# Introduction

## The question: What should I grow next?

The tools I’m going to show you today are designed to help solve a very basic business problem for cannabis producers in Washington State. There are over 1700 registered strains of cannabis, a number multiplied by possibilities of hybridization—all of which together present a kaleidoscopic variety of products to meet medicinal and recreational demands and present savvy consumers with a variety of sensory experiences. This is a dynamic marketplace, much like, say, wine or artisanal foods, that experiences ever-shifting consumer tastes.

Confronted by a market like this and the opportunities it presents, cannabis must answer the question: WHAT SHOULD I GROW NEXT?

Having the right product hit the market at the right time is an important factor in maintaining competitive advantage for growers in an industry that experiences a failure rate of around 50%.

Challenge is complicated by the fact that WA state regulations prohibit the vertical integration of the supply chain by erecting a wall between production and processing on the side and retail distribution on the other.

## We can now bring DATA to bear on this question

Growers keep their fingers on the pulse of the market in a variety of ways. The industry like much of small-scale agriculture and family farms forms pretty tight-knit communities with exchange of information among growers and their customers; there’s a burgeoning trade association activity and online literature. And they rely on their own experience and instinct. The decisions about what to grow is part of the CRAFT-ideal of the business.

The variety of tools that Uplift BI is developing are not designed to supplant this knowledge but to augment it through data-driven business intelligence that allows us to see what’s going on in the market in ways there were never possible when it the trade was illegal.

## Uplift BI: Competitive advantage through regulatory data

Cole Memo: From most opaque to most transparent industry

The data is abundant, but it’s a mess

All that Max and colleagues have done to clean up the data

## What I was asked to do

Product Ranking tools based on sales trends

Needed to define meaningful metrics for product performance

Dual function: exploratory – quickly and easily look at trends on different products; explanatory – in an form that facilitates communication and report writing (static reports to growers and investors; not a website)

Blunt instrument. No forecasting or ML

Challenges with the data: 2-month lag plus one growing cycle

# Looking at the data

## Common features of a strain sales trend

### DOW seasonality

### 4-20

### Moving average of 5 weeks (this is an art, not a science)

## How to compare two jagged lines? Which is “better”?

### An obvious contrast

### A NOT obvious contrast

### Weekly sales is informative but doesn’t hint a trend direction or momentum

### Can’t just choose beginning or end because daily sales vary arbitrary

### Where is the baseline?

# The Solution

## AUC

### Inspired by pharmacology and stock analysis (trend momentum)

#### Different because we are not tracking PRICE; we are tracking sales as a proxy for demand (Again, BLUNT INSTRUMENT)

### An actual number; but in units that make no intuitive sense (dollar-days)

## Transform to “Gain”

## Rescale to relative “Rate”

# Put it to use