

# **ANALYTICS CONSULTING LAB SYLLABUS WINTER 2024 01-23-24 UPDATE**

## **Background on the Analytical Consulting Lab**

The Analytics Consulting Lab (ACL) is part of the Foster experiential learning initiative. The specific interest in the Analytics Consulting Lab comes out of the deep demand for business leaders that can provide guidance in analysis and focus that analysis to specific business questions. Additionally, many recruiters and employers have commented that finding talent that bridges the business and analytical communities is difficult. The ACL strives to provide a real-world learning experience for students to work with sponsoring companies on business questions that revolve around analysis. Students work in teams using analysis (broadly defined) to answer current and important business questions.

## **Available Projects from the following Leading Firms:**

**Seattle Mariners**  
**Sonder – Managing Hotel Stays**  
**Foster Climate Risk Lab**  
**Genomma Labs and Price Study on Amazon**  
**Changing Tastes – Food Economic Studies**  
**Philips Healthcare**  
**Element Bars**  
**Lawrence and Scott**  
**UW Athletics – Preparing for Big Ten Success!**  
**José Andrés Group– Sustainable Spanish Canned Seafood Study**  
**Tubepoka Development Initiative – Malawi**  
**AEON LAW**  
**David Stine Furniture**  
**Investment Search Fund Study**  
**AgriPilot.AI**

**Project descriptions follow herein.**

## **READ THIS!!!! Course Expectations**

Analytics Consulting Lab is an experiential class, with a strong focus on the application of analytics and market measurement in a real-world, client-facing, consulting environment. It provides an excellent opportunity for Foster MBA students to get real-world experience in consulting and in applying analytics and market measurement techniques to actual business challenges and opportunities.

Therefore, it is important to set some very important expectations in regards to this class:

- **The class does NOT involve lectures to present new theory or analytical techniques. Students seeking new analytical techniques or lectures on analytics, primarily, should consider other courses for that goal. This is a class on the application of analytics in a real-world, team-based environment.**
- **You will work in a team. Team dynamics will be instrumental in your experience.** It is important that you are available, accountable, dedicated, and willing to contribute in a team. In most cases, you get to choose your teammates. Be extremely open and honest with your teammates in terms of their contribution and hold each other accountable in a supportive and respectful manner.
- **The Professor is your advisor, coach, aide, and sounding-board.** He is here to help you in your journey through the project. **The MBA team is in a leadership role to execute the project, communicate and present to the client, and formulate recommendations.**
- The Professor can help you with reviewing regression, analytical concepts, data visualization, consulting best practices, and most any topic that arises on the project. **Execution of the project is, however, the responsibility of the MBA team.**
- **Each project in ACL is unique, real, and driven by an actual client-facing challenge or opportunity.** Your project will vary from others. Projects have different goals, different analytical opportunities, and clearly different clients. You can apply for the project(s) that most interests you.
- **ACL is a lot of work, a lot of learning, and a lot of fun.** Many students consider it a top Foster experience. Be sure that your schedule, life, and other commitments permit you to get the most from the class.

### **Course Details**

The ACL is offered as MKTG 535.

Most projects in the ACL are sponsored by Seattle-based firms, professional contacts of Dr. Walker, and alumni of the school, at very senior levels in their organizations.

Students taking the ACL are assured a strong learning experience and a commitment from the firm to provide access to decision maker and information that will make the experience meaningful.

### **Application Process**

Students interested in the ACL must select MKTG 535 during elective bidding. Once in the class, email Dr. Walker of your:

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- Project Choice #1
- Project Choice #2
- Project Choice #3
- Any fellow desired student for a team (limit of one student to specify). Team member preference is only considered if both people select each other.
- Other information that you may wish to share in your application, personal goals, career aspirations, etc.

Student information in the application process is used in formulating teams and assigning projects so that goals, backgrounds, skills, and expectations are all best aligned.

### **Project Assignment**

Student assignments to client projects will be based on individual preferences, requested skill sets and industry experience, and team member diversity. Every attempt will be made to grant students their first or second choice of projects, and only third if necessary. Student information is collected via the application. Students may select one fellow student for a project. This fellow student selection is honored as possible, if the both students select each other.

Students will be notified about their project assignments during the term before the class. All efforts are taken to accommodate first choices, while forming teams with an appropriate set of skills and interests.

### **Case Packet and Readings**

As this course is an experiential one, there are no specific cases to prepare. However, many students have looked for examples of companies that have excelled at Analytics. Also, as the course emphasizes consulting and best practices in a professional client engagement, there is a need to consider some of these best practices. Given this, the following text is recommended and optional:

- 1) The McKinsey Way, Ethan M. Rasiel, McGraw-Hill

These texts are easily purchased on-line, so these are not requested in the bookstore.

### **Course Meetings**

As with other experiential courses, the focus is on the team project and its delivery to the sponsoring company.

Teams will meet with the Professor on a regularly and frequent basis in order to discuss the analysis, flow of work, final presentation and delivery to the sponsoring team. The class will also meet with the prescribed schedule to review concepts and themes important in being successful with the analytical consulting function and in order to provide presentations for the purpose of group learning.

All Group Meetings are to be held with the team and the Professor at a pre-defined time that works mutually. Meetings with the Professor and Client must conclude before

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4:30PM on weekdays. Students who cannot make meetings in person are encouraged and welcome to join via telephone.

Pre-term activities

- Project identification
- Team formation
- Identification of Team Liaison to Client
- Identification of Team Liaison to Professor
- Client Introduction
- Project description
- Schedule first group meeting with Professor
- Schedule first client meeting with Client

Week I:

- Class Session I
  - Getting Started with ACL
  - Managing Project Ambiguity
  - Managing Teams
  - Overview of the Consulting Approach
  - Dealing with Data, Descriptive Statistics
  - Using Tools: JMP, Excel, Tableau

Week II:

- Group Meeting I:
  - Developing a Work Plan, Project Analysis
  - Examples of Past Analysis
  - Use of Graphics, Best Practices in Presentation of Data
  - Building Points Through Analysis

Week III:

- Group Meeting II:
  - Preliminary Analysis of Data
  - Teams to bring descriptive statistics to meeting with Professor
  - Work Plans due to Professor**

Week IV

- Group Meeting III: Focus on Data and Analysis
  - Address questions and issues in analysis

Week V

- Group Meeting IV: Prep for Midpoint Check-in
- Class Session II
  - Mid-term progress review and **team mini-presentations**
  - Mid-point document due at beginning of class**

**Mid-point team and mid-point peer feedback due to professor**

Week VI :

Group Meeting V:

Mid-point feedback, planning for next phase

Week VII

Group Meeting VI:

As per team needs

Week VIII

Group Meeting VII:

As per team needs

Week IX

Group Meeting IX:

Dry-run of presentation with Professor

Week X

Class Session III

Project Findings

**Final project deliverable due to Professor and Client on last**

**Wednesday.**

**Meetings with Clients to be held and presentations made to client in person during or before final week of classes.**

As in any professional consulting engagement, the students are requested to regularly meet with the client to receive input, data, direction of project goals, and feedback on the progress as needed. All clients are committed and dedicated to fulfilling the learning and business aspect of the project.

Teams may schedule additional time with the Professor as needed and as available.

**Grading**

Grading of the project is driven largely by the quality of the team project. The Professor will evaluate the project, its analysis, presentation, and delivery on the following major points:

- Analysis:
  - Quality of analysis (thoroughness, appropriateness)
  - Clarity and quality of model summary and description
  - Intellectual impact (was the analysis creative, novel, clever, or otherwise compelling?)
- Project Document
  - Quality of project description
  - Quality of analysis summary

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- Quality of recommendations and conclusions
  - Use of meaningful graphs, graphs, and presentation of data
- Presentation Documents
  - Quality of presentation
  - Professional impact of the presentation
  - Ability to communicate main points of the analysis and recommendations
- Team Meetings
  - Preparation
  - Organization
  - Progress

The Professor will ask the client company to provide feedback on the same above points.

Peer evaluations will also be collected from each member. Each student must rate their teammates on the following dimensions:

- Intellectual and creative contribution
- Workload and willingness to take initiative
- Organization, preparation, and availability
- Collaboration and respect for peers

Peer evaluations will be on a 1-10 scale with 10 being excellent and 1 being poor. All peer evaluations will be treated confidentially.

All ACL students must participate, as participation is also important to make this a meaningful learning experience for all involved.

### **Grade Breakdown**

Professor Evaluation of Final project materials and presentation:	40%
Professor Evaluation of Work plan and Mid-point review:	20%
Client Evaluation of Final project materials and presentation:	15%
Peer Evaluations and Participation:	10%
Professor Evaluation of Preparation during meetings:	15%

### **Role of the Professor**

The Professor serves as an aide, counselor, and advisor for the team. The Professor does not conduct the analysis, but will provide detailed direction on analytical approaches. The Professor does not serve as the team liaison or representative to the client. The team must organize itself and identify such a liaison. The Professor may accompany the team to select team meetings and or participate in calls, but the Professor cannot in practically, attend all such meetings.

In the event that the client or the ACL student team encounter an incompatibility or encounter an issue, the Professor will intervene to remedy the situation.

The Professor may also resolve project assignments, as needed.

### **Role of the Team**

The team will consist of 3 to 7 Foster MBA students working as a team to complete analysis, as defined by the client as agreed to before the start of the academic term.

The team should be mindful to control the amount of time that is required of the client. This means being prepared for meetings, having a designated liaison to schedule meetings, request information, and follow-through with next steps. This level of preparation and understanding is needed as most clients sponsor this project but do not allocate a full-time associate to work with the ACL team.

The team should expect to contribute about 400-600 hours (depending on team size) over the 10-week period to this ACL project. This is a reasonable expectation for a team working on a project and is consistent with other experiential and lab courses in other MBA programs. This translates to 8-10 hours per person per week.

The team will produce a white paper that documents the study, results, and recommendations. The team will also prepare a presentation and deliver it in person to the client and its team. A reduced version with emphasis on key findings is also to be presented at the last class.

### **Role of the Client**

The client provides the real-world learning opportunity, data needed to complete the appropriate analysis, and feedback on the quality of the project and its analysis. The Client is not expected to solve the problem, but should provide ample expertise, data, and contextual information to the ACL team.

### **Prerequisites**

All students in the ACL must have completed a statistics class. There are no other requirements.

### **Some FAQs:**

#### **What is the Analytical Consulting Lab?**

It is a course available to Foster MBA students that are interested in the use of analytics in business. Students must take specific prerequisites and have strong academic performance in such classes to take the Analytics Consulting Lab. Students work in teams to resolve a real-work business problem using analytics.

#### **What do you mean by Analytics?**

It is meant to be broad but includes the use of specific quantitative approaches, such as regression analysis, time series analysis, forecasting, market segmentation, data mining, optimization, logistical analysis, scenario simulation, and risk analysis, as examples. In

particular, we mean solving a business problem using data and applying one of these quantitative approaches.

**How does this experience benefit the students?**

Foster MBA students taking the ACL will work on a real-world problem under the direction of Dr. Walker. The opportunity to apply analytical theory and learn about a business, make recommendations, and bring together many aspects of their business education is unparalleled. We also ask that the students focus on how to communicate the results of analysis in the context of business decision-making. For students interested in moving to an industry to deep in analytics after graduation or developing new business skills in analytics, this course will be very attractive.

The Analytics field is one of the most demanded in the workforce and students have expressed deep interest in developing strong skills in analytics. This course meets an interest in our students and provides them an exceptional experiential learning opportunity.

**How does the Client benefit from this opportunity?**

The ACL is an intensive analytics elective that attracts some of our most analytically talented MBA students. It is expected that the student group of 5 will commit about 500 working hours to the project. Additionally, the student project will be overseen by Dr. Walker, who has 20 years plus experience and deep expertise in analytics and its application in business.

We expect that the project deliverables, recommendations, and report will provide direct value to your organization. However, we also believe that the project provides your organization and opportunity to determine how and where to invest in more analytics. If this includes the acquisition of more analytical talent, the project provides an excellent conduit to members of our student body that are talented and interested in this space.

**How does the team work with the Client?**

For the student team, the partnering company is a client. They will conduct their analysis and provide recommendations through a report and presentation in the same format and in the same manner as a consulting service. The faculty member also serves as an important liaison between the partner and the student, serving to manage time commitments and negotiate deliverables. It is expected that the student team can meet with and speak with key members of your team that can help them answer questions relevant to the analysis.

**Which software will we use?**

It really depends on the project and your familiarity with software packages. This course is software agnostic, meaning most software packages are acceptable. The course does not have as a goal to teach a particular package, but rather to enable analytics in a business project. You are welcome to use software of your choice. Most projects can well be completed with a combination of Excel and one statistical package. If you are unsure



or unfamiliar with statistical software, we will discuss that during our first meeting. Some packages may have a minimal cost.

**What about the data?**

To make this experience valuable to the students and the to solve the business problem at hand, we do need access to data. It is important that the data be available before the project begins. Additionally, the project should make use of “scrubbed” data, that is data that is free of specific information that would be sensitive or otherwise governed by a law, such as social security numbers of customers or names of customers.

**What types of business problems can be considered?**

As analytics is helpful in many business functions, we are open to many applications of analytics. Specific business problems in marketing, forecasting, customer segmentation, pricing, commodity analysis, logistics, risk management, operations, inventory leveling, supply chain improvement, and scenario planning are sure to provide great analytical opportunities.

**Will the analysis become public?**

The work between the students and your organization is considered confidential. If necessary, the students may be asked to sign a non-disclosure agreement. If this is necessary, we ask that the non-disclosure agreement be such that it does not prevent the students from seeking employment or from building on their experience gained on the project.

From time to time, such company-student projects lead to very interesting business lessons. As a leading business school, we are interested in sharing such lessons with our next generation students and business leaders. We do this through business cases. If such an opportunity exists with your project, we will seek your permission to relate the business lesson through a case study.

**How to I join the Class?**

First, you must meet the prerequisites. Then submit your project selections to Dr. Russell Walker upon entering the course.

**Contact Information**

Please contact Russell Walker, Ph.D.  
Via e-mail: [rwalker1@uw.edu](mailto:rwalker1@uw.edu)

# **SPRING 2024 PROJECTS**

# SEATTLE MARINERS

## FAN ANALYSIS AND SEGMENTATION



**Background:** The Seattle Mariners are currently conducting a project that will evolve fan segmentation towards 'needs based clustering.' This change will support the business' capability to:

- Understand opportunities for incremental monetization
- Refine messaging points/tone and mediums to improve consumers' attention and product conversion.
- Make internal trade-off decisions based on identified priority segments.
- Drive creativity of product evolution (tailored offerings/ new experiences).
- Allocate digital and physical resources in the highest-leverage ways possible.

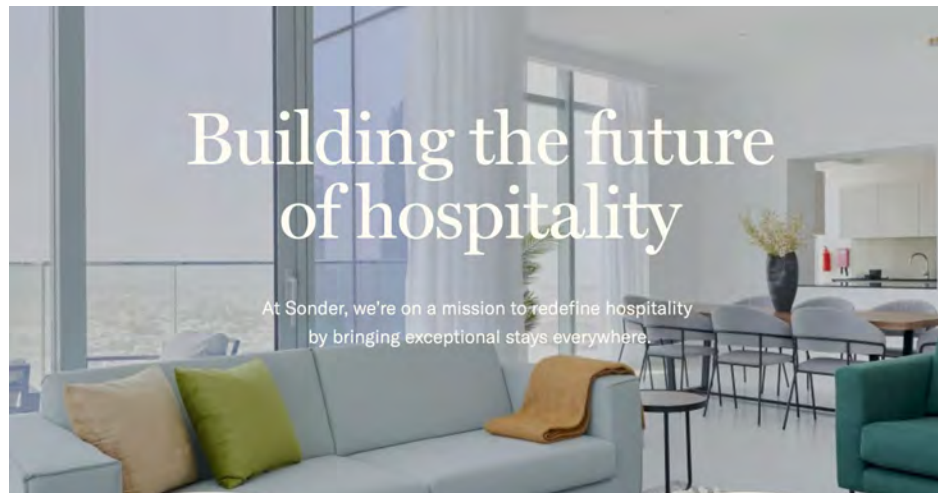
**Analysis:** We would like to understand, based on initial clustering results, which fan segments should be prioritized based on highest opportunity for monetization within the next 3 years and what those customer journeys should look like

*The Seattle Mariners are an alumni firm of the ACL!!!*

# **SONDER**

## **SONDER.COM**

### **OPTIMIZING HOTEL REVENUE**



#### **About Sonder:**

Hotels aren't always hip. Hosts aren't always reliable. So we're changing the game—with spaces that inspire and delight, that fulfill needs without sacrificing style, all while delivering seamless, personalized experiences. Check in, request fresh towels, and get dinner recommendations—all from your phone. By eliminating inefficiencies as we grow, we can deliver hospitality that's both remarkable and accessible. Because everyone should be able to afford an extraordinary place to stay.

#### **Project:**

Imagine you're operating a 100-room hotel over a week-long period. So, you have a supply constraint of 700 available units of inventory. Your job is to set seven prices – one for each day of the week – that maximize revenue.

You earn revenue based on the number of rooms occupied on each night and the prices paid therefor. The trick is, there are only 49 discrete booking types. Each booker can arrive on {Sun, Mon, Tue, Wed, Thu, Fri, Sat} day of the week and can stay in the hotel for {1, 2, 3, 4, 5, 6, 7} number of nights. A booker of type Thu-3 will evaluate whether to buy a stay in your hotel based on their

willingness to pay being greater than or equal to the combined prices of Thu, Fri, and Sat. So you can actually affect the quantity of demand you accept on one calendar date by changing the prices on an adjacent date.

The second trick is, the order in which bookings occur matters. If your hotel accepts the Thu-3 booker, then you will not be able to place a Sun-7 booker in the same room, because the room is already occupied on Thu-Sat nights. If you want to sell-out that room over the week, you'll instead need to find a Sun-4 booker, who would check-out on Thursday morning before the Thu-3 booker checks-in. Or, sell to both a Sun-2 and Tue-2 booker, and so on. In general, by accepting a booking today, you limit your ability to accept a booking tomorrow. As a result of your ever-decreasing pool of bookable demand, you'll eventually have to lower price, which will injure your revenue.

We want you to create simulation tooling that solves for the prices that tend to maximize expected revenue, given a set of demand equations for the 49 customer types. Some hotel markets will have balanced demand, some will have imbalanced demand, and their demand distributions might be entirely different during holidays or special events. So, the tooling needs to be built in such a way that you can easily loop through solutions under different sets of inputs. Intuitively, we expect that the more imbalanced demand is, the more variation prices should have, but we want to put actual numbers to that hypothesis.

After solving for baseline pricing strategies, there are additional complexities you can add to this project. You can add the ability to set a minimum length-of-stay for different dates. Or perhaps you decide that there are milestone points within the booking window when you can change price or min-length-of-stay parameters.

We want to see an efficiently-built simulation tool that can produce optimal-price results under a given set of inputs. We want to see you start simple in your work, ensure the models are tuned correctly, gradually add complexity, and ensure the finished product is executive-friendly. And we want to see a final deliverable in memo form (not slideshow) that explains the results of the analysis and the methodology (in that order).

***The leadership of Sonder includes alumni of the ACL!!!***

# CHANGING TASTES

## FOOD, AND ENVIRONMENT ECONOMICS



Changing Tastes is a strategy, culinary, and sustainability consultancy creating successful ventures and meaningful change in the food sector.

We work with our clients to achieve greater success by understanding and finding opportunities at the intersection of five key trends that are driving change in our food system: sustainability, public health, information technology, demographics, and the changing role of the culinary professional and foodservice industry.

### Certifications: Do They Create or Destroy Progress and Value?

Should food companies and brands use certifications to back up their sustainability claims? This is the urgent question as many well known global brands are facing lawsuits for consumer fraud (or greenwashing) by relying exclusively on certifications to support their claims of "sustainable products" and are being challenged on whether or not these products are sufficiently better...or better at all compared to "business as usual."

The deeper question is does reliance on certification lead to better business outcomes and create financial value, and does it also result in actual improvement and benefit to the environment? And is it still a preferred practice now that block-chain traceability is growing in implementation?

Third party verifications of food have a long history in the U.S. going back to the creation of kosher certification by the sheriff and rabbi of New Amsterdam (now Manhattan) almost 500 years ago. Halal followed the same path on an accelerated basis with Malaysia now being a center for global trade in halal certified foods.

In more recent decades, the US congress and the USDA set a national standard for organic which grew an industry with a market of US\$ tens of billions while with the EU also established national and global standards for organic certification and the EU created a host of others. Third party standards like Fair Trade, Rainforest Alliance, Utz, Certified Humane and a host of others have grown in marketplace presence and more recently the Marine Stewardship Council and a handful of others are now certifying fish and seafood and reaching into the ocean.

Of interest, independent standards like MSC are also independent businesses and have granted "exceptions" to compliance in order to secure market presence with key producers while other standards, like Kosher and Halal, are "black and white" about meeting them.

So here are the questions:

1. When a business relies on a third party standard, does it result in better business outcomes? Does it help market entry, acceptance, sales, etc.? Does it affect brand value (do you trust the brand or the mark of the certifier), etc.
2. When they do so, does it drive improvement in environmental, animal welfare or other relevant areas of performance? Or are the standards more likely to confirm current practices.
3. Is there a model that works better than others (such as government managed, independent, etc.) in achieving sustainability outcomes?

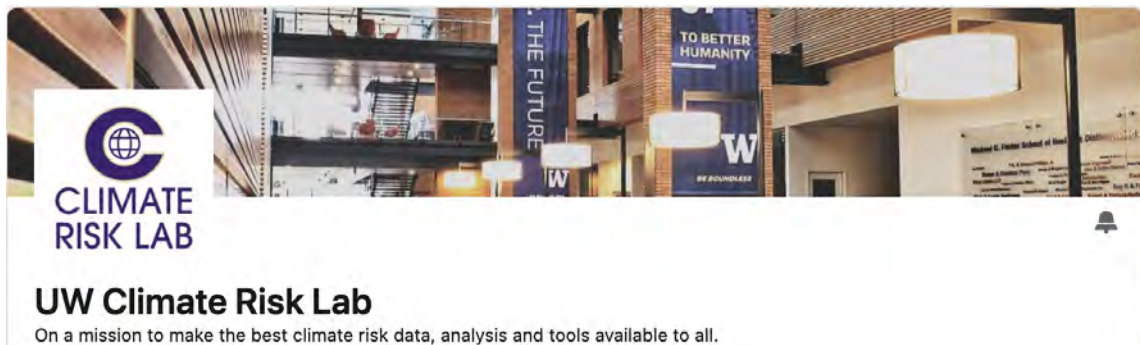
***Changing Tastes in an Alumni firm of the ACL!!!***



# FOSTER

# CLIMATE RISK LAB

## SUSTAINABILITY ECONOMIC ANALYTICS



**Project Title:** Analyzing and Mitigating Climate-Related Financial Risks in Washington State's Electricity Grid

**Overview:**

In this quarter-long project, MBA students will delve into the complex landscape of climate-related financial risks impacting the electricity grids, with a specific focus on the Washington State power grid. The objective is to provide a comprehensive consulting-style assessment of risks and opportunities posed by physical climate risks to the state's power utility sector.

**Key Deliverables:**

- **PESTEL Analysis:**
  - Conduct a thorough Financial PESTEL analysis for Washington state utilities.
  - Identify key factors (Political, Economic, Social, Technological, Environmental, and Legal) influencing the financial landscape of the power sector.
- **Risk Assessment:**
  - Evaluate short-term and long-term consequences of climate-related hazards (wildfires, droughts, floods) on the power grid.
  - Quantify potential financial impacts and losses associated with each hazard.
- **Investment Scenarios:**
  - Analyze the feasibility and implications of investing in climate resilience solutions at different time points.
  - Compare scenarios of investing now versus delaying investments in response to specific climate-related hazards.
- **Stakeholder Engagement:**
  - Interact directly with Washington state utility operators and decision-makers.
  - Gain insights into existing challenges, concerns, and mitigation strategies employed by the utility sector.
- **Consulting-Style Report:**
  - Develop a detailed report highlighting risks and opportunities.



- Provide actionable recommendations for adapting to and mitigating climate-related financial risks.

**Expected Outcomes:**

- **In-Depth Understanding:**
  - Gain a profound understanding of climate-related financial risks impacting electricity grids.
  - Develop expertise in applying PESTEL analysis to the utility sector.
- **Practical Application:**
  - Apply theoretical knowledge to real-world scenarios by engaging with industry stakeholders.
  - Translate findings into actionable recommendations for sustainable business practices.
- **Team Collaboration:**
  - Enhance teamwork and collaboration skills by working on a multidisciplinary project.
  - Foster effective communication within the team and with external stakeholders.

**Learning Objectives:**

- **Climate Risk Management:**
  - Understand the nuances of managing financial risks associated with climate change.
  - Develop strategies for building resilience in the face of climate-related challenges.
- **Strategic Decision-Making:**
  - Learn to make informed and strategic decisions in response to dynamic environmental factors.
  - Evaluate the trade-offs between immediate and delayed investments in climate resilience.
- **Stakeholder Engagement:**
  - Hone skills in stakeholder engagement, negotiation, and collaboration.
  - Experience firsthand the complexities of working with industry professionals and decision-makers.
- **Consulting and Reporting Skills:**
  - Develop consulting-style report writing skills.
  - Learn to present complex information in a clear and compelling manner.

***Foster Climate Risk is an Alumni Firm of the ACL!!!***

# ELEMENT BARS

## WWW.ELEMENTBARS.COM

### HEALTH BARS, PRODUCTION ANALYSIS

[Get a Private Label Quote](#)[Manufacture Your Bar Recipe](#)[Learn More About Us](#)

#### MORE ABOUT ELEMENT BARS

Providing exceptional food bar manufacturing since 2008.



#### OUR STORY

In 2008, Element Bars was founded with the goal of providing custom nutrition bars directly to online customers. After developing expertise in small run energy and protein bar manufacturing, we opened our private label capacity to brands and entrepreneurs. We have grown as a food bar manufacturer alongside our wholesale co-packing partners and we are committed to creating a product that supports your vision for a bar brand.



In the food industry, the FDA sets a standard maximum allowable variance (MAV) for how much the actual net weight of a product is permitted to be under the declared label weight. Typical MAV for a product is around 9%. Food manufacturers work to find an optimal balance to safely avoiding falling under this weight, while also producing the most output possible. As a food bar manufacturer, the initial goal would be to identify the mean of four of our most popular bars (listed below) vs the declared label weight of 26gs. Internal records of the daily baked averages for each bar can be used to sample the population and estimate the mean. Provide confidence intervals to show the range of the true mean. The estimated means and data provided can be used to find trends in yield and profit, and reveal opportunities for improvement.

Data for the four food bars that will be provided: final production yields, daily baked averages, ingredient cost, rate, water activity

#### Legacy

Apple Spinach

Banana Carrot

#### Expansion

Blueberry Oatmeal

Banana Strawberry Sun butter

**Some questions to consider:**

How do the means of the different bars vary?

Is there a correlation to yield quantity based on what bar is being produced?

How does that relate to the mean? Use production yield data to help calculate.

What bars generate the most profit based on ingredient cost, rate, yield, labor cost?

The four bars can be placed in to two separate categories, Legacy and Expansion. The most notable difference between legacy bars and expansion is the expansion bars have puree in them and the legacy do not. Water activity is historically higher in the bars containing puree. Are there noticeable trends in the data between the two categories?

***Element Bars in an Alumni firm of the ACL!!!***

***Founder, Jonathan Miller, is a Shark Tank Winner – check him out!***

# PHILIPS HEALTHCARE

## HEALTHCARE ANALYTICS



### 130 Years of Meaningful Innovation

Helping shape the future of healthcare since 1891



#### Moving Forward Together

We believe there is always a way to make life better. Watch how Philips has worked to improve people's lives and continues to reimagine healthcare.

#### About Philips:

Philips is a global leader in healthcare, with businesses that touch patients throughout the care cycle. With a goal of positively impacting more than 3 billion lives over the next 5 years, Philips is committed to making the world a better place. Additionally, Philips continues to rank as one of the most sustainable and most innovative companies within the healthcare industry.

#### Overall project objective:

The objective of this project is to use data to try to develop a prediction model to help identify and prioritize target customers for the sales team. We want to look at installed base, win-loss, and funnel data to try to anticipate where the sales force should be spending their time, and has the best chance for success.

#### Expected outcome:

For this project, we would like to generate a prioritized list or scoring/ranking system that can be used by the salesforce to prioritize time and effort. Ideally, we would be looking to identify:

1. Hospitals/imaging centers that are likely in a purchase window.

2. Hospitals/imaging centers that might be looking to change vendors if with a competitor
3. Most likely system type and brand to be purchased
4. Any other insight that might help figure out where to best spend time

Ideally, whatever is completed can be designed in a way that new data can be uploaded on a regular basis to keep the model fresh.

#### **Opportunities for students:**

In addition to working through data and providing direction that could be incorporated into future strategy, students will have the opportunity to receive mentorship/guidance/information from a Foster MBA alumni. There will also be an opportunity to interact with other Director-level individuals within Philips through interviews and presentations. Finally, for those that are interested in pursuing a career in healthcare, this will create an opportunity to build connections.

#### **Data background:**

There are a variety of different reports that are generated to look at the installed base of CT scanners (as well as other medical radiology equipment) in the United States, as well as the funnel of opportunities that sales people are pursuing. However, these are usually in separate locations and are used to provide more of a backward-looking perspective rather than a forward looking perspective. The data should be robust enough to design and test a model.

#### **Data overview:**

For this project, we will provide competitive installed base and win-loss data covering the past 3-5 years, and forward-looking funnel for up to 3 years. Additional data may be available regarding facility demographics, installations of other radiology systems (e.g., MR), or other factors as the team deems necessary to develop an accurate model.

#### **Questions to explore during the project:**

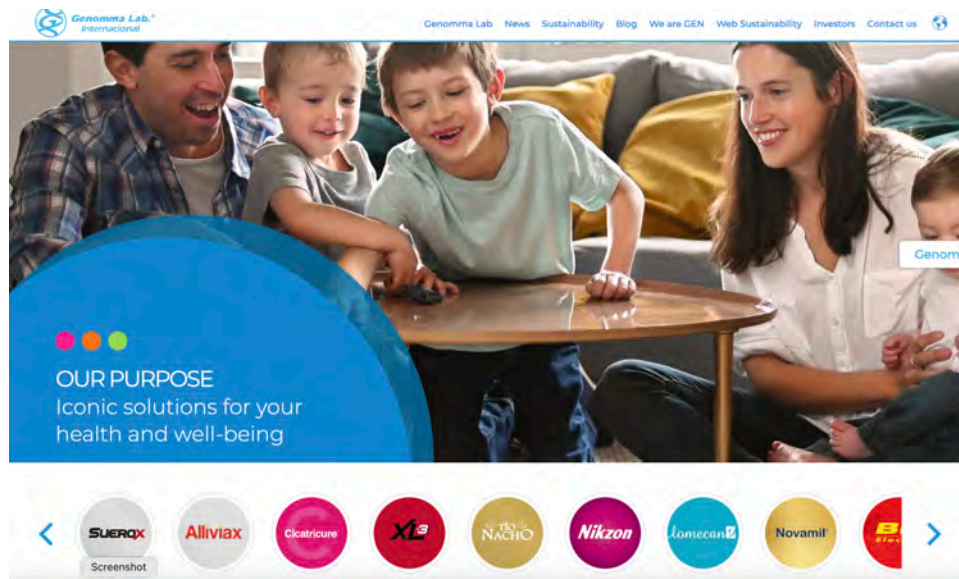
As we look at the ability to predict CT purchases, some questions to explore could be:

- What currently installed CT system (brand/model) is being turned over the most frequently?
- What brand is least likely to see customers purchase the same brand for their next system?
- What is the most common system that is being purchased?
- What are the characteristics of facilities that are most likely to purchase a new scanner?

*The Philips Team includes multiple Foster MBA alumni and UW alumni. They are excited with work with ACL!! Philips is also an alumni firm of the ACL!*

# GENOMMA LABS

## PRICE SENSITIVITY AND SALES ANALYSIS ON AMAZON



### ABOUT US

Genomma Lab is one of the **leading pharmaceutical and personal care products companies** in Mexico with an increasing international presence, that **develops, sells, and markets** a broad range of **premium branded products**, many of which are leaders in their categories.

**Genomma Lab USA** began in 2010 as a part of Genomma Lab International. Since then, it has been very successful in bringing to the **US Hispanic consumer** their favorite **OTC, Personal Care, and Beverage** brands.

### VISION

To improve and preserve the health and **well-being** of our customers through **innovative, safe, and effective products** providing development **opportunities** to our collaborators, **profitability** to our shareholders, and **positively impacting** our community and environment.

### MISSION

To be the **leading company** in the pharmaceutical and personal care products markets in which we are active; and to be recognized for our positive impact on the **health and welfare of people, communities, and the environment**.





## BRANDS & PRODUCTS

Genomma Lab USA carries **18 brands** across 3 different categories:

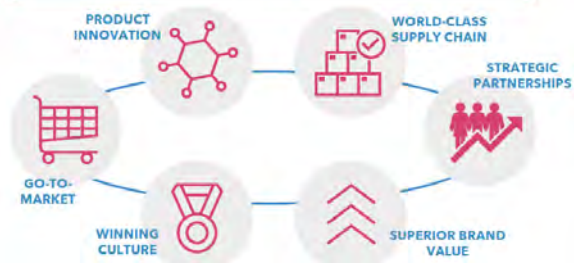
- **OTC (Over the counter)**
- **Personal Care**
- **Beverages**



## WHERE WE PLAY



## HOW WE WIN



# PROJECT DESCRIPTION

## Background

Price elasticity measures how responsive demand is to a change in price. Elastic goods are those for which demand is highly responsive to price changes, while inelastic goods are those where demand is relatively unresponsive. On the other hand, promotion effectiveness aims to understand which promotional tactics lead to an increase in sales or brand awareness. In the realm of retail and e-commerce, understanding both these aspects can be crucial to optimizing pricing and promotional strategies.

## Objective



To ascertain the price elasticity of our SKUs and evaluate the effectiveness and ROI of different promotional strategies across multiple retail platforms including Amazon, Walmart, Walgreens, etc.

### Data

- Weekly sales trends
- SKU Pricing data
- Competitor Pricing data
- Price promotions, discounts, coupons data
- Sales data from other platforms: Walmart, Walgreens, etc

### Methodology

1. **Data Preprocessing:** This involves cleaning the data, handling missing values, and structuring the data for analysis.
2. **Descriptive Analysis:** Understand the basic trends and patterns in the sales and pricing data.
3. **Econometric Modeling:** Use regression models to understand the relationship between price and demand. This can be achieved by developing a model that factors in price, promotions, and other potential external factors (e.g., seasonality, competitor prices).
4. **Segmentation Analysis:** Break down the SKU's into categories (like high-demand, low-demand, luxury, essential, etc.) to understand if different categories react differently to price changes.
5. **Promotion Effectiveness Analysis:** Compare sales trends before, during, and after promotions to ascertain their effectiveness. A difference-in-differences approach can be helpful here.
6. **ROI Analysis:** Measure the return on investment for each promotional vehicle. This can be calculated by understanding the net profit from the promotional sales minus the cost of the promotion itself.

### Business Questions

1. How does demand change with a 1% change in price for each SKU? (Price Elasticity)

2. Are there SKUs that show significantly different elasticity on different platforms (Amazon vs. Walmart vs. Walgreens)?
3. Which promotional strategies lead to the highest increase in sales or demand?
4. How does the effectiveness of promotions vary across different SKUs or SKU categories?
5. What is the ROI for each type of promotional vehicle? Which promotional vehicle provides the best return on investment?
6. How do competitor prices impact the sales of our SKUs?
7. Are there any external factors (like holidays, seasonality) that significantly affect the sales trends and promotional effectiveness?
8. Based on the elasticity and promotion analysis, what are the recommended price points and promotion strategies to optimize profits?
9. How do the sales trends vary post-promotion? Is there a significant drop in sales after promotions end?
10. Are there diminishing returns on repeated promotions? That is, do the same promotions become less effective if used frequently?

#### Deliverables

1. A comprehensive report detailing the findings, insights, and recommendations.
2. Data visualization dashboards showing sales trends, elasticity curves, and promotion effectiveness.
3. A presentation summarizing the key findings and actionable insights for stakeholders.

#### Limitations

The project should also consider potential limitations like the impact of stock-outs, the influence of reviews or ratings on sales, and potential changes in consumer behavior over time which might not be solely due to price or promotions.

#### Conclusion

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Understanding price elasticity and promotional effectiveness is crucial for businesses operating in competitive retail environments. This project aims to provide insights into pricing and promotion strategies, ensuring the company remains competitive and maximizes profits.

*Genomma Labs comes to the ACL via an ACL alumnus. They are excited to meet more Foster MBAs!!!*

# LAWRENCE AND SCOTT

## Marketing (Google) Analytics: Selling Luxury Items Online

LAWRENCE & SCOTT

Accents ▾

LJULI Crystal Art

Lighting ▾

Fine Art ▾

Gifts

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### About Us



On the bedside of Jennifer Aniston's bedroom, as seen in Architectural Digest

#### Our Mission

Founded in 1961, Lawrence & Scott is now an AAPL-owned small business in Seattle that has come to be one of the most trusted and preferred sources for interior designers and the most discerning clients nationally.

Inspired by nature, beauty, and the great appreciation of Asian cultures, Lawrence & Scott's original designs of fine lighting and curated home accessories are elegant in aesthetic and diverse in material, with an obsessive level of attention to detail and made "quietly sophisticated".

Under the new ownership team since 2018, Lawrence & Scott refreshed its core values, which include the implementation of environmentally sustainable practices throughout the company, the ethical treatment of staff and fabricators, and, of course, the creation of visually enchanting, luxury quality home décor.

L&S is an Envirostars<sup>SM</sup> certified company for sustainability practices.

#### Our Values

- We are inspired by the beauty of different cultures and their interpretation of nature.
- We treasure timeless, exceptional craftsmanship to create designs that will stand the test of time.
- We take care of our clients the way we would like to be taken care of, with integrity, respect, care, and attention to detail.
- We respect our artisans, employees, partnerships, and communities so we can take care of our customers with exceptional service.
- We are stewards of this planet, and we implement sustainable practices throughout the entire organization.

**About:**

Lawrence & Scott is one of the longest-running Seattle original high-end luxury brand for home decor and lighting products "to-the-trade" since 1961 ("To-the-trade" means selling exclusively through interior designers). The new ownership acquired the business in 2019 and is looking to revitalize the business, and bring it up to 21st century. While the end-user clients "write the checks", most of the design decisions are made by the clients' interior designers. To raise awareness among designers, Lawrence & Scott has been doing in-person marketing and online advertising through Google Ads (to increase brand awareness) and Instagram/Facebook ads (to generate leads and sales)

Impressively, Lawrence and Scott was named a top luxury retailer by Chairish in 2021 and 2020.

**Project Description:**

The team's goal is to identify the optimal demographics and methods to target advertising for a small luxury home goods brand in Seattle. The team will have access to our Google Analytics and our Google Ads data analytics.

***Leo Lam, PhD is the owner and is a UW and Foster alumnus! Lawrence and Scott is an alumni firm of the ACL!!!***

# UW ATHLETICS — ANALYSES FOR BIG TEN SUCCESS



The UW Athletics Leadership has three major questions that require careful analysis. The findings and recommendations of these studies will be especially impactful and helpful as UW moves to the Big Ten Conference in 2024.

**Project 1:** Comparing financial models for potential future student-athlete employment. This will look at different schemes in which athletes may earn while playing collegiate sports.

**Project 2:** Determining most efficient travel models in and out of Big Ten schools (charter v. commercial). This analysis might consider the schedule

of major teams and even which sports teams might travel together, to maximize the value of chartered of commercial flights. Some travel, owing to team size and equipment, as in football is very burdensome in travel. This analysis will need to consider such elements.

**Project 3:** Compilation and analysis of resource investment per student-athlete at Power 5 institutions (or just Big Ten & SEC institutions). In this analysis, you will compare UW to other schools on how many resources it provides per collegiate athlete. Recommendations for changes, enhancements, and improvements are the goal.

Students may select from the above projects or some combination of those, based on UW Athletic needs.

*UW Athletics is an alumni partner of the ACL!!! GO DAWGS!!!*

# JOSÉ ANDRÉS GROUP— SUSTAINABLE SPANISH CANNED SEAFOOD STUDY

 José Andrés!

[About](#) [Restaurants](#) [Foods](#) [Media](#) [Contact](#)



## CUSTOMER TASTES AND MARKET DEVELOPMENT

### A Market Study of the Sustainable Spanish Canned Seafood Market in the US

Canned seafood, or *conservas*, has a long history in Spain. Canning seafood has allowed the Spanish to harvest seafood when in abundance in the north of Spain and store it over long periods of time, especially through hot periods of the year, and transport and sell it without spoilage. The motivation for canning seafood in Spain was heavily driven by preservation, but it has evolved into a market of high-quality products used by chefs. Based on the local availability of the seafood, the market has been comprised of canned sardines, mussels, clams, tuna (albacore, called *bonito del norte*), cod, anchovies, squid, octopus and various other less common species of fish and seafood.



The benefits of canned seafood, especially from Spain, which uses olive oil for the packing, are multiple. The seafood is wild caught, natural, and comes from sustainable fisheries. The product is rich in healthy proteins and fats, including Omega-3s. The product is ready to eat, shelf stable, and useful in preparing many dishes. And, perhaps, most importantly, the product is delicious. Many brands of canned seafood exist in Spain and some even might be considered upscale to luxurious in price, positioning, and packaging.

In recent years, Spanish canned seafood has become available in the US, with multiple prominent brands selling their product at premium prices. This is a surprise in many ways. The US consumption of canned tuna (especially the skip jack species and brands like Starkist and Bumblebee) are way down over the last 30 years. This study will examine the perceptions and purchasing drivers for US buyers of Spanish canned seafood. Some inquiries worthy of consideration include:

1. Why are Americans so interested in Spanish canned seafood?
2. What is the importance of health, price, sustainability, usability, and taste on the purchasing decisions?
3. How do US consumers prefer to consume the canned seafood?
4. What makes this market so rich for expansion and growth?
5. Which products, brands, styles, packaging are seeing growth and why?
6. Where is this market headed in the coming years?
7. How can a Spanish canned seafood producer innovate and lead in the US market?
8. How does being Spanish help or hinder the product success in the US?
9. How can a celebrity chef best market and participate in this market?

The MBA team will have access to experts in the industry and access to product to conduct primary research. The analysis will be both reflective on what has happened in the market and predictive on what is expected to happen.

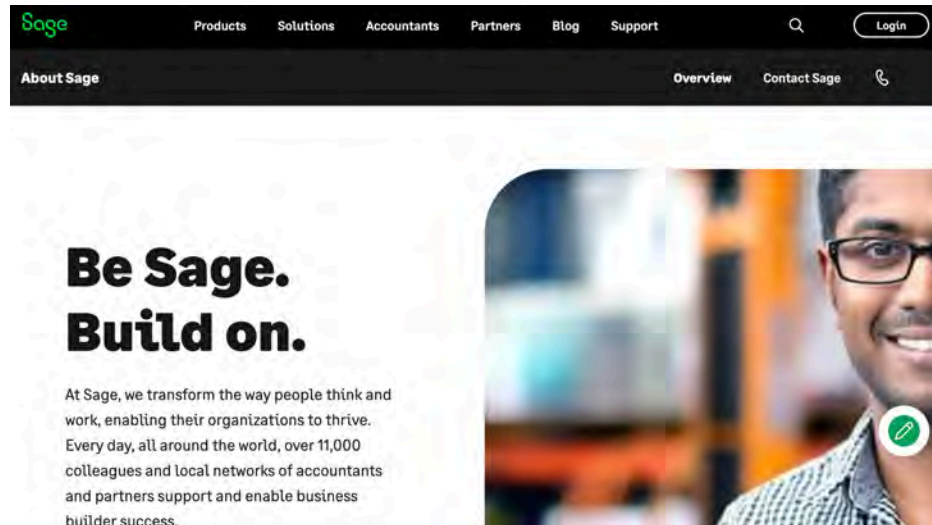
This project will be especially focused on the benefits (health, sustainable, taste) derived from the Spanish canned seafood. Your interest in these goals is especially valued.

***ACL is proud to partner with the José Andrés Group on this project!!!***

# SAGE

## SAGE.COM

### AI TOOLKIT DEVELOPMENT



#### Project – Applying Modern AI Tools

This project will leverage current and publicly available AI tools to process large amounts of accounting and payroll data.

- Building an AI developer toolkit that allows integrating pre-built AI models into their applications. This will involve hands on software development as well as software product management
- Leveraging anonymous and non-production Sage Data and correlating with 3<sup>rd</sup> party data to create data insights / data products. This includes leveraging cutting-edge technologies to perform data analysis at scale
- Leveraging chatGPT (or something like that) on the communications platform, includes hands on Ai / ML development and analysis including chatbots, and other techniques

*This project is sponsored by the Analytics Team of Sage, who is a UW alumnus!*

# TUBEPOKA DEVELOPMENT INITIATIVE – MALAWI STUDY

## ECONOMIC PROSPERITY AND DEVELOPMENT

Tubepoka Development initiative

Opening Hours  
MON TO FRI - 8:00 AM TO 5:00 PM

Call Us  
+265 1382343

Email Us  
INFO@TUBEPOKA.ORG



### ABOUT US

In an effort to develop Malawi in a manner to bring prosperity to its people, the Tubepoka Development Initiative (TDI) proposes a research project on the development of a comprehensive business plan for the feasibility of entering the banana industry and provide strategic recommendations for successful market entry and growth.

As you may be aware, the global demand for bananas has continued to rise owing to population growth in the region and elsewhere, making it a lucrative and

promising market. However, the banana industry is highly competitive, and developing a robust business plan is critical for long-term sustainability and profitability. The objective of this research project is to provide the necessary analysis and insights to guide TDI's decision-making process in entering the banana market.

The proposed research will consist of the following key components:

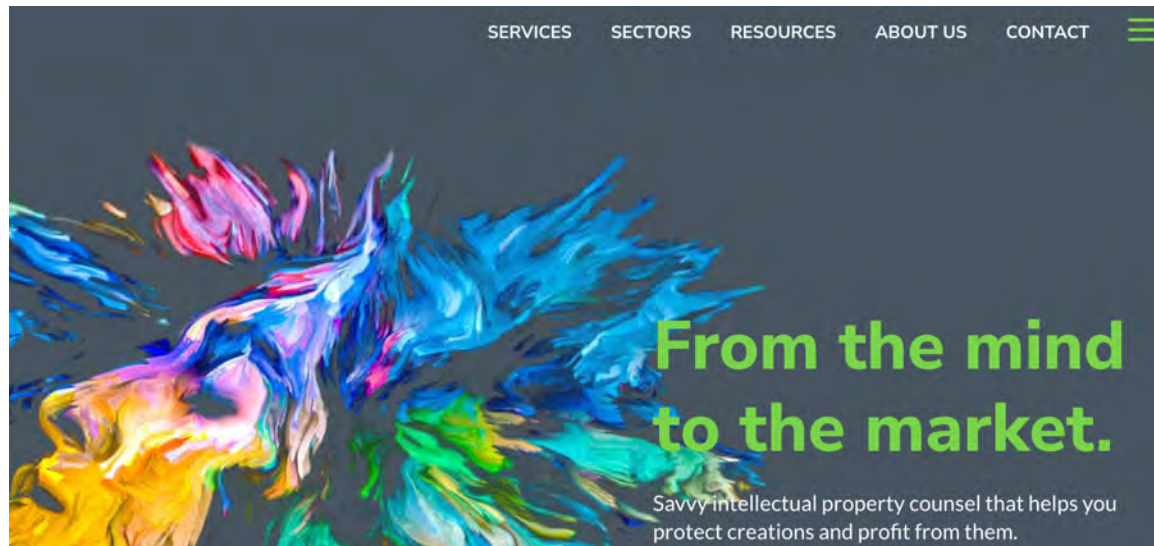
1. **Market Analysis:** This will include an in-depth examination of the current banana market in Malawi, including global and regional demand, key competitors, pricing trends, customer preferences, and potential barriers to entry. By understanding the market dynamics, TDI can identify its unique value proposition and target customer segments.
2. **Supply Chain Assessment:** The research will assess the banana supply chain, from sourcing and production to distribution and retailing. Understanding the supply chain's efficiency, potential risks, and cost structures will enable TDI to develop a competitive advantage and ensure smooth operations.
3. **Financial Analysis:** A comprehensive financial analysis will be conducted, evaluating the investment required for setting up banana plantations, processing facilities, transportation, marketing, and overhead expenses. This analysis will also forecast revenue streams, profitability, and potential return on investment for TDI.
4. **Sustainability Practices:** Given the increasing importance of sustainability in consumer decisions, the research will explore best practices in sustainable banana farming and production. This consideration will enable TDI to align with environmental and social responsibility standards, enhancing brand reputation and customer trust.
5. **Risk Analysis:** The research will identify and assess potential risks and challenges, such as climate change, disease outbreaks, fluctuating market prices, and regulatory constraints. This risk analysis will allow TDI to develop effective risk management strategies and contingency plans.
6. **Strategic Recommendations:** Based on the findings from the above analyses, the research will provide strategic recommendations for TDI to successfully enter the banana market, including market positioning, target markets, marketing strategies, and growth opportunities.

The proposed timeline for this research project is approximately 10 weeks, with regular updates and progress reports. TDI kindly seek your contribution and support for the initiation of this research project and further believe that conducting thorough research with UW Foster ACL will serve as a foundation for

the successful development and implementation of a banana business plan for Tubepoka Development Initiative (TDI) and will advance the lives and prosperity of the people of Malawi.

*ACL is proud to support this project and one of the TDI thought leaders is an ACL alumnus!!*

# AEON LAW



## **Project – Using Analytics to Optimize Online Advertisements to Patent Filing Customers**

We would like to identify geographic targeting regions by number of patents and technology area so we can direct our digital marketing to those geographic regions targeting specific technology companies. For the project, we would like to have a list of entities (companies or individuals) that have filed patents in 2021 and 2022. We would like this in a spreadsheet format that includes columns for state, metropolitan area, technology area, and law firm name.

The data is available in xml format from the USPTO from the following locations:

<https://www.uspto.gov/learning-and-resources/official-gazette/official-gazette-notices-2023>

<https://developer.uspto.gov/data>

<https://www.uspto.gov/learning-and-resources/official-gazette/official-gazette-patents>

*AEON LAW is located in Seattle and is a friend of UW!*



# DAVID STINE FURNITURE

## STINE WOODWORKING



**SOCIAL MEDIA, DIGITAL MARKETING ANALYSIS**



**Sustainable, Environmentally Conscious Bespoke Furniture**

### About Us

We specialize in natural wood furniture handcrafted from sustainably harvested American hardwoods. Our work is offered to the trade and to the public. The work is high end; our average price point is \$3,500. We've been in business 25 years. We have three full-time employees and two part-time employees.

### Strengths

We are vertically integrated. We own the land where we harvest the wood; the sawmills where we mill the wood; the kilns where we dry the wood; the seasoning and storage sheds where we store the wood; and the wood shop and showroom. We have no debt.

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**FOSTER SCHOOL OF BUSINESS**

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We stay in our lane and play to our strengths: We do not do cabinetry or small items (like boxes). We stick to large, flat surfaces like tables, coffee tables, benches, etc. that come in at a high price point.

We have a devoted following on Instagram.

We have a strong foothold in the St. Louis area and have developed a strong commercial/trade clientele.

**Weaknesses**

We have a very limited budget for marketing.

We can no longer rely on serendipity and eyeballs at large shows, like the Architectural Digest Show in New York or the One-of-a-Kind Show in Chicago, which we stopped doing during covid. Despite boosting posts and following algorithms, our Instagram feed is not growing nearly as much as our competitors, who have hundreds of thousands of followers while we have just 45,000.

*David Stine Furniture is an ACL alumni Firm!!!*



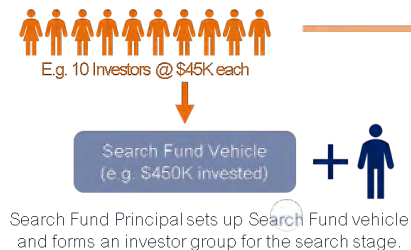
# SEARCH FUND STUDY

## EVALUATION AND ENTREPRENEURSHIP

### PROJECT DESCRIPTION FOLLOWS WITH LINKS

#### The Four Stages of a Search Fund Lifecycle:

##### 1 Fundraising



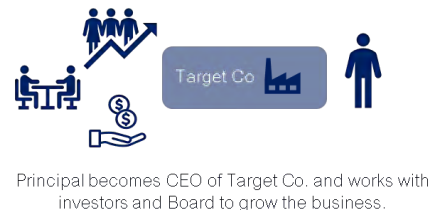
##### 2 Search & Acquire



##### 4 Exit & Return Capital



##### 3 Operate, Lead & Grow



*This project is sponsored by a FOSTER ACL, MBA Alumnus!!!*

### **A Seattle Search Fund to Acquire a Business Services or B2B Software Company**

Our firm looking to acquire a Business Services or Business to Business (“B2B”) Software Company and is looking for help from MBA students who have a knack for finance and an interest in entrepreneurship.

A search fund is an investment vehicle where an entrepreneur locates, acquires, manages, and grows a privately held company. Commonly known as a Search Fund, Entrepreneurship Through Acquisition (“ETA”), or mini private equity. There are also various types of Search Funds.

There’s opportunity to analyze data from Pitchbook, IBISWorld, and more for market data and [Acquire.com](https://www.acquire.com/) (formerly Micro Acquire), BizBuySell, and more for business valuation.

The deliverables would be an exploratory data analysis, a short plan, and model for valuing a business. Some areas for inquiry might include: How have Search Funds performed in the past few years as they’ve gained popularity? What types of companies are being acquired? Where might there be opportunities? Are there good B2B software businesses with great products and traction but upside-down capitalization tables? What is the effect of broad public market (or private market) indicators such as the S&P level or the P/S or P/E ratio of the Nasdaq at time of investment on exit? When do exits happen and who buys them (perhaps looking at data on acquirers at time of acquisition)?

As this is exploratory, we are open to a student team's creative ideas for what factors to examine.

More information can be found on here:

- <https://www.gsb.stanford.edu/experience/about/centers-institutes/ces/research/search-funds>
- [On the Nature of Modeling and Valuation in a Search Fund Acquisition](#)

# **SEATTLE RECRUITING**

## **HR ANALYTICS AND DEMOGRAPHICS FOR GROWTH**

### **A Seattle Recruiting Company Looking to Expand Across the US**

This project will help a recruiting company in Seattle, WA. The company has been primarily based in San Francisco and Seattle with numerous clients and candidates in these regions. It has primarily served companies from 500 employees to 2000 employees by helping them hire accounting and finance professionals. Basically, they help place candidates under the CFO.

The founder is looking to expand geographically, but needs to know what markets are ideal, especially after the great migration with remote work. There are a lot of other job markets.

There's opportunity to analyze data from Apollo.io, LinkedIn, the Census Bureau, Pitchbook, and more.

The deliverables would be an exploratory data analysis, a short plan, and recommendation of the next markets we should pursue in the US. The project might answer: What states and geographies should we pursue? What about size of company? What roles in Accounting & Finance are most popular? What recruiting firms are in these markets? Also, how does a small recruiting firm do more with AI?

As this is exploratory, we are open to a student team's creative ideas for what factors to examine.

*This project is sponsored by a FOSTER MBA Alumnus!!!*

# GOOGLE

## SHOPPING DATA AND TRUST METRICS

**Sponsor:** [Chris Merz](#), Foster MBA '18, Shopping Trust Data Acquisitions and Trust Experiences

**Project Title:** Global E-Commerce Trust Signals Market Research

**Background:** In the rapidly evolving e-commerce landscape, consumer trust is a pivotal factor influencing purchasing decisions. Questions like "How do I know if this seller is legitimate?" or "Will I get scammed if I purchase this product?" run through shoppers' minds constantly when transacting online. To make better decisions, consumers often rely on external signals and research before trusting a seller. Understanding what trust information consumers rely on across different markets is crucial for businesses to tailor their strategies effectively.

**Objective:** The goal of this project is to identify and analyze the leading providers of trust information (for example, scores, ratings, or reviews) in key e-commerce markets throughout the world.

**Scope:**

- **Regional User Behavior Analysis:** Investigate regional consumer preferences for trust information. This involves identifying the most popular and well-known data providers in each market and understanding the regional nuances in consumer trust.
- **Quantitative Market Research:** Conduct thorough market research to gather empirical data. Aim to quantify user reliance on specific trust information sources.
- **Data Due Diligence:** For top signal providers, understand data accessibility, pricing, and quality.
- **Strategic Recommendations:** Based on the collected data and analysis, develop recommendations for the most relevant trust information to enhance consumer trust and decision-making.

**Outcome:** This project will provide comprehensive insights into signal providers and consumer trust behavior in e-commerce, supporting strategic decisions in online retail and enhancing the user experience on platforms like Google Shopping.

*This project is sponsored by a FOSTER MBA Alumnus!!!*

# **AGRIPILOT.AI**

## **AI SOLUTIONS IN AGRICULTURE**

### **FIRM DESCRIPTION FOLLOWS WITH DETAILS**

**Project Opportunities:** Students will have latitude to explore various topics in the use of AI to advance previous agriculture, based on their interests. The team will work with AgriPilot to identify the project goals.

*This project is sponsored by a FOSTER ACL, MBA Alumnus!!!*



# A Digital & AI Driven Farming Future of Agriculture

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[www.agripilot.ai](http://www.agripilot.ai)





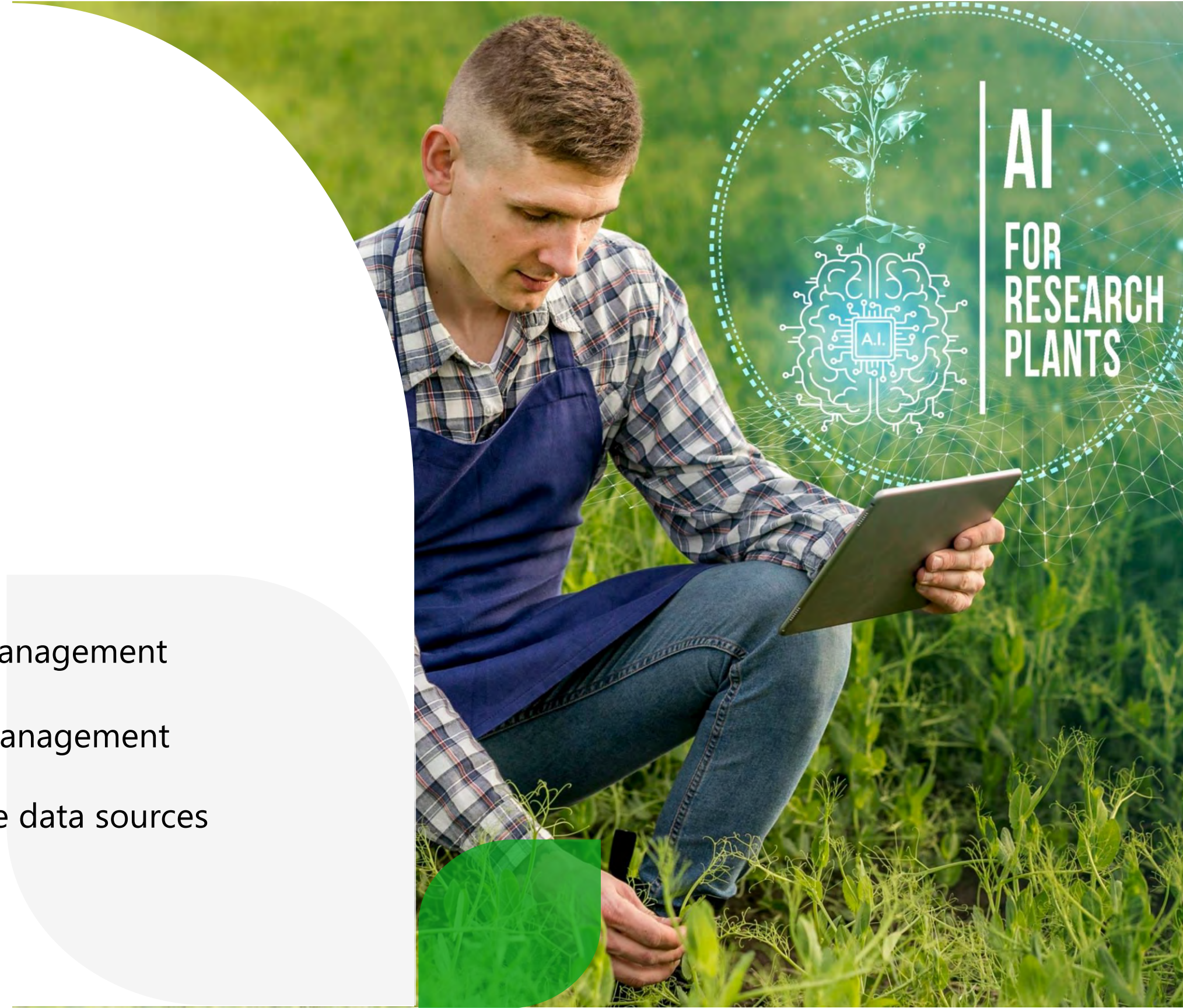
## Agricultural Challenges

- ✓ **Lack of Access to Best Practices**  
60% of smallholder farmers lack access to modern agricultural.
- ✓ **Sustainability and Environmental Impact**  
24% of global greenhouse gas emissions.
- ✓ **Limited Data Utilization**  
Only 20% of farmers use data from sensors and satellites.
- ✓ **Education & Training**  
85% of farmers in India rely on traditional farming practices, which is not based on the latest agricultural knowledge.



## Problem Statements

- 1 Lack of Real-Time Data
- 2 Soil Health and Fertility
- 3 Climate Change Resilience
- 4 Wastage during Post-Harvest Management
- 5 Sustainable Water & Nutrient Management
- 6 Centralized platform for multiple data sources



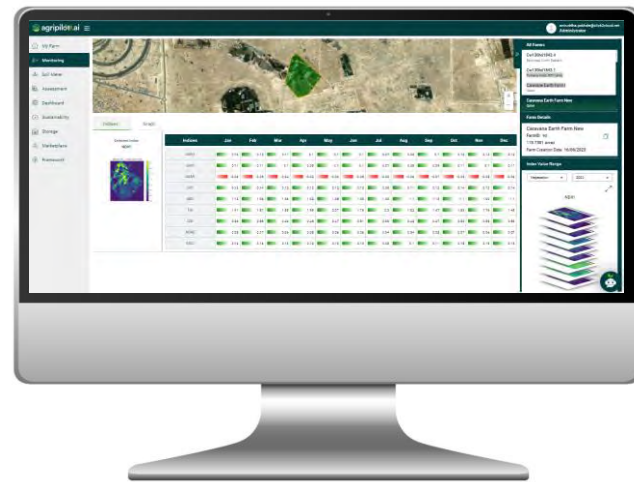
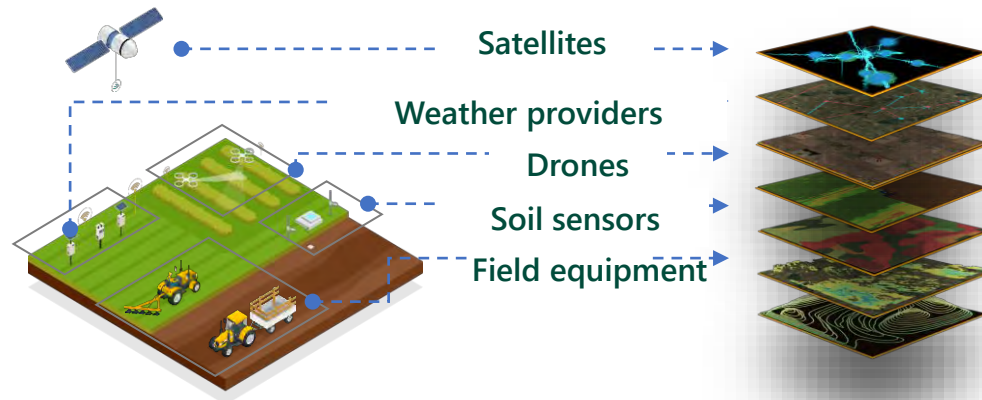


# Introducing Agripilot.ai



agripilot.ai

Agripilot.ai for agriculture utilizes power of generative AI to make data driven decisions



## Product Overview

- Automated Precision Farming
- Access to Real-Time Farm Data
- Weather anomaly risk notifications
- AI Driven Crop Lifecycle Planning & Management
- Step by Step Organic & Sustainable Farming Guide
- Automated and Smart Irrigation Planning Assessment
- Buyer-Seller Connectivity through Marketplace

**One stop solution for data driven sustainable agriculture with Generative AI**

## How Agripilot.ai Works



### Data Collection

The data is collected from multiple sources: sensors, drones and satellites.



### Data Diagnostic

Conclusions are drawn and risks are identified based on the analysis performed on the collected data.

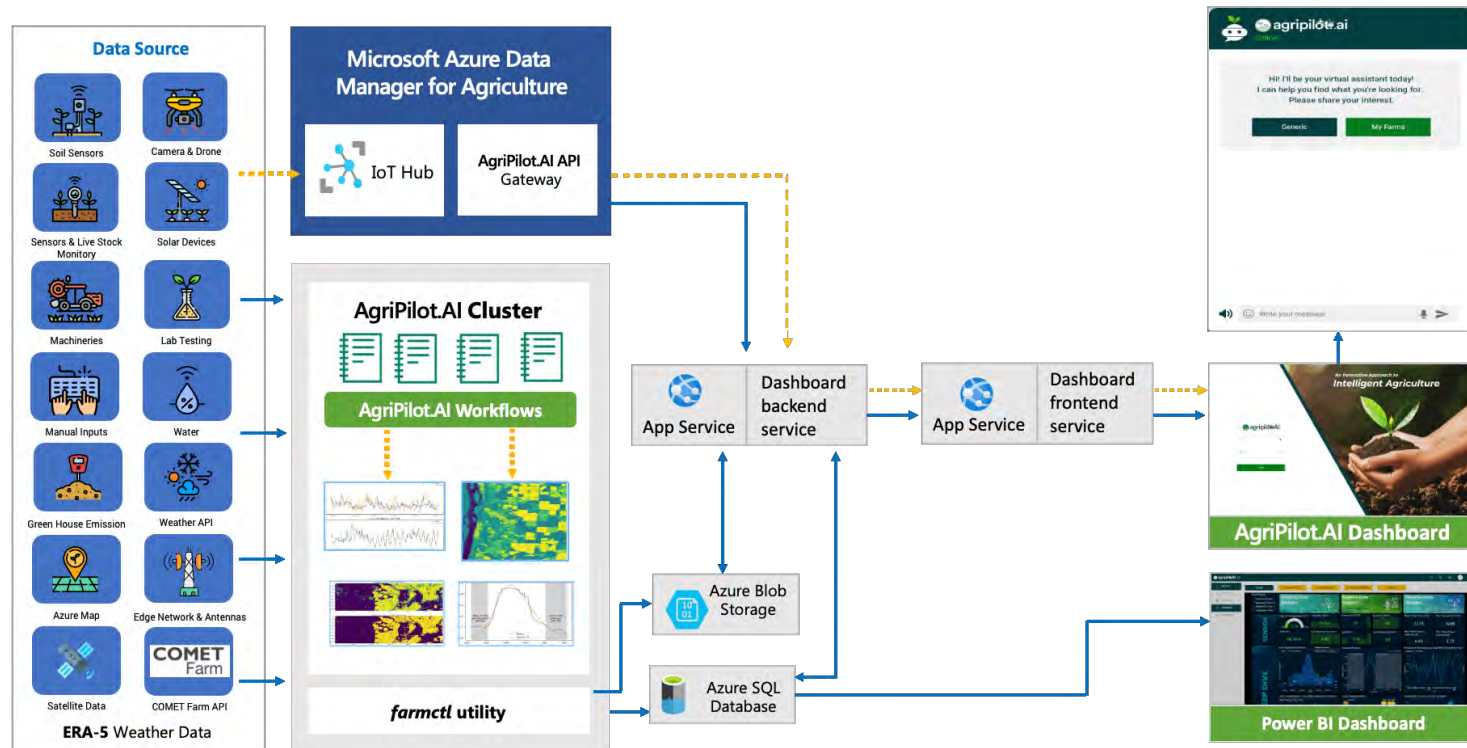


### Decision Making

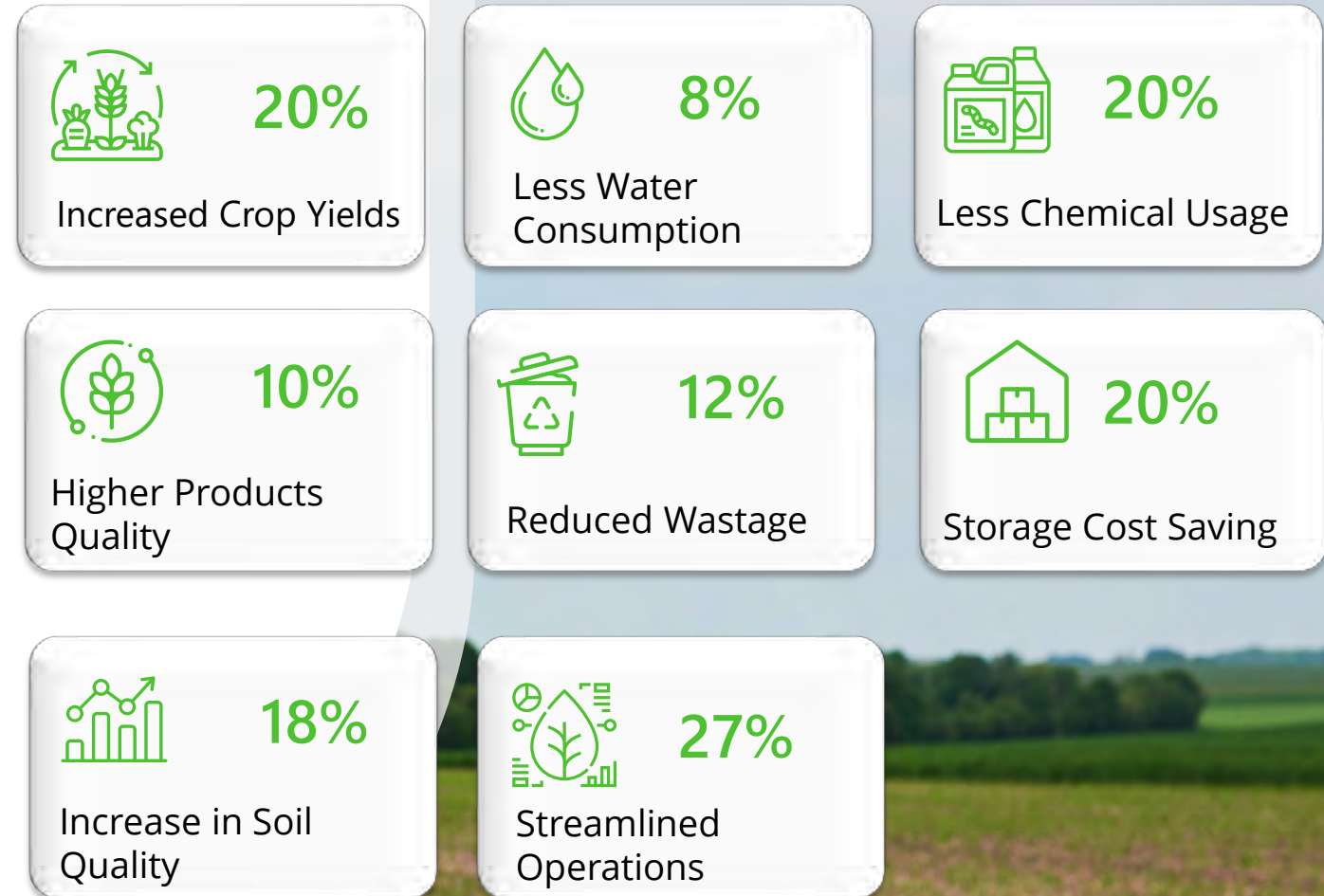
Future actions are recommended based on the analysis and conclusions to optimize farm operations.



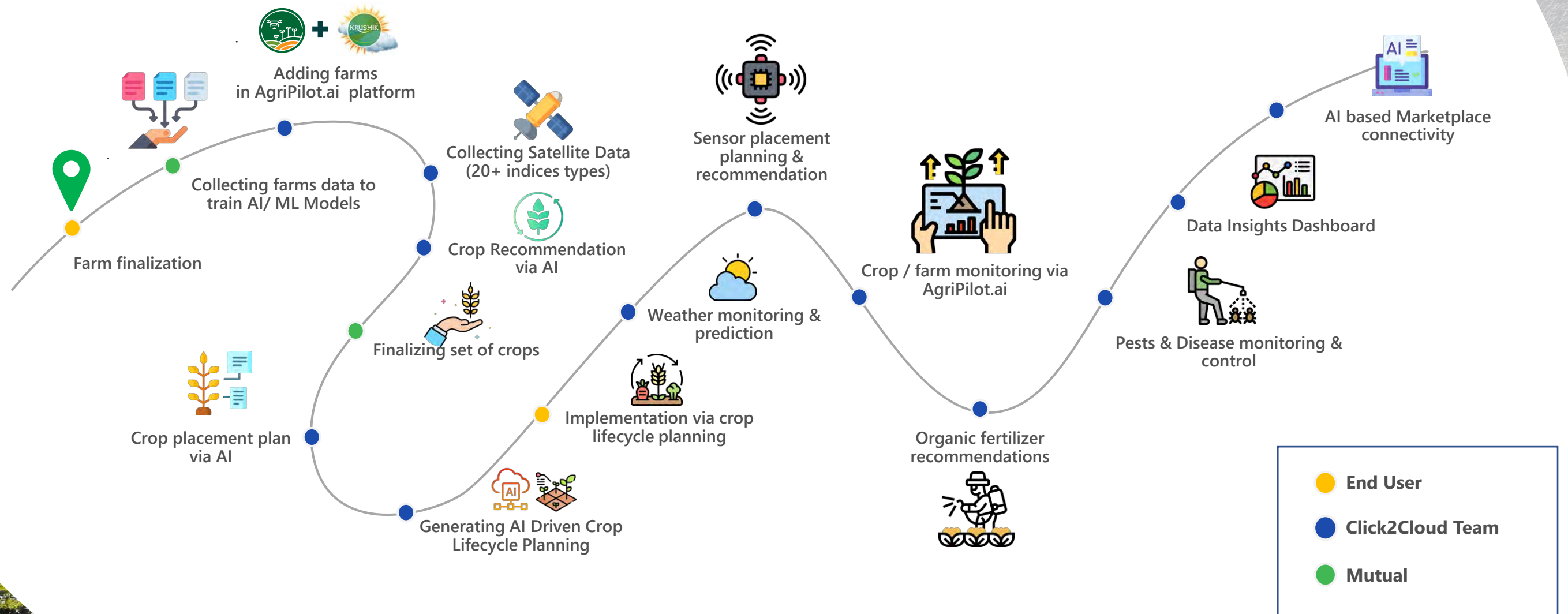
# Enhancing Agricultural Efficiency and ROI with Agripilot.ai for ADT Baramati



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# A Roadmap to Success





# Case Studies



Ramdas faces challenges in crop management in Nagpur, India, due to the absence of real-time environmental data, impacting his farming goals.

## Challenges

- **Inaccurate Environmental Data:** Ramdas lacked timely and accurate data on soil moisture, temperature, humidity, and light intensity, affecting crop management and 6% low crop production for 2021 and 2022.
- **Weather Vulnerability:** Nagpur's hot climate and untimely rainfall impacted crop processes like germination, flowering, and fruiting.
- **Fungal and Bacterial Growth:** Untimely rain caused high humidity, fostering crop-damaging fungal and bacterial growth.

## Solution

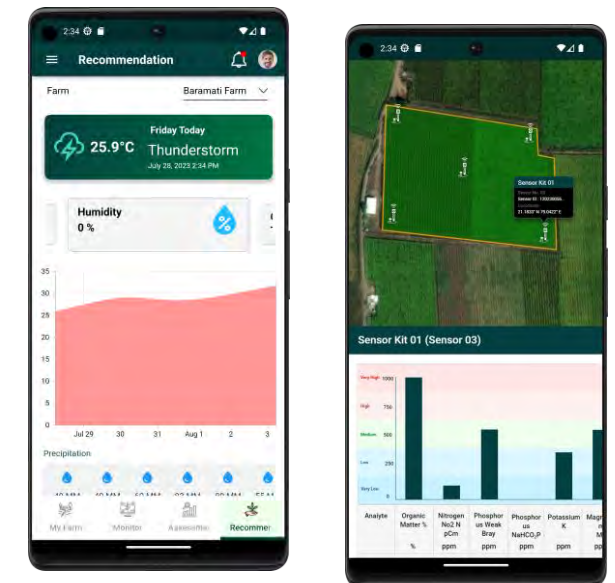
- **Assessment and Sensor Placement:** We assessed the farm and strategically placed sensors to monitor soil moisture, temperature, humidity, and light intensity.
- **LoRa Connectivity:** Sensors were connected to LoRa devices for wireless data transmission to a centralized hub.
- **Web-Based Applications:** Data was processed, analyzed, and provided to Ramdas through a web app, offering real-time environmental conditions and actionable insights.

## Benefits

- **Precision Farming:** Increased crop yield by 8% and reduced resource wastage by 10%.
- **Improved Resource Management:** Optimized water usage, reduced energy costs, and mitigated environmental impact by 3%.
- **Early Issue Detection:** Early identification of waterlogging, drought stress, and pests prevented significant crop losses (almost 5%).
- **Data-Driven Decision-Making:** Accurate sensor data empowered informed decisions, improving efficiency and profitability.

## Outcome: Results and Visualization from AP Tool

- **Soil Moisture:** The tool highlighted moisture levels in various farm sections, guiding irrigation and drainage adjustments.
- **Temperature and Humidity:** Ramdas monitored temperature and humidity to spot potential issues like heat stress or excessive humidity affecting crops.
- **Light Intensity:** The tool revealed sunlight distribution across the farm, aiding optimal planting decisions.





Richard, the owner of a 20-acre wheat farm in Texas, has been using UREA, a synthetic fertilizer high in nitrogen, for five years, leading to detrimental impacts on both the land and crop. This case study aims to assess the adverse effects of long-term UREA usage on the environment and crop health.

## Challenges

- **Land Degradation:** Continuous UREA use has led to reduced soil fertility and water-holding capacity.
- **Nitrate Leaching:** UREA has contaminated groundwater with nitrates.
- **Soil Acidification:** Nitrification due to UREA use has lowered soil pH.
- **Crop Impact:** UREA resulted in nitrogen burn, reduced nutrient uptake, and increased environmental stress susceptibility.

## Solution

- **Cost Analysis Comparison:** Assess and compare the economic implications of synthetic and organic fertilizers.
- **Recommended Organic Fertilizers:** Suggest organic fertilizer alternatives and solutions based on the assessments conducted by AgriPilot.ai.
- **Data & Analysis:** AgriPilot.ai conducted various tests on Richard's soil and crop, providing valuable insights for switching to organic fertilizers.

## Benefits

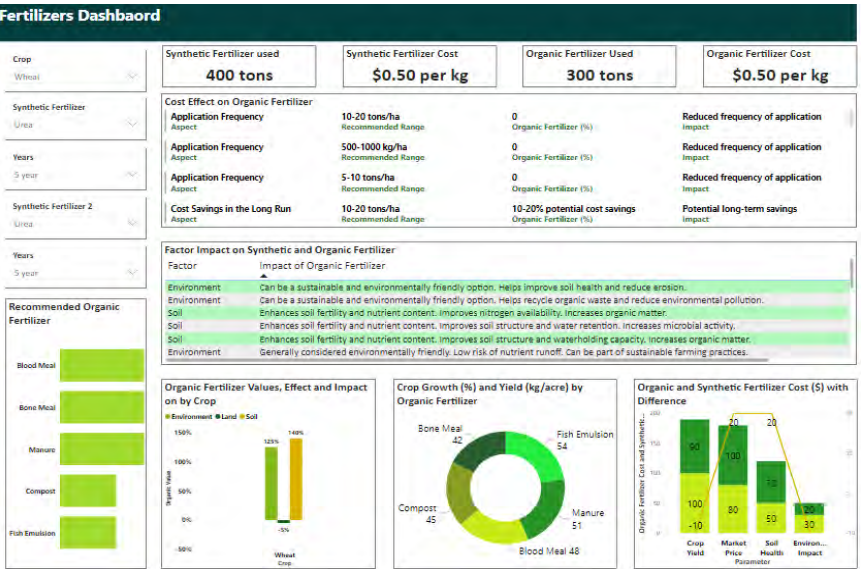
After transitioning to Bone Meal for three months, Richard experienced significant improvements:

- **Root Development:** Approximately 20% improvement.
- **Crop Vigor:** Approximately 15% improvement.
- **Nutrient Uptake:** Approximately 25% enhancement.
- **Soil Fertility:** Approximately 25% improvement.

This transition to organic fertilizers, guided by AgriPilot.ai’s assessments, offered a more sustainable and environmentally friendly approach, leading to improved crop health and soil quality.

## Cost Analysis Comparison

Fertilizer Type	Application Rate	Cost per Unit	Total Cost per Acre
Synthetic Fertilizer (UREA)	200 lbs/acre	\$0.50/lb	\$100
Blood Meal	200 lbs/acre	\$1.00/lb	\$200
Bone Meal	100 lbs/acre	\$0.80/lb	\$80
Manure	5 tons/acre	\$20/ton	\$100
Compost	10 tons/acre	\$30/ton	\$300
Fish Emulsion	50 gallons/acre	\$5/gallon	\$250





**agripilot.ai**

**Thank you**







# AGRIPILOT.ai

## DATA DRIVEN AGRICULTURE SOLUTION



AgriPilot.ai enables data-driven agriculture by utilizing Artificial Intelligence and Machine Learning based smart farming solutions curated to generate insights from complex agro-data using high-technology sensors and analysis tools.

It helps farmers adapt to a changing climate by providing processing workflows that integrate multiple sets of geospatial data, such as satellite, drone imagery and weather data, to improve crop yield and increase the effectiveness of crop management strategies.

It also helps them address climate change by understanding the carbon emissions of different agriculture practices and adopting carbon-neutral agriculture methods.



Through this project, our goal is to develop a smart agricultural system that will help farmers optimize various farming activities such as irrigation planning, weed removal, insect and fertilizer spraying, harvest planning and storage management. The system should be user-friendly, efficient, and scalable to meet the needs of farmers of all sizes.

### SpaceEye

SpaceEye produces daily cloud-free optical and multispectral photos of farms using AI to provide land monitoring and disaster response information.

### Weather API's

Real-time access to climate and weather data, including temperature, precipitation, and other critical factors.

### Soil Testing

Detailed analysis of soil health, including nutrient levels, pH, and other key factors.

### Sensors

Sensors that measure temperature, humidity, and other climate factors to optimize planting, irrigation, and other critical activities.

### AgriPilot.ai Bot

A feature of AgriPilot.ai Bot lets you connect with farmers, either to query data or relay insights through chatbots. Also, the platform owner can connect to external APIs to crowd in services for the user.

# AGRIPILOT.ai

## DATA DRIVEN AGRICULTURE SOLUTION



### Camera & Drone Images

Enables real-time analysis by processing large amounts of farm data captured by drones or other farm sources, performs computer vision techniques to stitch drone images, and also runs AI at the edge.



### Edge Network/Antennas

Real-time monitoring and control of farm equipment and machinery, improving efficiency and reducing downtime brings affordable connectivity to areas that are difficult to reach.



### Carbon Sequestration

AgriPilot.ai has several built-in workflows for farm-related ML and AI. By implementing several models, these ML and AI workflows identify farm features, such as carbon sequestration.



### Sustainability & What-If Analysis

The system will use AI to analyze the sustainability of various farming practices. The system will also perform what-if analysis to help farmers make informed decisions about fertilizers, NPK values and many more.



### Water Use

Wasting water, especially in areas in which it is a scarce resource, is a huge headache for farmers and food growers worldwide.

AgriPilot.ai provides deeper insight into water usage based on integrated geospatial and spatiotemporal data.



### Genome to Phenome

AgriPilot.ai assist you to improve animals' health, production, and well-being.