



HELIX™ (Hybrid Environment for Longitudinal health Information eXchange)

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Background

The development of antimicrobial resistance genes in animal microbiota and their transmission to humans, the amplification of diseases that can cross species with a broad reservoir host range, and many more like Ebola, Zika, West Nile and other Coronaviruses are ever evolving threats. The current (COVID-19) pandemic put a spotlight on the significance of the human and animal health zoonotic relationship and exposed weaknesses in the food supply chain; dependence on physical on-site regulatory governance model for safety inspections and the need for scaled up collaboration at local, regional, national and global levels. To protect the Healthy Human DNA, a **One Health** playbook requires a holistic and multifaceted approach to traceability, efficient inspection processes, continuous testing and surveillance in partnership with the regulatory agencies, stakeholders in the supply chain and the consumers.

Objective

Create a framework for implementing a **One Health** technology roadmap to understand, analyze, resolve socio-economic disparities in research, and promote information sharing for effective policy and decision making for public health and safety.

Methods

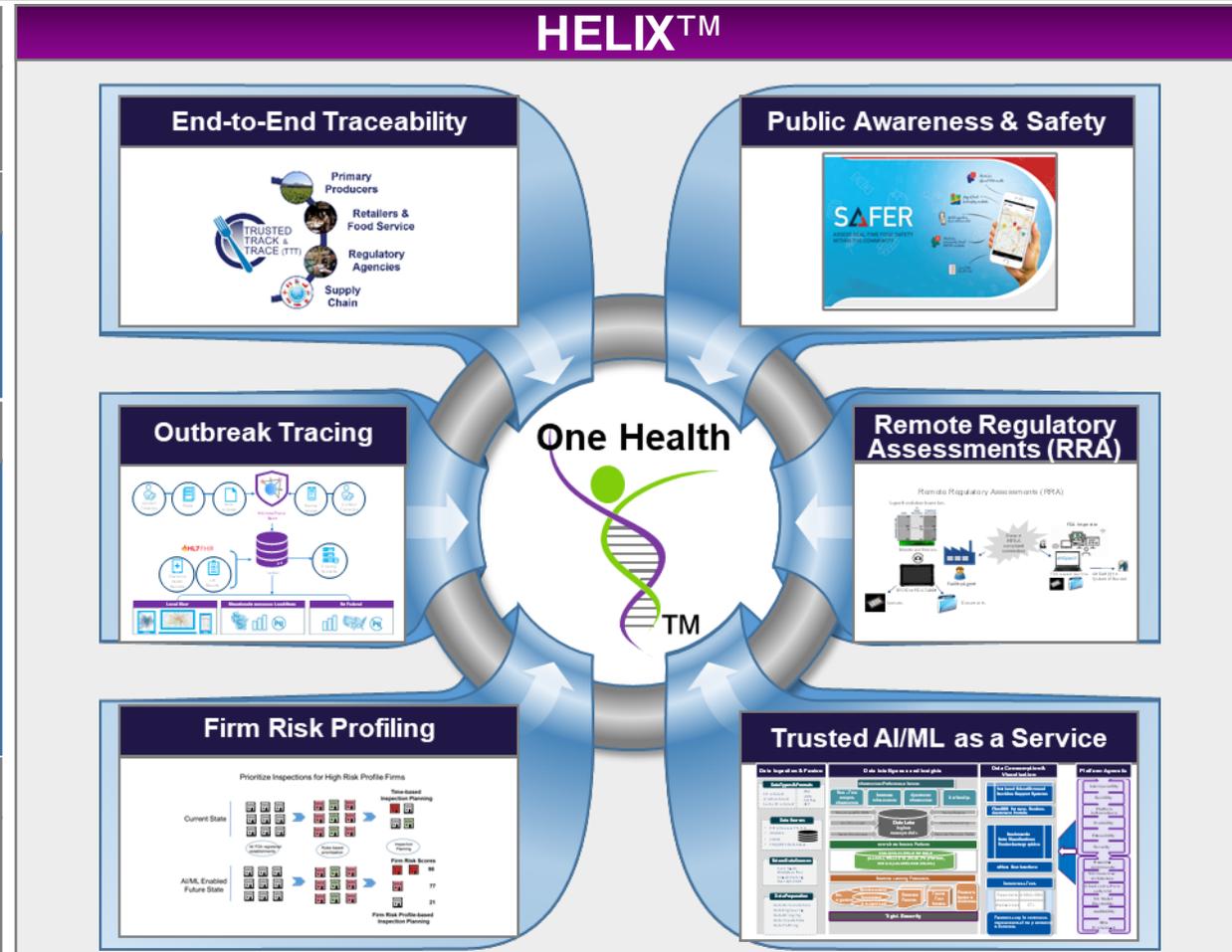
- Dissected **One Health** ecosystem needs by stakeholder: conservation, grower/farmer, supply chain, consumer, and public health and regulatory agencies
- Defined the challenges, requirements and health supply chain activities by stakeholder
- Identified the technologies needed for the individual domains and piloted the technologies to ensure the functionality met the needs and are seamlessly integrated into the overall framework

Results

- Supports end-to-end traceability from farm to table with low/no cost adoption through incentives on the Trusted Track & Trace (TTT™) marketplace
- Supports real-time, crowd sourcing and tracking of food-borne illnesses
- Uses 360-degree RRA to increase mission-critical facility inspections and eliminate time, expenses and health risks associated with traveling for in-person, on-site inspections
- Uses Trusted AI/ML for data-driven decision making (i.e. firm risk profiling to prioritize inspections thus using limited workforce effectively and proactively minimizing recalls)
- Links track and trace information, with syndromic surveillance data gathered via HL7/FHIR linkages to medical records and lab results

Conclusion

Secure, future proof, plug and play framework meets many of the stakeholders' needs serving the **One Health** Mission. The framework fosters collaboration and informed, effective decision making for advancing public health and driving workforce efficiencies. HELIX™ allows technologies to be interoperable and provides a self-service environment for stakeholders.



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