

Multi-location Sensory Programs

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The Boston Beer Company
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A little about me...

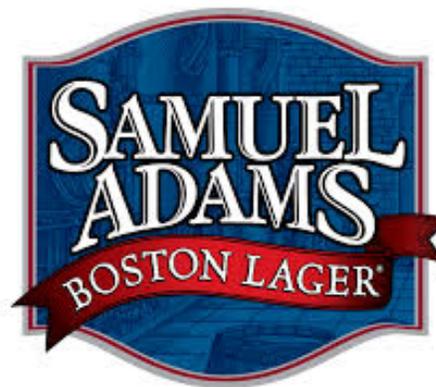
- BS in Food Science
- MS in Food Science – researching hops, Sensory Science and Statistics
- 15+ years in food and beverage
 - Flavor houses, wine, sensory consulting, beer, cider and FMBs
 - Focus on innovation
- Director of Research and Product Innovation
 - 7 years at Boston Beer
 - Lead Sensory, Product Development and Ingredient Innovation



The Boston Beer Company

7 Year Review:

- Increased from 3 brands to 8
- 75 new products released in 2016
 - >1 new product each week
 - A nearly 10 fold increase in 7 years
- Three brewery locations:
 - Pennsylvania, Ohio, Massachusetts



Areas of Focus

- Determining your mission and vision
- Creating consistency and diversity in your panels to reach your goals
- Quality data: collecting and reporting
- Making the business decision versus Sensory Evaluation

Designing your program

- Mission statement
 - Guide to achieve the overall goal
 - Provides a sense of direction
 - Implements decision making
- Includes:
 1. Major goals
 2. Reason for the goal
 3. Specify the future of the goal (vision)
 4. Identify the key values of the Sensory team

Provides a destination for
which to create your
Sensory Program

Designing a Sensory program

- Assess goals and identify the methods needed to achieve goals
 - Evaluate the process for key points of influence
 - Determine the tests needed and the timeliness required for the test
- Evaluate resources required to achieve, including ideal and realistic
 - Panelists, Facilities, Sensory Professional
- Review and Refine!
 - Are the goals possible in the short term? Long term? RE-EVALUATE and make adjustments
- Build a program
 - Defining testing method
 - Training the panelists
 - Implementing the system
- Maintain!

Panelist Requirements

- Be able to distinguish basic tastes
- Be able to identify and rate objectives
 - In and out of profile?
 - Rating scales?
 - Particular attributes?
 - Hedonics?
- Have the ***time*** to commit to training and testing
- Be reliable!

Facilities

- Unbias!
 - White light, with red light options
 - Isolation for focus
 - Free from other aromas!
 - Quiet and little distraction

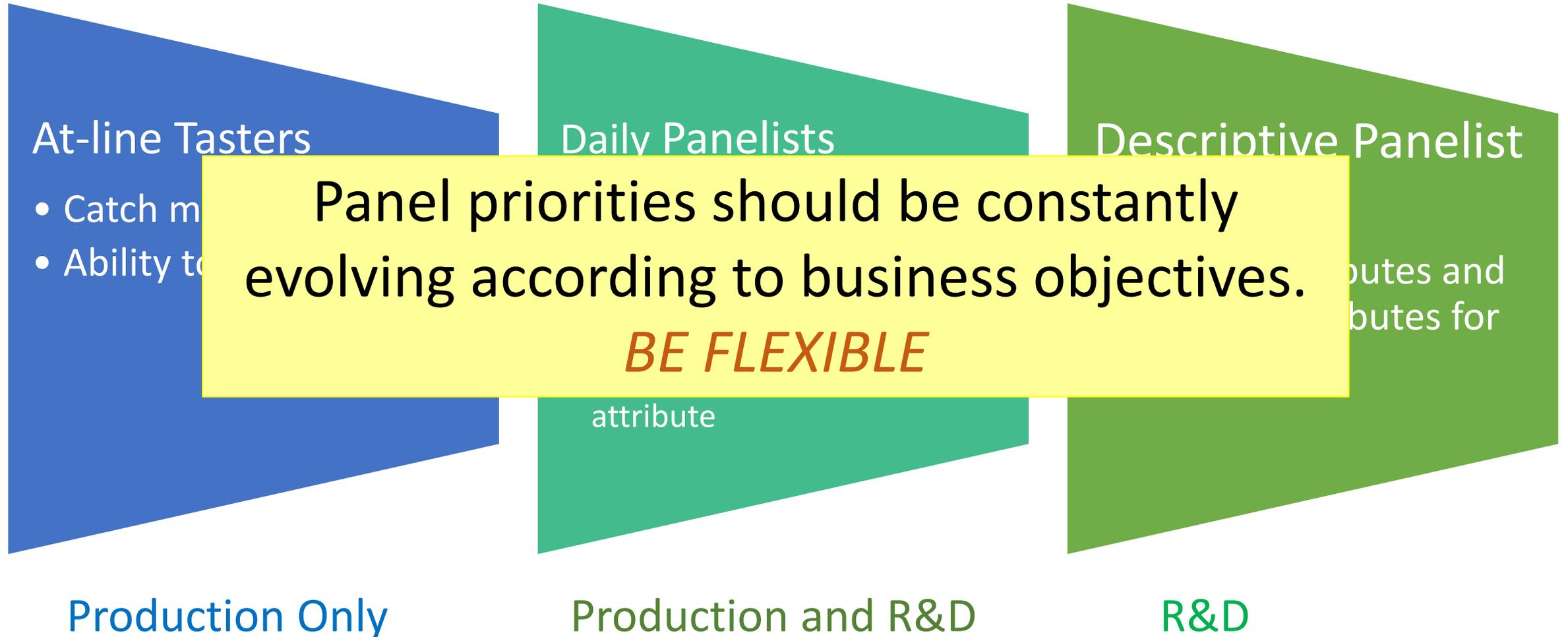
Bonus: technology for data collection!

Key goals to consider for a Multi-Brewery System

- Clear responsibilities
- Consistency of panelists across breweries
- Consistency in evaluations
- Consistency of techniques employed
- Standards for communicating results
- Communication
 - Regular meetings, cross-location teams
 - A gate keeper

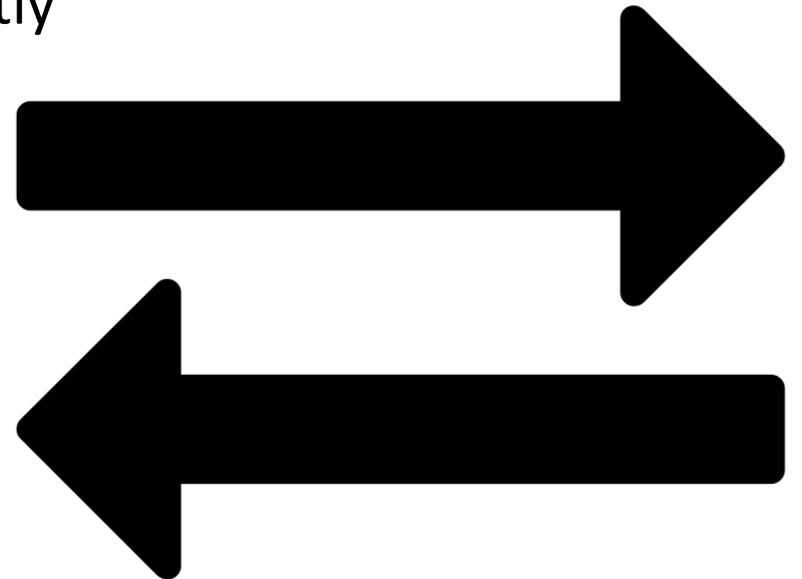
Panelist Training and Consistency

Goal: All validated panelists can sit on a Sensory Panel and give valuable data



Validation: Interbrewery Exchanges

- Validates Panel consistency
- Evaluates Panelist drift among facilities
- Identifies Product Profile drift and sets early warnings for issues
- Frequency
 - Core brands and secondary (i.e. seasonals) fort-nightly
 - New products – beginning of season



Defining Sensory according to Quality

Production Breweries

- Introductions of new beers, need to match objectives
- Consistency of current styles
- On-time releases
- Optimization

R&D Brewery

- Transitions to Production breweries – tools for training
- White space analysis
- Competitive Landscaping
- Optimization
- Consumer Testing

*R&D with a Tour Center:
Consistency of styles and on-time releases*

Essential Panels for Quality Evaluations

- Daily Release Panel
 - Raw Material Releases: Difference From Control
 - Product Panels: In/Out
- Difference Panels: Triangles or Tetrads
 - Identifying only *if* there is a difference
- Descriptive Panel: Trained panel on attribute identification and scaling
 - Identifying *what* the difference is
- Decision maker
 - Identified protocol for communicating and receiving approvals from appropriate parties
- Consumer Panel
 - Shelf-life Testing

Trials

Trials

Identifying Profile Issues

As Required

For All New Products of a Certain Volume

Panel Specification

Production Breweries

Maintain focus on primary efforts – release highest quality product on time

- Daily Release Panel
 - Raw Material Releases: Difference From Control
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 - Identifying only *if* there is a difference

R&D Brewery and Tour Center

- Daily Release Panel
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Panel Specification - CONSISTENCY

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Daily Release Panel

- Evaluating in-process products at identified critical points
- Panelists decide if a product is acceptable
 - Defined product characteristics for both in and out of specification
 - Requires training
- Application
 - Yes/No answer is sufficient
 - Reference samples are limited
 - Resources to train and maintain panel is lacking

In/Out Method

- Identifies when a sample is “in” or “out” of specification
 - In = typical or normal production with tolerable variation
 - Out = atypical results, gross off-notes
- Result is a % of the panelists who assessed the product as in spec
 - Can visually evaluate using a p-chart
- Popular in production climate
 - Raw materials
 - Simple finished products

In/Out Method: Getting More Information

Instruction

Evaluate the
is in-spec and
during training

Please add

Benefit

Provides more information on the attributes that are out of profile

Specific Training:

Trends versus overall out of profile

Issues:

Still Difficult to provide specific direction on issue

Determining Release:

Degree of In/Out

| Style | Production Date |
|---------|-----------------|
| Example | 10/11/201 |
| Example | 10/2/201 |

ION

o Profile

Using Scales for In/Out

- Attributes

- Appearance
- Aroma
- Taste/Flavor
- Mouthfeel
- **Overall**

- Measured along a 9 point scale

- Determine the level of acceptable profile on the 9 point scale
- 9 is perfect
- 1 is not at all the right product: for example rating an IPA, presented a cider

- Requires **a lot** of training for panelists to agree

Sensory Evaluation vs. Business Decision

- Sensory collects data to aid in the decision about a product
- A piece of the decision
 - Decision maker: identify decision makers for severity of issue
 - Collect all data needed – QA, volumes, timelines, business priority
 - Decision is a balance of all data



Decision maker tastings!

Old Style Decision making

- Goal of a decision making tasting
 - All for feedback and direction on the profile
- Decision based on:
 - Intuition
- Less product releases
 - Easier!

Current Method

- Goal of a decision making tasting
 - All for feedback and direction on the profile
 - Present the information learned on the product
- Method
 - Blinded directional tasting in booths
 - Round table discussion
 - Presenting:
 - Intended direction and purpose of product
 - Analytics and competitor information when appropriate
 - Consumer results
 - Discussion and decision making

Style being tested
Destination

Date of Tasting

Evaluate [Style] and Next Steps

- **Development goal:** [insert project goals including profile target, consumer target and if there are goals against competitors, i.e. preference over...]
 - Release Date: 1/1/2017
 - Confirm profile target: 8/1/2016
- **Direction:** See consumer test and experimental design
- **Goals & Agenda**
 - Determine next steps

Information to Include

- Review of previous tastings and results
- Experimental design
 - What did you make?
 - What was the goal
- Quality Analytics
- Other Sensory analysis – Descriptive, Napping, etc
- Consumer test results
 - The benefits of having a tour center

Multi-Brewery Sensory in Review

- Determining your mission and vision
 - Build a Sensory program to meet your needs and resources
- Creating consistency and diversity in Panels
 - Interbrewery panels!
- Quality data and collections
 - New ways to collect data to aid the discussion
- Making the business decision
 - Sensory Evaluation is not a business decision



**KEEP
CALM
IT'S THE
END OF MY
PRESENTATION**

