Tuture Dr1nks εxp0 Moving The Drinks Industry Forward

San Francisco May 17, 2022

### Perception, Performance & Profits:

### Increase Customer Retention, Acquisition & Revenues With Implicit AI/ML Recommendation



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### **Lewis Perdue**

Revolution Algorithms, Founder

A 5% increase in customer retention can produce a 25% increase in profit.

The ability to match individual customer tastes with specific wines and other drinks is vital.

This presentation will demonstrate how new research from Asahi, plus a patent-pending AI/Machine-Learning technology, can solve this shortcoming using implicit recommendation methods that capture user perceptions.

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# 5%=25/95%

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5% increase in customer retention produces a 25% to 95% increase in profit

### 4 REASONS WHY

#### Return customers:

1. Buy more from a company over time.

2. Lower your operating costs to serve them

3. Are motivated to refer others to you.

4. Are often willing to pay a premium to continue to do business with you rather than switch to a competitor with whom they're neither familiar nor comfortable.

Source: Bain & Co Prescription for cutting costs



1. Company SEC filings. 2. Average customer retention rate by industry — <u>https://www.profitwell.com/customer-</u>

retention/industry-rates) 3. Silicon Valley Bank 2021 Direct-To-Consumer Survey 4. Private offering statements © 2022 Lewis Perdue

### Wineries are killers at acquiring new customers, but not so great at keeping them. That's a 5=25/95 problem

### **Wine Club Growth and Attrition Rates**

SILICON VALLEY BANK 2021 DIRECT-TO-CONSUMER SURVEY

#### Growth Rate in New Wine Club Members\*









\*New Wine Club Member Growth Rate = New wine club members acquired in 2020, divided by starting number of wine club members in 2020. \*\*Attrition Rate = Number of wine club members lost during 2020, divided by number of wine club members at the beginning of 2020. Excludes wineries with <5 years experience. Keeping Customers Depends on Product Performance: That's Why Asahi Has Millions of Yen Riding on These Guys



Source: Brewing Science Laboratories, Asahi Quality & Innovations



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Taste = Product Performance. "[W]hen it comes to **'repeat** purchase,' which usually contributes to the majority of sales for fast*moving-consumer-goods* companies, product performance should take precedence ...."

-- Asahi Brewing Science Laboratories

Wakihira, T., Morimoto (<u>takahiro.wakihira@asahi-qi.co.jp</u>), M., Higuchi, S., Nagatomi, Y., "Can facial expressions predict beer choices after tasting? A proof-of-concept study on implicit measurements for a better understanding of choice behavior among beer consumers," *Food Quality and Preference (2022)*, <u>https://www.sciencedirect.com/science/article/abs/pii/S0950329322000556</u> j.foodqual.2022.104580 -- 49 footnotes of related and basic research.

### Taste Performance = Liking: Asahi

### A drink has no inherent performance.

Drink performance (taste/liking) exists entirely in the perception of an individual consumer's mind.

The likelihood that a customer will visit or return to your drinks brand or purchase venue depends upon perceived satisfaction.

And that depends upon your ability to recommend drinks they will like.

How Do You Really Know How Much A Consumer Likes A Drink?

### According to the Asahi study:

**WRONG:** "Relying solely on **explicit liking** could lead to a **misunderstanding** of consumers' real intentions, ultimately resulting in the failure of a new product after its launch on the market.

**<u>RIGHT</u>:** "Analyzing facial expressions as an **implicit measurement** may provide a **better understanding** of consumers' preferences at a subconscious level by capturing their objective responses to products after tasting."

### Implicit



### Asahi Study:

Explicit Fails Because People Can't or Won't tell you how they feel about a wine or other drink..

- "... consumers' choice behaviors occur more unconsciously than consciously or rationally."
- "...response biases, particularly, social desirability and acquiescence biases."
- Tendencies of respondents to "overreport attitudes or behaviors deemed socially desirable."
- Tendency for survey respondents to "...agree with statements regardless of their content."

## *Implicit* = Accurate, observable, subconscious expression of *perception*.

In addition to facial micro-expressions, other outwardly observable examples of internal perception include:

- Tics, fidgeting, & other unconscious movements.
- Tone/quality of voice.
- Blushing.

- Pupil dilation
- Perspiration
- Changes in pulse rate

### What Sort Of *Explicit* Expressions & Methods *Fail*?

- Stars.
- Point scales, 100, 20, or any other number;
- Profile matching (Includes "How do you like your coffee?" Etc.)
- Reviews
- Collaborative Filtering.
- Comments:
  - Words get in the way when trying to describe desirable drinks with an experienced shopkeeper, sommelier, friend, family member.
  - Shaped by psychological and social pressures, misunderstanding, education, vocabulary, experience, genetics, tasting environment & more.

#### Please refer to the Appendix for specific examples of why these methods fail



### Real-life example of the explicit problem:

**Q:** How can drinkers know they will like this?

A: They can't.

No Sale or won't return.







#### Bancroft, Pauli, Steinhauer... Oh My!

'Oh my' is right! These **vineyards make up components of the \$175 Beringer Private Reserve**, and you're getting this one for \$36.99! Excellence runs in the family for Napa Valley's Beringer—the first (and only) winery to have both a red and a white claim *Wine Spectator*'s #1 Wine of the Year.

### Can't Get No Satisfaction



### Implicit/Perception Issues Are In Your head

With flavors (odor + taste), decisions are made before you are aware of them.

That's why it's nearly impossible to describe a flavor when odor perception goes first and faster than conscious recognition.



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### Why Words Don't Work



Humans Can Identify More Than **1** Trillion Smells: <u>NIH</u>

The average English-Speaking person has a vocabulary of **20,000 to 35,000** words: <u>The</u> <u>Economist</u>.

The best experts can identify up to a maximum of **4** odors <u>Chemical Senses</u> Individual *Implicit* Recommendations For Are Vital Because No Two People Taste The Same Drink The Same way

### 26 (of 400 odor) receptor genes studies among 189 people, found *NONE* had the same set.

The graphic to the right published in a scientific paper — ("<u>Different</u> noses for different people,") illustrates this vast genetic diversity.

*"Each of the individuals examined had a unique genotypic pattern."* What's more, the genes involved with olfactory receptors, have a very high rate of variation/mutation (aka polymorphisms).

#### Does the genetic variation actually matter?

Researchers from the Monell Center and collaborating institutions have found that as much as 30 percent of the large array of human olfactory receptor differs between any two individuals.. — <u>Variability in olfactory</u> <u>receptors affects human odor perception</u>.



Source: "Different noses for different people." Idan Menashe, Orna Man, Doron Lancet & Yoav Gilad - NATURE GENETICS: May 2003; doi:10.1038/ng1160



### Scale: A Final Barrier To Recommendation Performance

In one year, 175K+ new AlcBev products approved by U.S.

Worldwide, 1 Million+ Wines available for sale at any one time: Wine-Searcher.com

Most products are never reviewed by experts or consumers

#### TTB Approved 175.7K wine/beer/spirits products over last 12 months Through July 2020. An increase of 7.7K (+4.6%)



Asahi clearly has the right idea, but you can't get every drinker into a lab to test every drink:

### 5=25/95 Demands:

- Accurate,
- Implicit,
- Perception-based,
- Individual,
- Scalable recommendations for,
- Specific wines/drinks for,
- Specific customers.

I am aware of one technology – Clans -- that currently fulfills all of those requirements. Some details of that AI/Machine Learning system are in the Appendix. If you know of others, please email me at <a href="mailto:lperdue@ideaworx.com">lperdue@ideaworx.com</a> and I will update content at <a href="https://revolutionalgorithms.com">https://revolutionalgorithms.com</a>



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To dig deeper into these topics, please scroll down to the appendix.

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### Dig Deeper - Appendix

Email Lew if the following don't answer all your questions: lperdue@ideaworx.com

### CLANS: Accuracy-Validated Al/Machine Learning

Top 5 Recommendations Based On Normalized 100-Point Data



*Clans is far more accurate with "native" data.* 

### **Clans System and Algorithm Validation**

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- Dataset: 90K ratings by 30K users.
- Ratings are on a 100-point scale, normalized.
- Tested on users that made at least 6 ratings.
- For each user, hide some ratings, then generate recommendations. Check whether highly-rated "hidden" wines are recommended.

Clans: Patent Pending – <u>Revolution Algorithms</u>

### CLANS Implicit Perception Capture (IPC): An Enabling Technology That Plays Well With Existing Systems

Recommendations based on people who **perceive** the **same** exact product the **same** exact way.

- Enhances (no need to replace) existing recommenders.
- Rooted in behavioral science.
- Subconsciously creates a computable representation of internal perception,
- Consistency and validity enforced by long-established psychological principles,
- Easy, quick one-click on computer, tablet or phone.
- Designed to work in a constantly updated network of independent consumer and business Clans.
- Proven success in normalizing outside data.
- Ease & simplicity allows efficient work "at scale" for maximum product coverage.
- Can operate in fully anonymous mode or with user-controlled data privacy bucket.

Instant advice, feedback, data update everywhere (labels, ads, packaging) sharpens accuracy, increases participation.



### Clans Enhances, Does Not Replace

- Globally, wine, beer and spirits are blessed with an enormous variety of drinks, critics, reviewers, consumer sites, recommendation methods, and other venues that are helpful, entertaining, informative, and enjoyable.
- Each producer, distributor, website, vendor, merchant, affinity group, restaurant, club and other operations will be able to create a standalone Clan to enable more accurate recommendations for its own users.
- Speeds accurately matching a specific customer to a specific product you have in stock.
- Standalone Clans can also integrate with other Clans to share revenue (via the Clans FX payment system) and broaden their own base with users who can join multiple Clans while remaining "citizens" of their original Clan of entry.

### Clans

#### DOCKET: 768075.000002

### U.S. PROVISIONAL PATENT APPLICATION SYSTEMS AND METHODS FOR GENERATING RECOMMENDATIONS

Assignee: Ideaworx 811 W. Napa St., Suite G Sonoma, CA 95476

NOTE: Some Of The Following Clans Slides Are Vague Or Redacted Because The Patent Has Not Been Formally Issued Yet.

Ideaworx is Lewis Perdue's primary company

### More From The Asahi Lab Study

- 1. "[R]elying solely on explicit liking could lead to a misunderstanding of consumers' real intentions, which would ultimately result in the failure of a new product after its launch on the market."
- 2. "Several types of response biases, particularly, social desirability and acquiescence biases, are known to occur in consumer research."
- 3. "[S]ocial desirability bias refers to errors that result from the tendencies of respondents to "overreport attitudes or behaviors deemed socially desirable," and acquiescence bias refers to "the tendency for survey respondents to agree with statements regardless of their content," both of which can threaten the validity of the data acquired from consumer surveys.
- 4. Another fallacy, called "the fallacy of conscious choice," deals with the fact that "... consumers' choice behaviors occur more unconsciously than consciously or rationally.'

### Additional Resource Links

#### **From Recommendation Insights**

- THE PROBLEM: Welcome to the Vino Casino
- <u>GENETICS, PART 1: Why wine reviews and taste profiles miss the</u> <u>target for recommendations</u>
- <u>GENETICS, PART 2: How Inherited Taste Sabotages</u>
  <u>Recommendations</u>
- INCOMPATIBILITY: Profile Matching
- <u>SCALING: Most Wines Have NEVER Been Rated By Critics</u>
- <u>MISINTERPRETATION: Words = Big Trouble</u>
- INCONSISTENCY: Rating The Rating Systems
- <u>PSYCHOLOGY: Anxiety, Stress and Social Pressure Sabotage Choice</u>
- The promise (and pitfalls) of current recommendation engines
- How sensory taste profiling stops short of individual recommendation accuracy
- <u>New Research Shows Why Wine Descriptions Don't Help Consumers</u> <u>Select Wine</u>
- Mouth bacteria: one more reason that individuals' taste perception differs (especially from sip & spit experts)
- Wine And Music Are A Lot Alike & So Are The Ways Their

#### **Recommendation Systems Fail**

#### From Wine Industry Insight

- <u>The Path To Netflix-Quality Wine Recommendations Leads Through</u>
  <u>The Doors of Perception</u>
- <u>A "Netflix of wine" is impossible with current recommendation</u> <u>methods because Sight & Sound dominate Smell & Taste</u>
- <u>Netflix Amped Up Recommendations with its own Big Data. What that means for wine.</u>
- <u>Netflix Generates Big Data for To Amp Up Recommendations —</u> <u>Wine Needs To, Too.</u>
- Wine profile matching fails because genes determine that no two people taste the same wine the same way.
- <u>Reviews and 5-Star ratings are so useless for recommendations that</u> <u>Netflix tossed its prized \$1-million algorithm. They're even worse</u> <u>for wine</u>
- Why solving the "Paradox of Choice" is a major reason Netflix's recommender is worth \$1 Bil/yr. And why wine fails at that.
- How A Netflix-Style Recommender Is Vital to Reversing Wine's
  Market Marginalization

### Explicitly Implicit – Collaborative Filtering

- Collaborative Filtering -- People who liked/bought this also liked/bought this. Vague and often irrelevant data defies accuracy no matter how advanced the underlying algorithm is.
- Despite that ... (next slide, please)

### Collaborative Filtering Can Prompt Sales Even When 93% Never Click On A Recommendation.

Ecommerce for metric-based products lives and dies by mostly lame and ignored recommendations. CF fails totally for wine, beer & spirits



**26%** say offers they receive via email, display ads, social networks and mobile are never relevant to their interests.

**67%** say offers are relevant sometimes or rarely.

• 7% say offers are <u>relevant</u> regularly or all of the time.

https://www.lytics.com/assets/documents/Lytics\_Marketing\_Research\_Report\_2015.pd

#### The big disconnect

While people value good recommendations, most (7%) rarely click on one from a site because 93% find them irrelevant. Yet, those 7% who do click on a recommendation amount to 24% of orders and 35% of Amazon's revenues (*McKinsey*).

VISITS WITH RECOMMENDATION CLICKS



https://www.demandware.com/blog/retail-intelligence/personalized-product-recommendations-drive-just-7-visits-26-revenue

### Explicit: Reviews



### Consumers Find Explicit

### Recommendations Mostly Unhelpful.

Implicit/Perception -based Influence (tasting) rules.



### **Purchase Influences**

(Percent "very" influential by influence type - "7" on a scale of 1 - 7)



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Explicit: Profiles Fail because reference profile differs from individual, due to:

- Genetics
- Experience
- Uncertainty

This is an actual example from "SmartTaste" invented by Lewis Perdue in 1996.



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### Explicitly Implicit – How do you like your...Profile?

What is the one type of chocolate you could eat for the rest of your life?



Some people may not like chocolate very much (or at all). No empirical data on accuracy

Default selection of upper left on all categories may prejudice selection, especially among newcomers or the undecided influenced by "the paradox of choice"

Used by many DTC clubs. These are based on variations of "My Vinotype," developed by Tim Hanni, MW.

May help define very broad categories but fails for specific wine recommendations.

### Social pressure makes honest wine opinions difficult



Social pressure stops Facebook users recommending products on social media sites

### Explicit: When Excellent Means "Just OK"

"On Amazon.com ... the average star rating is approximately 4.2 out of 5, ... half of the reviews being 5-star ratings.

"Nearly half of all Yelp reviews are 5-star ratings ... nearly 90% of Uber ratings may be 5 stars.

"A visual representation of most online ratings reveals a J-shaped distribution, with many 4- and 5star ratings, a few 1-star ratings and few ratings in between.



"The degree of overwhelming positivity suggests that individuals are often confronted with choosing between numerous items with similar star ratings, especially given that people will not even consider options that garner less than a 3-star rating."

Source: -- <u>Nature Human Behaviour</u> (Article), <u>Published: 08 April 2021</u>, Massscale emotionality reveals human behaviour and marketplace success, <u>Matthew D. Rocklage</u>, <u>Derek D. Rucker</u> & <u>Loran F. Nordgren</u>

100-point systems also suck

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