Leveraging Technology to Enable Ownership and Innovation on the Plant Floor

Todd Parker
Plant Engineer
Lakeview Farms


LAKEVIEW FARMS
Creating a World of Fresh, Delightful Foods!
LAKEVIEW FARMS

Why I came to Lakeview Farms

- Automotive to food industry
- 2013 consolidation to Delphos plant
- Parts, machines, locations, and history were all scrambled in the move
- Priority #1: Repairs costs, parts, and unknown spare parts inventory

Top 4 Priority Maintenance Issues

- Preventative maintenance scheduling
- Tracking machine uptime
- Technician efficiency
- Spare parts control

Problem 1: Preventive maintenance scheduling

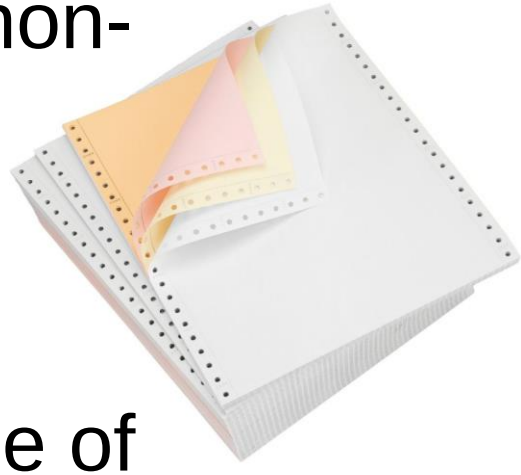
- “Putting out fires.”
- Machine failures don’t lead to improved PM procedures
- Machines not being PM’d
- History was unclear

Problem 2:
Tracking Machine Uptime:

- No trustworthy data
- Manual tracking is subjective
- No clear protocols on downtime

Problem 3: Maintenance Technician Efficiency

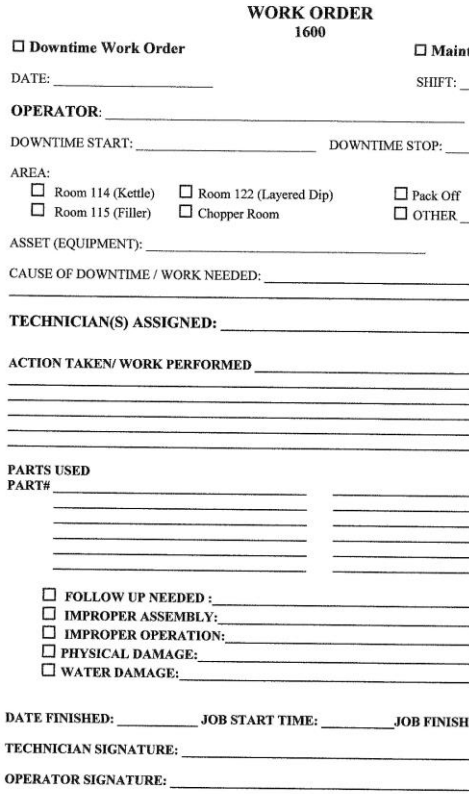
- Used hand-filled carbon copy work orders
- Parts Department team/support non-existant
- Less than 50% efficiency with technician's time (wrench time)
- Maintenance department overtime of more than 30%



Problem 4:
Spare Parts Control

- $2.5M in unknown spare parts inventory
- Accountability
- Outside Vendor controls

How Things Were Done



WORK ORDER
1600

☐ Downtime Work Order ☐ Maint

DATE: _____ SHIFT: _

OPERATOR: _____

DOWNTIME START: _____ DOWNTIME STOP: ___

AREA:
☐ Room 114 (Kettle) ☐ Room 122 (Layered Dip) ☐ Pack Off
☐ Room 115 (Filler) ☐ Chopper Room ☐ OTHER _

ASSET (EQUIPMENT): _____

CAUSE OF DOWNTIME / WORK NEEDED: _____

TECHNICIAN(S) ASSIGNED: _____

ACTION TAKEN/ WORK PERFORMED _____

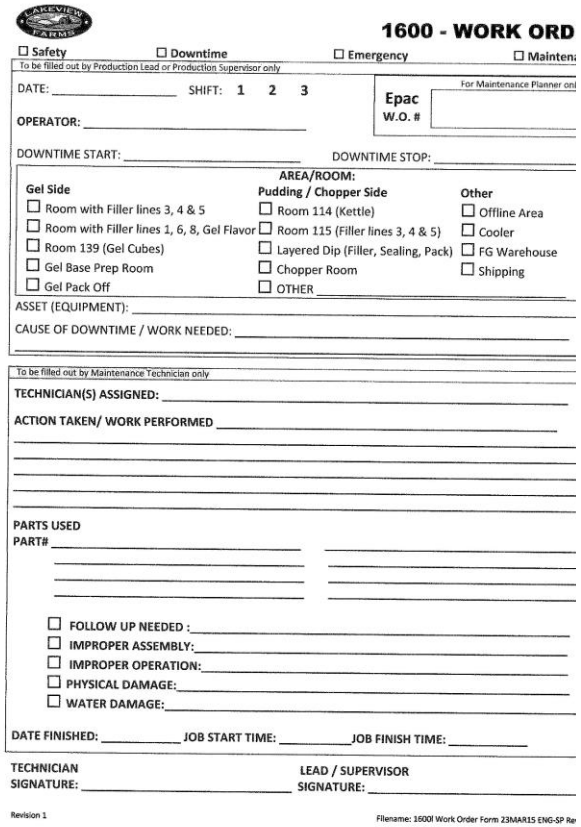
PARTS USED
PART# _____

☐ FOLLOW UP NEEDED : _____
☐ IMPROPER ASSEMBLY: _____
☐ IMPROPER OPERATION: _____
☐ PHYSICAL DAMAGE: _____
☐ WATER DAMAGE: _____

DATE FINISHED: _____ JOB START TIME: _____ JOB FINISH

TECHNICIAN SIGNATURE: _____

OPERATOR SIGNATURE: _____



1600 - WORK ORD

☐ Safety ☐ Downtime ☐ Emergency ☐ Maintena

To be filled out by Production Lead or Production Supervisor only

DATE: _____ SHIFT: 1 2 3

For Maintenance Planner onl

Epac
W.O. #

OPERATOR: _____

DOWNTIME START: _____ DOWNTIME STOP: _____

AREA/ROOM:

Gel Side	Pudding / Chopper Side	Other
☐ Room with Filler lines 3, 4 & 5	☐ Room 114 (Kettle)	☐ Offline Area
☐ Room with Filler lines 1, 6, 8, Gel Flavor	☐ Room 115 (Filler lines 3, 4 & 5)	☐ Cooler
☐ Room 139 (Gel Cubes)	☐ Layered Dip (Filler, Sealing, Pack)	☐ FG Warehouse
☐ Gel Base Prep Room	☐ Chopper Room	☐ Shipping
☐ Gel Pack Off	☐ OTHER _____	

ASSET (EQUIPMENT): _____

CAUSE OF DOWNTIME / WORK NEEDED: _____

To be filled out by Maintenance Technician only

TECHNICIAN(S) ASSIGNED: _____

ACTION TAKEN/ WORK PERFORMED _____

PARTS USED
PART# _____

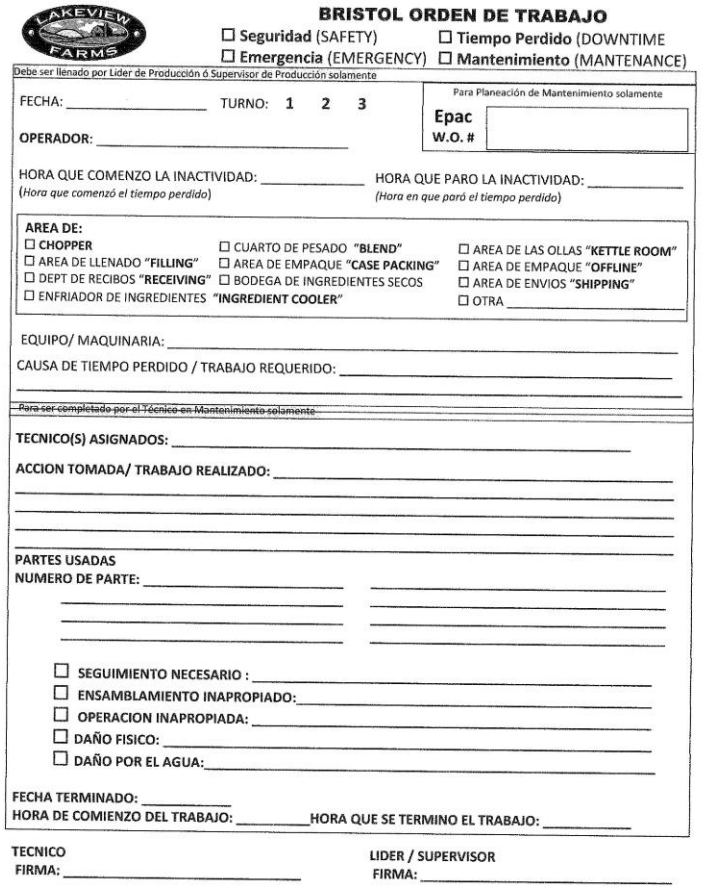
☐ FOLLOW UP NEEDED : _____
☐ IMPROPER ASSEMBLY: _____
☐ IMPROPER OPERATION: _____
☐ PHYSICAL DAMAGE: _____
☐ WATER DAMAGE: _____

DATE FINISHED: _____ JOB START TIME: _____ JOB FINISH TIME: _____

TECHNICIAN SIGNATURE: _____ LEAD / SUPERVISOR SIGNATURE: _____

Revision 1

Filename: 1600l Work Order Form 23MAR15 ENG-SP Re



BRISTOL ORDEN DE TRABAJO

☐ Seguridad (SAFETY) ☐ Tiempo Perdido (DOWNTIME
☐ Emergencia (EMERGENCY) ☐ Mantenimiento (MANTENANCE)

Debe ser llenado por Lider de Producción ó Supervisor de Producción solamente

FECHA: _____ TURNO: 1 2 3

Para Planeación de Mantenimiento solamente

Epac
W.O. #

OPERADOR: _____

HORA QUE COMENZO LA INACTIVIDAD: _____ HORA QUE PARO LA INACTIVIDAD: _____
(Hora que comenzó el tiempo perdido) *(Hora en que paró el tiempo perdido)*

AREA DE:
☐ CHOPPER ☐ CUARTO DE PESADO "BLEND" ☐ AREA DE LAS OLLAS "KETTLE ROOM"
☐ AREA DE LLENADO "FILLING" ☐ AREA DE EMPAQUE "CASE PACKING" ☐ AREA DE EMPAQUE "OFFLINE"
☐ DEPT DE RECIBOS "RECEIVING" ☐ BODEGA DE INGREDIENTES SECOS ☐ AREA DE ENVIOS "SHIPPING"
☐ ENFRIADOR DE INGREDIENTES "INGREDIENT COOLER" ☐ OTRA _____

EQUIPO/ MAQUINARIA: _____

CAUSA DE TIEMPO PERDIDO / TRABAJO REQUERIDO: _____

~~Para ser completado por el Técnico en Mantenimiento solamente~~

TECNICO(S) ASIGNADOS: _____

ACCION TOMADA/ TRABAJO REALIZADO: _____

PARTES USADAS
NUMERO DE PARTE: _____

☐ SEGUIMIENTO NECESARIO : _____
☐ ENSAMBLAMIENTO INAPROPIADO: _____
☐ OPERACION INAPROPIADA: _____
☐ DAÑO FISICO: _____
☐ DAÑO POR EL AGUA: _____

FECHA TERMINADO: _____
HORA DE COMIENZO DEL TRABAJO: _____ HORA QUE SE TERMINO EL TRABAJO: _____

TECNICO FIRMA: _____ LIDER / SUPERVISOR FIRMA: _____

Solution:
Needed Capabilities:

- **Preventative Maintenance Scheduling:**
  - Real-time visibility for scheduler and technicians
  - Directly link the history of failures to PM history
  - Structured process for constant PM review and improvement
  - Track technician labor usage on PM activities

- **Tracking Machine Uptime:**
  - Single source of data used throughout the facility
  - Standardize data collection across the facility
  - System that's easy to use so that people feel empowered to input needed data

Solution:
Needed Capabilities:

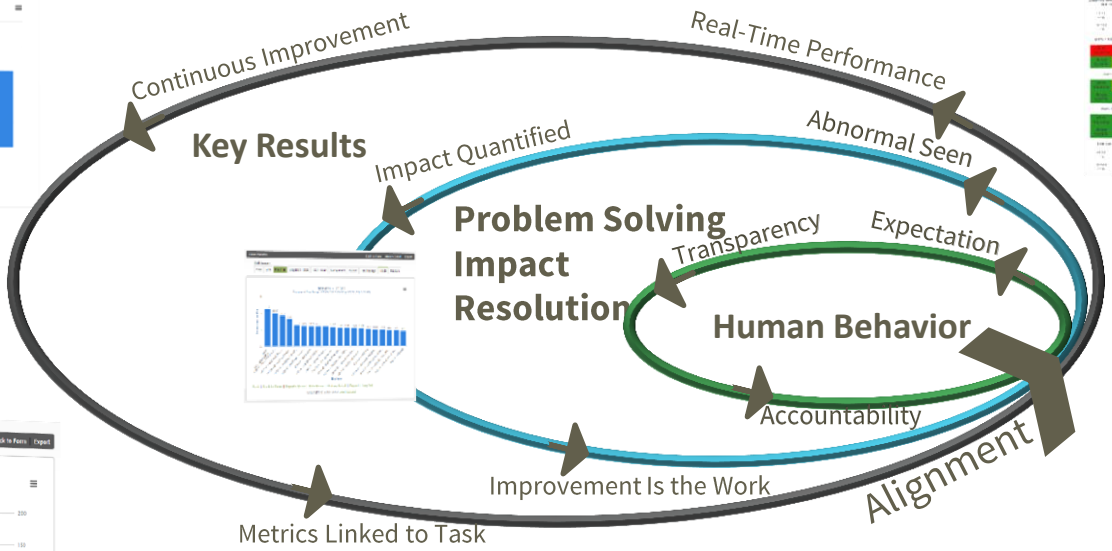
- **Maintenance Technician Efficiency:**
  - Make current efficiency losses visible in real-time

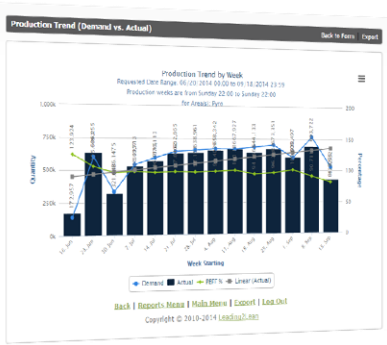
- **Spare Parts Control:**
  - Way to directly tie spare part usage to individual events on floor
  - Remove the burden of a manual stocking and reorder process

Solution:
Options Considered

- Outside Consultants
- Use of on-site management company
- Increased staff size with education/training
- Cloud-based software system

Solution:


Continuous Improvement
Real-Time Performance
Key Results
Impact Quantified
Abnormal Seen
Problem Solving
Impact
Resolution
Transparency
Expectation
Human Behavior
Accountability
Improvement Is the Work
Alignment
Metrics Linked to Task


Production Trend (Demand vs. Actual)
Production Trend by Week

Solution Implementation:

Real-Time Visibility & Reporting

Maintenance

PM
Spares Inventory
CMMS
TPM
Downtime
Reliability & OEE

Inspection

Visual Inspection
Scanner Support
Defect Trending
Inspection Takt-Times
Material Inspection
Red-Tagging/Quarantine

Integration Server

Platform Connectors for Industry Standard Systems
Unparalleled Integration Possibilities
Safe & Easy Firewall/Security Friendly Deployment

Production

Training
Production
Performance Triggers
Real-Time Pitch Boards
Scrap
Takt-Time

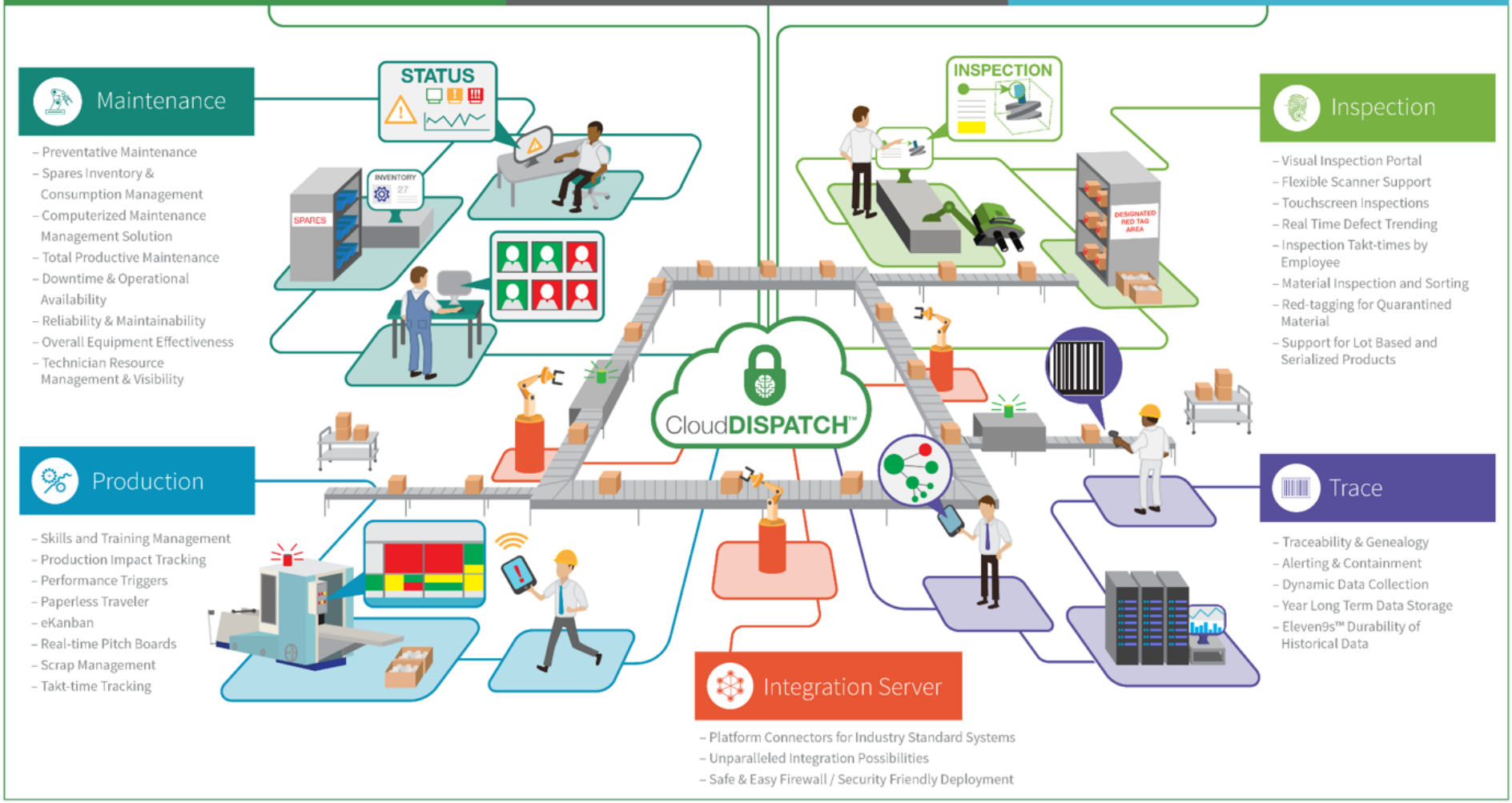
Trace

Traceability & Geneology
Alerting & Containment
Dynamic Data Collection
Eleven9s Durability of Historical Data

Leading2Lean™

CloudDISPATCH™

Real Time Dispatch | Analytics & Reporting | Web Services API



Maintenance

- Preventative Maintenance
- Spares Inventory & Consumption Management
- Computerized Maintenance Management Solution
- Total Productive Maintenance
- Downtime & Operational Availability
- Reliability & Maintainability
- Overall Equipment Effectiveness
- Technician Resource Management & Visibility

Production

- Skills and Training Management
- Production Impact Tracking
- Performance Triggers
- Paperless Traveler
- eKanban
- Real-time Pitch Boards
- Scrap Management
- Takt-time Tracking

Inspection

- Visual Inspection Portal
- Flexible Scanner Support
- Touchscreen Inspections
- Real Time Defect Trending
- Inspection Takt-times by Employee
- Material Inspection and Sorting
- Red-tagging for Quarantined Material
- Support for Lot Based and Serialized Products

Trace

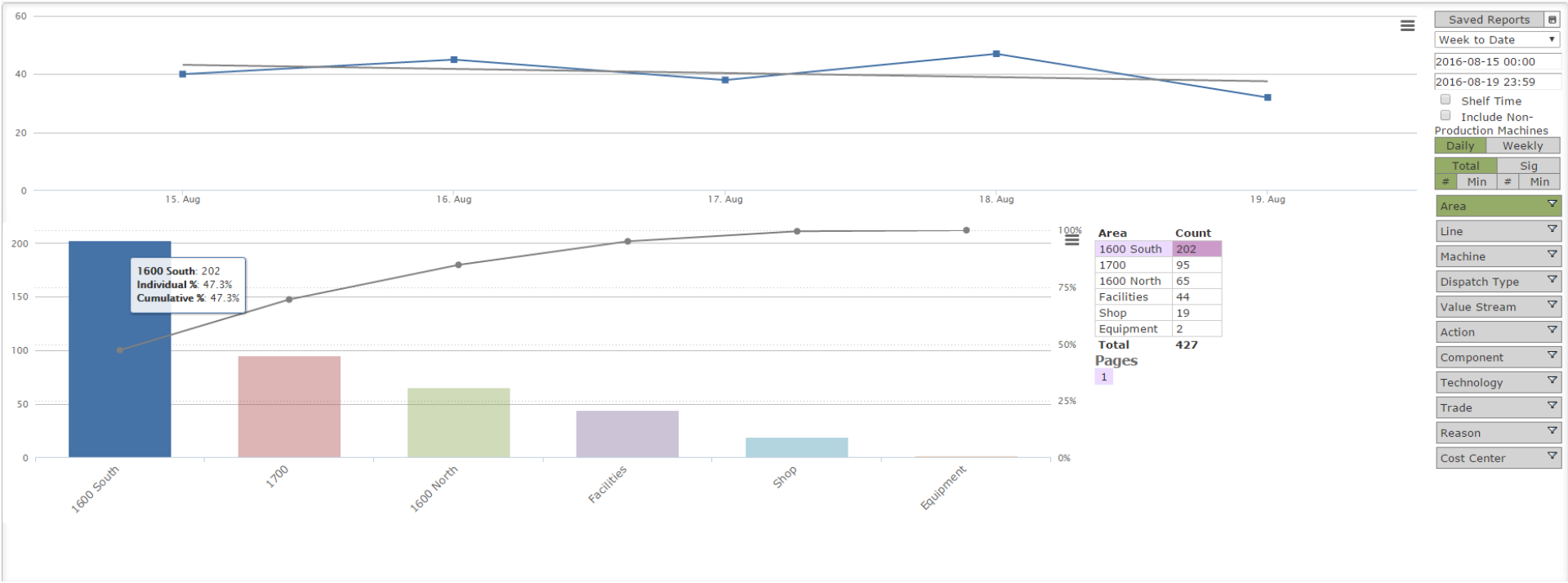
- Traceability & Genealogy
- Alerting & Containment
- Dynamic Data Collection
- Year Long Term Data Storage
- Eleven9s™ Durability of Historical Data

Integration Server

- Platform Connectors for Industry Standard Systems
- Unparalleled Integration Possibilities
- Safe & Easy Firewall / Security Friendly Deployment

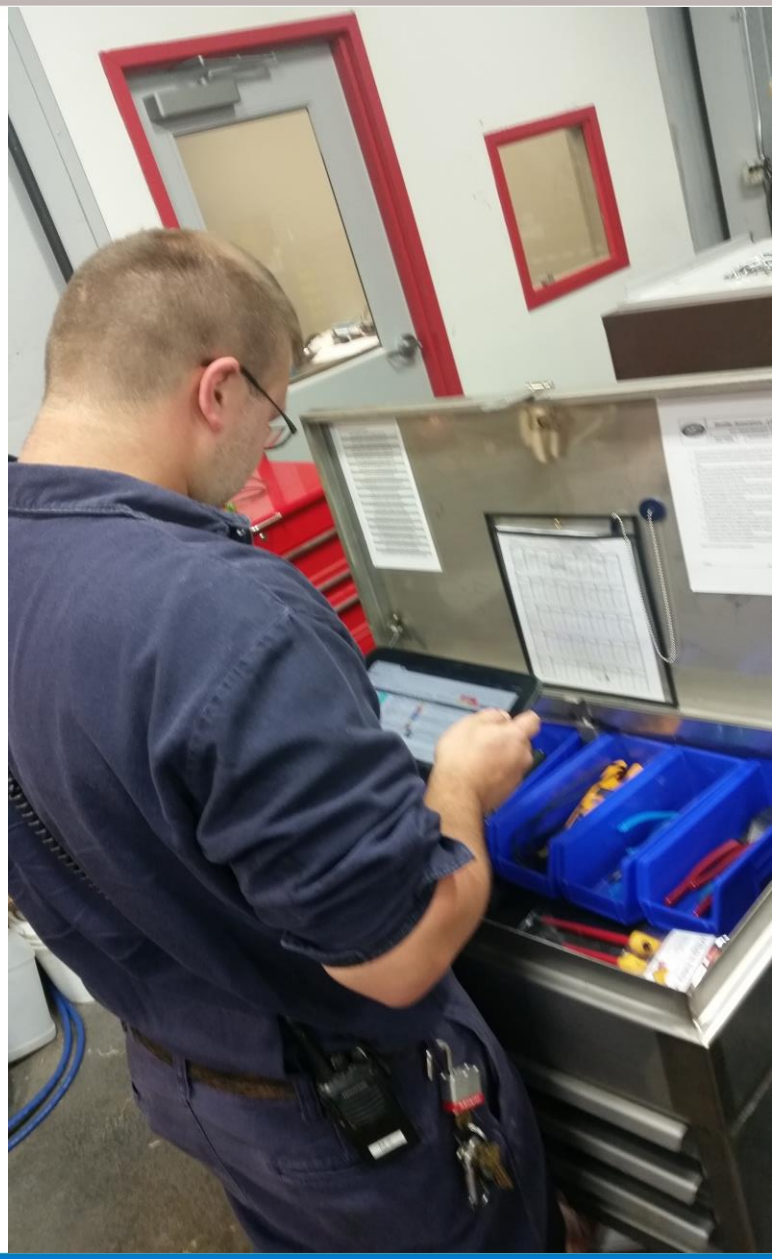
Solution Implementation:

Real-Time Tracking



Solution Implementation:

Employee Engagement in Problem Solving



Solution Implementation:

Plant-Wide Involvement & Transparency

Close performance gaps

- Engages technicians and operators to own improvement
- Provides real-time visibility and resolution into production impacts
- Visualizes data with behavior protocols to bring workforce to improvement

Manage real-time events

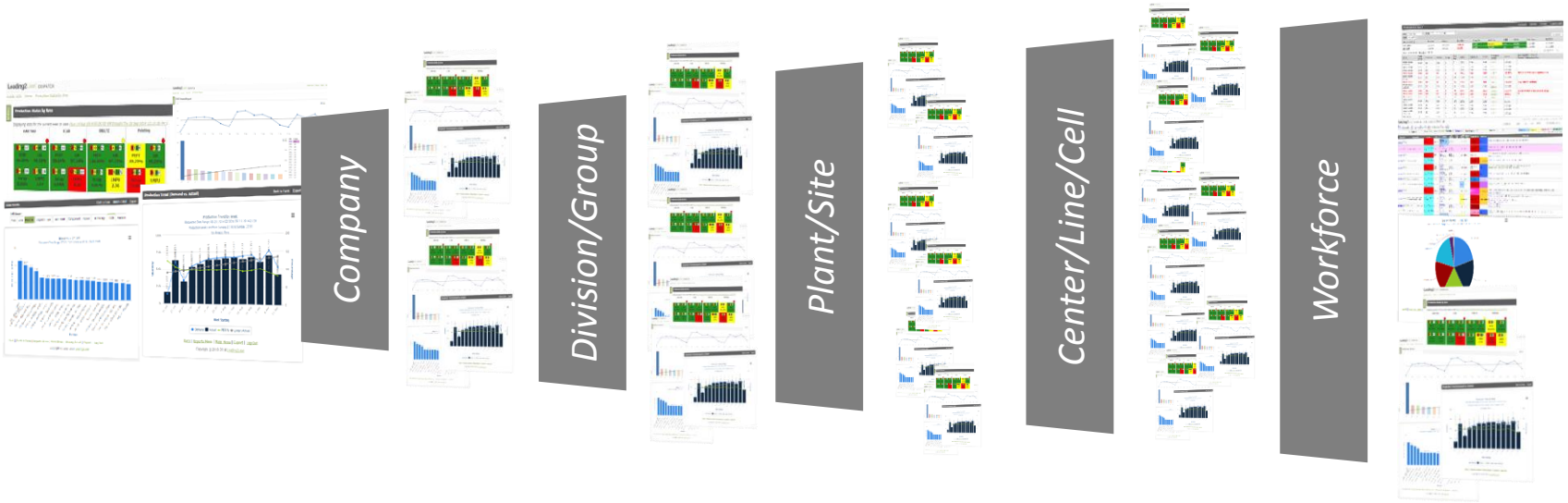
- Incorporates flexible reaction and escalation protocols
- Produces real-time resource visibility to determine location and priority
- Organizes details for any event impacting productions (e.g. machine, material, quality, process, change-overs)

Expand visibility

- Offers a group of reports: SIG event reporting, MTBF, MTTR, Operational Availability, OEE
- Visualizes real-time tasks in drill-down dashboards
- Accessible on across all devices – tablets, laptops, smartphone
- Gives full version control, access rights and change history

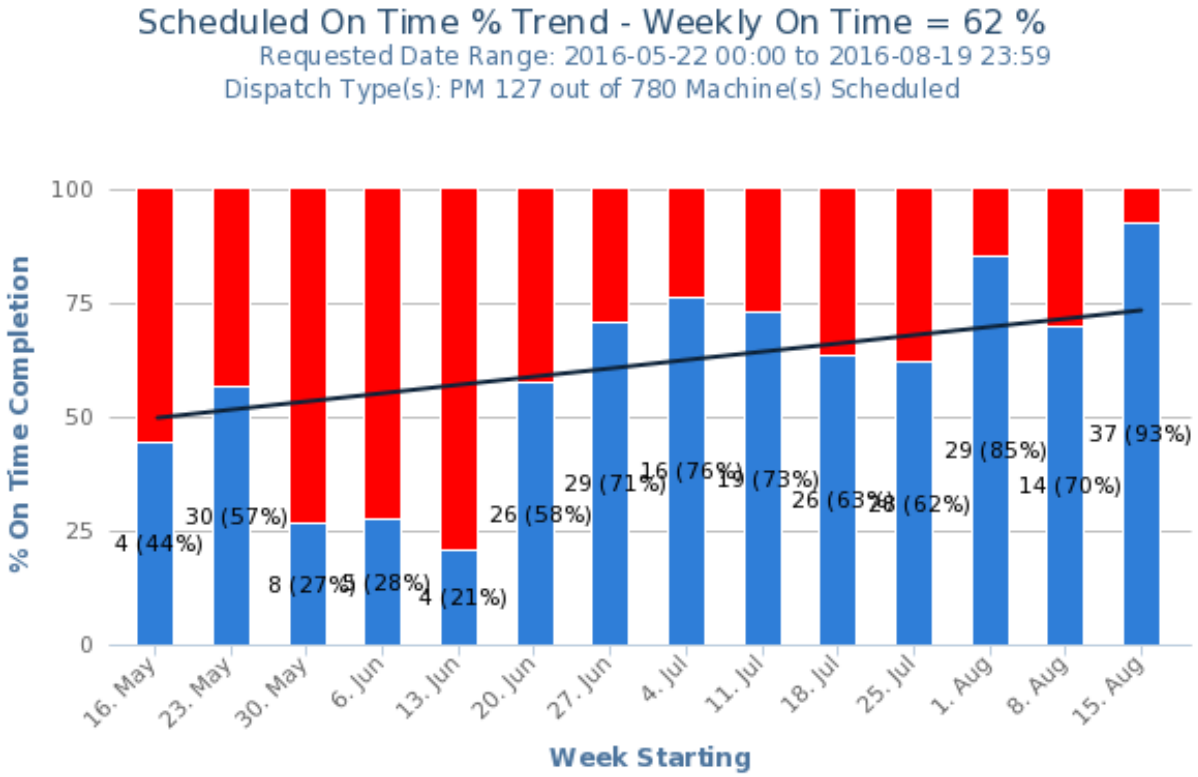
Solution Implementation:

Plant-Wide Involvement & Transparency



Solution Implementation:

Platform for Reporting Results:



Solution:
Lessons Learned

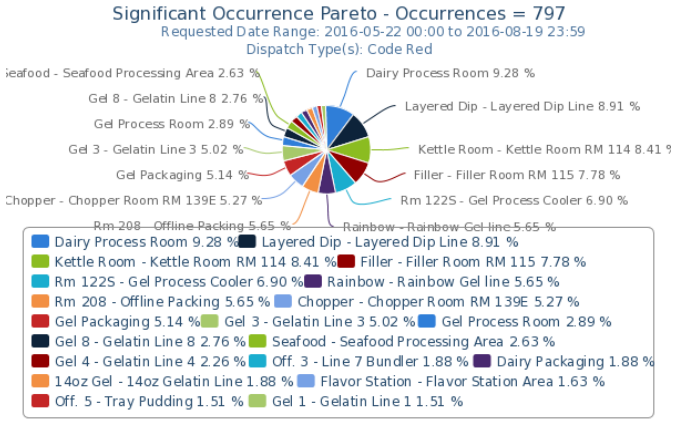
1. *Get team involved in data collection process*
   - The more people enter data the better the overview
2. *Have good plan before implementation*
   - Timeline to see progress will encourage entire plant participation
   - Train everyone that you can, visible means questions
   - Great for language and cultural barriers
3. *Use skills that are seen as common today*
   - Smartphone users, internet shoppers, mobile apps

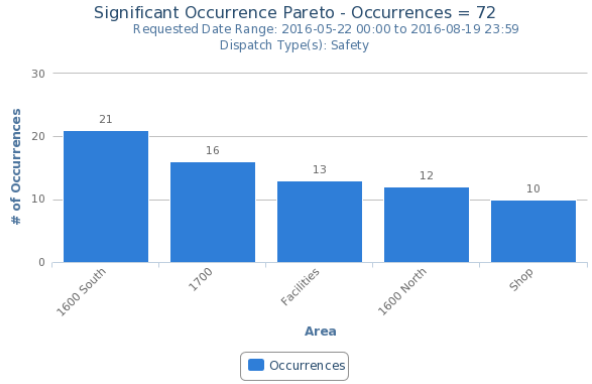
Results:
Preventive Maintenance Scheduling

- Scheduler has equipment history *(What's being done, what intervals, better for longevity of machines.)*
- **Downtime decrease of 34%** in first 6 months
- Visible, predetermined, records of completion *(You have good history of what, when, and who did it.)*
- **15% reduction in overall repair costs**

Results:
Tracking Machine Uptime

- Configure priority of dispatches
- Leaves “no excuses” over multiple shifts (*If it’s in the system, it can be tracked)*
- **34% uptime improvement**





Results:
Maintenance Technician Efficiency

- Was 50% efficiency, **now is 78-81%**
- Overtime was over 30% in maintenance dept., **now it's under 10%**
- Progressed from reactive cycle to **proactive improvement style and mentality**
- Greater **competitive advantage** through organizational agility and incremental changes
- Employee incentive program based on production **performance tracked real-time**

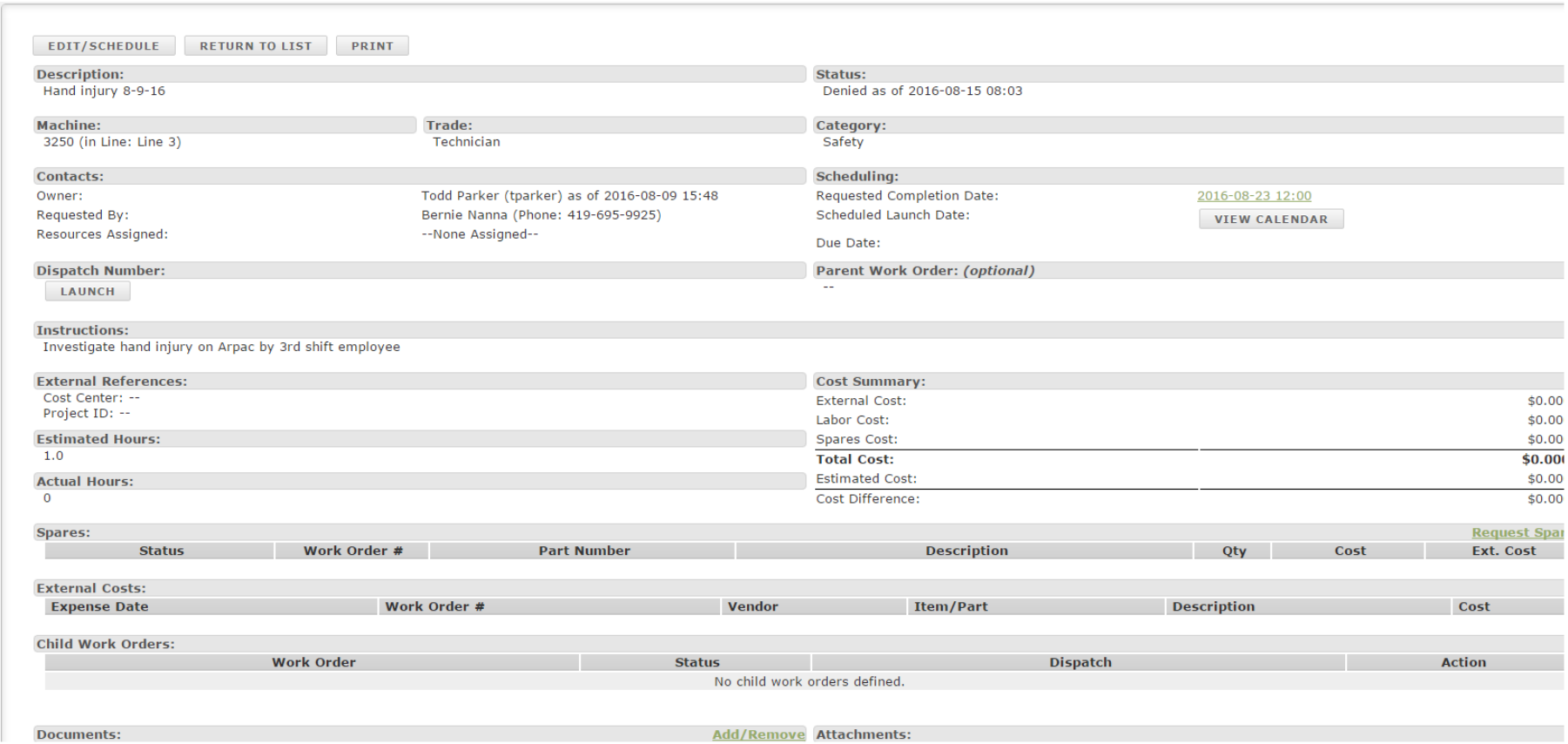
Results:
Spare Parts Control

- Savings from increased uptime due to having correct parts and reduced staff due to automatic ordering and parts management
- Inventory accuracy and availability lead to reduced downtime
- Once there's confidence of having the right parts for the job, no need for employees to "stash away" repair parts to get their job done.

Other Benefits:

- Culture and systems are more in line with today's workforce
- Tracking of finished goods: Can track any issues.
- Information accessibility (access to pulse of company anywhere instantaneously)
- No language barrier, just data

OSHA & FDA Compliance



EDIT/SCHEDULE | RETURN TO LIST | PRINT

Description:
Hand injury 8-9-16

Status:
Denied as of 2016-08-15 08:03

Machine:
3250 (in Line: Line 3)

Trade:
Technician

Category:
Safety

Contacts:
Owner: Todd Parker (tparker) as of 2016-08-09 15:48
Requested By: Bernie Nanna (Phone: 419-695-9925)
Resources Assigned: --None Assigned--

Scheduling:
Requested Completion Date: 2016-08-23 12:00
Scheduled Launch Date: VIEW CALENDAR
Due Date:

Dispatch Number:
LAUNCH

Parent Work Order: *(optional)*
--

Instructions:
Investigate hand injury on Arpac by 3rd shift employee

External References:
Cost Center: --
Project ID: --

Estimated Hours:
1.0

Actual Hours:
0

Cost Summary:

External Cost:	$0.00
Labor Cost:	$0.00
Spares Cost:	$0.00
Total Cost:	**$0.00**
Estimated Cost:	$0.00
Cost Difference:	$0.00

Spares: Request Spar

Status	Work Order #	Part Number	Description	Qty	Cost	Ext. Cost

External Costs:

Expense Date	Work Order #	Vendor	Item/Part	Description	Cost

Child Work Orders:

Work Order	Status	Dispatch	Action
No child work orders defined.			

Documents: Add/Remove

Attachments:

Overall Results Achieved at Lakeview Farms:

- **30%** improvement in maintenance tech efficiency
- **20%** reduction in overtime (big savings!)
- **15%** reduction in overall repair costs
- **5%** Skilled trades turnover
- **15%** operational availability
- Real advantage in highly competitive marketplace

What's Planned for the Future at Lakeview Farms:

- Production pitchboards
- Quality department tracking
- Performance bonuses based on key indicators from real-time reporting
- Flexible cloud-based system in place for future expansion

Why It Worked:

- ***Visibility*** (real-time data for decision making)
- ***Transparency*** (accountability)
- ***Engagement*** of people (ownership)
- At the end of the day, an engaged workforce is what drives continuous improvement

Questions?

www.Lakeviewfarms.com

Thank You!

Your opinion is important to us!
Please take a moment to complete the survey using the conference mobile app.

Session: ThP/38
Leveraging Technology to Enable Ownership and Innovation on the Plant Floor

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