

Extended Value-Stream Map for Acme Alliance — Current State

This map shows the entire lead time for product to come from the smelter as a raw material (recycled aluminum) to the time it reaches the end user in Versailles, KY, USA

The principal measures in this Map include inventory, time, defects and Process Cycle Efficiency.

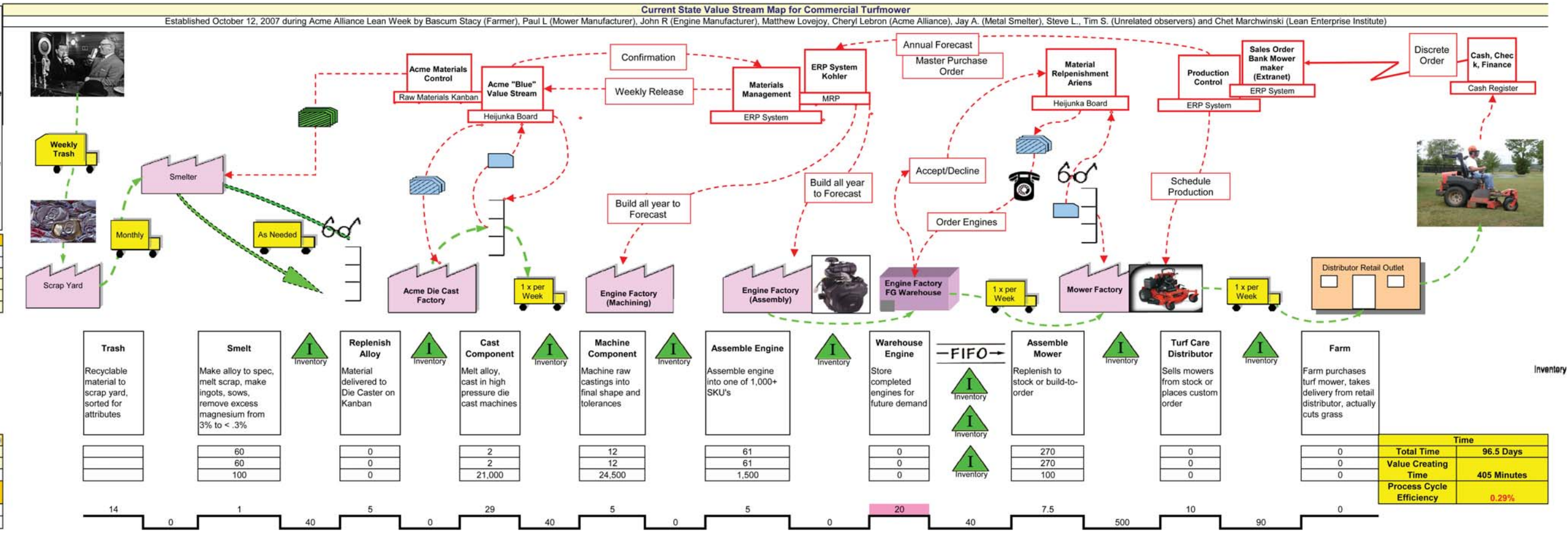
Seasonality is paramount, and the engine maker and die caster are not inclined to expand overall capacity to meet peaks nor do they have equally offset seasonal products to permit year-round level flow production.

There is no commentary herein about improving the Process Time or eliminating Waste WITHIN any one organization. This Map attempts only to view the Whole Extended Value Stream.

Metric	Value	UOM
Work Days/Week	5	Days
Work Hours Per Day	20	Hours
Work Time Available/Week	360,000	Seconds
Demand / Week		Units
Takt Time*	0	Seconds
Target Lead Time	<30	Days



Process Metrics		
Processing Time (declared)	405	Minutes
Value Add Time**	405	Minutes
Quality Measure (Cast Parts)	47,200	DPPM
Inventory & Transportation		
Inventory (WIP & FG)	96.5	Days
Distance Traveled - Transport	710	Miles

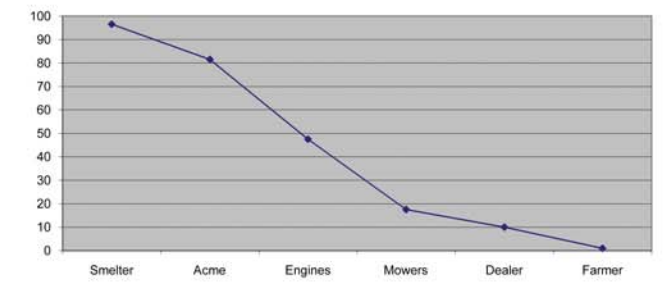


Process	Description	Inventory
Trash	Recyclable material to scrap yard, sorted for attributes	14
Smelt	Make alloy to spec, melt scrap, make ingots, sows, remove excess magnesium from 3% to <.3%	60
Replenish Alloy	Material delivered to Die Caster on Kanban	0
Cast Component	Melt alloy, cast in high pressure die cast machines	2
Machine Component	Machine raw castings into final shape and tolerances	12
Assemble Engine	Assemble engine into one of 1,000+ SKU's	61
Warehouse Engine	Store completed engines for future demand	0
Assemble Mower	Replenish to stock or build-to-order	270
Turf Care Distributor	Sells mowers from stock or places custom order	0
Farm	Farm purchases turf mower, takes delivery from retail distributor, actually cuts grass	0

Time	
Total Time	96.5 Days
Value Creating Time	405 Minutes
Process Cycle Efficiency	0.29%

* For the purpose of this Mapping, we did choose a specific time of year for Takt time calculations given the seasonal nature of this business. Fill in cell G27 for demand to get Takt time value.
 ** This number varies from a negative (when pulling from inventory) to as high as 120 days when building to stock, depending upon the season.
 *** For the purpose of this Mapping, there is no waste assumed within each operation, so process time and Value Add Time are equal

Demand Amplification



Extended Value-Stream Map for Acme Alliance — Kaizen Targets

This map shows the entire lead time for product to come from the smelter as a raw material (recycled aluminum) to the time it reaches the end user in Versailles, KY, USA in a Future State.

The principal measures in this Map include inventory, time, defects and Process Cycle Efficiency.

Seasonality is the elephant in this room, and the engine maker and die caster are not inclined to expand overall capacity to meet peaks nor do they have equally offset seasonal products to permit year-round level flow production.

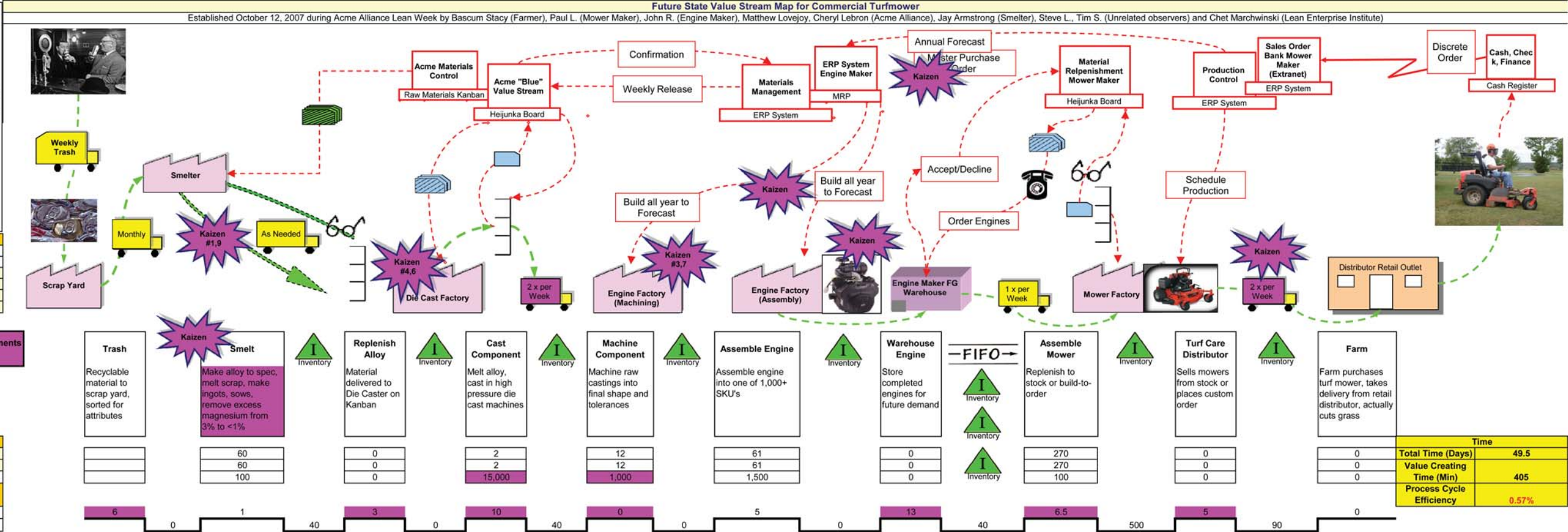
There is no commentary herein about improving the Process Time or eliminating Waste WITHIN any one organization. This Map attempts only to view the improved Extended Value Stream.

Metric	Value	UOM
Work Days/Week	5	Days
Work Hours Per Day	20	Hours
Work Time Available/Week	360,000	Seconds
Demand / Week		Units
Takt Time*	0	Seconds
Target Lead Time	<30	Days

Items in pink were identified for reduction and improvements worth in aggregate > \$16,000,000



Process Metrics		
Processing Time (declared)	405	Minutes
Value Add Time**	405	Minutes
Quality Measure (Cast Parts)	17,700	DPPM
Inventory & Transportation		
Inventory (WIP & FG)	49.5	Days
Distance Traveled - Transport	710	Miles



* For the purpose of this Mapping, we did choose a specific time of year for Takt time calculations given the seasonal nature of this business. Fill in cell G27 for demand to get Takt time value.

** This number varies from a negative (when pulling from inventory) to as high as 120 days when building to stock, depending upon the season.

** For the purpose of this Mapping, there is no waste assumed within each operation, so process time and Value Add Time are equal

Demand Amplification with 49% Reduction in Overall Cycle

