary/alternative medicine versions of CBD effective as GW Pharma

Discussion

- Do you see a “Big Tobacco” scenario where cannabis is controlled by a few big companies?
- Or maybe a beer scenario where there are a few companies making cheap beer and lots of space for microbreweries making premium beer?
- Big profits or small profits?
- Profits in growing it? Extracting it? Or making custom products (e.g., edibles, drinks)?
- Growth and profit in pharmaceutical (i.e., FDA approved) route? Or growth and profit as more of a alternative/complementary medicine (consistent with history of cannabis)?
- How do you think CBD on the shelf compares to CBD from GW Pharma?