Leveraging AI for a Safer Today and Tomorrow

May 14, 2025

Agenda

- Background Regarding Taylor Farms
- What is AI?
- Considerations
- Current Activities and Challenges
- Conclusions

Mission:

To be North America's favorite maker of salads and healthy fresh foods.

- Started 1995
- Family Owned
- 1 in 3 Salads Consumed in the USA and Canada
- 28 Salad & Fresh Food Facilities
- 280+ Independent and Family-Owned Farming Partners
- 14 Growing Regions
- 20,000 team members

RETAIL

DELI/FRESH PREPARED

FOODSERVICE

Our Customers

BROADLINE DISTRIBUTORS	PRODUCE DISTRIB. SPECIALISTS	QUICK SERVICE RESTAURANTS	CASUAL DINING	RETAIL PRODUCE	RETAIL DELI
Sysco	PRO•ACT America's Produce Specialist	McDonald's	DARDEN	Walmart	Publix
US Foods	freshpoint	SUBWAY	Bloomin' Brands	Kroger	Kroger
Markon	PA Produce Alliance	Yum!	Ruby Tuesday	Sam's Club	Starbucks
Food Services of America	ProMark	CAVA Mezze Grill	Panera Bread	Costco Wholesale	Walmart
PFG Performance Food Group	AmeriFresh	Chipotle Mexican Grill	Brinker International	Ahold Delhaize	Safeway
	Robinson Fresh	Burger King		H-E-B	Albertsons
		Jack in the Box		Safeway	Trader Joe's
		Wendy's		Albertsons	Ahold Delhaize
		Del Taco		Trader Joe's	Wawa
				Target	H-E-B
				Whole Foods Market	Save Mart Supermarkets
				Sprouts Farmers Market	7-Eleven
				Save Mart Supermarkets	Target
				HyVee	Raley's
				Giant Eagle	Jewel-Osco
				Wegmans	
				Sobeys	
				Harris Teeter	

Production Locations

PRODUCTION LOCATIONS BY BUSINESS SEGMENT

Food Service

Salinas*, Yuma*, Colorado Springs, Dallas*, San Miguel*, Smyrna*, Baltimore*, Orlando*, Covington*, Toronto*, Guadalupe*

Retail

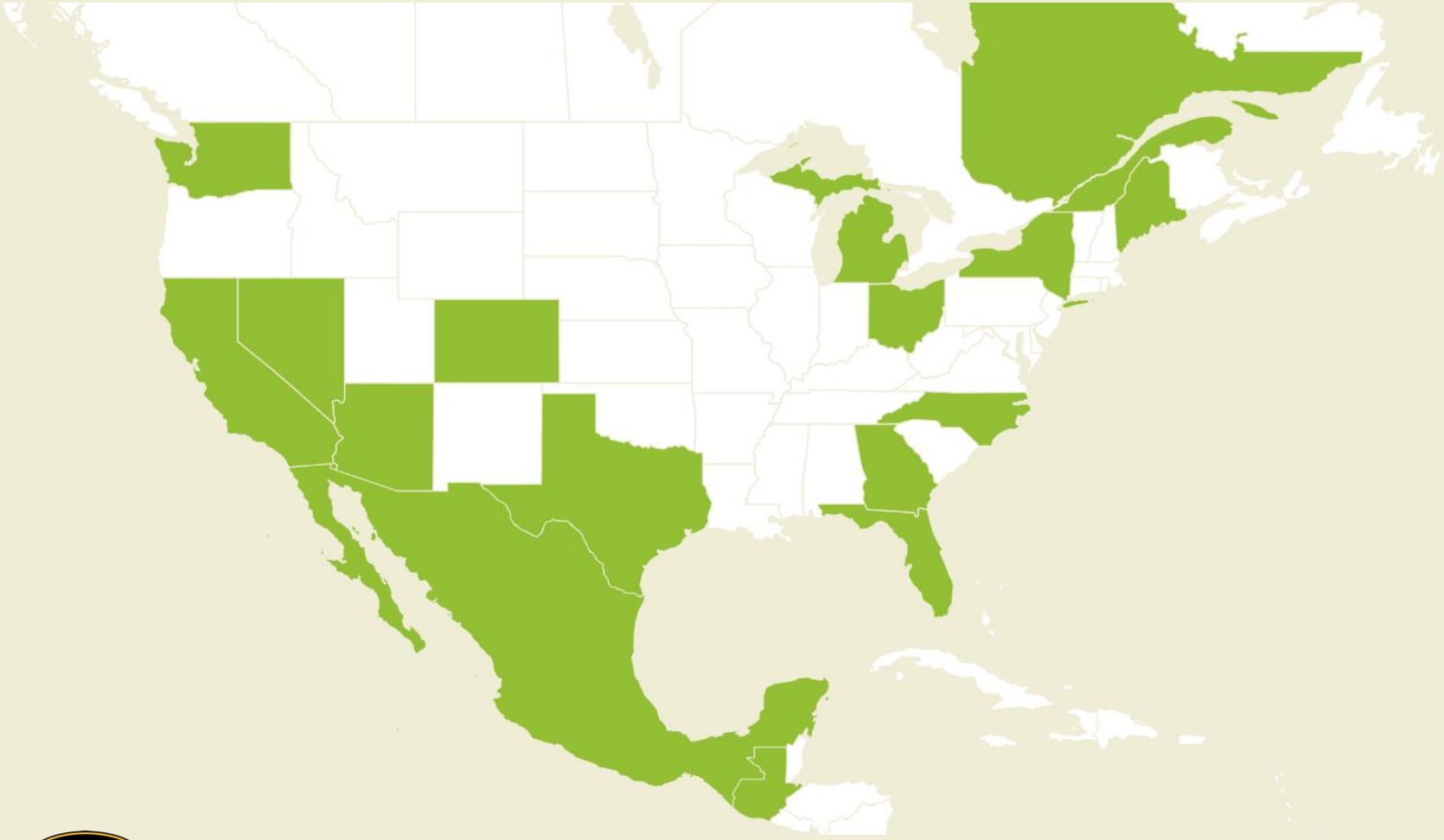
Salinas*, Gonzales*, Dallas*, Smyrna*, Baltimore*, Orlando*, Baja*, San Juan Bautista*, Toronto*, Cashmere*, Guadalupe*

Deli

Tracy*, Chicago*, Smyrna*, Orlando*, Dallas*, Swedesboro, Kent*, Tolleson, North Kingstown*, Covington*

All Deli Operations are USDA Certified

Growing Together for Assured Supply



Sustainable Growing Practices

- **280** Family-owned independent growing partners across North America, providing diversity of growing regions, practices, and operation size
- Taylor Farms acquired Mission Ranches, and now Taylor Farming is now **the largest grower of organic** leafy greens in North America
- Organic ranches become more productive as they age because of the restoration of soil nutrients
- Over **200** years of shared production knowledge and experience
- Local sourcing, reducing **“food miles”**
- **Healthy foods start with healthy soils:** embracing crop rotations, crop diversity, ensuring nitrogen & water use efficiency

What Is AI or Artificial Intelligence?

Artificial intelligence or AI is the branch of computer science that studies machine intelligence.

EXAMPLES OF APPLICATIONS

- Search engines (Google)
- Content recommendations (Netflix, YouTube)
- Self-driving vehicles
- Automatic language translation
- Facial recognition
- Computer games
- Spam filters

An AI is a computer system that performs tasks that usually require human intelligence.

QUICK WINS – READY TO USE NOW

1 NLP tools — Plug-and-play with current data; fast insights

2 Supplier risk scoring — Use past rejections, delays, test results

3 AI on digitized sanitation/QA logs — Spot lapses or predict failures from patterns

4 Predictive modeling — Use historical environmental/test data

5 Smart sampling plans — AI recommends hotspots over random grabs

Mid-Term – Some Integration Required

6 Anomaly detection — Needs live data streams or logs to monitor

7 Cold chain monitoring + AI alerts — IoT sensors help; integrates across supply chain

8 Dynamic shelf-life prediction — Combines product traits + storage data over time

Longer-Term – High Infrastructure Needs

9 Computer vision — Needs cameras, training, and validation

10 Predictive AI from internal recalls/events — Requires deep internal data cleaning and modeling

Taylor Farms Robust Building Blocks Of Food Safety

01 | Ranch Inspection

- Each ranch is inspected prior to planting lots for Taylor Farms.
- Audits include record review, historical micro-results, and irrigation system inspection.
- California Department of Food Agriculture (CDFA) audits are conducted to verify Taylor Farms' audit proficiency.

02 | Irrigation Water

- Irrigation water is tested monthly.
- Open source water from irrigation canals or reservoirs is treated with Cl2 prior to use post germination.
- All reservoirs are required to be fenced to prevent animal intrusion.
- Two years of research is ongoing to monitor deep well aquafer.

03 | Fertilization

- All compost requires a certificate of analysis (COA) of test results prior to use (tested for pathogens).

04 | Pre-Harvest Testing

- All lots are tested prior to harvest for pathogens.
- All pathogen tests that are positive trigger a research project design to inform future risk assessments.
- Historical results are used in future risk assessments.

05 | Pre-Harvest Inspections

- All growing lots are inspected for animal intrusion prior to harvest.

06 | Harvesting Crew

- Harvest crews are audited regularly against Taylor Farms' food safety standards.
- Harvesters are engineered for cleanability using materials like stainless steel and quick release food grade belting.
- Harvesters are fully sanitized at the end of each day.
- Pre-operation inspections are conducted prior to use, including swabs to confirm sanitation effectiveness.

07 | Post Harvest Handling

- Harvested product is tracked through a robust receiving system that tracks the origin of product, as well as all records and inspection associated with each raw lot.
- The product is cooled in stainless steel vacuum tubes that are treated with Cl2 and sanitized daily.

08 | Processing Facilities

- Audited by multiple third-party consultants.
- Stainless steel and food grade design consistent throughout processing.
- Daily sanitation monitored through pre-operations inspections and robust environmental monitoring programs.
- Zone controlled.
- Sanitary design construction.

09 | Equipment Design

- Taylor Farms' processing plants are engineered with a continuous improvement strategy.
- Stainless steel equipment.
- Designed and engineered for cleanability.
- Salad Dryer design for sanitation.
- SmartWash® Monitoring Equipment.
- Automated line shut-off tied to wash system chemistry.
- SmartWash® wash water chemistry.
- Validated wash chemistry eliminates cross contamination.
- Continuous monitoring technology measures Cl2 and Ph levels.
- Large data capabilities inform continuous improvement on processing lines throughout the system.

10 | Cold Chain Management

- Robust cooling system and transportation monitoring to assure cold chain management through processing and delivery.
- Pre-shipment inspections and temperature recording.
- Advanced tracking system to track codes and departure for each shipment.

9

What We Are Working On Right Now: On the Farm

What We Are Working On Right Now: In the Plant

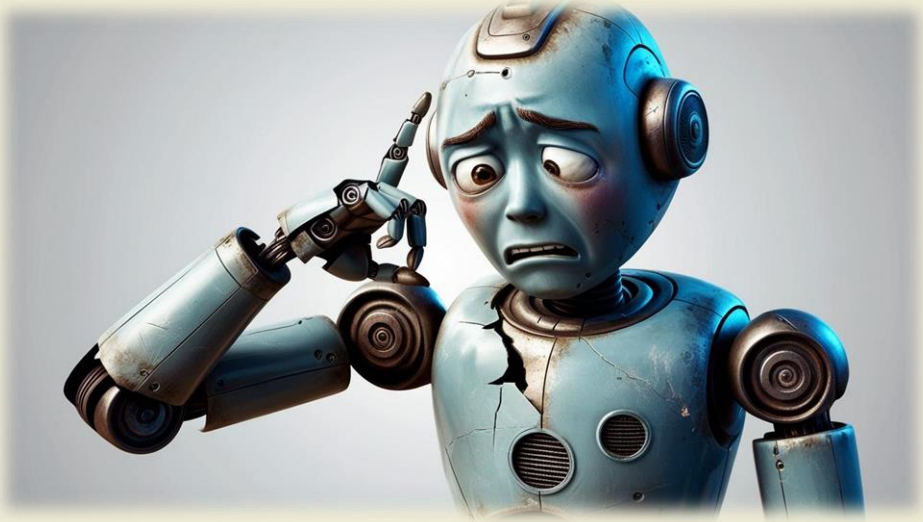
Challenges: Physical and Mental

Physical

Equipment must work in our environments
-Wash down
-Robust

Mental

Initially if you don’t have an idea of the answer, you will not get there from here
-Can it tell me or do something something easier, more efficiently than my current approach?



Challenges: Garbage In/Garbage Out *BUT Also, Don't Shoot the Messenger*

The quality of AI and ML algorithms depends on high quality input data. Incomplete, biased, or inaccurate data may lead to harmful decision-making and outcomes. For example, in applications of AI for deploying public health resources and food establishment inspections based on consumer-sourced big data, a concern lies in how individual consumer bias may be propagated through the food industry and influence enforcement of food safety and consumer purchasing habits. Altenburger and Ho* showed that predictive analytics using consumer complaints to target food safety enforcement disproportionately targeted Asian-owned establishments. This study concluded that crowd-sourced information for a single establishment had lower predictive power than prior inspection history and that these reviews did not significantly improve predictions of food safety violations when existing restaurant data and inspection history was available (1). Thus, data quality will benefit from continued investments in digital data accessibility, connectivity, and infrastructure.

*Altenburger, K. M., and D. E. Ho. 2018. When algorithms import private bias into public enforcement: the promise and limitations of statistical debiasing solutions. *J. Inst. Theor. Econ. 175:98–122.* https://doi. org/10.1628/jite-2019-0001.

Conclusions

- Get ready for a highly automated future.
- Get ready for a lot of solutions in search of a problem
- Food Safety professionals participating in developing AI solutions that focus on strengthening food safety may result in finding new applications from **existing** algorithms.
- Food safety professionals will also play an important role in developing **novel** algorithms for specific food safety problems
- Retailers should be open to working alongside AI tools that provide actionable information to leverage experience and resources for managing food safety risks.
- These technologies should not replace humans involved in food safety but should help existing food safety practices work more effectively
- Don’t delay. Get involved now.

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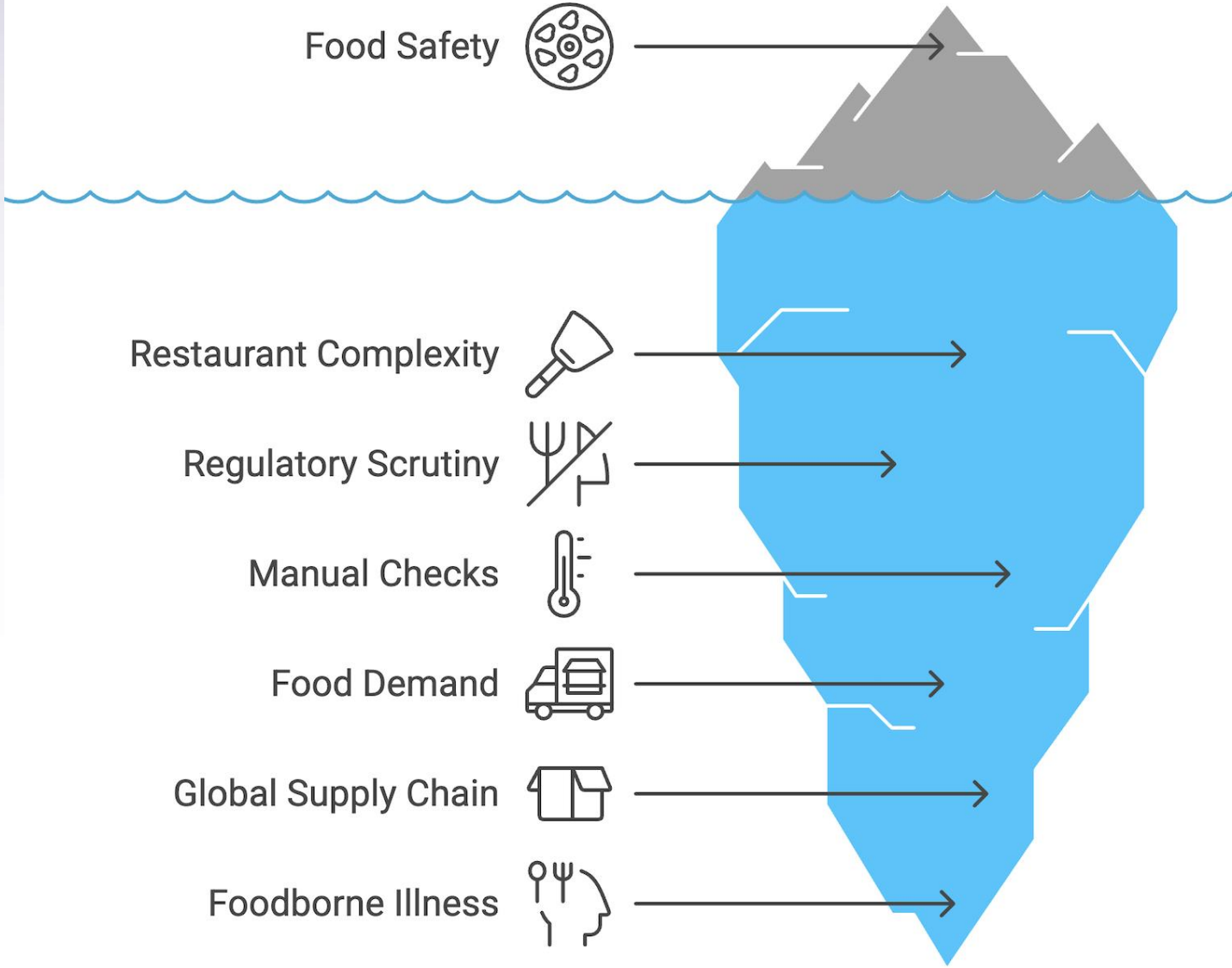
Leveraging AI for a Safer Today and Tomorrow

Presented by: Purni Wickramasinghe, PhD

WHY Does Food Safety Need an AI Upgrade?



HOW : The Role of Data in Food Safety

Siloed Underutilized Data

Isolated, untapped information sources

Centralize Data

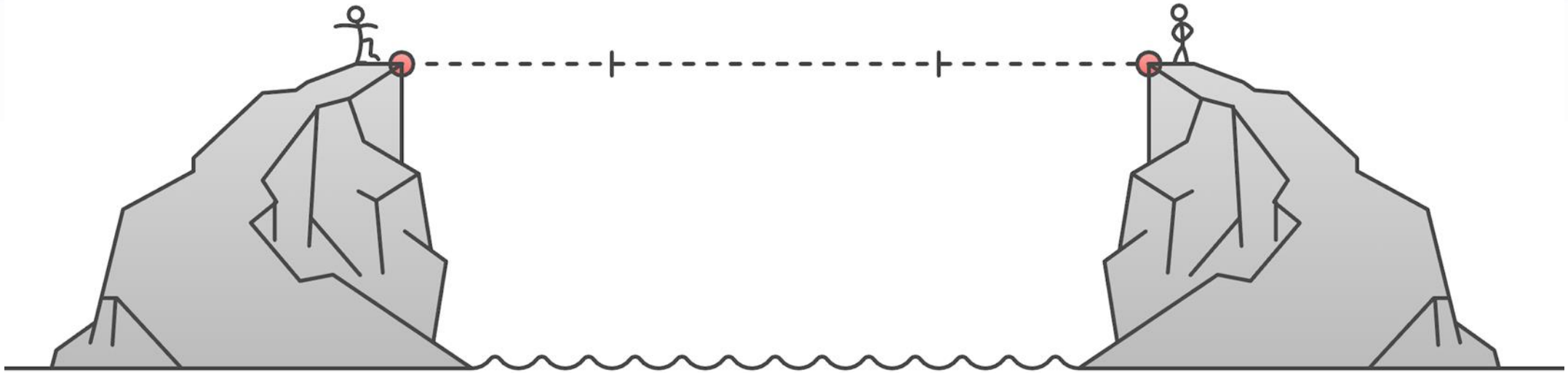
Integrate all data sources

Apply AI Models

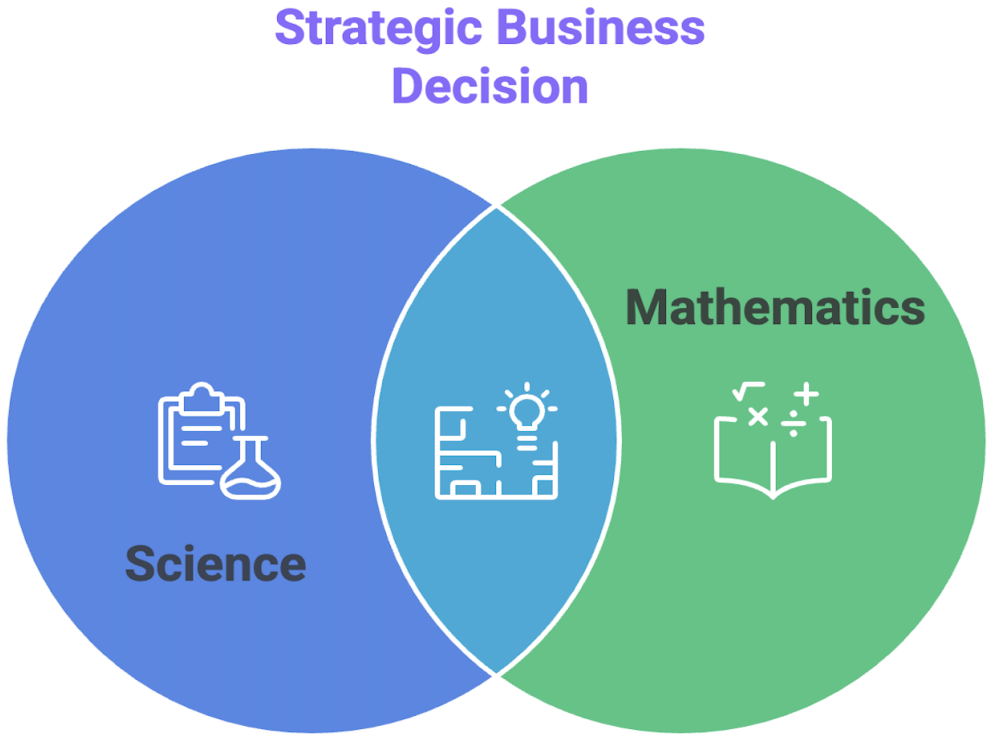
Analyze data for insights

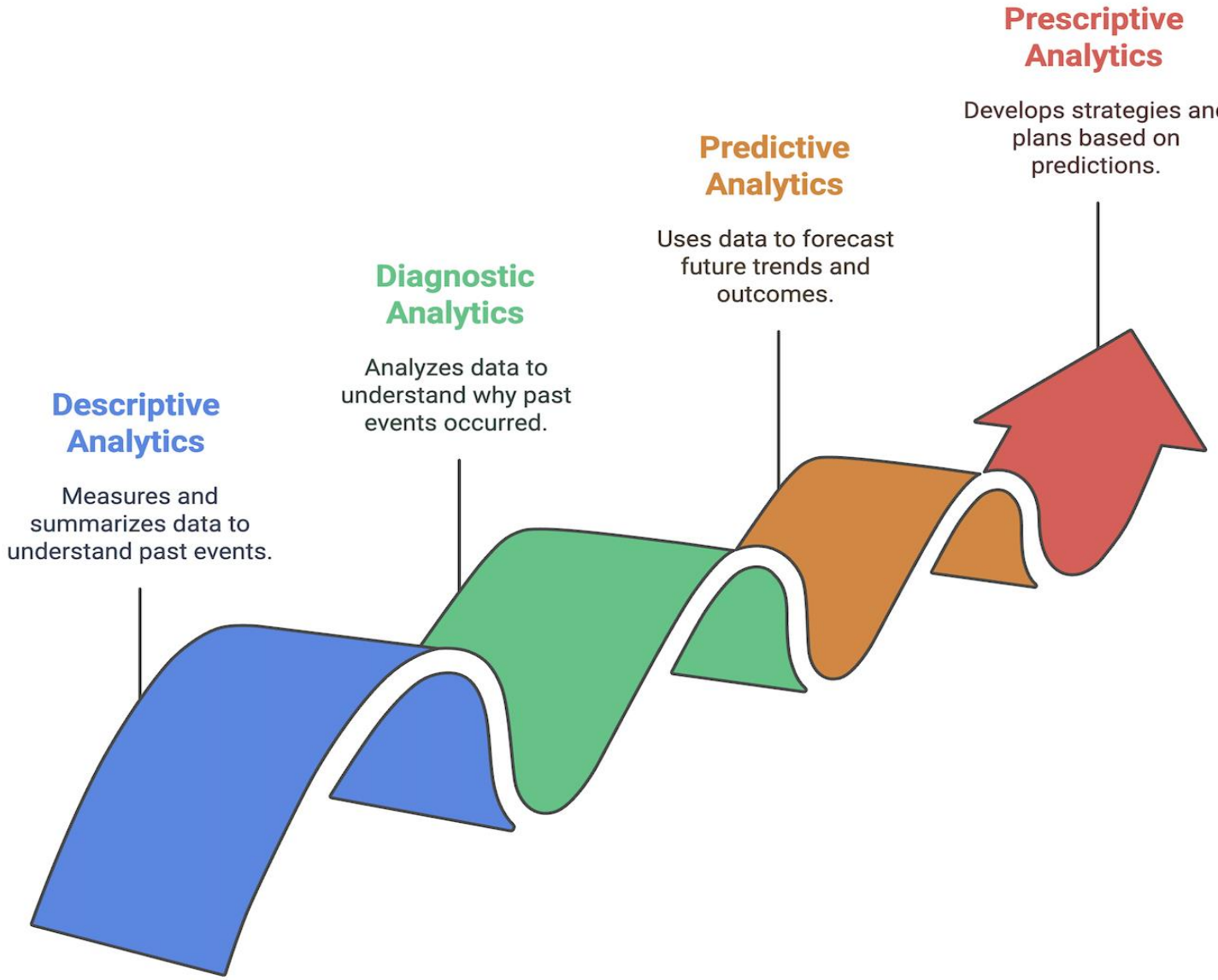
AI-Informed Decisions

Data-informed risk analysis



Ok, now WHAT?


Strategic Business Decision
Mathematics
Science


Descriptive Analytics
Measures and summarizes data to understand past events.
Diagnostic Analytics
Analyzes data to understand why past events occurred.
Predictive Analytics
Uses data to forecast future trends and outcomes.
Prescriptive Analytics
Develops strategies and plans based on predictions.

AI in Food Safety at a Glance

Predictive Modeling

Predicts microbial growth using research data.

Anticipates food safety risks.

Human Component

1. Tune Models: Humans Adjust Models for Accuracy
2. Interpret Results: Humans Analyze AI Outputs for Insights
3. Decide Risk Thresholds: Humans Set Acceptable Risk Levels
4. Act on Alerts: Humans Respond to AI-Generated Alerts
5. Provide Context: Humans Add Meaning to AI & Data

WHAT It Takes to Succeed

1

Clean and consistent data is essential.

Data Quality

ANTICIPATE the Challenges

Data Reliability

AI requires accurate and complete data for reliability.

Accountability Issues

AI predictions raise complex accountability questions.

Cultural Resistance

Cultural resistance hinders AI adoption due to trust issues.

No Room for Error

Wrong AI predictions can harm customers or brand.

Turn Insights into Impact — Building Trust in AI.

Decision Influence

Using stories to guide AI adoption

Storytelling

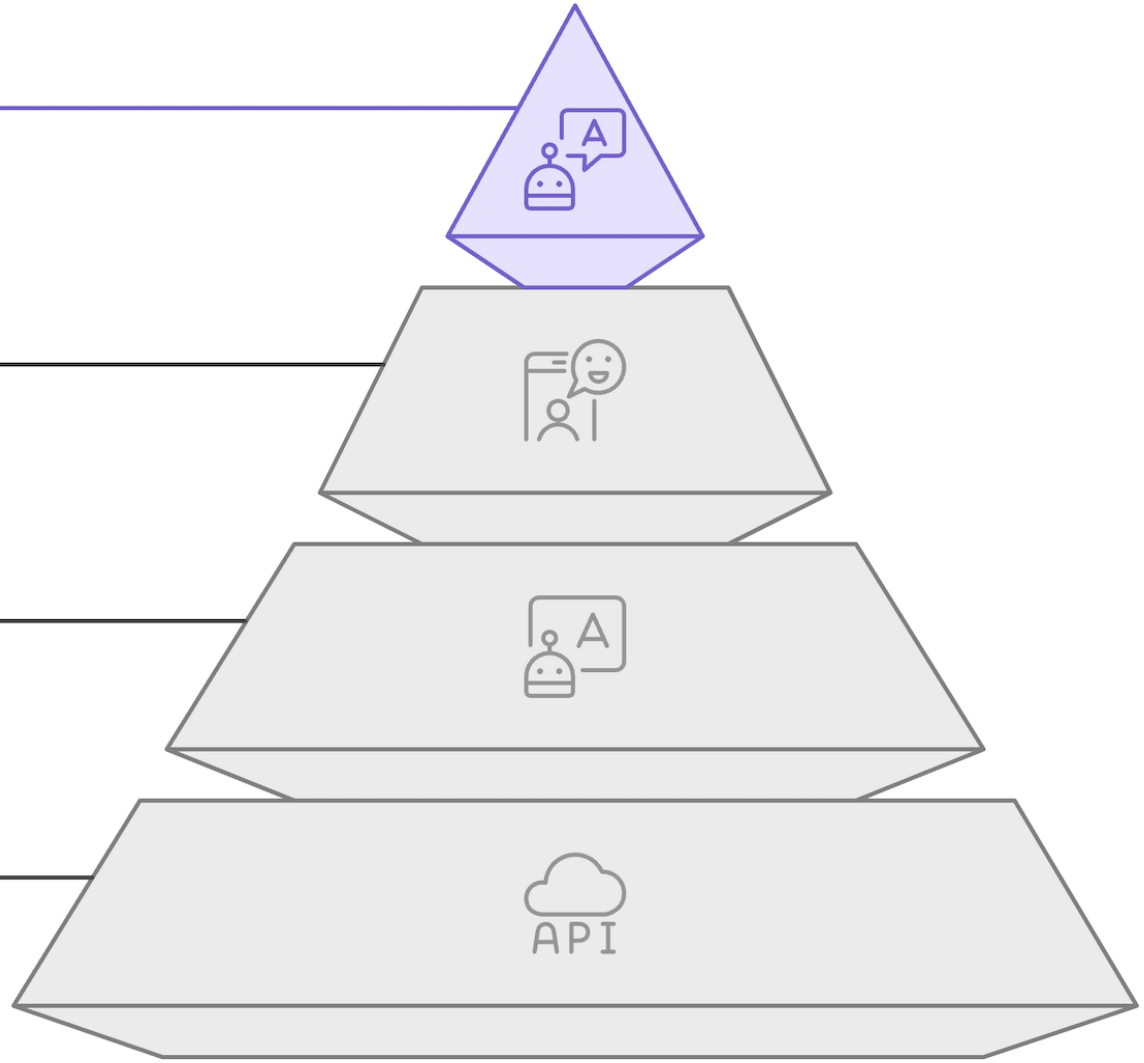
Narratives demonstrating AI's real-world impact

Education

Knowledge of AI capabilities and limitations

Transparency

Clear understanding of AI processes

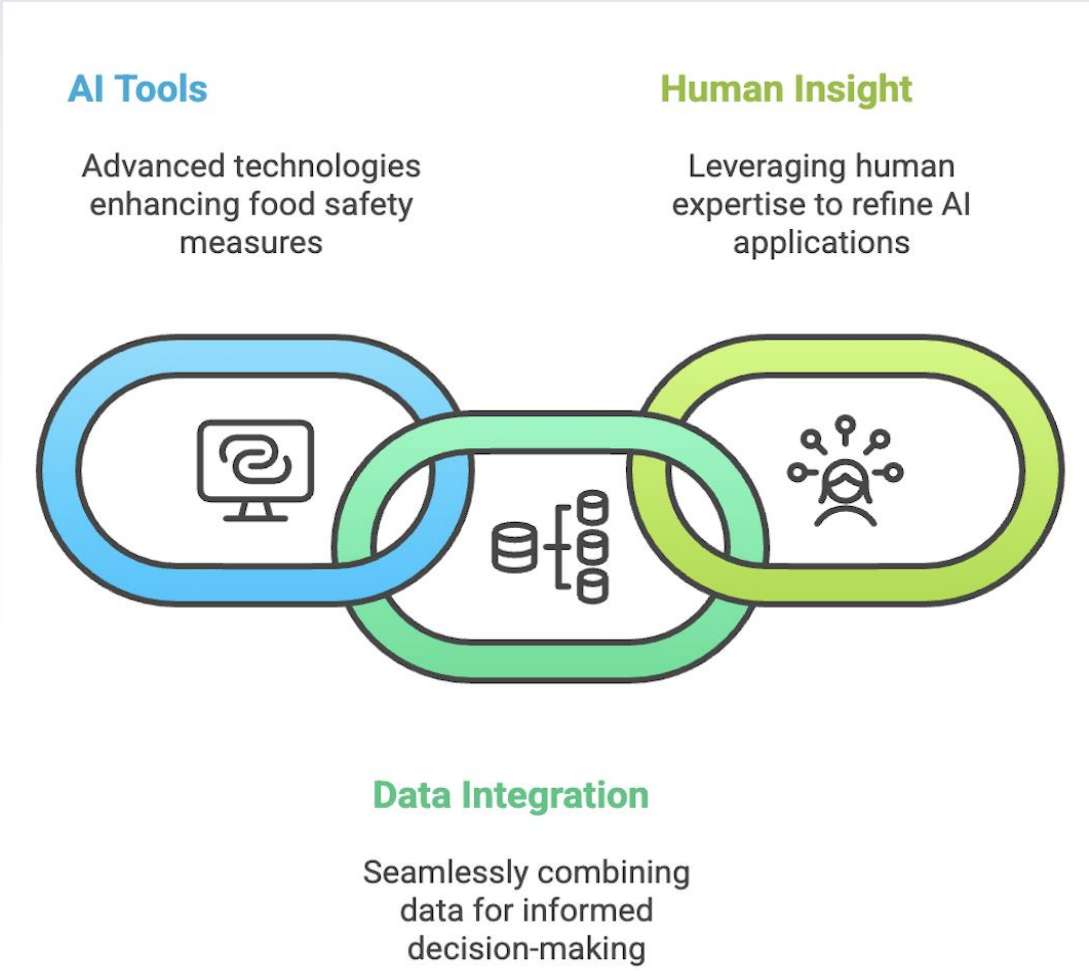


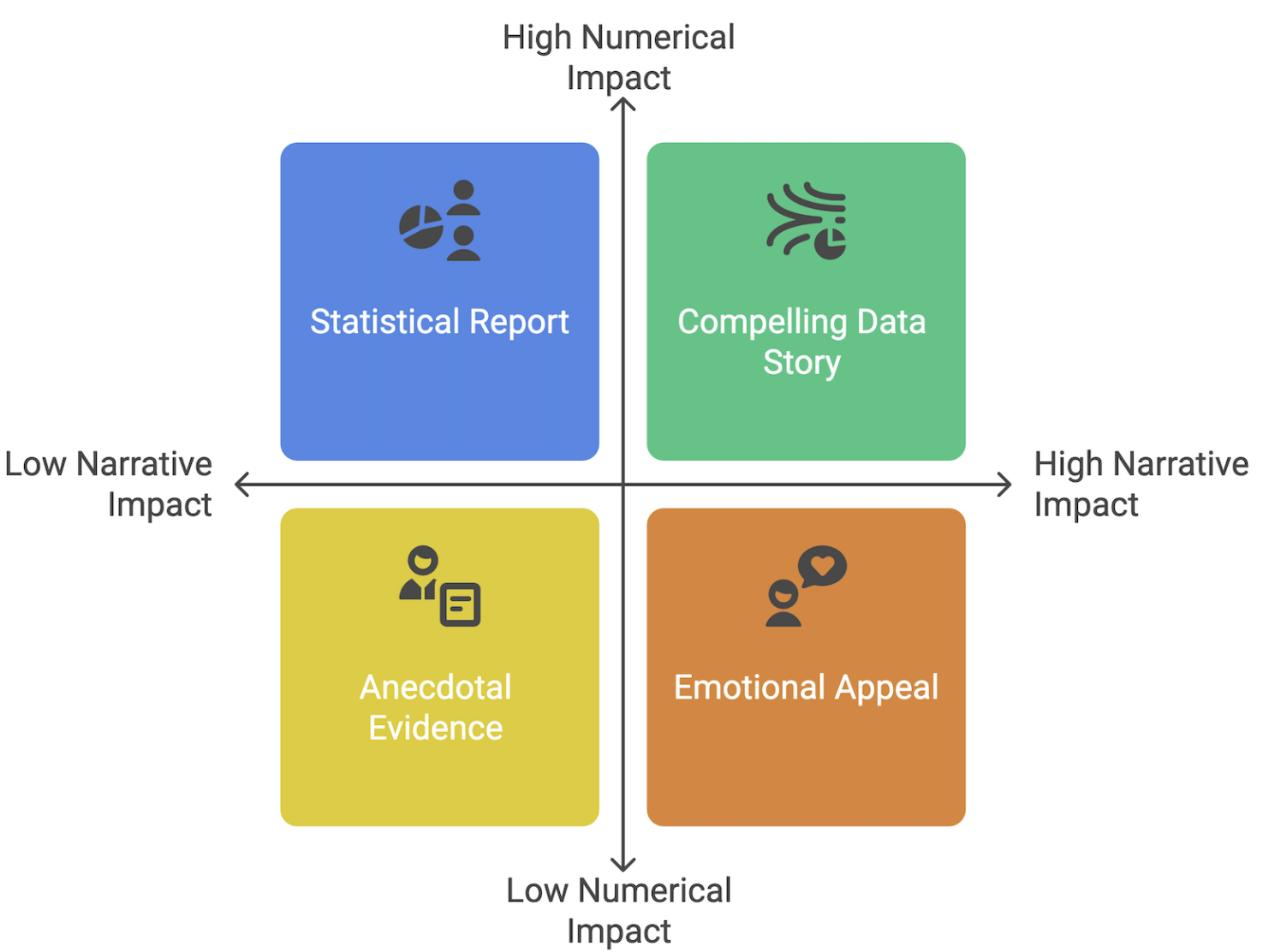
Let’s Build a Safer Future Together

❖ AI gives us new tools to protect customers and improve operations

❖ It takes people to make it work right

❖ **Let’s combine AI, data, and human insight to lead the future of food safety...**





And influence not just with numbers—but with narratives

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Thank you & Questions?

Presented by: Purni Wickramasinghe, PhD