The 5th Ingredient®

Pulkit K. Agrawal

Internship Opportunities

April 2, 2020

LEARN academy

PKA@The5thIngredient.com

Outline

- Introduction
- The 5th Ingredient – "Launch, and then Evolve"
- Startup Experience
- Interns

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Introduction

Pulkit K. Agrawal

Founder & CEO

PKA@The5thIngredient.com

Ryan E. Allis

Co-founder & COO

RAllis@The5thIngredient.com

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Industry: Breweries

383% Growth

The United States

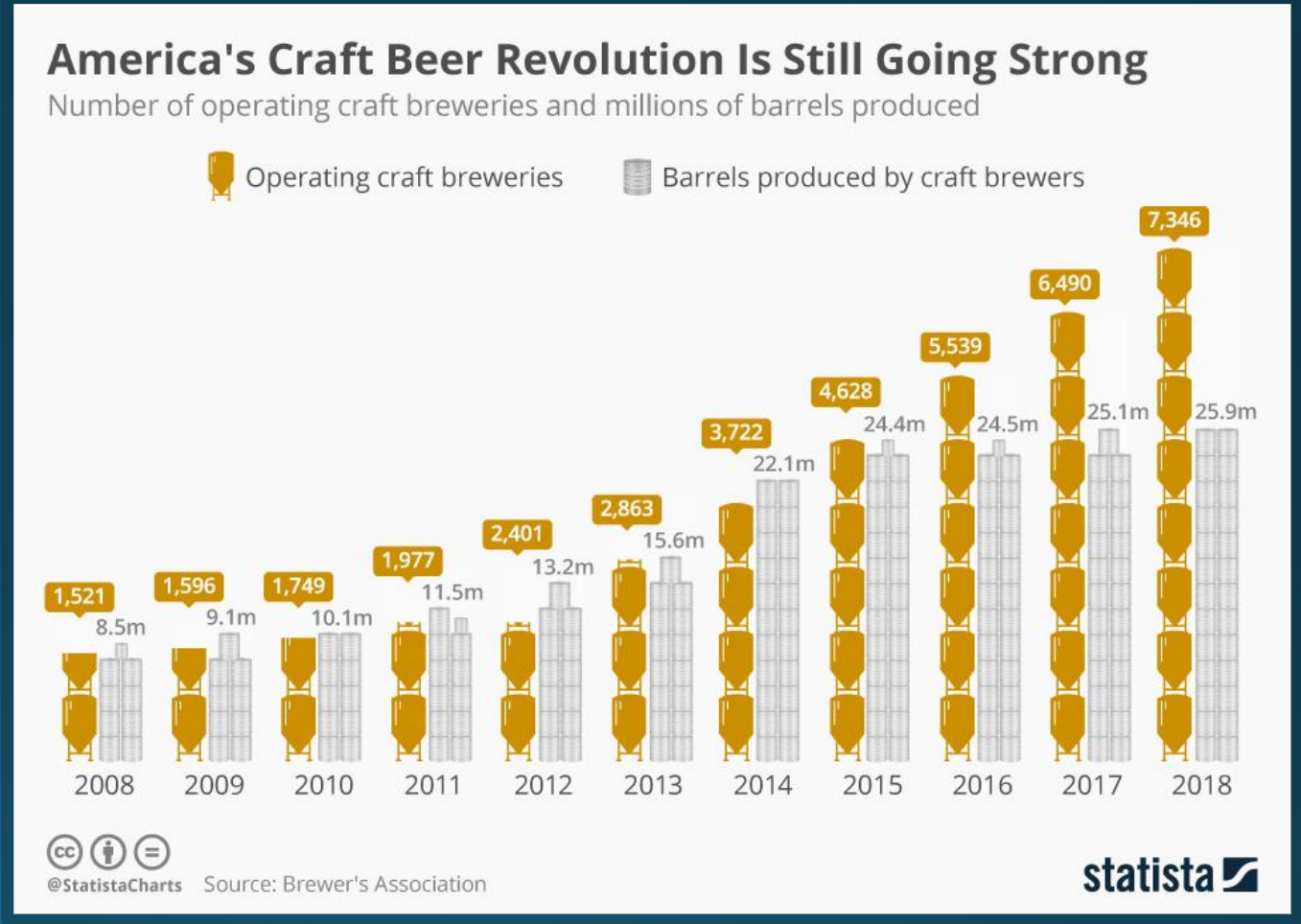
2008: 1,521 Breweries

2018: 7,346 Breweries

Global Market

22,000 Breweries (Mid-2019)

(Reported by RateBeer)



Industry: Landscape

Global

22,000 Breweries (Mid-2019)

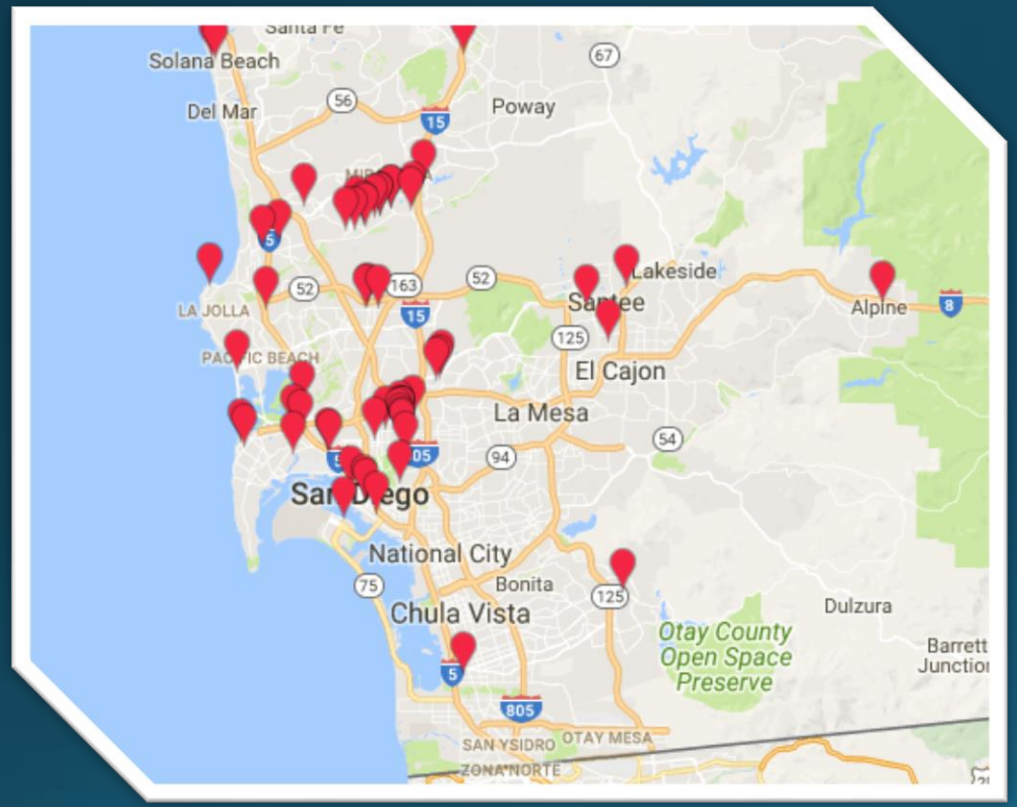
(Reported by Alltech + The Brewers Journal)

California

Ranks 1st in US for craft breweries

(Reported by Brewers Association)

Industry: San Diego, California



As of August 12, 2019:

154 Breweries in San Diego County

(Reported by West Coaster)

ART
SCIENCE

WATER

MALT

HOPS

YEAST

DATA

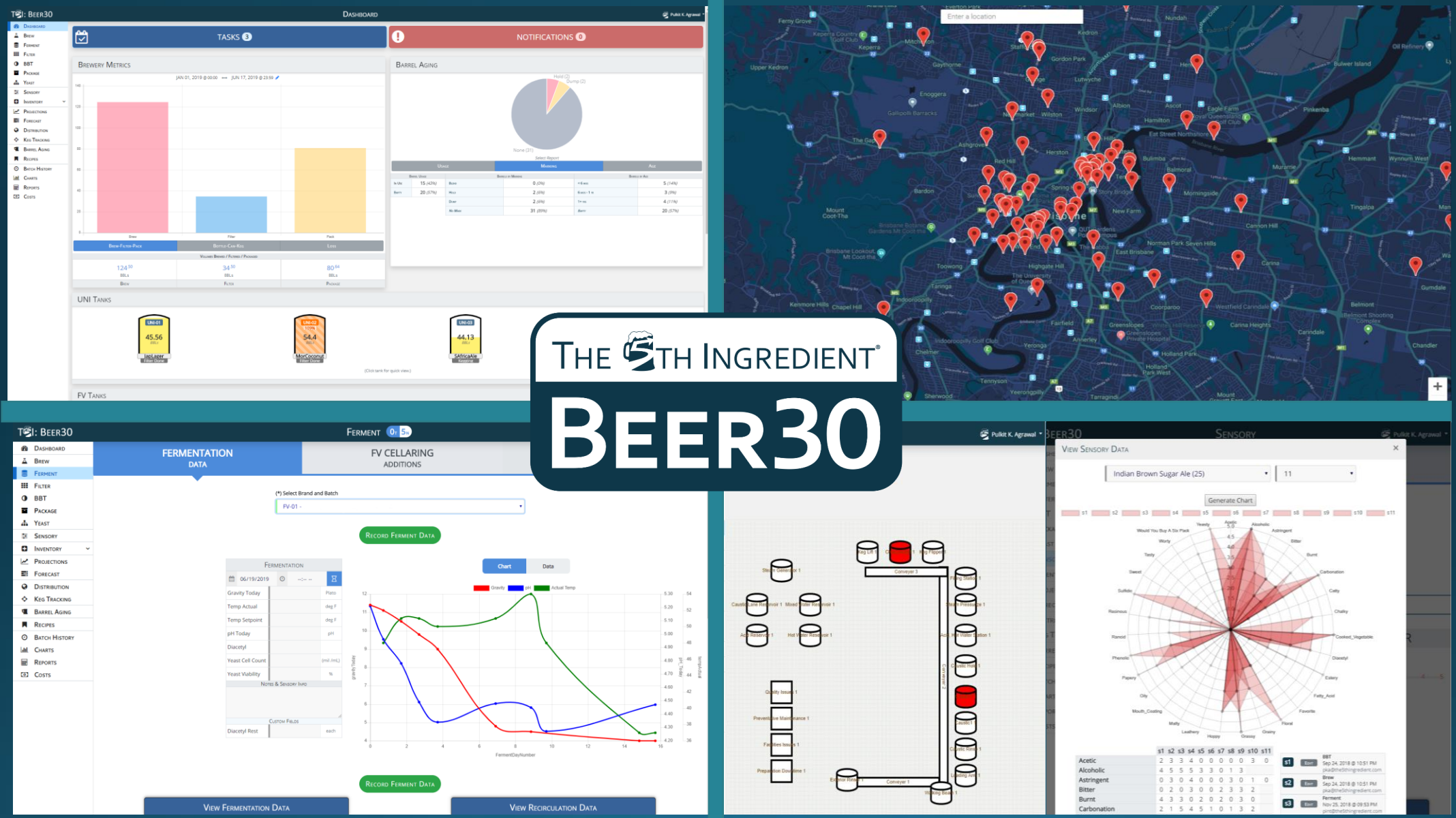
Problem

Complexity	Costs	Inconsistency
• Paper Logs • Whiteboards • Spreadsheets	• Kegline Downtime • Grain Bill • Schedule Errors	• Tank Destroy • Customer Unhappy • Brand Reputation

Beer30

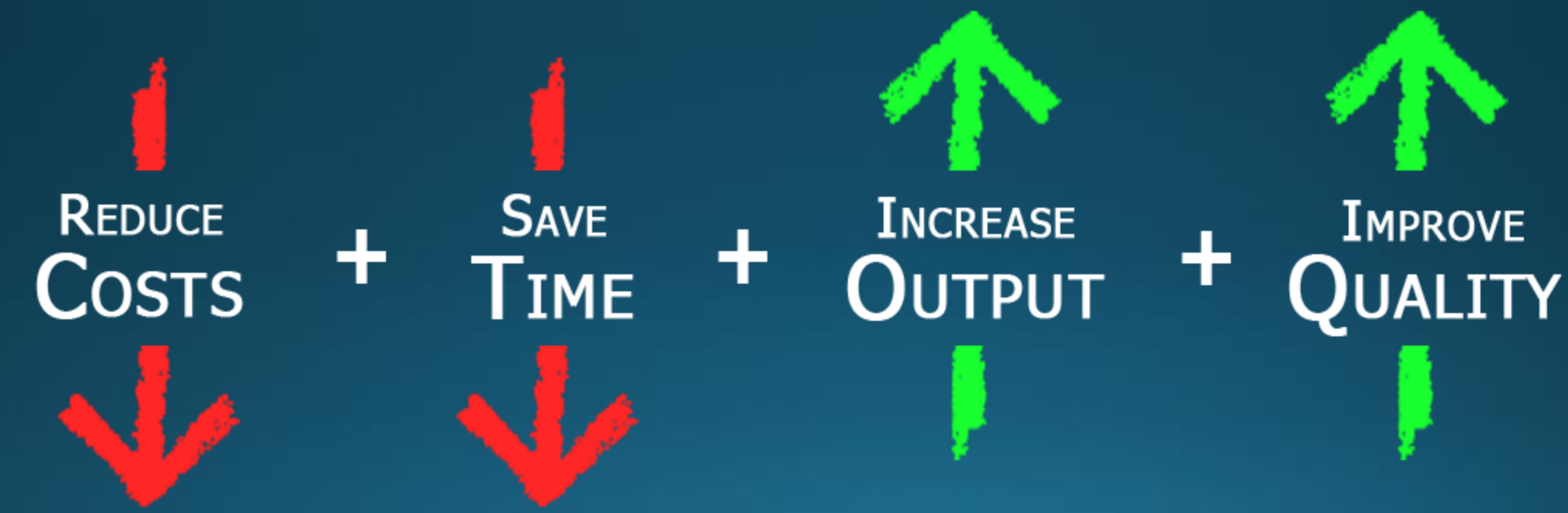
- Proprietary Software-as-a-Service for data management
- Modular: based on a brewery's needs
- Tiered pricing: based on a brewery's size
- Customizable & Scalable
- Mobile, Tablet, Computer Friendly

BEER30™
by The 5th Ingredient®
BREWERY MANAGEMENT SOFTWARE
v7.0.0
APRIL 2020
SCHEDULING & TASKS
PROCESS
BREW
FERMENT
FILTER
BBT
PACKAGE
RAW MATERIALS
YEAST
DASHBOARD
CHARTS
REPORTS
NOTIFICATIONS
CONTACTS
BATCH HIST
LOT TRACE
SENSORY & QUALITY
DISTRIBUTION & SALES
XERO SYNC
PACKAGING MATERIAL
BATCH COSTS
BARREL AGING
PACKAGING DOWNTIME
KEG TRACKING
QBO SYNC
GRAIN-TO-GLASS
DATA TRACKING


THE 5TH INGREDIENT
BEER30

THE 5TH INGREDIENT®

BEER30 =



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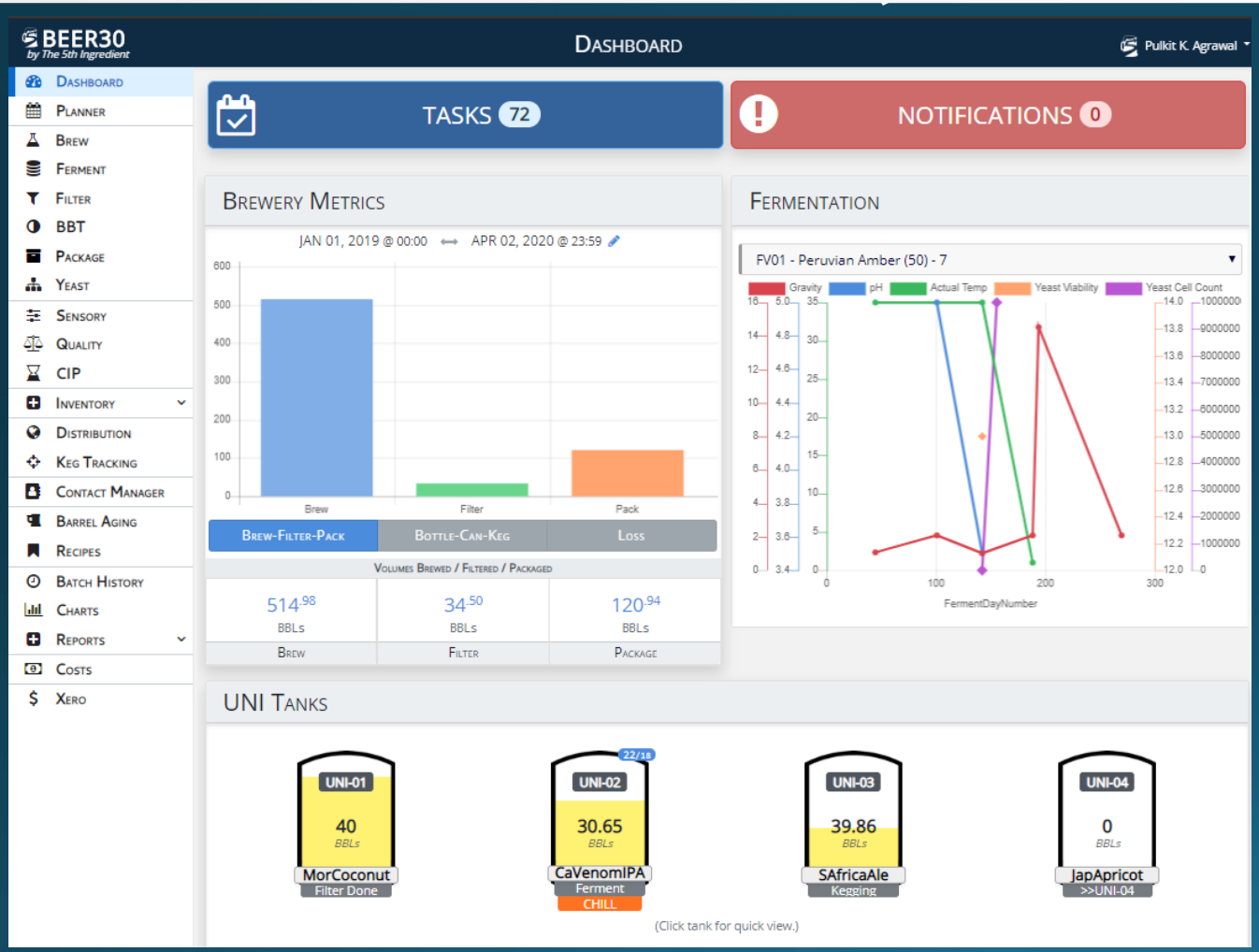
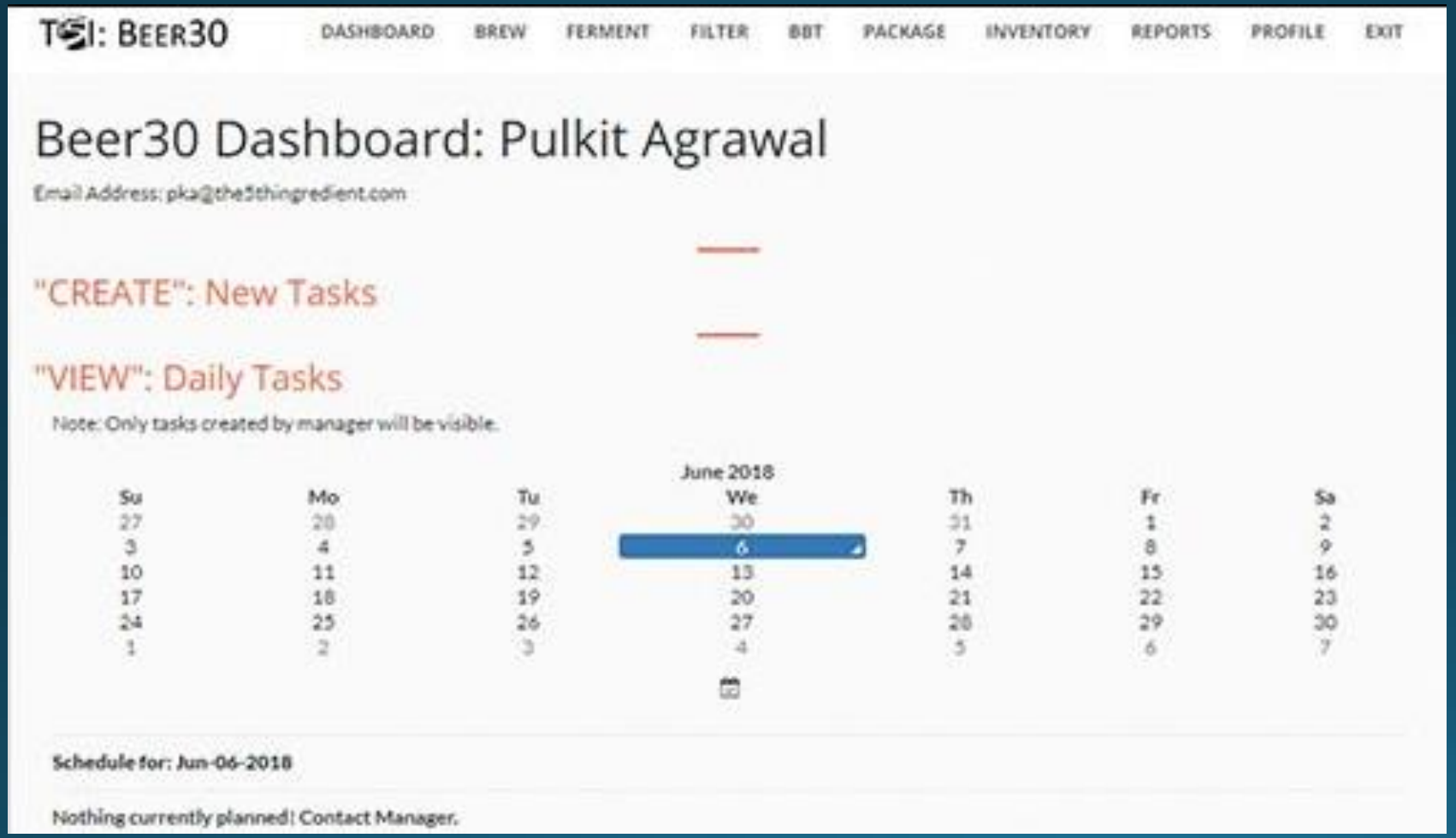
BEER30: v6.14 (APRIL 2, 2020)



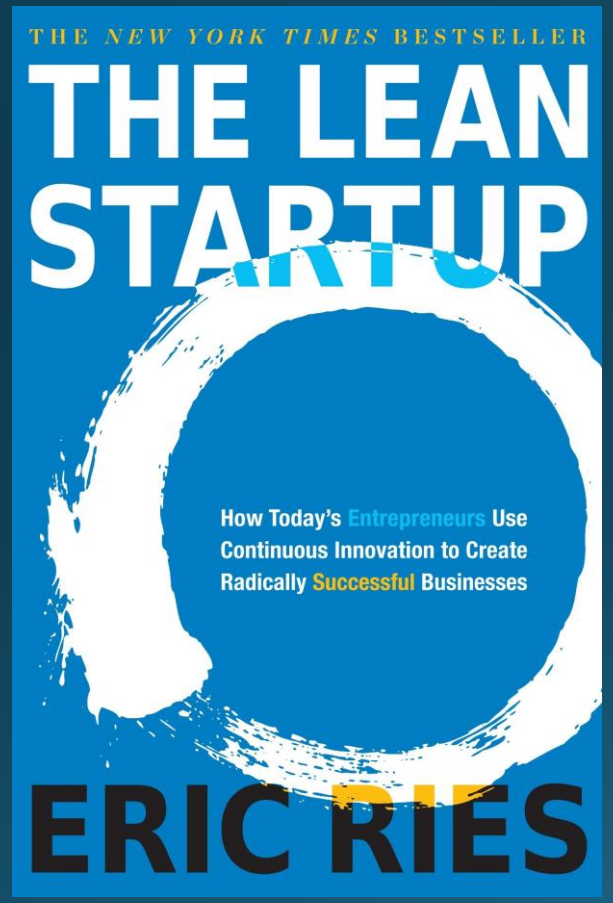
Beer30: v1.0 (January 15, 2018)



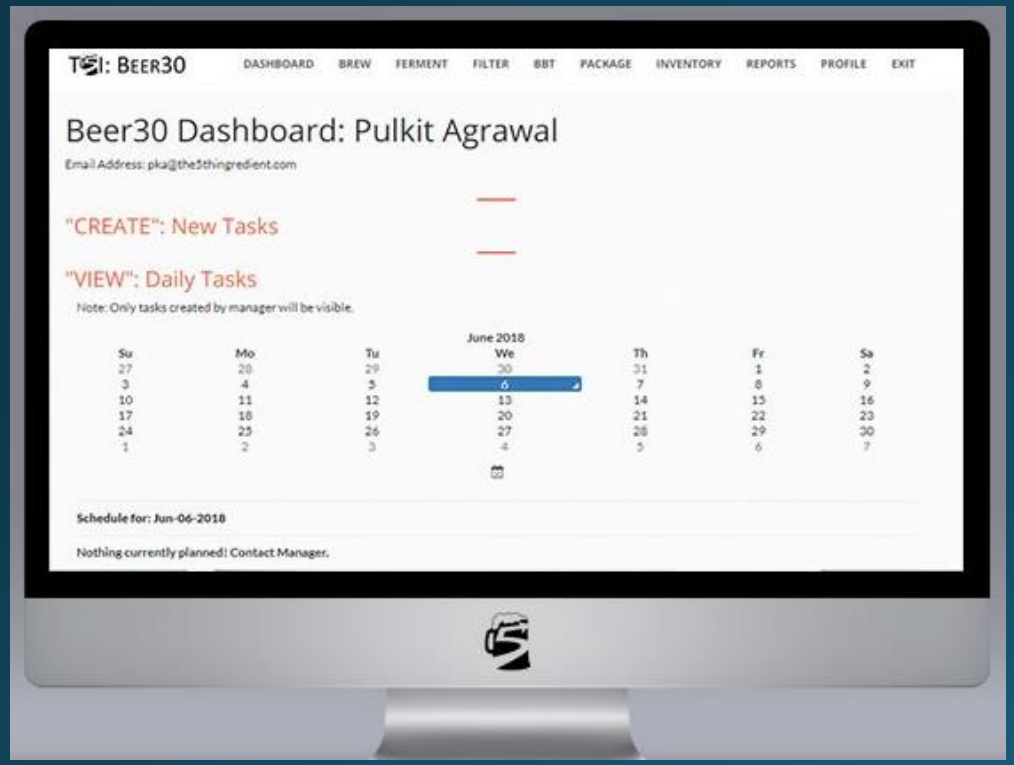
But how did we get to v6.14?

Mentality of "Launch, and then Evolve"

The Lean Startup



Alpha + v1.0



- January 15, 2018
- What do brewers think?
- Am I on the right path?
- What does this tell me about the market?
- Craft Brewers Conference – May 2018
- 110 Brewery Employees → 70 Breweries

What is the Criteria for an Update?

(1) Size of the Client

(2) Quantifying how many Clients have told you this

(3) Client Specific vs. Generic Solution

(4) Is the Client willing to Pay?

(5) Is the lack of this feature a showstopper for Client?

v1.0 to v2.0

Before
After
T5I: BEER30
DASHBOARD
BREW
FERMENT
FILTER
BBT
PACKAGE
INVENTORY
REPORTS
PROFILE
EXIT
Beer30 Dashboard: Pulkit Agrawal
Email Address: pka@the5thingredient.com
"CREATE": New Tasks
"VIEW": Daily Tasks
Note: Only tasks created by manager will be visible.
June 2018
Schedule for: Jun-06-2018
Nothing currently planned! Contact Manager.
T5I: BEER30
DASHBOARD
Pulkit Agrawal
Tasks
FERMENTATION TANKS
FV01
FV02
FV03
FV04
FV05
FV06
Go to FERMENT
BBT TANKS
BBT01
BBT02
BBT03
Brewery Management Evolved
THE 5TH INGREDIENT
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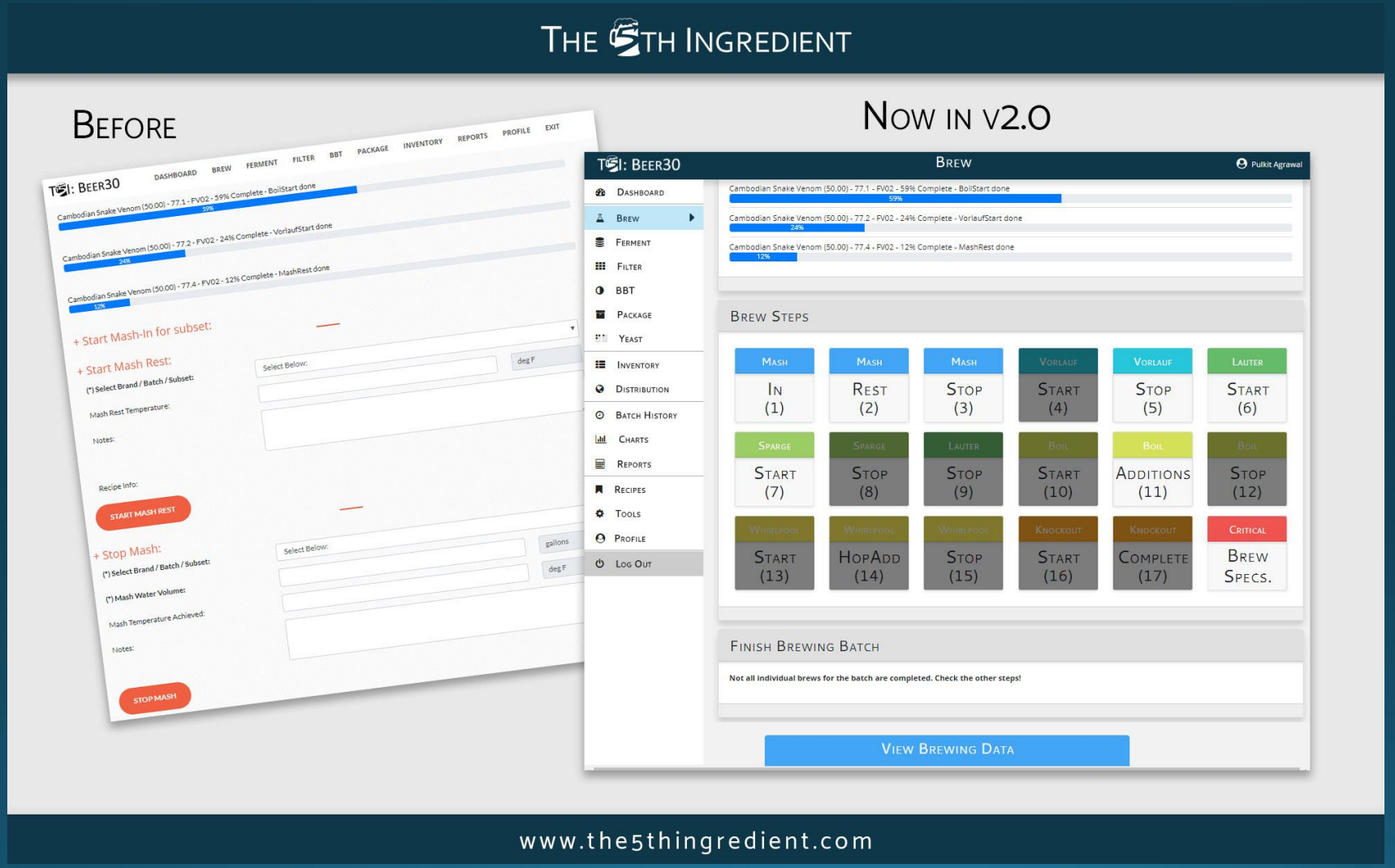
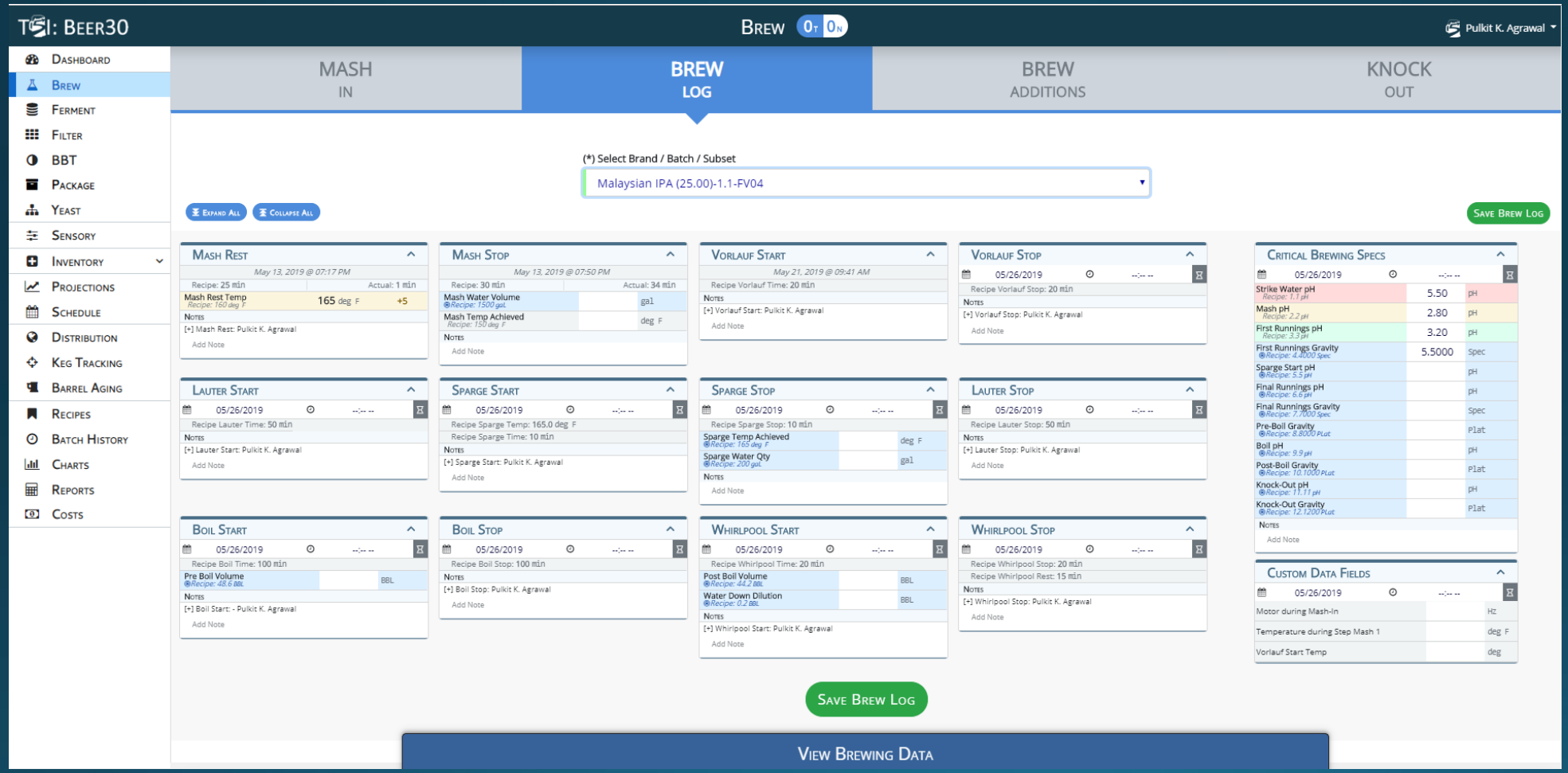
v1.0 to v2.0


THE 5TH INGREDIENT
BEFORE
NOW IN V2.0
T5I: BEER30
DASHBOARD
BREW
FERMENT
FILTER
BBT
PACKAGE
INVENTORY
REPORTS
PROFILE
EXIT
Cambodian Snake Venom (50.00) - 77.1 - FV02 - 59% Complete - BoilStart done
59%
Cambodian Snake Venom (50.00) - 77.2 - FV02 - 24% Complete - VorlaufStart done
24%
Cambodian Snake Venom (50.00) - 77.4 - FV02 - 12% Complete - MashRest done
12%
+ Start Mash-In for subset:
+ Start Mash Rest:
(*) Select Brand / Batch / Subset:
Mash Rest Temperature:
Notes:
Recipe Info:
START MASH REST
+ Stop Mash:
(*) Select Brand / Batch / Subset:
(*) Mash Water Volume:
Mash Temperature Achieved:
Notes:
STOP MASH
Select Below:
deg F
gallons
T5I: BEER30
BREW
Pulkit Agrawal
DASHBOARD
BREW
FERMENT
FILTER
BBT
PACKAGE
YEAST
INVENTORY
DISTRIBUTION
BATCH HISTORY
CHARTS
REPORTS
RECIPES
TOOLS
PROFILE
LOG OUT
Cambodian Snake Venom (50.00) - 77.1 - FV02 - 59% Complete - BoilStart done
59%
Cambodian Snake Venom (50.00) - 77.2 - FV02 - 24% Complete - VorlaufStart done
24%
Cambodian Snake Venom (50.00) - 77.4 - FV02 - 12% Complete - MashRest done
12%
BREW STEPS
MASH IN (1)
MASH REST (2)
MASH STOP (3)
VORLAUF START (4)
VORLAUF STOP (5)
LAUTER START (6)
SPARGE START (7)
SPARGE STOP (8)
LAUTER STOP (9)
BOIL START (10)
BOIL ADDITIONS (11)
BOIL STOP (12)
WHIRLPOOL START (13)
WHIRLPOOL HOPADD (14)
WHIRLPOOL STOP (15)
KNOCKOUT START (16)
KNOCKOUT COMPLETE (17)
CRITICAL BREW SPECS.
FINISH BREWING BATCH
Not all individual brews for the batch are completed. Check the other steps!
VIEW BREWING DATA
www.the5thingredient.com

v5.0


TSI: BEER30
BREW
Pulkit K. Agrawal
DASHBOARD
BREW
FERMENT
FILTER
BBT
PACKAGE
YEAST
SENSORY
INVENTORY
PROJECTIONS
SCHEDULE
DISTRIBUTION
KEG TRACKING
BARREL AGING
RECIPES
BATCH HISTORY
CHARTS
REPORTS
COSTS
MASH IN
BREW LOG
BREW ADDITIONS
KNOCK OUT
(*) Select Brand / Batch / Subset
Malaysian IPA (25.00)-1.1-FV04
EXPAND ALL
COLLAPSE ALL
SAVE BREW LOG
MASH REST
MASH STOP
VORLAUF START
VORLAUF STOP
CRITICAL BREWING SPECS
LAUTER START
SPARGE START
SPARGE STOP
LAUTER STOP
BOIL START
BOIL STOP
WHIRLPOOL START
WHIRLPOOL STOP
CUSTOM DATA FIELDS
SAVE BREW LOG
VIEW BREWING DATA

Opportunity Cost Analysis

How long will it take to build this feature?

What are the alternatives?

Low Hanging Fruit with High Impact?

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- Introduction
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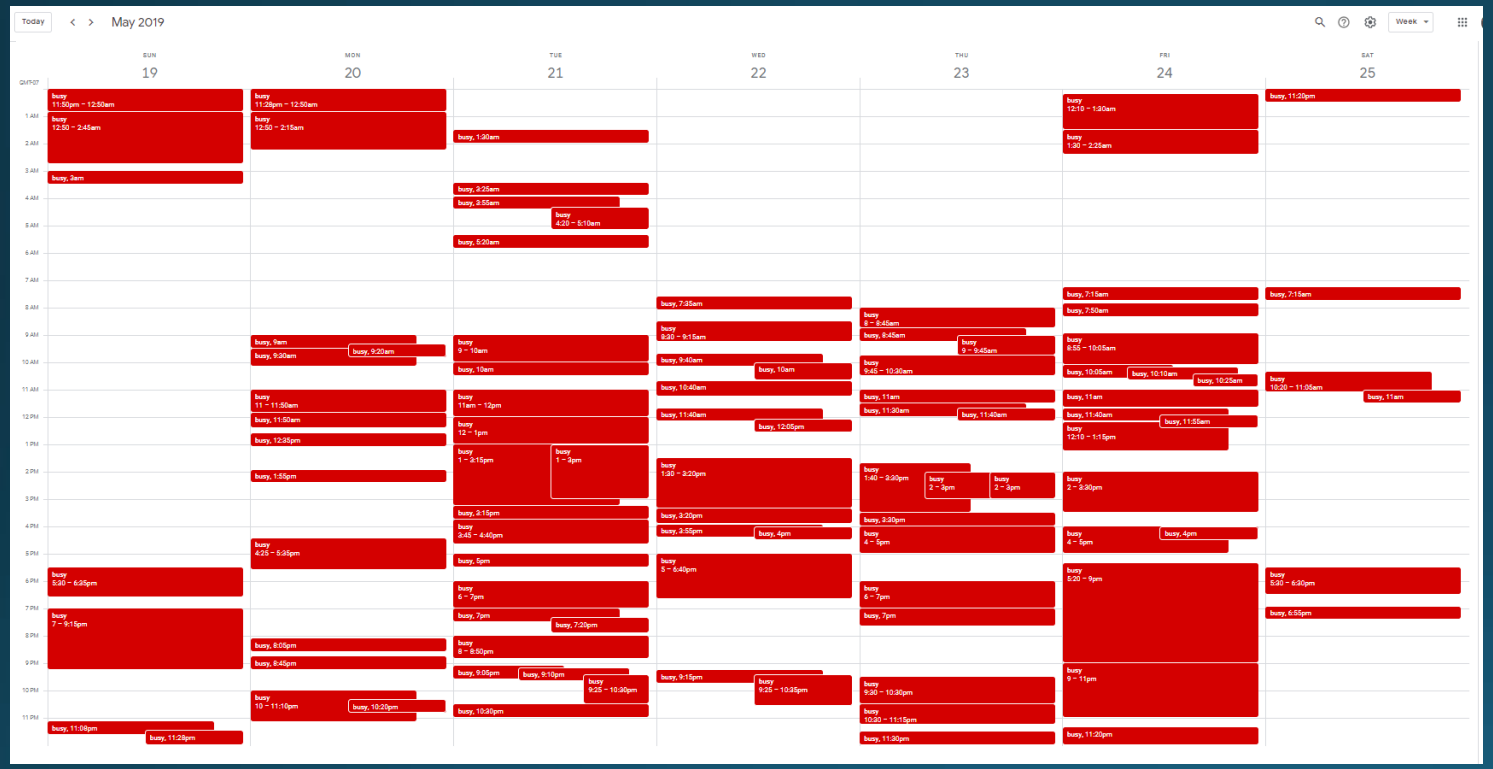
Summer 2018 Interns

Mike
JP
Pulkit
Ryan
Mark

January 2019 Interns

Ryan
Pulkit
Julianne
Andrew
Jason

Keep Track of Time and Commitments



164 hours in a week: You really don't get your own schedule…

Establish and Evolve a Workflow

Hubspot: Leads and Demos

Drive: Client Worksheets

Monday.com: Priority List and Backlog

Calendar: Time Allocation

Slack + WhatsApp: Team

Style Guidelines of Current Team

```
if(array_key_exists( $newKeyForHistory, ${"each".$PackageType."History"}) ) {
    ${"each".$PackageType."History"}[$newKeyForHistory] .= $historyRow;
} else {
    ${"each".$PackageType."History"}[$newKeyForHistory] = $historyRow;
}
```

```
if(array_key_exists( $newKeyForHistory, ${"each".$PackageType."History"}) )
{
    ${"each".$PackageType."History"}[$newKeyForHistory] .= $historyRow;
}
else
{
    ${"each".$PackageType."History"}[$newKeyForHistory] = $historyRow;
}
```

Variable Names

```
foreach($notification_history as $key => $value){
    echo "<tr>";
  foreach($value as $key2 => $value2){
      if($key2 != 'breweryID' && $key2 != 'userName'){
          //Split timestamp into date and time:
          if($key2 == 'timestamp'){
              $timearray = explode(" ",$value2);
              foreach($timearray as $i => $e){
                  echo "<td>$e</td>";
              }
          }else if($key2 =='notes'){
              $notestring = $value2;
              $value2 = "<div class='container'>
              <!-- Trigger the modal-->
              <div data-toggle='modal' data-target='#myModal' style='color: grey; cursor:pointer;'>More Details</div>
              <!-- Modal -->
              <div class='modal fade' id='myModal' role='dialog'>
                <div class='modal-dialog'>
```

Variable Names

```
foreach($notification_history as $key => $value){
    echo "<tr>";
  foreach($value as $key2 => $value2){
      if($key2 != 'breweryID' && $key2 != 'userName'){
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              foreach($timearray as $i => $e){
                  echo "<td>$e</td>";
              }
          }else if($key2 =='notes'){
              $notestring = $value2;
              $value2 = "<div class='container'>
              <!-- Trigger the modal-->
              <div data-toggle='modal' data-target='#myM
              <!-- Modal -->
              <div class='modal fade' id='myModal' role=
                <div class='modal-dialog'>
```

```
foreach($notification_history as $Selector => $NotificationEntry)
{
    echo "<tr>";

    foreach($NotificationEntry as $DBKey => $DBValue)
    {
        if($DBKey != 'breweryID' && $DBKey != 'userName' && $DBKey !=
        {
            //Split timestamp into date and time:
            if($DBKey == 'timestamp')
            {
                $timearray = explode(" ", $DBValue);

                foreach($timearray as $i => $e)
                {
                    echo "<td>$e</td>";
                }
            }
            else if($DBKey == 'email_body')
            {
```

Commenting Code

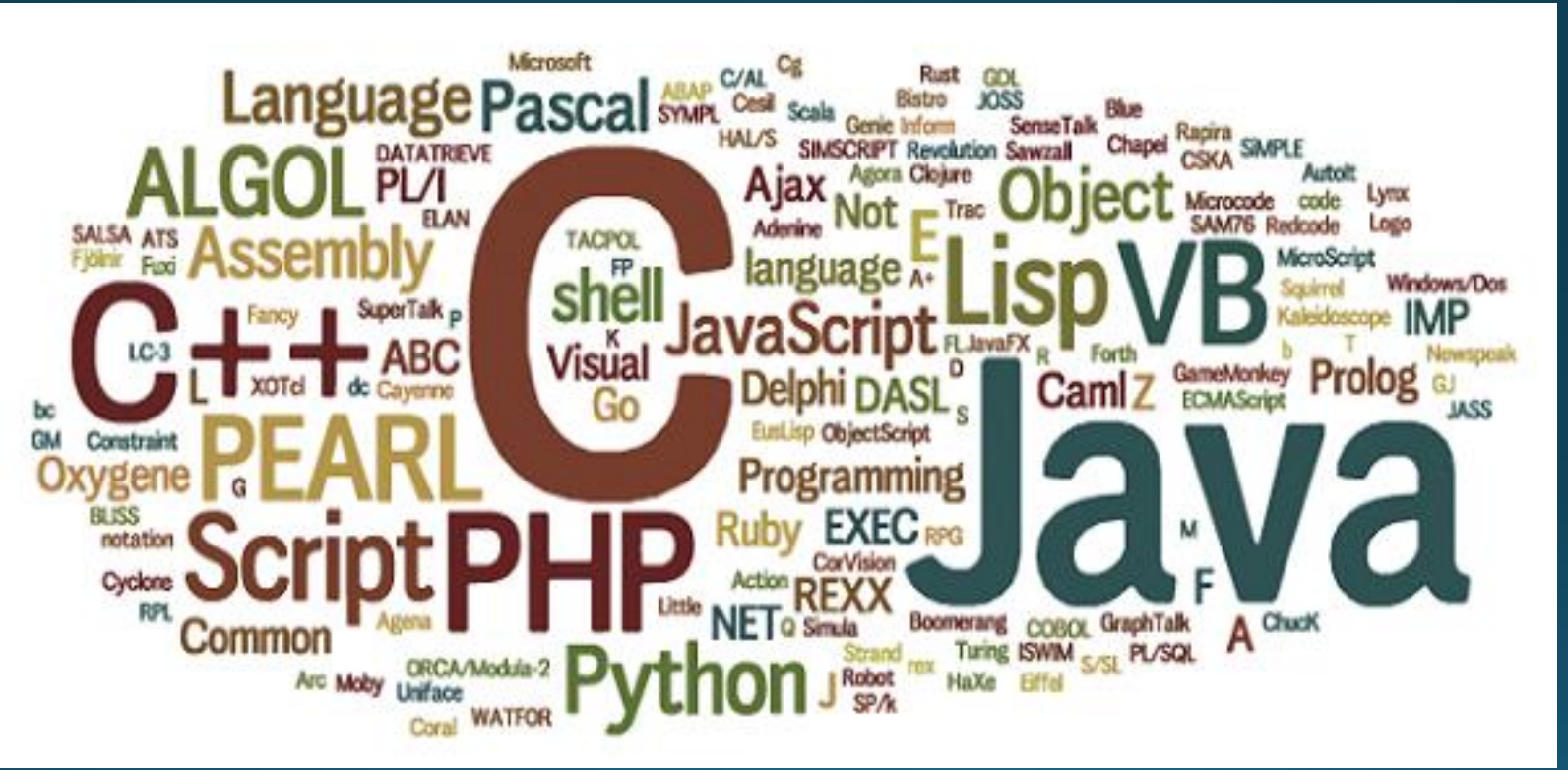
```
// PKA:: Use this to add a PACKAGETYPE_HISTORY_MODAL
$newKeyForHistory = $ItemNameHistory.'_'.$AssignedItem_BrandName_History;

// PKA:: CHECK TO SEE IF KEY EXISTS IN THE ARRAY
// PKA:: IF EXISTS, CONCAT THE STRING INTO THE END OF THE KEY'S VALUE
// PKA:: IF IT DOESN'T EXIST, CREATE A NEW INDEX AND ADD THE UPDATED HISTORY ROW
// PKA:: USED BECAUSE THE ITEM'S IN HISTORY AREN'T SORTED BY TYPE AND ARE BASED ON TIME STAMPS.
if(array_key_exists( $newKeyForHistory, ${"each".$PackageType."History"}) )
{
    ${"each".$PackageType."History"}[$newKeyForHistory] .= $historyRow;
}
else
{
    ${"each".$PackageType."History"}[$newKeyForHistory] = $historyRow;
}
```

Git Commits (Bitbucket or Github)

2407bff	Batch History Cleaning
062c8b7	Batch History Cleaning

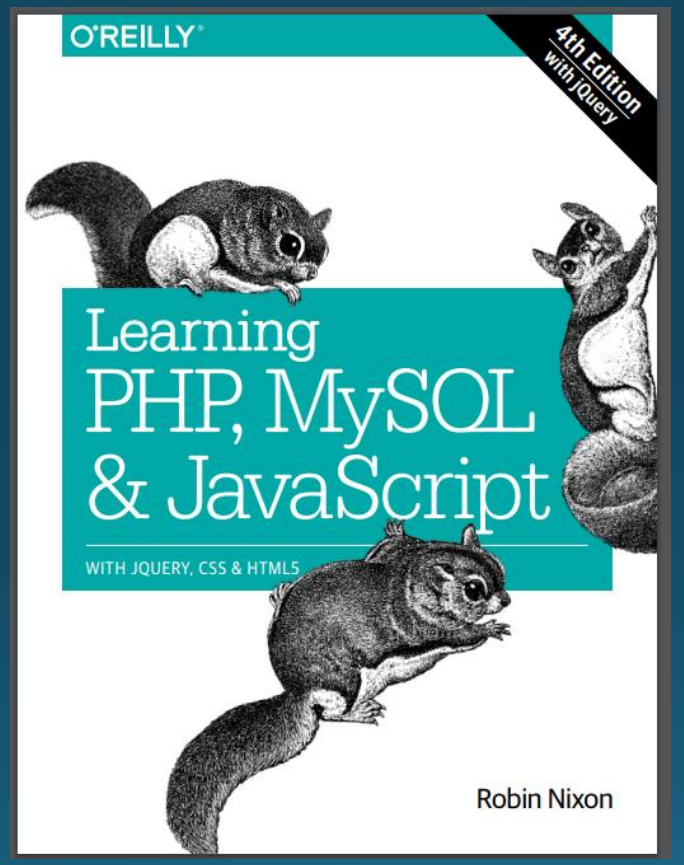
Pulkit Agrawal	7840b06	PKA:: FIX CORNER CASE ASSOCIATED WITH MODALS FOR HISTORY.	pack_inventory	14 hours ago
Pulkit Agrawal	a4fbd67	PKA:: DB Dump for package_supplies.	pack_inventory	15 hours ago
Pulkit Agrawal	dc6a5b9	PKA:: Package History Modals complete -- ALL CODE COMMENTED.	pack_inventory	15 hours ago
Pulkit Agrawal	fa292ad	PKA:: Check to make sure all add and subtract are working in canning, ke...	pack_inventory	15 hours ago
Pulkit Agrawal	e959126	PKA:: CLEAN UP ADD FUNCTION	pack_inventory	16 hours ago
Pulkit Agrawal	ee81fe1	PKA:: Subtract function working for package supplies (generic and brand...	pack_inventory	16 hours ago
Pulkit Agrawal	7f45a4f	PKA:: Start subtraction function.	pack_inventory	yesterday
Pulkit Agrawal	665cbd6	PKA:: Create subtract modals with pre-populated rows. Delete Distributi...	pack_inventory	yesterday
Pulkit Agrawal	f9e5d6a	PKA:: Add in Inventory Total Quantity Units for brand specific items	pack_inventory	yesterday
REA	3994e0b	REA:: Filter History // Fixed data.php controller when no recipe version present (l...	antman	yesterday
REA	2bc83d8	REA:: BBT History finished / Force Carb started / updated ferment history to have...	antman	2 days ago

Transforming Between Languages



External Resources

CS50



Textbooks

Understand Fundamentals

stackoverflow

Online Forums *(Be Cautious!)*

Questions

PKA@The5thIngredient.com