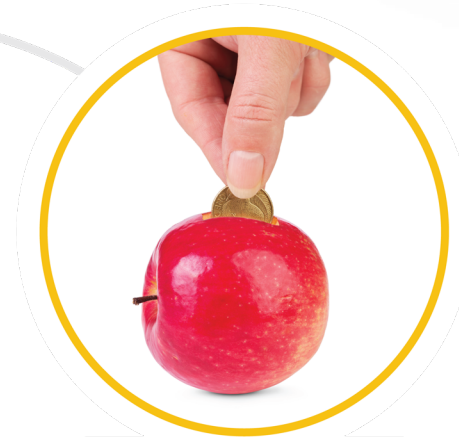AgroFresh

USApple Outlook 2024

AgTech: Using Data to Improve Efficiency, Profitability and Sustainability

The Power of Real-time Data Is In Your Hands

EFFICIENCY

PROFITABILITY

SUSTAINABILITY

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Pain Points in Packhouse Operations

Pain Point Intensity Meter

- 🔴 High
- 🟠 Medium
- 🟡 Low

Lack of Data Visibility or Timely Intervention

On-site traceability exists but **disconnected** from underlying data infrastructure, making it hard to gather meaningful insights.

Managers are late to intervene when things go wrong since their **data is mostly retroactive,** with little **real-time pack line insight to act on.**

Lack of visibility into supply chain, hours spent on **inventory management over phone, paper and pen** or MS Excel.

Suboptimal Room Monitoring

Data is pulled from simple and rudimentary environmental monitoring sensors that do **not tie to overall packhouse analytics.**

Multitude of considerations causes **struggle to optimize pack-out timing**; decisions made on intuition.

Manual Inspections

Most QC done manually, prone to **bias, variability and human error** leading to losses due to improper grading and repacking costs.

Distributors often bear cost of rejections due to QC issues from inability to track major and progressive defects early.

Suboptimal Overall Operations

Significant opportunity to gain operational efficiency across the distribution center by optimizing equipment, labor and sales.
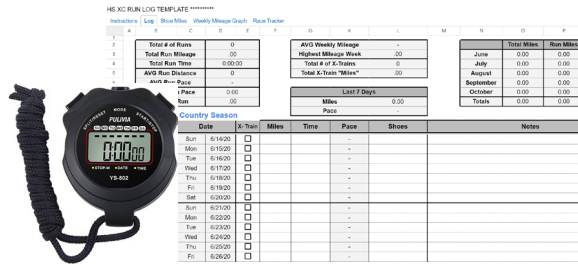
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Define Product Features Tied to Client Pain Points

	Sources of Data		Output of Data	
	Tech-enabled Inspections	**Environmental Monitoring**	**Workflow Automation & Analytics**	**Consultative Services & Recommendations**
Need Met	**Improving efficiency and accuracy of quality inspections** through technology such as hardware sensors, artificial intelligence.	**Providing real-time environmental information** for better control & early intervention.	**Improving visibility through building analytics** to manage data and provide shareable, actionable insights.	**Providing insights & human-based advisory services** to improve operational process & quality control practices.
Features	• Computer vision to inspect physical attributes • Non-destructive sampling using handheld devices (e.g., infrared, microwave) • Interface to record and integrate quality inspection data	• IoT sensors for room-level monitoring of ethylene and environmental factors such as temperature, humidity, CO_2, O_2 etc. (e.g., Strella) • Actionable alerts (e.g., cold-chain failure)	• Real-time dashboards & insights • Intra-facility traceability • Auto-generation of audit-ready reports (FSMA, EU General Food Law etc.) • Business intelligence functions (e.g., supplier score carding, productivity report)	• Published reports on produce industry trends • Self-serve benchmarking indices (e.g., costs, efficiency) • Post-harvest process / quality control advisory • Operational, quality, storage or transit monitoring "as-a-service"
Value Drivers	Inspection / repacking time savings, avoided loss from destructive sampling & improper grading.	Room opening labor savings, avoided loss from poor environmental control.	Time savings for data capture, analytics & reporting.	Overall incremental opex improvements (including labor savings & avoided loss).
Enablers	← Intuitive UI, Multi-language accessibility, ERP, FMS integrations, set-up and technical support →			

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Developing a Data Integration & Analytics Layer to Inform Real-time Decisions

The vision for FreshCloud 2.0 using consumer fitness and health as an analogy…
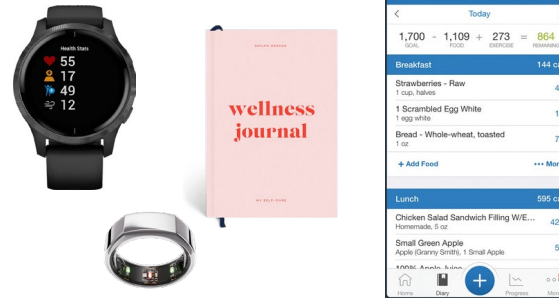
Stage 1

Simple instruments with limited data + manual processes using Excel or pen & paper

Many smaller customers are still here today:

- Manual, destructive inspection processes that lead to errors & inconsistencies

- Pen & paper or Office tools to keep track of quality control data & comply with audit/compliance requirements

- Little to no data visibility/analytics
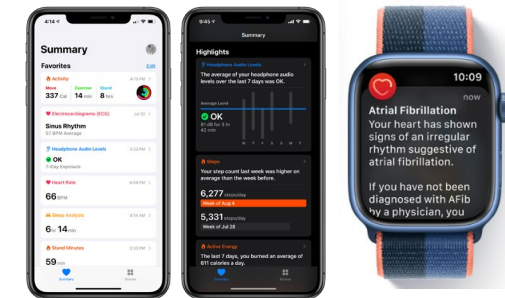
Stage 2

Fragmented data with no integrated insights

Most AgTech provides point solutions based on 1-2 technologies:

- IoT monitoring sensors that provide real-time environmental data

- Non-destructive testing technologies that improve the accuracy & consistency of QC

- These tools don't integrate & often provide only data without value-added insights

Stage 3

"One source of truth" with rich, actionable insights and alerts

Vision to enable efficiency, profitability & sustainability:

- Software backbone that serves as the central "clearinghouse" for packhouse operational data and analytics

- Integrate with multiple hardware technologies to bring end-to-end visibility & cross-pollinate

- Produce actionable insights & recommendations for customers

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