



**INTEGRATING ENVIRONMENTAL
MANAGEMENT SYSTEMS
AAC CONFERENCE 2017
JOHN STOLYS**

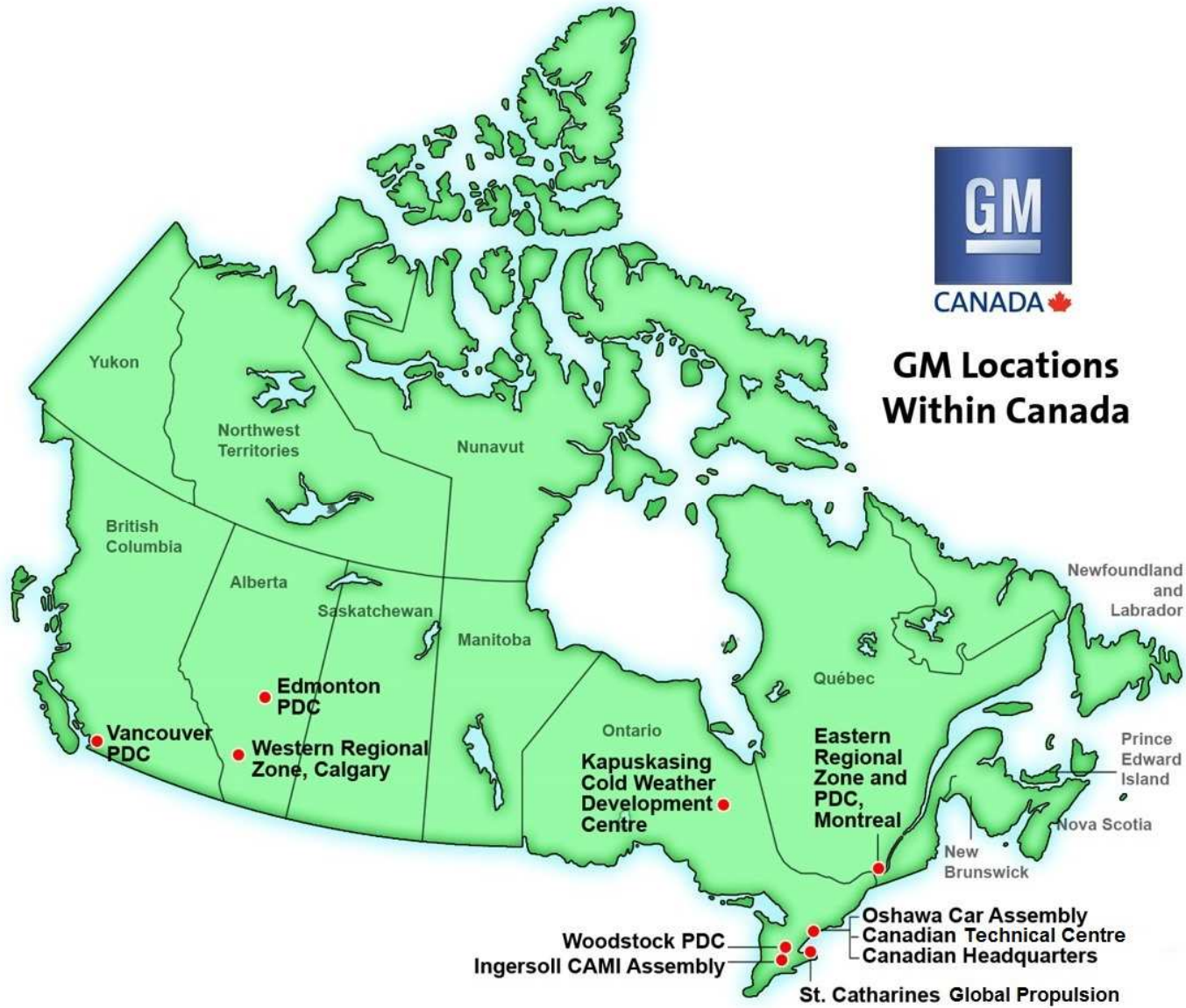


General Motors Global Brands





GM Locations Within Canada




GM Sustainability 2020 Targets

Legend:
 ★ 2020 Goal Met or Exceeded
 ● On target

- **Renewable Energy**
100% RE by 2050
- **CO₂ Footprint**
 - Reduce carbon emission intensity by 20%
- **Energy Use**
 - Reduce intensity by 20%
- **Water Use**
 - Reduce intensity by 15%

★ **VOC Emissions from Paint Shops**
 • Reduce intensity by 10%



2010 Baseline

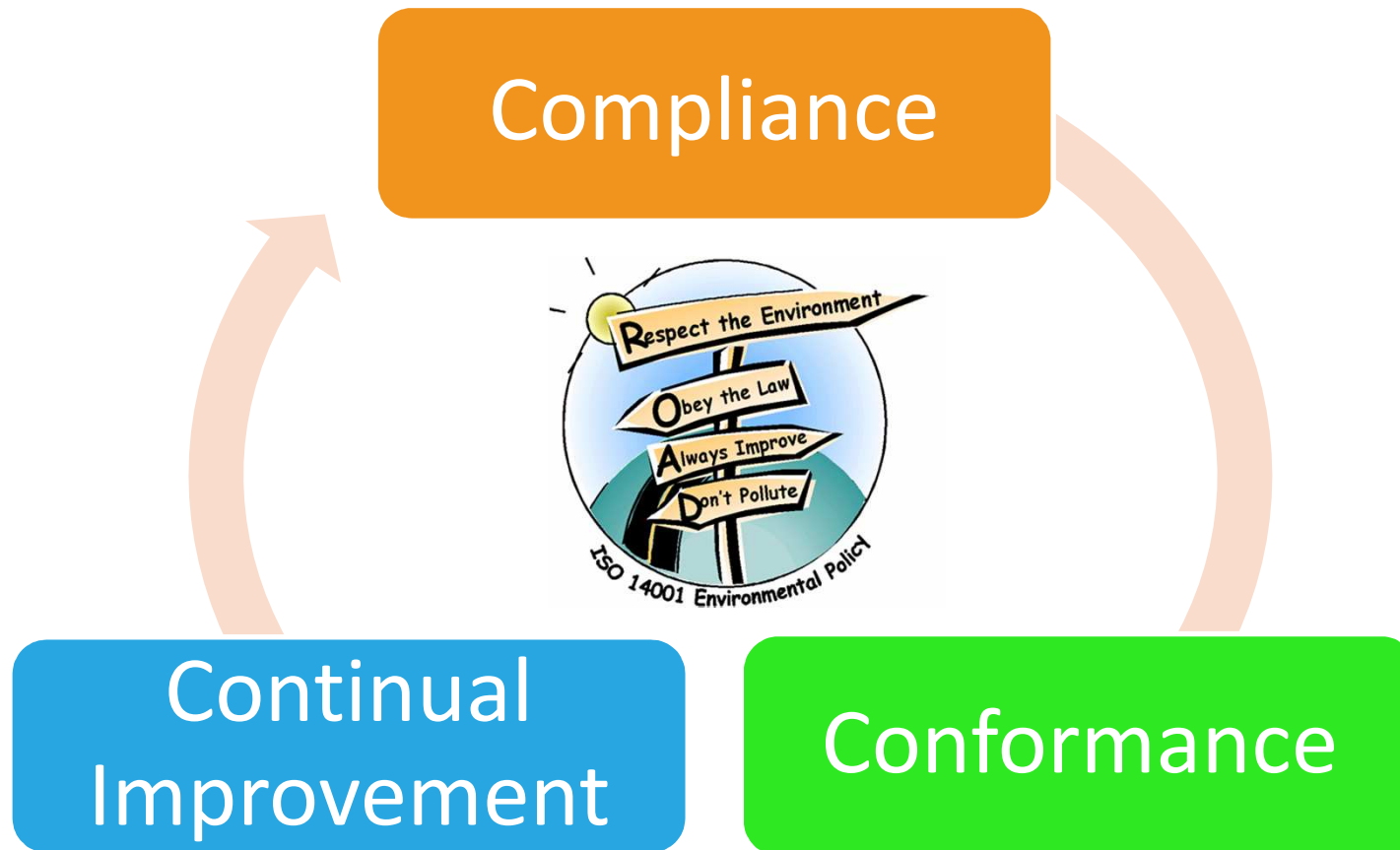
- **Biodiversity**
 - Wildlife habitat programs established where feasible
- **Total Waste**
 - Reduce intensity by 40%
- **Landfill Free**
 - 150 Landfill free sites
- **Community Outreach**
 - All manufacturing sites



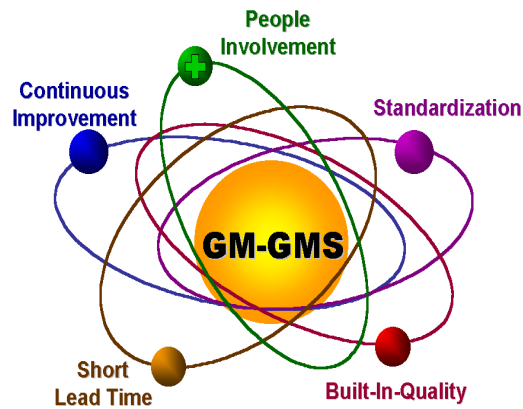
Environmental Awards



General Motors Approach



Independent Management Systems



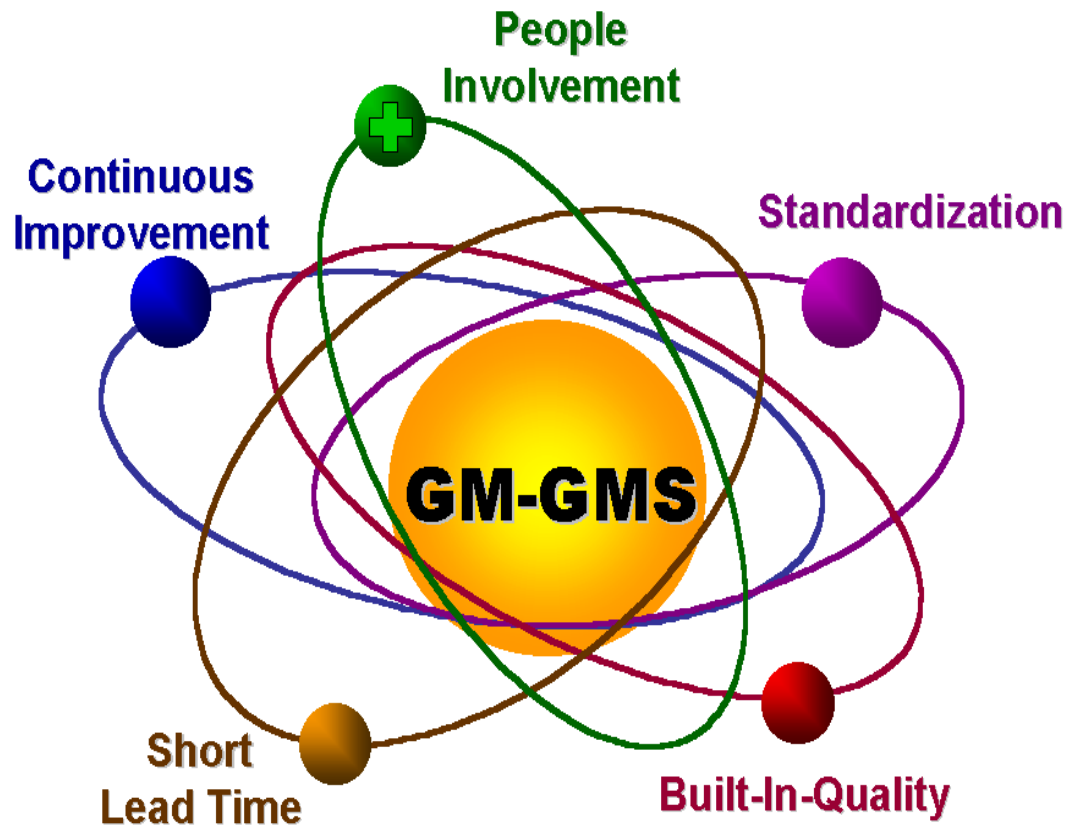
Safety

it's personal
OWN IT

GM Maintenance
Global |  & Technology
People, Equipment & Technology

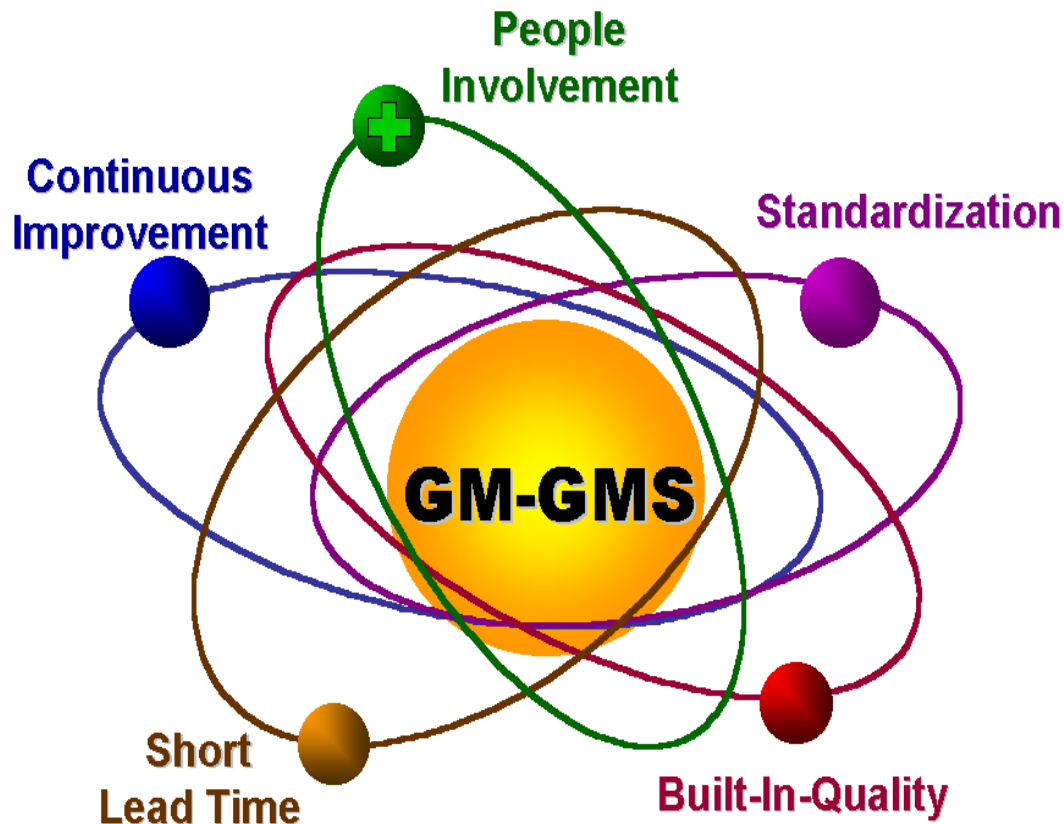


Environmental Integration into GM's Global Manufacturing System



GM's Global Manufacturing System

Five Principles Supporting Six Goals:



Safety

People

Quality

Responsiveness

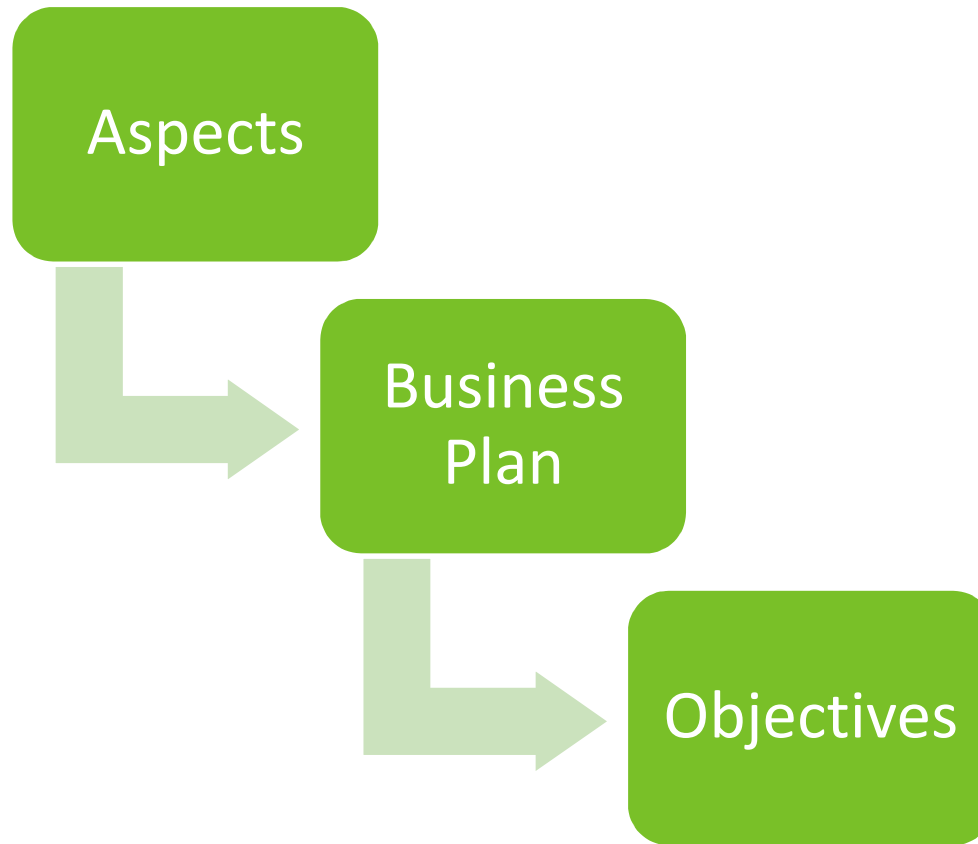
Cost

Environment

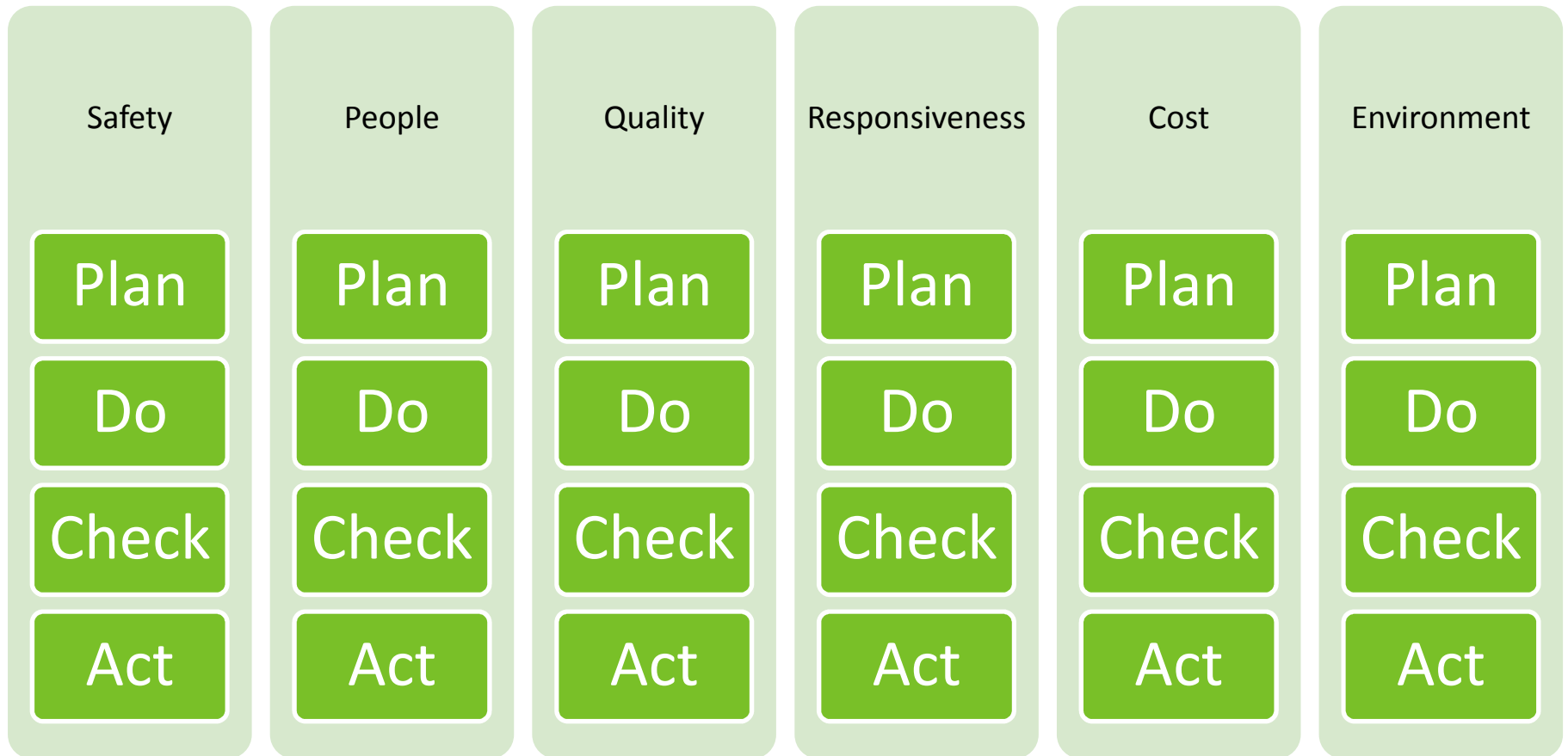
GMS/EMS Similarities and Integration

- Policy
- Training Plan – Competence, training and awareness
- People Recognition – Communication
- Performance Reviews – Management Review
- Layered Audits – Monitoring and Measurement; Internal Audits
- Standards and Workplace Organization – Documentation
- Execution – Operational Controls
- Standardized Work (STS, TIS) – Operational Controls, Control of Documents
- Annual Plan & Structure – Objectives, Targets and programs
- Reviews – Evaluation of Compliance
- Criteria & Process – Non-conformity, Corrective Action

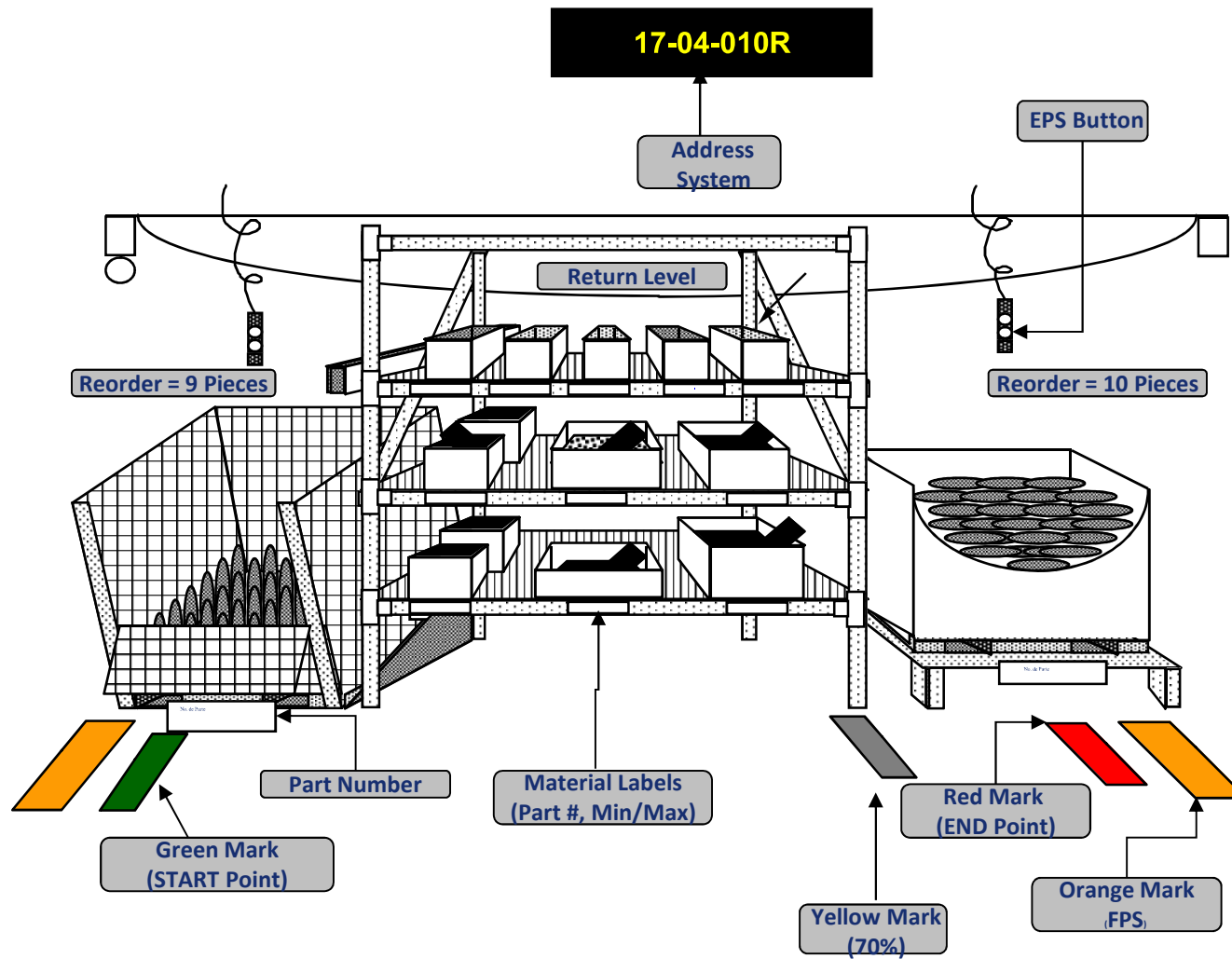
Examples of EMS Integration







Business Plan Deployment



Examples of EMS Integration – Workstation Design

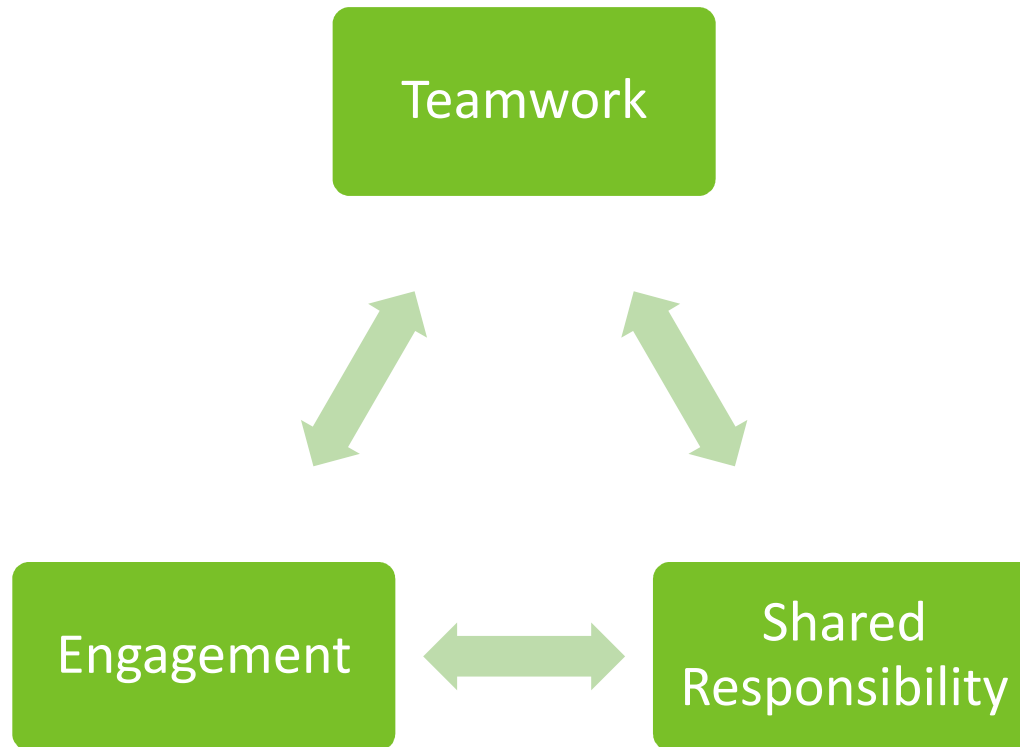


Examples of EMS Integration – Standardized Work

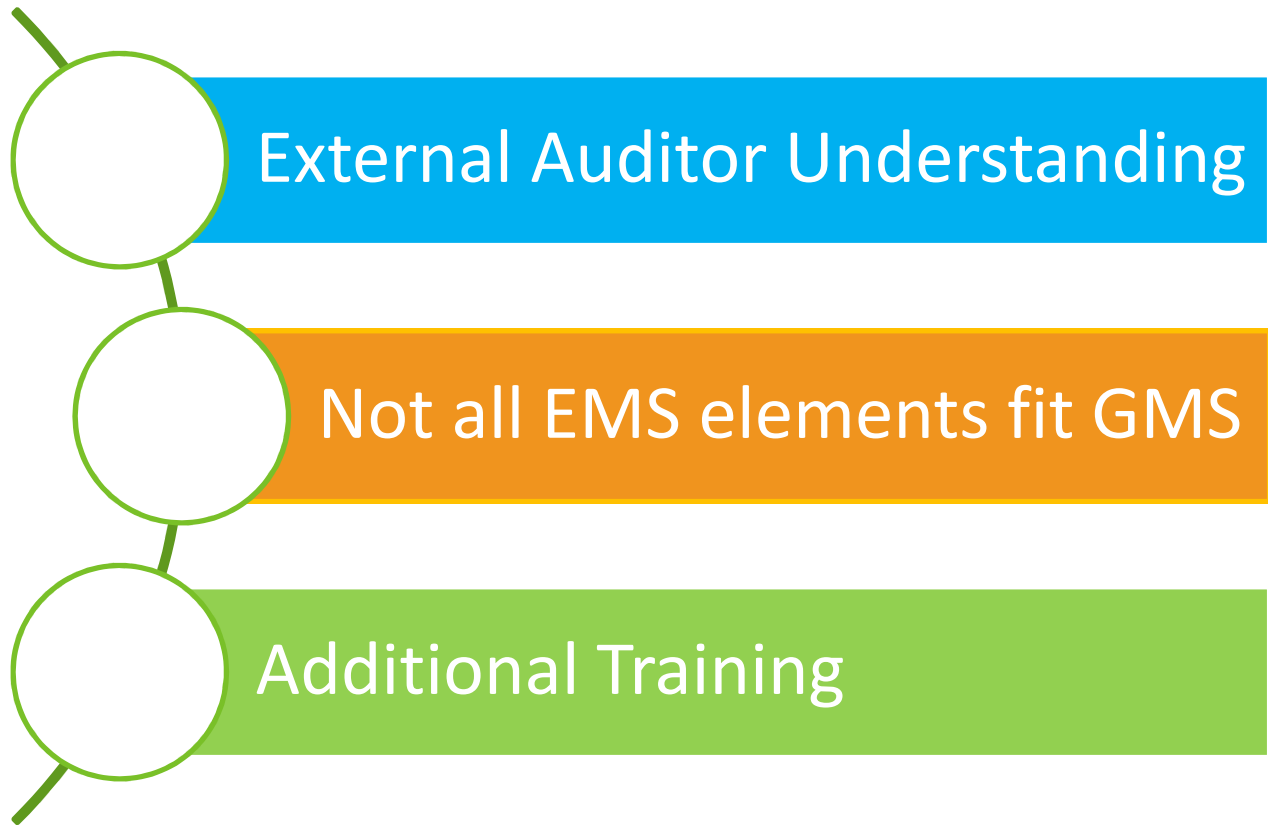
Plant Name		Task Instruction Sheet			Department Area		Pizza Pizza		
Task #1					Date Prepared			Prepared By:	
Equipment Description/No.		Location		Symbols		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
						Safety	Critical	Hand. Seq. Mktg. STEP	Quality
								Handing Sequence	ESTERS
✓	Seq. No.	Step Description	Step Detail (How, Why, Key Points)		Diagram: (Tools, Special Parts, Special PPE, Layout, etc.)				
	1	Turn on oven	Turn dial to 350 F for perfect cooking, oven needs to be put on before pizza's put in.		 1  3  4  6				
<input type="checkbox"/>	2	Roll out dough	Roll dough into a circle. Visually and physically check that the dough is an 1/8" thick, or it won't cook evenly.						
<input type="checkbox"/>	3	Add toppings	Add sauce Add cheese Add veggies and meat, as required						
<input type="checkbox"/>	4	Put in oven	Set timer for 15 mins, to ensure pizza can be removed before burning, and to avoid waste.						
<input type="checkbox"/>	5	Remove pizza	Put on oven mits when pulling out pizza to avoid burns, and take pizza from oven with wooden tool after elapsed time.						
	6	Place pizza in box.	Attach correct address tag to box.						
	7	Call for Delivery operator.	Press buzzer to signal driver.						
Signature Block					Date	Name	Change Description		
Shift		Team Leader	Group Leader						
1	Sign Date								
2	Sign Date								
3	Sign Date								



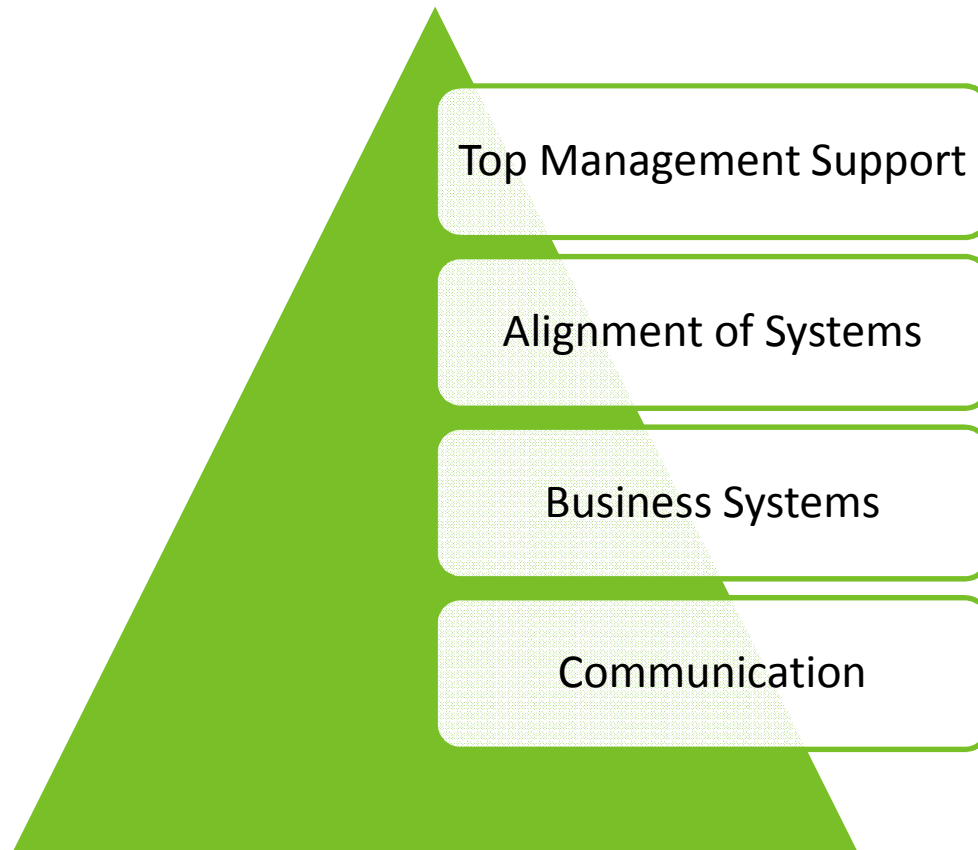
Benefits from EMS Integration



Challenges with EMS Integration



Applicability of EMS Integration for Others



General Motors Global Brands

Chevrolet



Buick



GMC



Cadillac



Opel



Vauxhall



Holden



Baojun



Wuling



Faw Jiefang

Thank-you

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