



## Elevating Shop Floor Leadership: A Balanced Approach to Lean Training and Digital Tools

*Preparing front line leadership for better results*

Rich Calvaruso – Senior Director Lean  
Carolyn Berry – Principal Lean Coach  
Chris Young – Principal Lean Coach  
Jennifer Bolton – Principal Lean Coach  
Kari Stansberry – Senior Lean Coach  
Alison Seward – Director Quality  
GE Appliances, a Haier company



16,500  
employees across  
the globe



Contributing to  
local economies in  
46 states



Our appliances  
are in half of  
all U.S. homes









\$35 billion  
in revenue



104,000  
employees

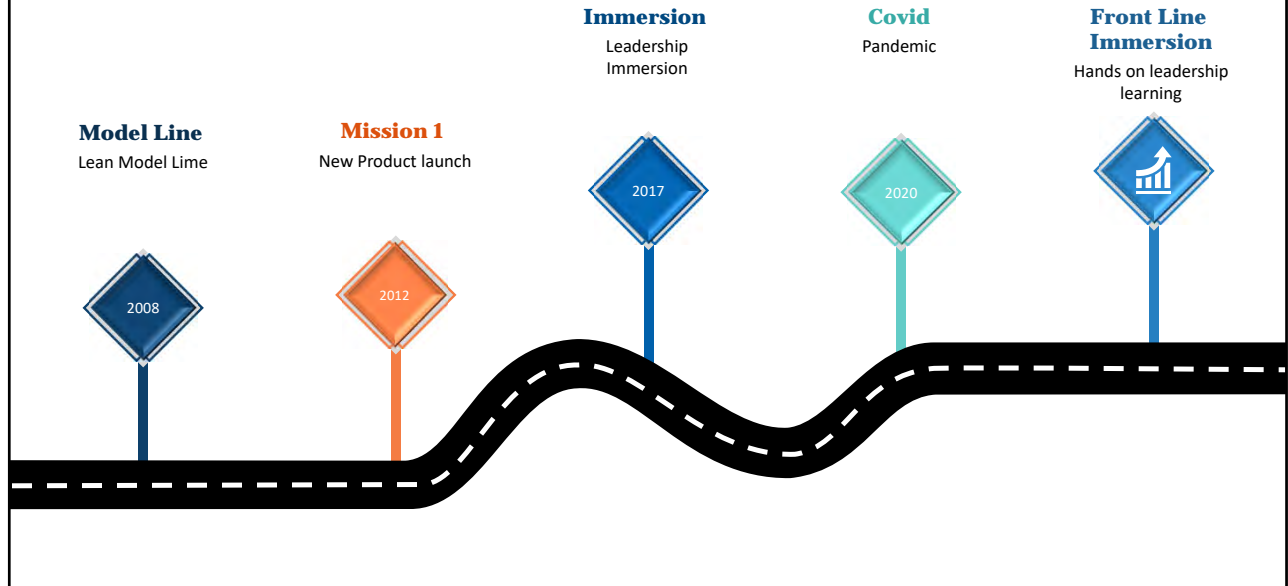


160 countries  
and regions

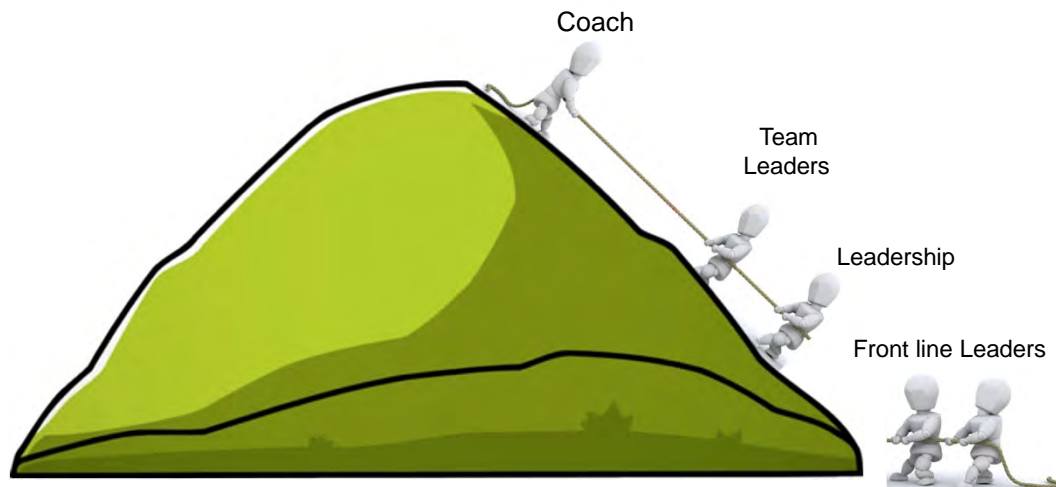
<h1>Each Year...</h1>	 <p>We build 2,500 units per hour</p>	 <p>We deliver an appliance every 13.8 seconds</p>	 <p>We recycle 100+ million pounds of cardboard, wood, and plastic</p>
	 <p>We procure 3 billion parts</p>	 <p>We ship 25 million parts and accessories</p>	 <p>We manage 16 million calls through our call center</p>



# Our Lean Journey



## What We Were Missing



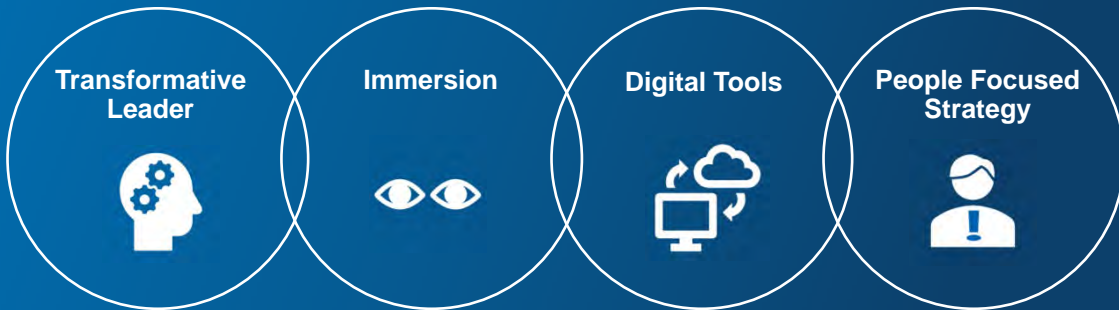
# Immersion Structure



## HANDS ON *Learning*

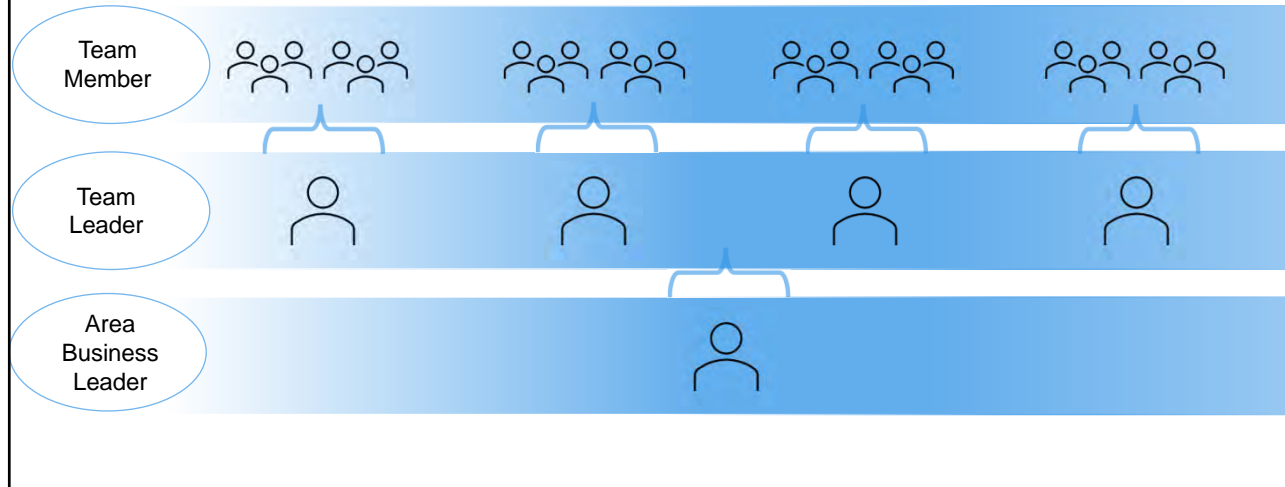


# Learning objectives

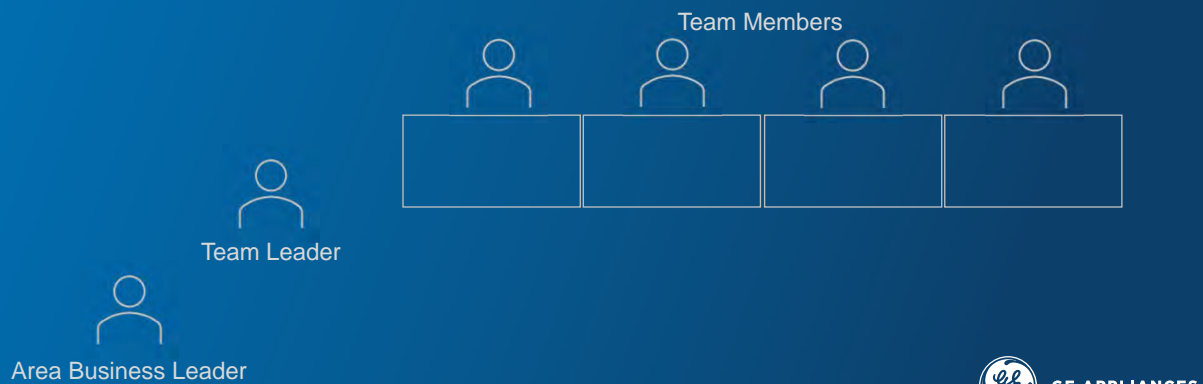


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# The Floor Leadership Structure



# Demonstration *Part 1*



# Reflection



## Training – APS Awareness



Course Syllabus  
6 Lessons

- APS Training Introduction SCORM
- Role of a Team Leader SCORM
- Standardized Work SCORM
- Hour x Hour Board SCORM
- 5S SCORM
- Andon System SCORM

APS Training Introduction

Role of a Team Leader

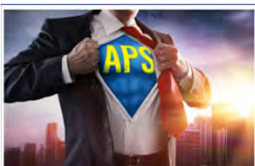
Standardized Work

5S

Hour x Hour Board

Andon System

# Training – APS Awareness



The **secret sauce** to your success is **APS**, which is short for Appliance Production System, and you're going to learn a lot about it - in fact - **you're going to master it**. But we're going to take it step-by-step and play-by-play.

The ABC's of APS



It's okay. This job can be intense, overwhelming, and stressful ... but it can also be extremely rewarding.

**We've got a secret** (that's not a secret) to make your job easier and everything run more smoothly.

Spill the beans



In your new shoes do you feel ...

Confident

Lost

Both! Neither! What day is it?



Welcome!



Hi Front Line Leader!

Congratulations on getting this job at GE Appliances! Your job is super important to the success of our business.

How do you feel in your new role?



# Brilliant Factory



Supply Chain Portal  
GE Appliances

Manufacturing

Distribution

Training

Our Team

What's New

Reports

Young, Chris(212311690) ▾

## AP4



- [Hour-by-Hour](#) ☆
- [Attendance](#) ☆
- [TPM](#) ☆
- [Plastics COE](#) ☆
- [Alarm Manager](#) ☆
- [Yamazumi](#) ☆

## AP5 Refrigeration



- [Production Metrics](#) ☆
- [Hour-by-Hour](#) ☆
- [Attendance](#) ☆
- [Test Results](#) ☆
- [EOLA](#) ☆
- [TPM](#) ☆
- [Work Calendar](#) ☆
- [Plastics COE](#) ☆
- [Alarm Manager](#) ☆
- [Proficy Refrigeration](#) ☆
- [Yamazumi](#) ☆



2024

Lean Summit







# Brilliant Factory - HRxHR



HRXHR  
GE Appliances

Berry, Carolyn(214018313)

02/15/24 08:47:42  
Shift Date: 2024-02-15 1ST SHIFT

Home MA1 Final HRxHR Metrics Shift Note Inventory P & A Matrix Analysis

Current Shift

Problems Hour Notes

Perfect	Customer Demand	Actual	AY	Variance	Problem	Duration
301	286	286	95%	-15		
Hour 1: 05:35 - 06:35						
99	94	93	93%	-6	SP	0:24:58
Hour 2: 06:35 - 07:35						
99	94	95	95%	-4	SP	0:22:56
Hour 3: 07:35 - 08:35						
90	85	85	94%	-5	SP	0:18:03
Hour 4: 08:35 - 09:35						
13	12	13	100%	0	SP	0:02:16
Hour 5: 09:35 - 10:35						
0	0	0		0		
Hour 6: 10:35 - 12:05						
0	0	0		0		

# Digital Standardized Work



STANDARDWORK  
GE Appliances

Observation Preparation Time Observation Periodic Work **Standard Work Chart** Production Capacity Combination Table Job Instruction Save Print

Model: Base -3 Door Shift: 1ST SHIFT Daily Demand: 750 Prepared

Pitch: 01-ASY-003 Slide Support Install Date: 12/13/2023 Takt Time: 36.4 Team Me

Work Element	Adjusted Time
1 place manifest into unit	4.51
2 Get supports, verify to manifest, install to unit	6.03
3 Drive 1 screw into each support	10.11
4 remove debris, install dell pan	4.83
<b>Cycle Time (Big T)</b>	<b>25.48</b>

Current Chart Scale: 2 seconds per foot

Shape	Line	Material	Work Element	Motion / Return	Quality	Safety
□	—	⊗	①	①—②	◆	+

# Digital Yamazumi



Berry, Carolyn(214018313)

Plants : RPO Cooking : L7 : Cavities

Changes in this mode will not be saved.

Takt Time: 85.9s  $\Sigma$  CT: 376.54s

Theoretical Processes: 4.4

Actual Processes: 5 Region Details:

Version: Initial (Active) Enter Edit Mode

Save Create Print Print Change Log Ergo Score

<p><b>L7-BMD-001</b> <span style="float: right;">+</span></p> <ul style="list-style-type: none"> <li>add paint on fixture 24.21s</li> <li>place leg to each side of pan shoot 1 screw</li> <li>start appliance pilot on</li> <li>get stove top gas pan</li> <li>pan fixture gas foot</li> <li>shoot 2 on 1 leg rail</li> <li>inspect 2 limbs and in</li> <li>get top rails pan top</li> <li>fixture get foot shoot</li> <li>2 on 1 leg rail repeat 6 times, pan is rack</li> </ul> <p>Low End</p>	<p><b>L7-LCV-002 (M)</b> <span style="float: right;">+</span></p> <ul style="list-style-type: none"> <li>change out front frames 12.01s</li> <li>place cavity to table inspect front</li> <li>inspect front to</li> <li>inspect front to</li> <li>inspect front to</li> <li>inspect front to</li> <li>inspect front to</li> <li>inspect front to</li> <li>inspect front to</li> <li>inspect front to</li> </ul> <p>Low End</p>	<p><b>L7-SCV-002 (C)</b> <span style="float: right;">+</span></p> <ul style="list-style-type: none"> <li>check sensor across 8.36s</li> <li>shoot 2 screws in pan shot wire</li> <li>shoot 4 cavity screws 13.77s</li> <li>shoot 2 screws in pan shot wire</li> <li>get front frame cover</li> <li>insert gasket</li> <li>insert wire plate in cavity</li> <li>inspect for manifold</li> <li>get front frame place to before get away</li> </ul> <p>Low End</p>	<p><b>L7-LCV-004 (K)</b> <span style="float: right;">+</span></p> <ul style="list-style-type: none"> <li>check front bake pan 10.63s</li> <li>get 6 screws 1</li> <li>grounding steel shoes front frame to cavity</li> <li>get 2 hinge receivers</li> <li>place 4 screws and shoot to front frame</li> <li>place cavity to front frame</li> <li>check front</li> <li>check front</li> <li>check front</li> <li>check front</li> <li>check front</li> </ul> <p>High End</p>	<p><b>L7-SCV-004 (A)</b> <span style="float: right;">+</span></p> <ul style="list-style-type: none"> <li>check front 14.66s</li> <li>get 2 hinge receivers and 4 screws above</li> <li>get 2 screws 1</li> <li>grounding steel shoes front frame to cavity</li> <li>get 2 hinge receivers and 4 screws and shoot to front frame</li> <li>place cavity to front frame</li> <li>check front</li> <li>check front</li> <li>check front</li> <li>check front</li> <li>check front</li> </ul> <p>High End</p>
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# APS (Appliance Production System) Portal



APS (Appliance Production System) Home Standard Work Material Flow Cases/Status APS Assessment Standards Internal Sites External Links Document Library

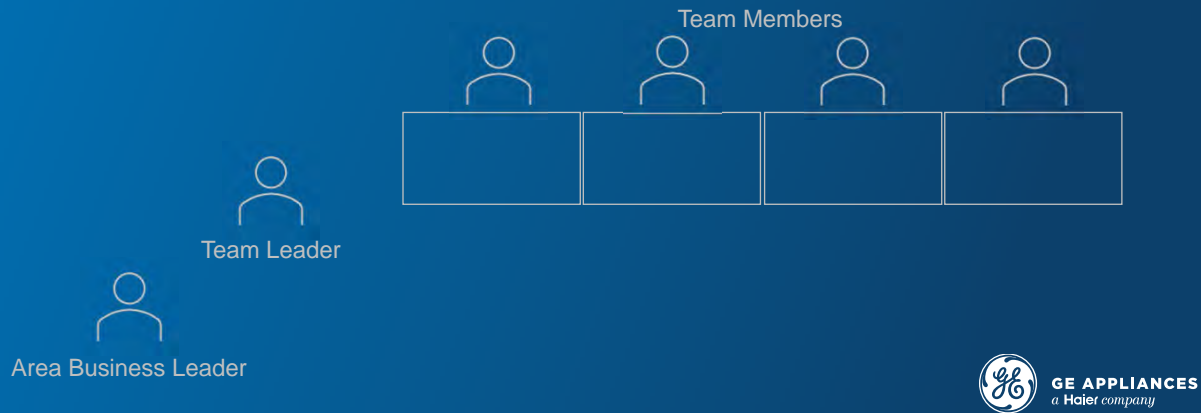
<p><b>1x1 Problem Solving</b></p> <p>Select</p> <p>1x1 Problem Solving teaches the scientific method of root cause problem solving using the PDCA methodology while solving a real Business problem upon conclusion of learning using the A3.</p>	<p><b>Front Line Leader Experience</b></p> <p>Select</p> <p>Front Line Leader Experience is a two-week intensive learning opportunity that focuses on Standardized Work &amp; Shop Floor Management for the BL &amp; AB levels of leadership.</p>	<p><b>Material Leader Experience</b></p> <p>Select</p> <p>Material Front Line Leader Experience is a two-week intensive learning opportunity revolved around material delivery guides and making efficiency improvements to the conveyance of parts to the lines.</p>
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<p><b>Standardized Work</b></p>	<p><b>Shop Floor Management</b></p>
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<p><b>APS Central</b></p>	<p><b>Lean Management Office</b></p>
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- Continual Learning**
- Develop 3 - APS Assessments
  - Lean Transformation Framework (LEI)
  - NOBRI (NPI) program This American Life
  - 100 Years of Inspiration in the Work (LEI)
  - Lean Books to Read
  - John Dook at BEC (Management Hall 2019)
  - How to Change a Culture (Harvard Business Review)
  - Learning to Lead (Harvard Business Review)
  - The 5 Whys - Lean Problem Solving (LEI)
  - Why Traditional Farming is ripe for Disruption, an interview with Learn Farmer, Ben Hartman
- Art of Lean Video Series (LEI)**
- The Art of Lean: Use These Tools to Help You Improve a Process (LEI)

# Demonstration *Part 2*



## Gemba

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*a Haier company*

# Questions?



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# Thank You



2024

**Lean Summit**