Lessons in Big Data

InfoAg Conference July 18, 2018
INNOVATE

VALIDATE

INNOVATE

VALIDATE
WHO IS MAIN STREET DATA

• Strong advocate for data analytics in agriculture
• Independent
• Credible
• Collaborative
• Pro-Partnering
A POWERFUL PARTNERSHIP

IBM

GiSC

MAINST
DATA
The key to accelerating adoption is validation and the key to validation is benchmarking.
The Most Accurate and Objective Primary Data Set

**SCOPE**

**SCALE**

**QUALITY**

1 BILLION UNIQUE MICROFIELDS

SEVEN + YEAR HEAD START CREATING THE LARGEST SOURCE OF CLEAN “GROUND TRUTH” YIELD DATA IN THE U.S.

TEST PLOTS

Main Street Data

1.3B

5,100

10,000

Leading Agribusinesses

USDA

Main Street Data
THE HIGHEST QUALITY YIELD DATA SET

- Proprietary Fleet of over 300 Combines Rotating to ~ 800 Customers per year in 26 States
- More than 7 Years of Data Collected, Using Verizon’s Data Network
- Focused on Corn, Wheat, and Soybean Crops
- This method of highly controlled data collection at scale will not be replicated
The magnitude of our yield database is vast and collected in real-time.

Over 7 million acres of real-time yield results from a managed fleet of over 300 combines, which is 1.3 billion unique micro-fields that passed quality assurance, every yield observation is validated and calibrated, which makes the MSD yield database the largest and most accurate yield database available, which is every 150 square feet of a field.

1.3 billion unique micro-fields yield, weather, soil and topography, are used to create the MSD yield benchmarks & Validator.
## Unmatched Yield Data Process Delivers Differentiated Model Quality Yield Data + Ability to Ingest and Clean New Data Sets

<table>
<thead>
<tr>
<th>Unmanaged Data Collection</th>
<th>vs.</th>
<th>Managed Data Collection</th>
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<tbody>
<tr>
<td><strong>Random Combines</strong></td>
<td>MACHINERY</td>
<td><strong>Managed Fleet</strong></td>
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<tr>
<td>Difficult to Get Farmers to Provide Data, No Control Over Equipment Condition or Maintenance</td>
<td></td>
<td>Highly Controlled Logistical Operation, Including Inspection and Adjustment of Key Equipment Components</td>
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<tr>
<td><strong>Manual</strong></td>
<td>CALIBRATION and PREPARATION</td>
<td><strong>Precise</strong></td>
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<tr>
<td><strong>Unsupervised</strong></td>
<td>DATA COLLECTION and MONITORING</td>
<td><strong>Supervised</strong></td>
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<tr>
<td><strong>None</strong></td>
<td>QA and VALIDATION</td>
<td><strong>Rigorous</strong></td>
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<tr>
<td>No Way to Tell What Data Is Corrupted vs. What Is Valid</td>
<td></td>
<td>Industry Leading Control of Data Quality Assurance</td>
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THE MAIN STREET DATA PROPRIETARY ANALYTICS PLATFORM IS BUILT ON FOUNDATIONAL DATA AND SCIENCE, AND IS SCALABLE INTO THE FUTURE

UNIQUE MICRO-FIELD (150ft²) SIGNATURES

HYBRID REGRESSION MODELS
Proprietary Soil Index
Proprietary Harvest Index
Proprietary Field Index

YIELD PATTERN IDENTIFICATION
Proprietary methodology builds meaningful environmental and climatological layers, which are paired with yield data to understand yield outcomes

YIELD DATA ANALYSIS
Data science engine analyzes 1 billion unique micro fields of data to develop yield benchmark

BILLIONS of DATA ELEMENTS

PROPRIETARY YIELD DATABASE
Yield Data Captured from Managed FleeT

PUBLIC DATA
(dttn) (USDA) (NRCS) (WSI)
(20 Yr. History, Daily 10-Day Forecasts) (Drought Monitor, Crop Progress) (20 Year Moisture Index) (Soil Index) (Precipitation, Temperature, Growing Days)

COOP DATA
(GISC) (New Yield + Farming Practice Data)
Main Street Yield Database: Yield data captured from managed fleet

Main Street Field Database: Proprietary analysis and methodology used to build environmental and climatological layers, which are paired with yield data to create unique Field Database

Main Street Yield Benchmark: Data scientists analyze 1.3 billion unique micro-fields of data to develop yield benchmark

GISC Data: Data collected through GISC members will provide rich source of not only yield data but also on farming inputs and practices that will allow MSD and GISC to expand and enhance benchmarking and validation into the future.
COMING SOON: MARKETVISION
CUSTOMIZED ANALYTICS FOR LOCAL GRAIN MARKETING

• Easy-to-use analytics tool that informs management and grain marketing decisions to increase profit potential real-time

• Sold to Growers, Land Owners and AgriBusiness
VALIDATOR IS LIVE
STOP BY BOOTH 156 FOR A DEMO
Thank you