

Developing Lean Leaders at all Levels: A Practical Guide

Chapter 7 Figures

Lean Leadership Development Model

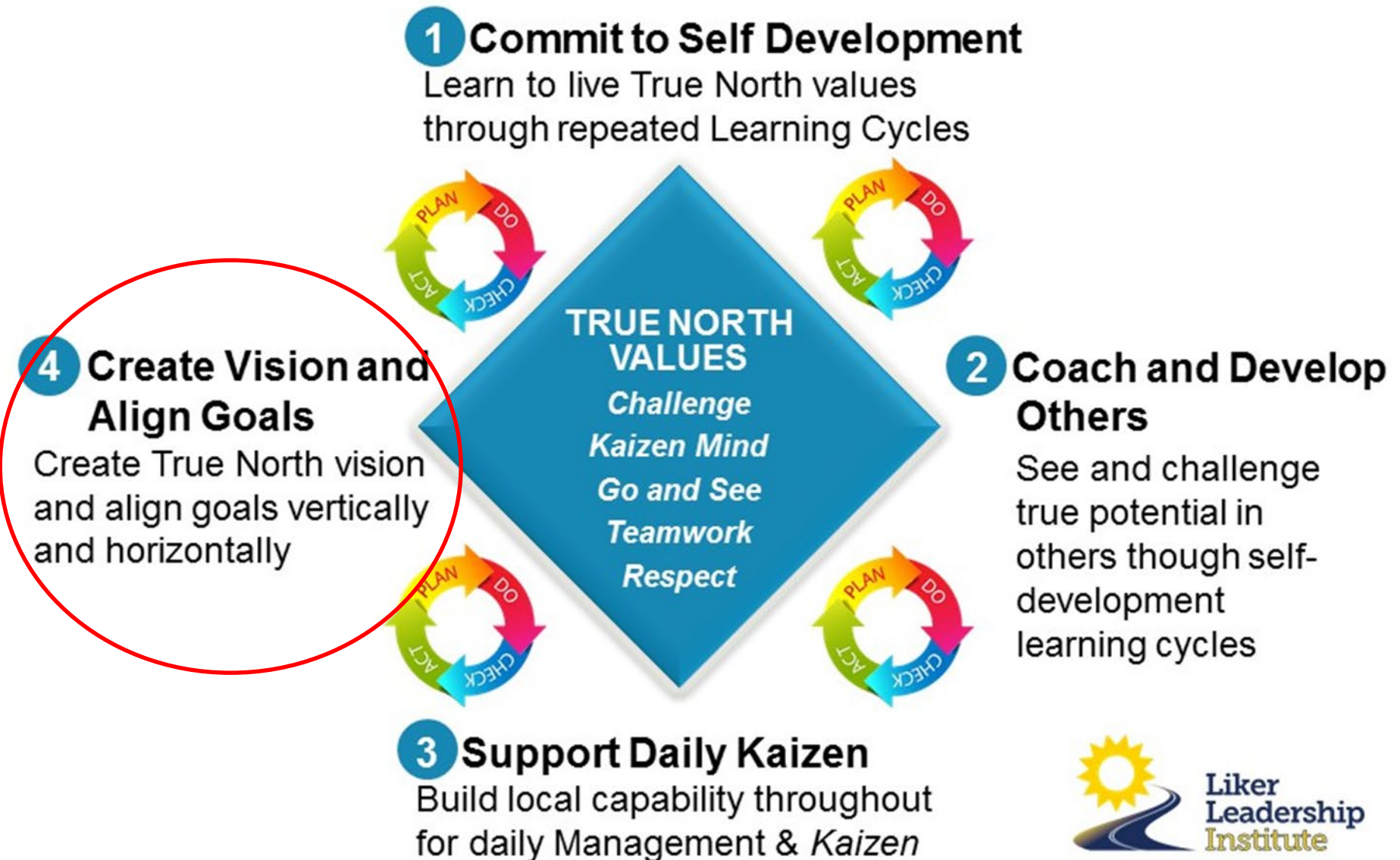


Figure 7-1. The Lean Leadership Development Model (we are focusing on step 4)

Visual Metrics Aligned from Top to Bottom to meet Annual Plan (Hoshin Kanri)

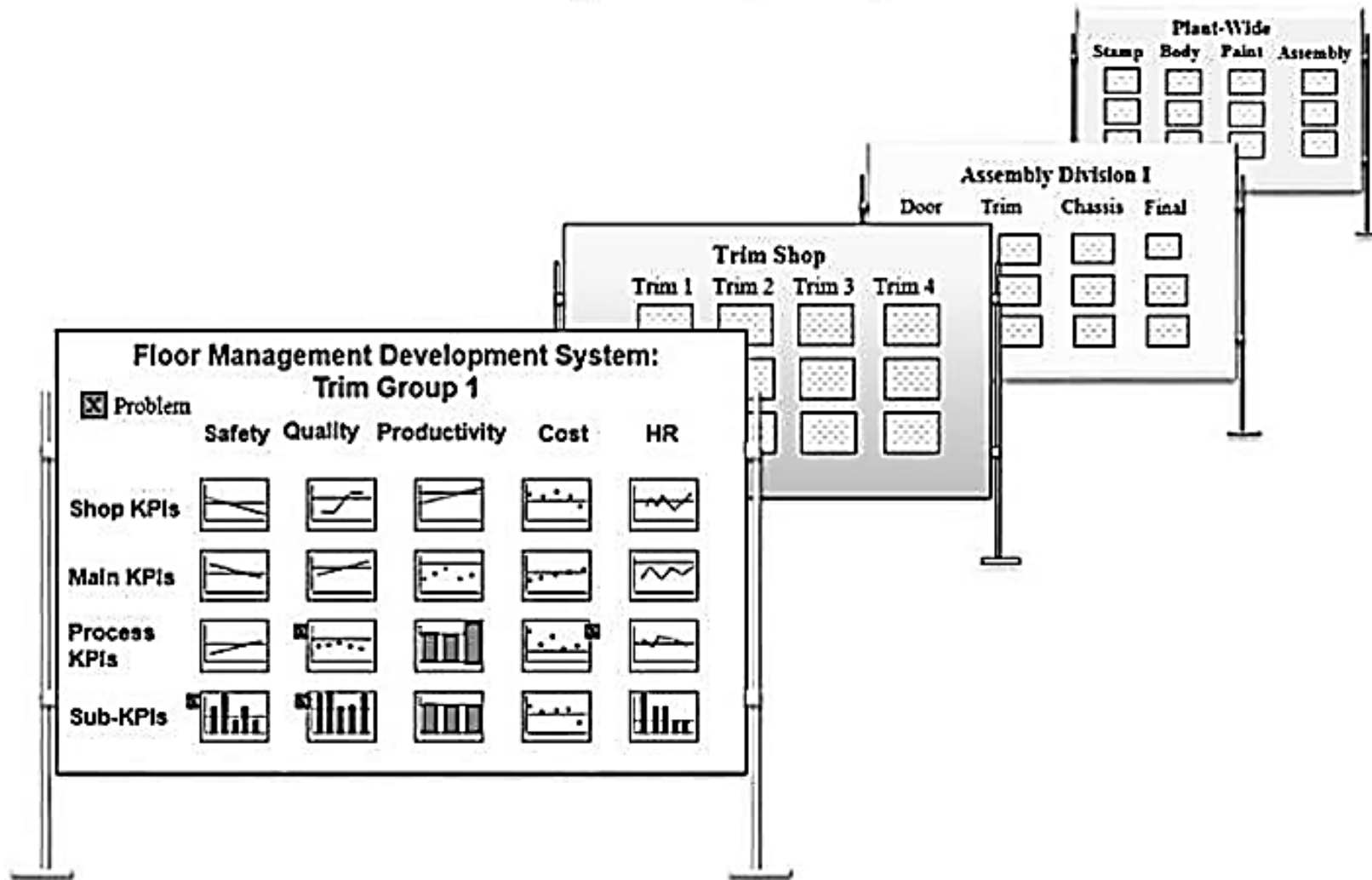


Figure 7-2. Visual Boards that Align top-level Plan to Shop Floor Metrics

Floor Management Development System: Trim Group 1

X Problem

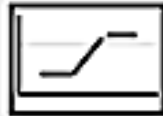
Safety Quality

Productivity

Cost

HR

Shop KPIs



Main KPIs



Process KPIs

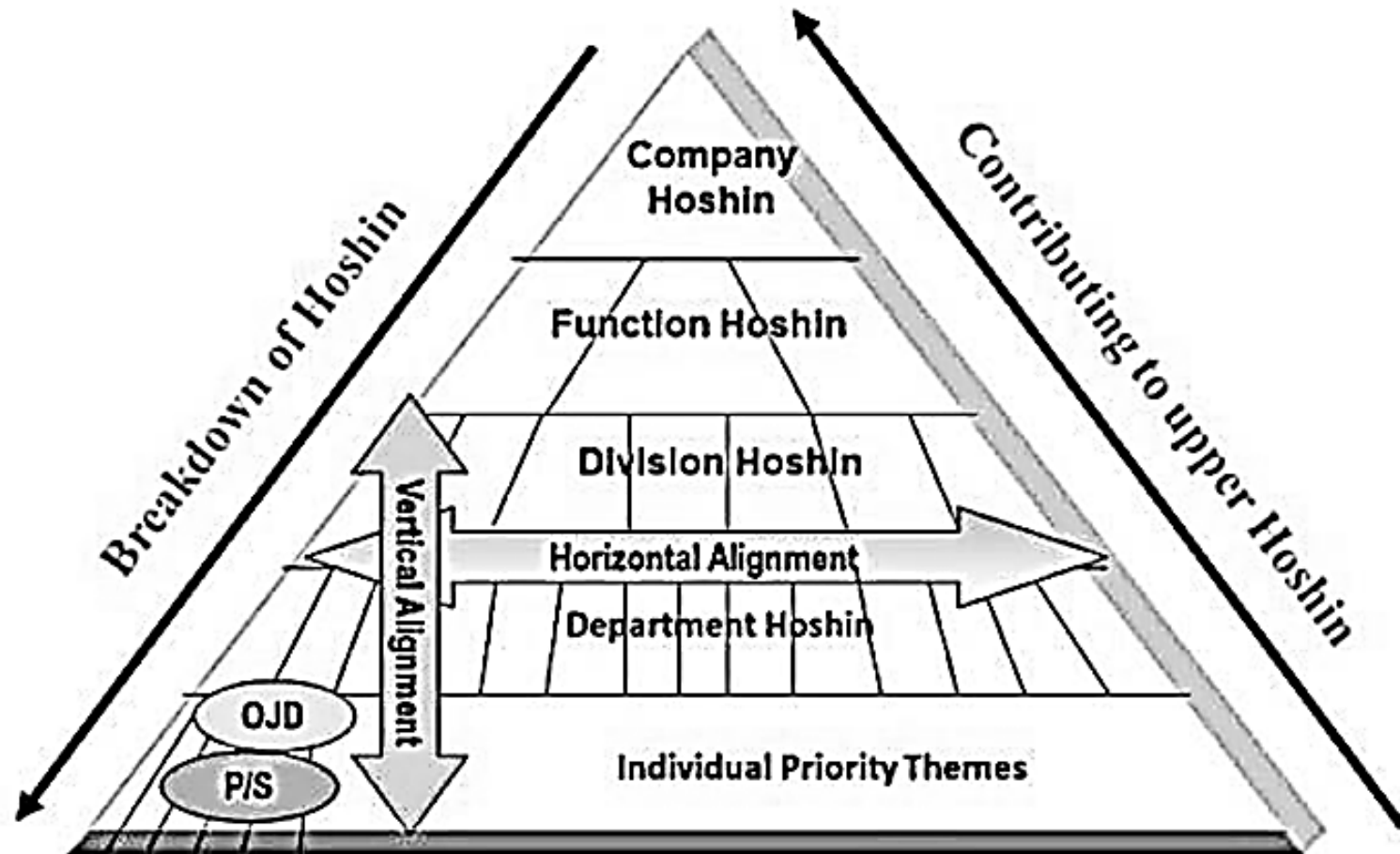


Sub-KPIs



Figure 7-3. Floor Management Development System Board

Hoshin Kanri Aligns Goals & Develops People Horizontally and Vertically



KEY: Concepts: OJD = On-Job-Development P/S = Problem Solving

Figure 7-4. *Hoshin Kanri* Horizontal and Vertical Alignment

Relationship between HK & Daily Management

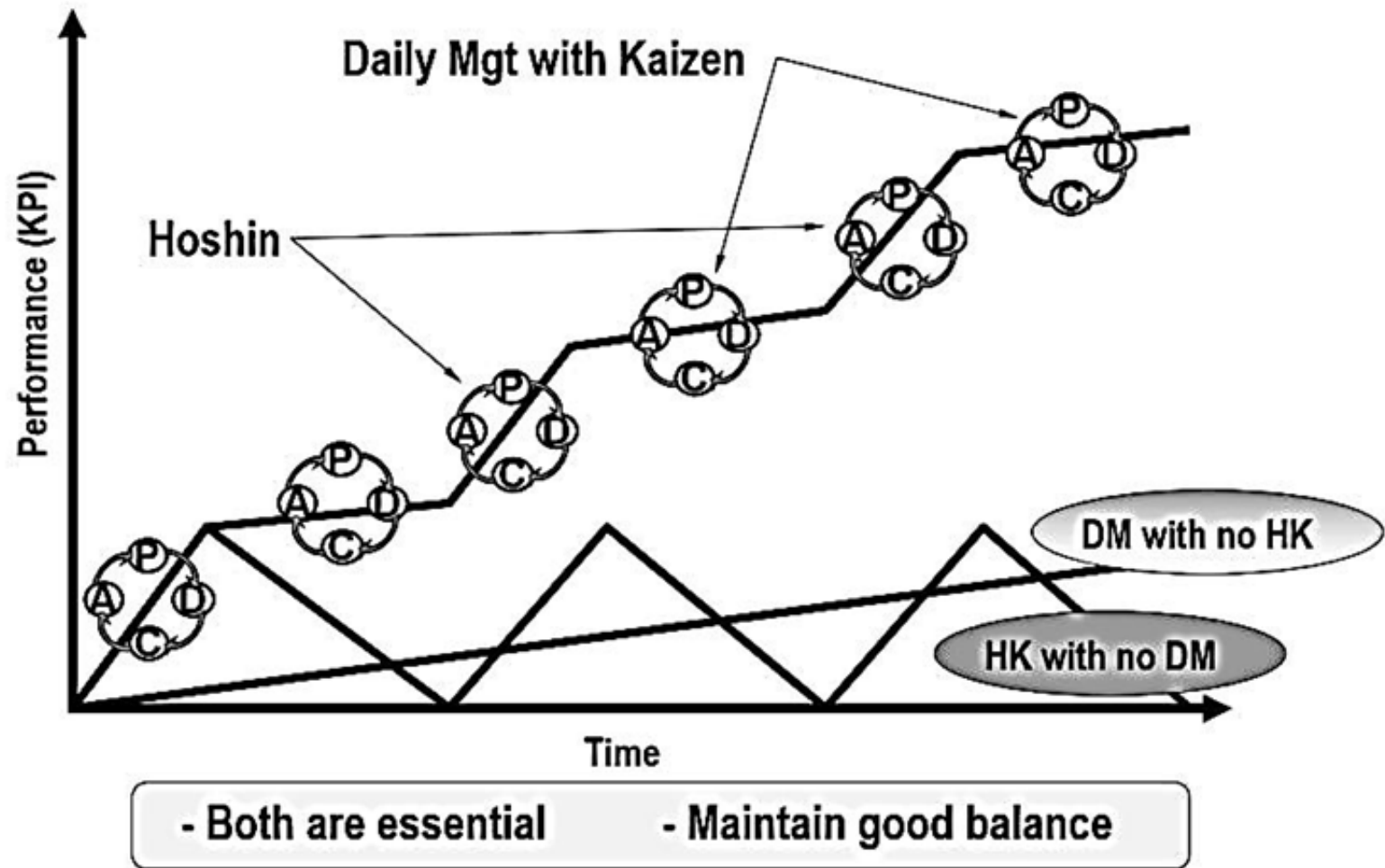


Figure 7-5. *Hoshin Kanri* and Daily Management work together for breakthroughs and sustainment

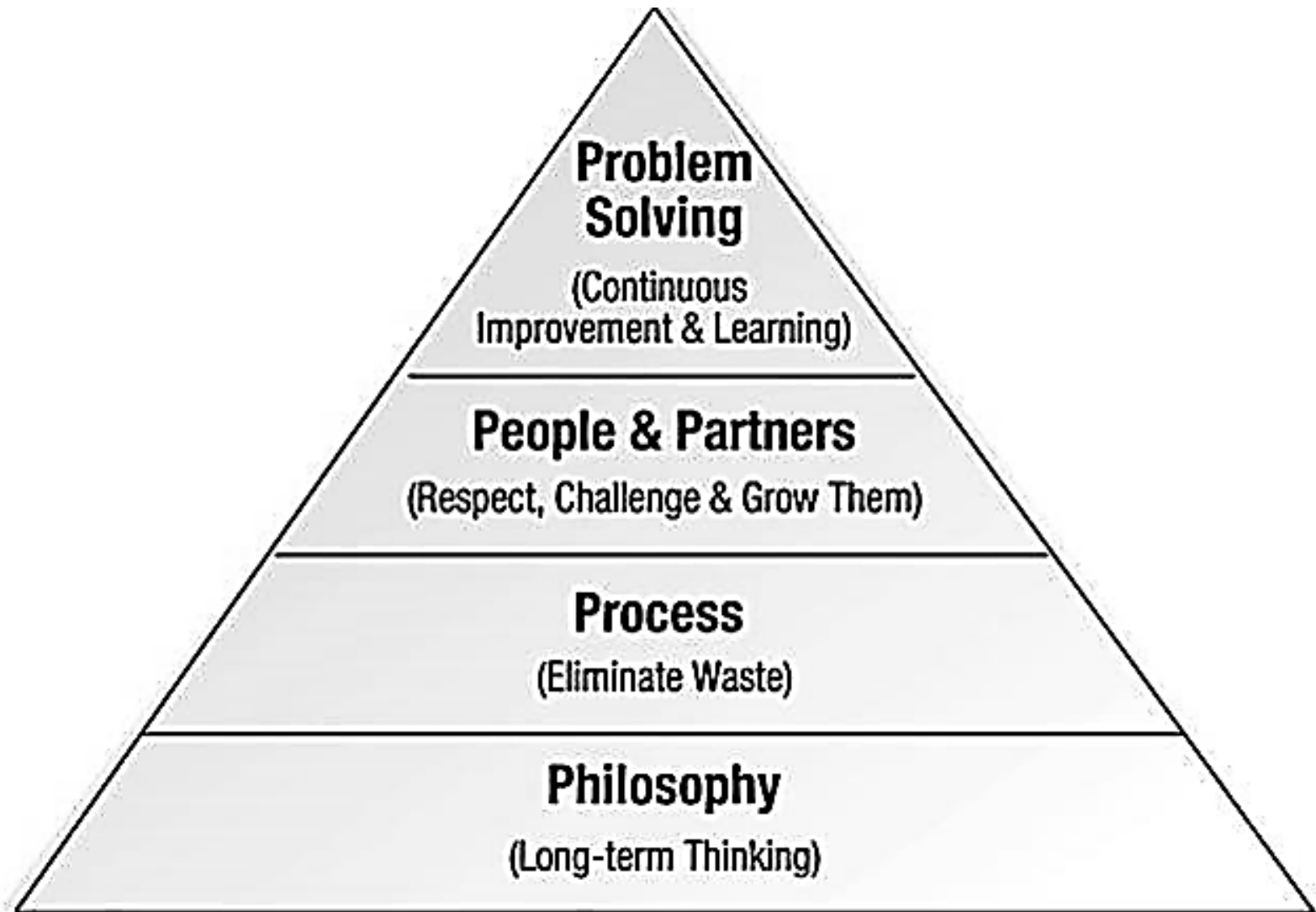


Figure 7-6. The Toyota Way Model.

Management by Objectives	Hoshin Kanri
Short-Term, No Philosophy	Long-Term, Strong Guiding Principles
Results Oriented Evaluation of Effort	Concerned with Results and Process with Focus on People Development
Top down Communication	Top down Direction Setting and Bottom-up flow of Information and means
Directive	Participative
Primarily Authority Oriented	Primarily Responsibility Oriented

Figure 7-7. Comparison between Management by Objectives and *Hoshin Kanri*

Dana Background

Actions Taken: Focus on Developing Leadership

- ▶ Formed Operational Excellence leadership at presidential level reporting to CEO with 100% global plant focus:
 - Created Dana Operating System (DOS) patterned after Toyota Production System
 - Established 12 standard global KPIs in six categories
 - Formed core internal Dana Lean Consultants
 - Enhanced plant leadership management capability, methods, and tools.



Figure 7-8. First Year Actions for Dana Operational Excellence

Early Initiatives

Dana Standard KPIs

Safety	Quality	Efficiency	Productivity	Cost	Inventory
<ul style="list-style-type: none">• OSHA incidents• Lost-time accidents	<ul style="list-style-type: none">• Product defects• Scrap costs	<ul style="list-style-type: none">• Equipment efficiency for highest constrained line	<ul style="list-style-type: none">• Earned hours at standard / total hours worked	<ul style="list-style-type: none">• Premium freight• <u>Plant conversion cost / standard earned hours</u>• Utilities	<ul style="list-style-type: none">• <u>Raw material</u>• <u>Work-in-process</u>• <u>Finished goods</u>

Figure 7-9. Dana Global Key Performance Indicators



Figure 7-10. Dana Diamond Area.

Visualization and Meeting Management Standards

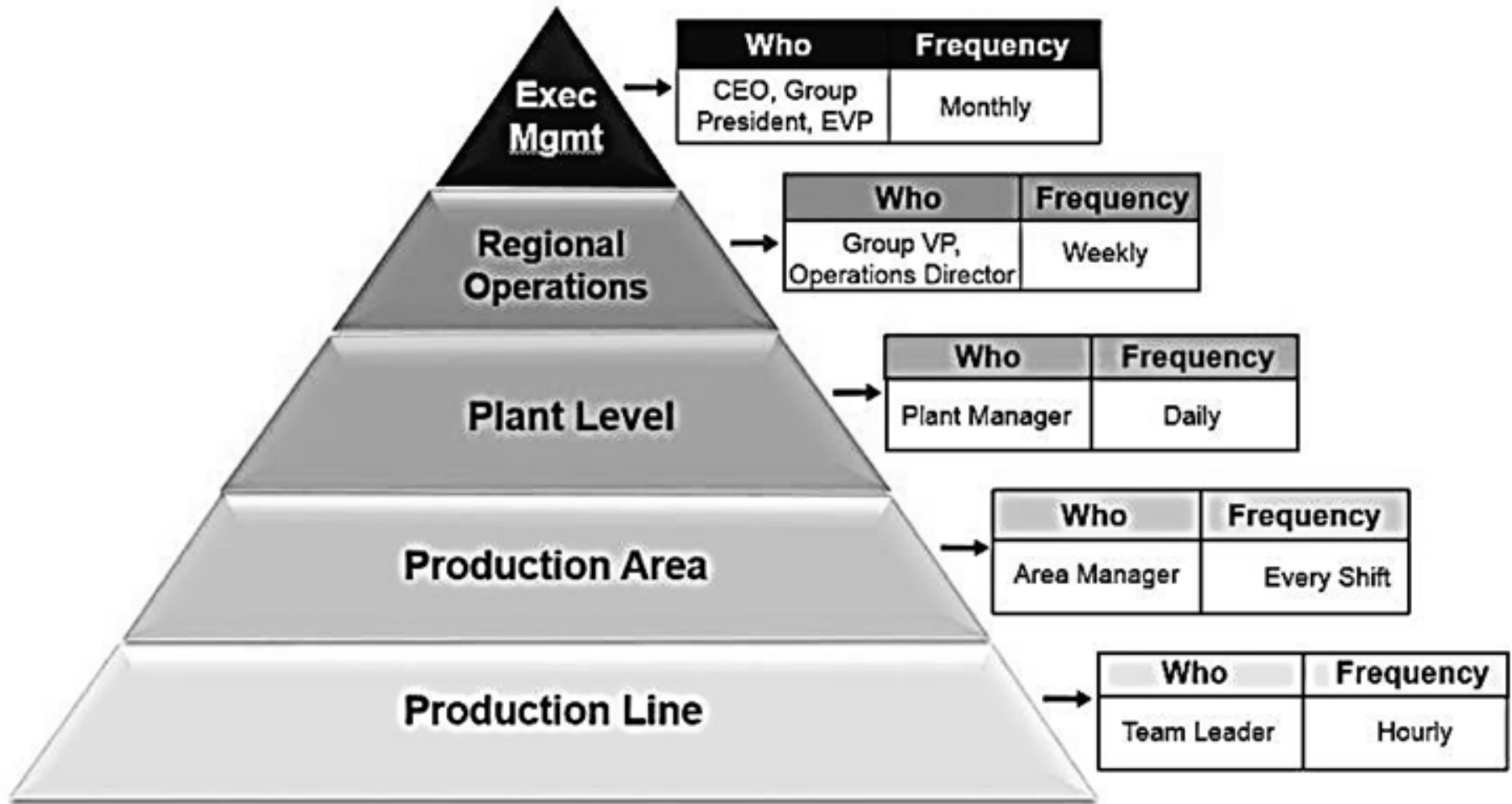


Figure 7-11. Standard Meetings by Responsibility and Frequency

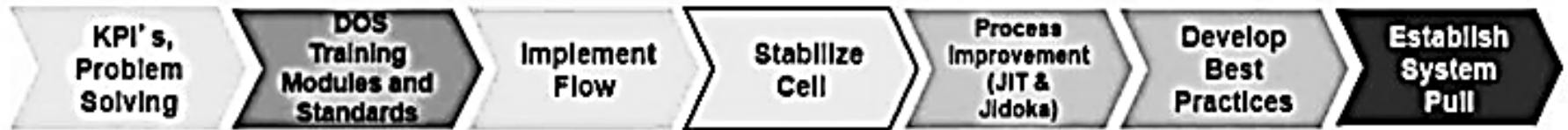
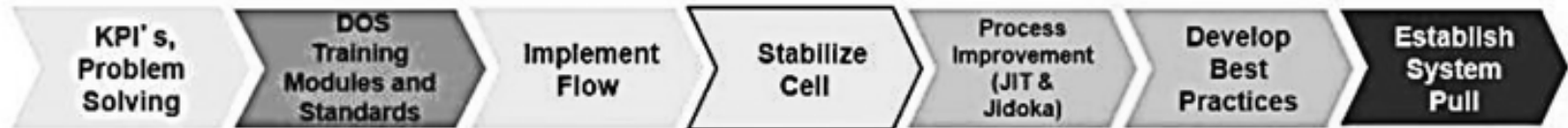


Figure 7-12. The Dana Operating System Implementation Roadmap (Years 2-5).

Year 2 -5: Dana Operating System Implementation Roadmap



Stabilize & Standardize Flow (11 Steps):

1. Define Future State Value Stream
- 2- 6. Implement Flow & Standard Work
7. Deploy Material Presentation details
8. Implement 5S & Workplace Organization
9. Improve and Standardize Change Over
10. Establish and Develop Team Leader
11. Implement Layered Process Audits

2009 DOS Workshop Summary (average KPI Improvement %)

Number Completed	Qualified SME's	Quality	WIP	Floor Space	Productivity	C/O time
75	40	62%	64%	36%	76%	68%

Globally 2009 DOS efforts delivered important results

- Exceeded Conversion Cost target of \$170M Reduction
(2010 Target to reduce 5% from 2009 Actual)
- Exceeded Reduction targets for Inventory cost & Days on Hand

	<u>2008</u>	<u>2009</u>	<u>Change</u>	<u>2010 Plan</u>
INV\$	\$915 M	\$642 M	(\$273 M)	\$542 M (\$100M)
DOH	63 Days	38 Days	(25 Days)	32 Days

Figure 7-13. Some Results of Implementing the Dana Operating System.

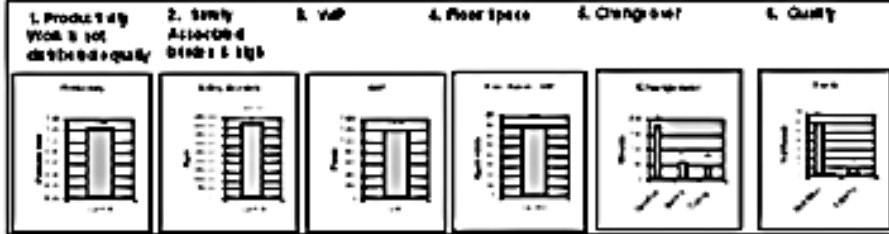
DANA OPERATING SYSTEM - TEAM KAIZEN CHARTER

PLANT: TOLUCA, MX. Gear Sets 404 Model.

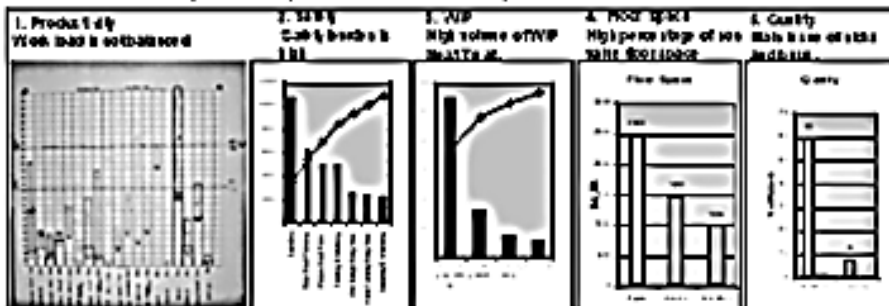
I. TEAM LEADER & MEMBERS

Team Leader: Carlos Perez
Team Members: Oscar Melendez, Luis Hernandez, Miguel Hernandez, Raul Gomez, Felix Lopez, Angel Diaz, Eduardo Vazquez, Carlos Arreola, Pedro Hernandez, Francisco Torres, Juan Carlos Martinez, Jose Antonio Gonzalez, Alberto Vazquez, Javier Rios, Ricardo Jimenez, Arturo Morales, Carlos Perez, Eduardo Morales, Andres Martinez, Jose Antonio Gonzalez, Juan Carlos Martinez, Jose Antonio Gonzalez, Pedro Vazquez, Miguel Hernandez

II. KPI & PROBLEM STATEMENT



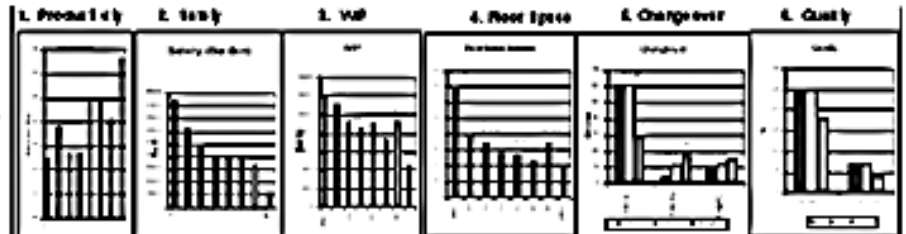
III. KPI ANALYSIS (PARETO, GRAPHS FISH-BONE)



VI. ACTUAL RESULTS - PAINTER CHART (DOF)

KPI'S		31 Dec	1 Jan	1 Feb	1 Mar	30 Apr	1 May	1 Jun	1 Jul	1 Aug	1 Sep	1 Oct	1 Nov	1 Dec	1 Jan	1 Feb	1 Mar	1 Apr	1 May	1 Jun	1 Jul	1 Aug	1 Sep	1 Oct	1 Nov	1 Dec
Productivity - Pieces / DL Hour	PLAN	3.46	3.22	3.36	3.41	3.50	3.59	3.77	3.95	4.13	4.31	4.49	4.67	4.85	5.03	5.21	5.39	5.57	5.75	5.93	6.11	6.29	6.47	6.65	6.83	
	ACTUAL	1.21	1.30	1.31	1.34	1.35	1.36	1.37	1.38	1.39	1.40	1.41	1.42	1.43	1.44	1.45	1.46	1.47	1.48	1.49	1.50	1.51	1.52	1.53	1.54	
Sub & Order - Item Movement	PLAN	42.13	42.13	42.13	42.13	42.13	42.13	42.13	42.13	42.13	42.13	42.13	42.13	42.13	42.13	42.13	42.13	42.13	42.13	42.13	42.13	42.13	42.13	42.13	42.13	
	ACTUAL	24.31	24.31	24.31	24.31	24.31	24.31	24.31	24.31	24.31	24.31	24.31	24.31	24.31	24.31	24.31	24.31	24.31	24.31	24.31	24.31	24.31	24.31	24.31	24.31	
Quality - % of products defective	PLAN	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	
	ACTUAL	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	
WIP - Ref Piece	PLAN	12.12	12.12	12.12	12.12	12.12	12.12	12.12	12.12	12.12	12.12	12.12	12.12	12.12	12.12	12.12	12.12	12.12	12.12	12.12	12.12	12.12	12.12	12.12	12.12	
	ACTUAL	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	
Floor Space - WIP Square ft.	PLAN	351	351	351	351	351	351	351	351	351	351	351	351	351	351	351	351	351	351	351	351	351	351	351	351	
	ACTUAL	143	143	143	143	143	143	143	143	143	143	143	143	143	143	143	143	143	143	143	143	143	143	143	143	
Changeover - Minutes Grinding	PLAN	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	
	ACTUAL	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	
Changeover - Minutes Polishing	PLAN	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	
	ACTUAL	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	
Changeover - Minutes Coating	PLAN	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	
	ACTUAL	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	

IV. KPI TARGET STATEMENT



V. COUNTERMEASURE ACTION PLAN

ACTION ITEM	WHO	START	FINISH
Conduct Web Workshop	Team	11/9/2009	12/4/2009
Examine / modify / Supplement April 1	Team	11/9/2009	12/4/2009
Implement 5S reduction program	Team	11/9/2009	12/4/2009
Team Leader Development	Team	10/9/2009	2/16/2010
Conduct Web Workshop	Team	11/9/2009	12/4/2009
Implement LSA for Change of Work	Oscar Melendez	11/9/2009	1/16/2010
Implement 5S	Team	11/9/2009	1/16/2010
Develop a standard process material handling system	Team Q.M.B.	11/9/2009	1/16/2010
Process WIP on the floor to material and Coating	Team Q.M.B.	11/9/2009	12/16/2009

Figure 7-14. Proposal A3 for Planning Dana Operating System Activities and Expected Results

Results as Lean Evolves Depend on Philosophy

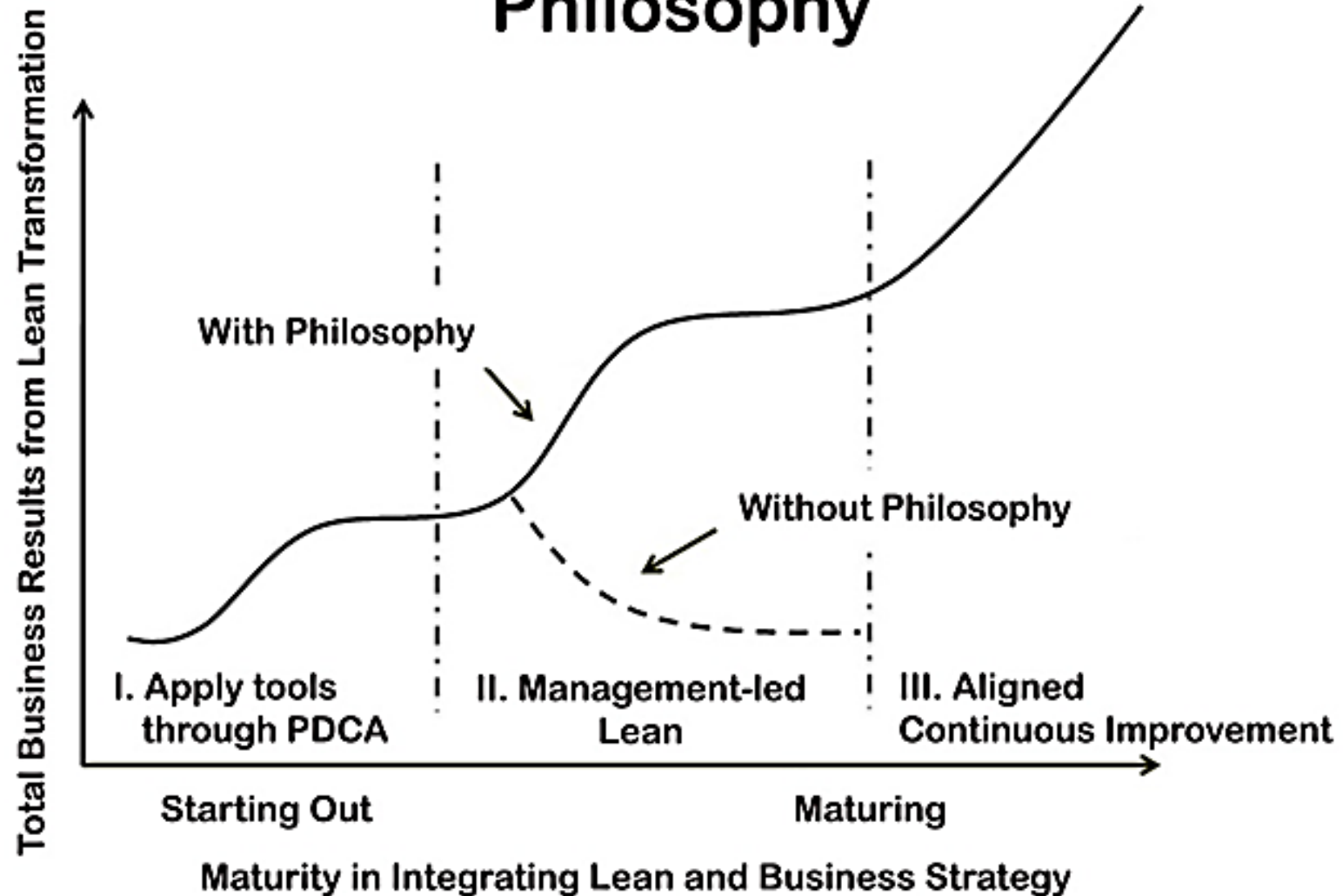


Figure 7-15. Results as Lean Evolves Depend on Philosophy.