VALUE STREAM MAPPING

Learning to see

PRESENT STATE

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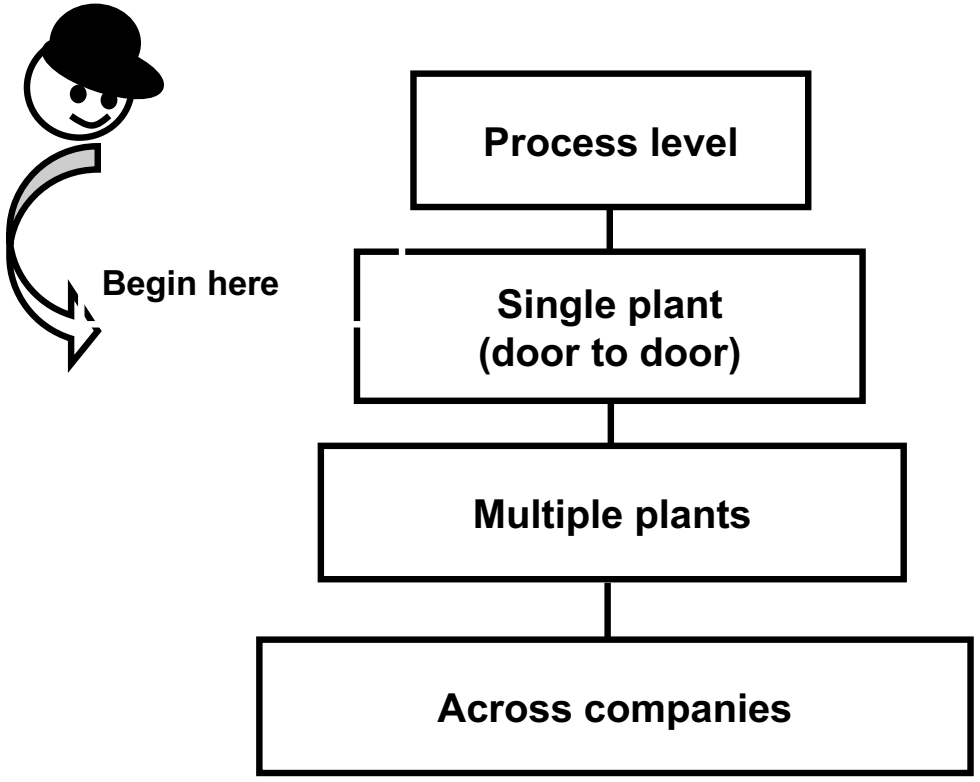
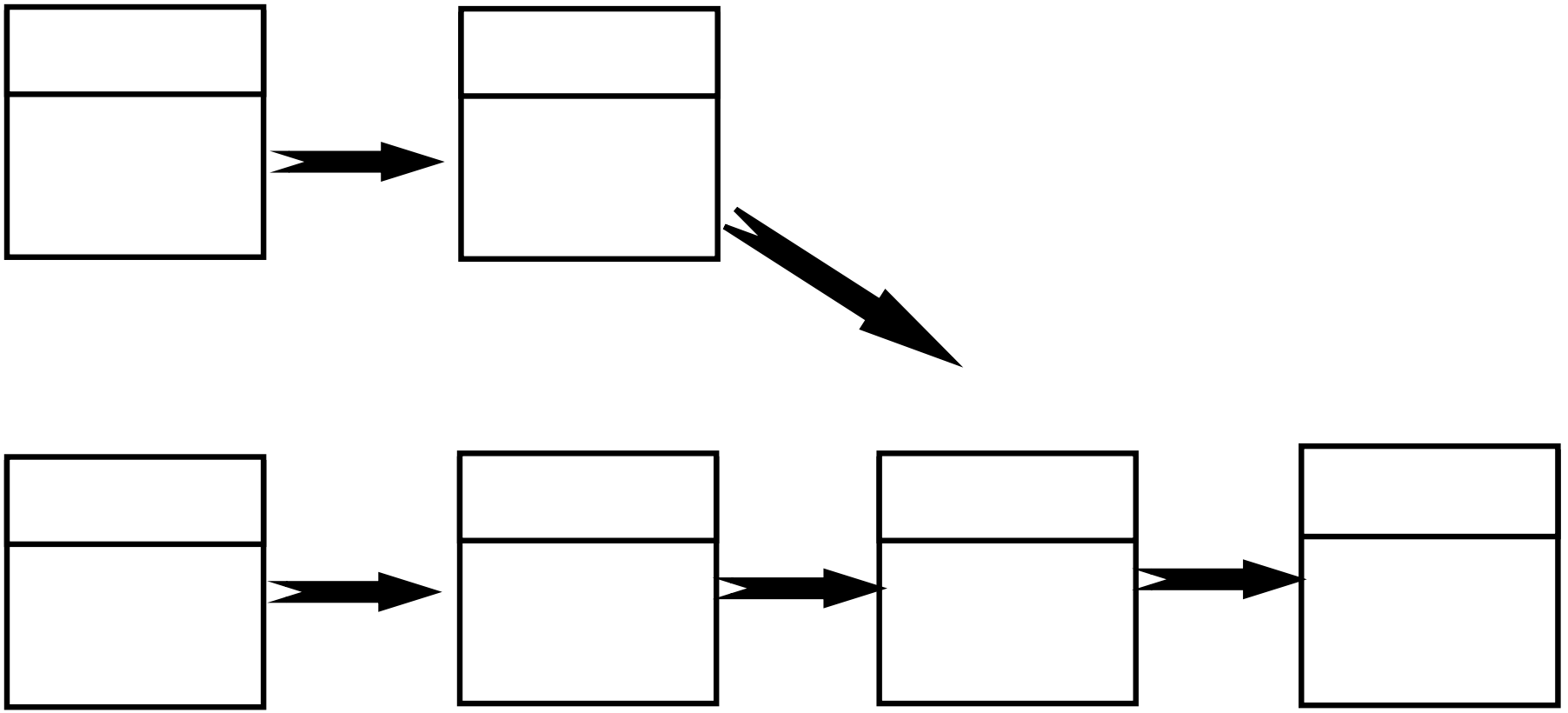

Begin here
Process level
Single plant
(door to door)
Multiple plants
Across companies

Identify a family

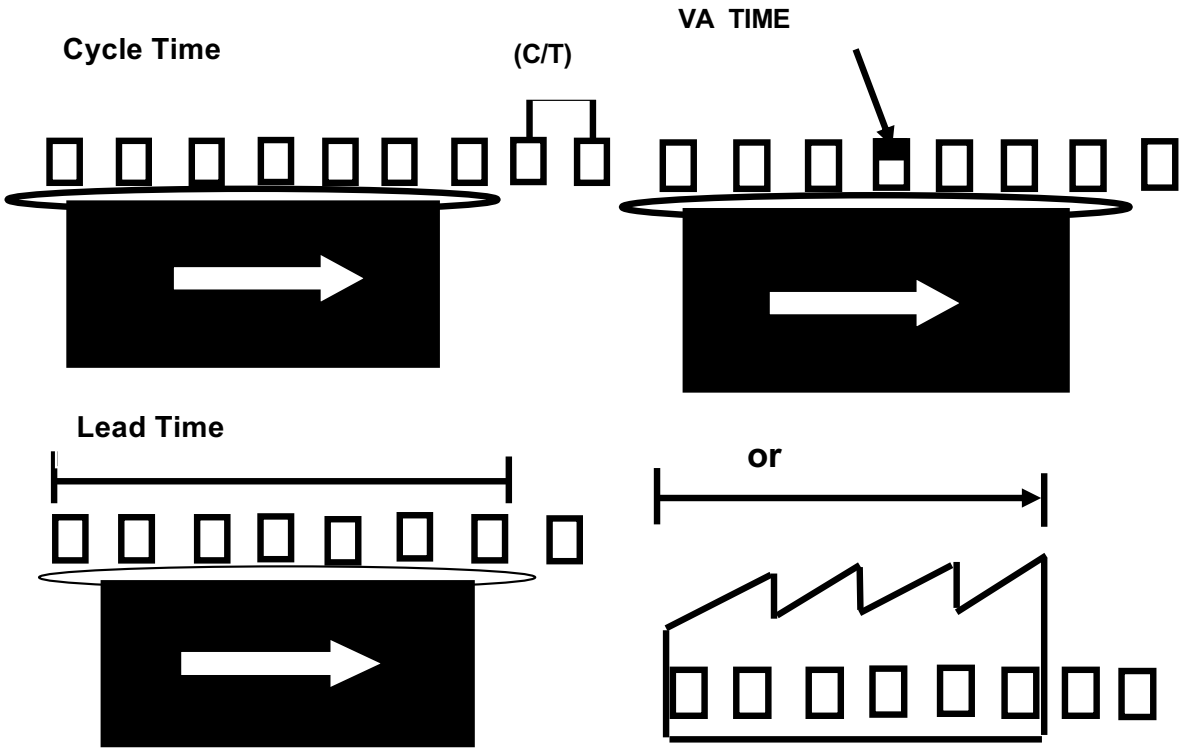
PRODUCTS	ASSEMBLY STEPS & EQUIPMENT							
	1	2	3	4	5	6	7	8
A	X	X	X		X	X		
B	X	X	X	X	X	X		
C	X	X	X		X	X	X	
D		X	X	X			X	X
E		X	X	X			X	X
F	X		X		X	X	X	
G	X		X		X	X	X	

A Product Family

Focus on main streams only



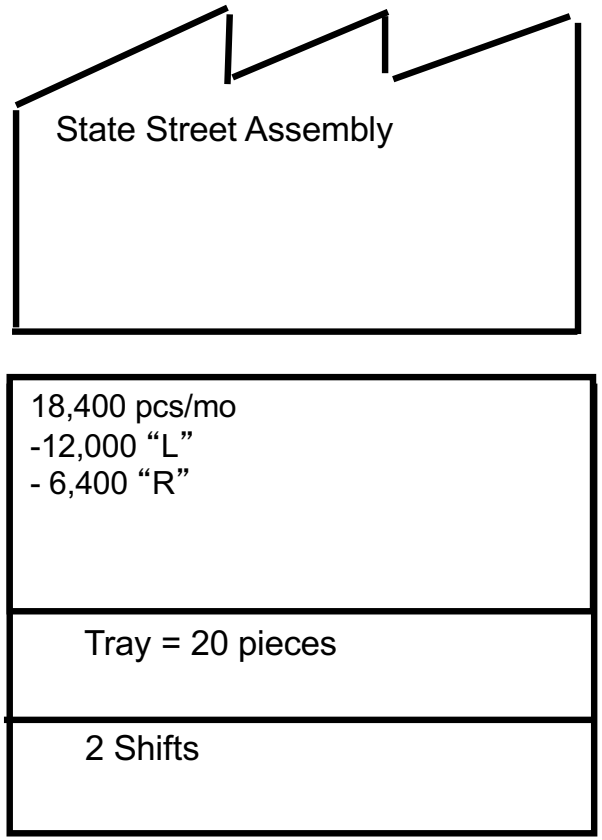
Different type of TIME



In general
VA < C/T < LT

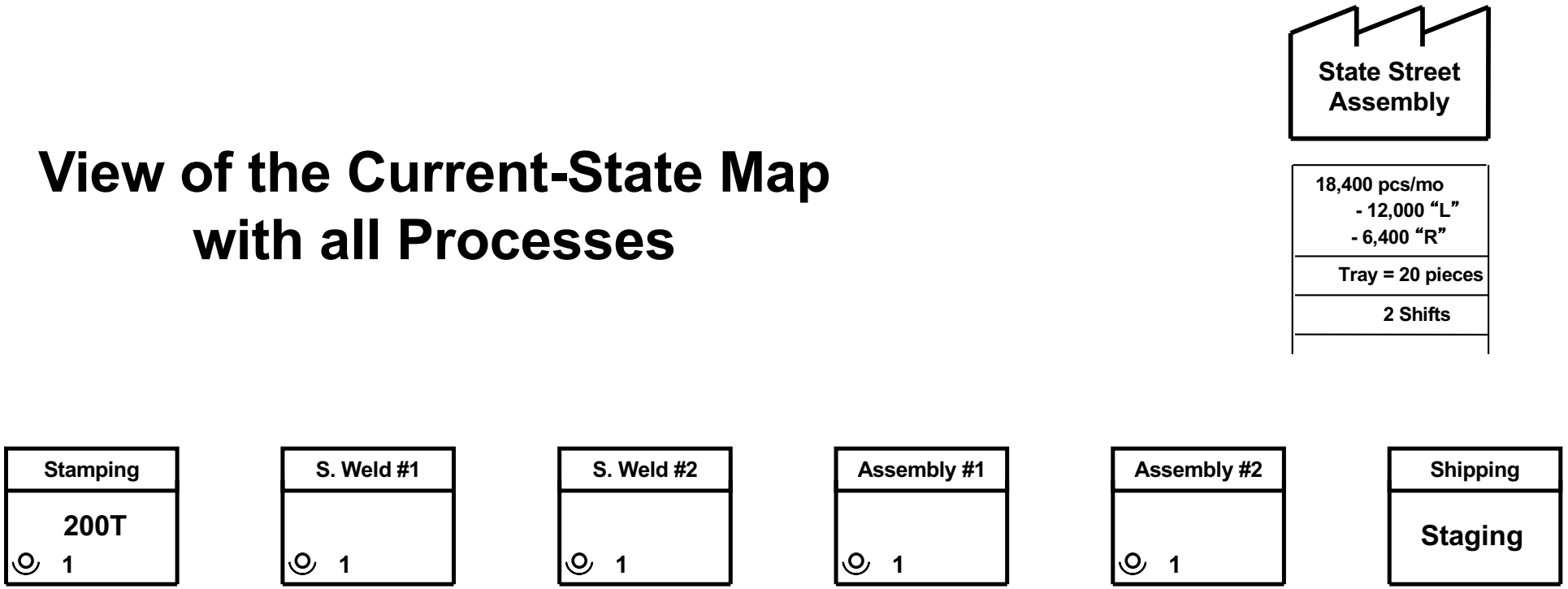
PROCESSING TIME: the active time from the perspective of the piece being processed. From beginning to end

The starting point: the customer



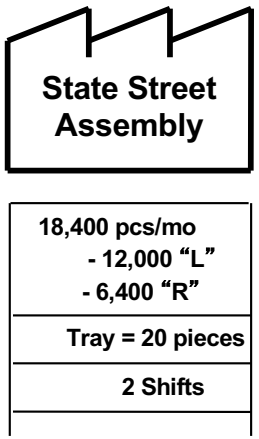
First view of the VSM

View of the Current-State Map with all Processes



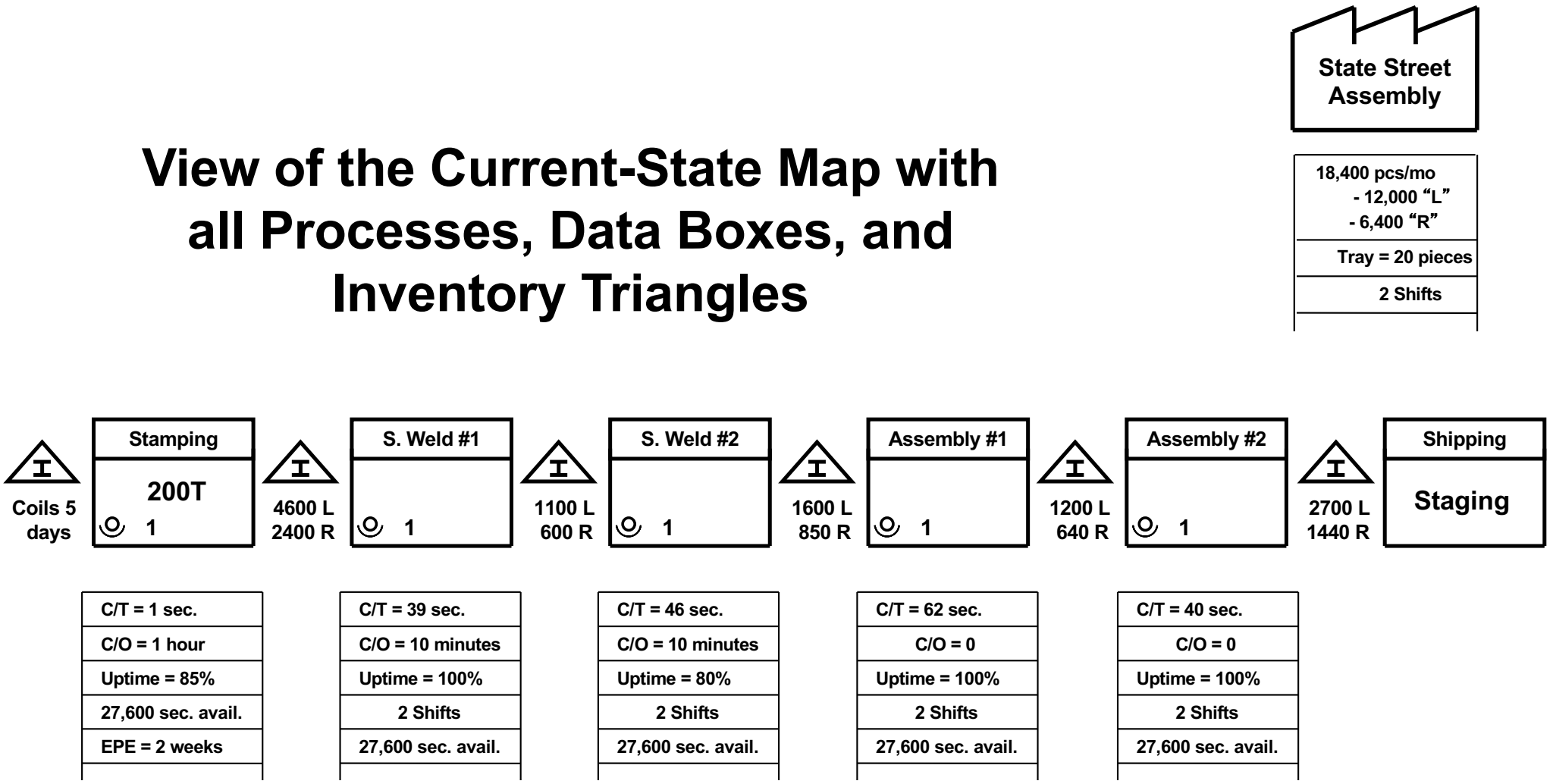
Second view of the VSM

View of the Current-State Map with all Processes and Data Boxes

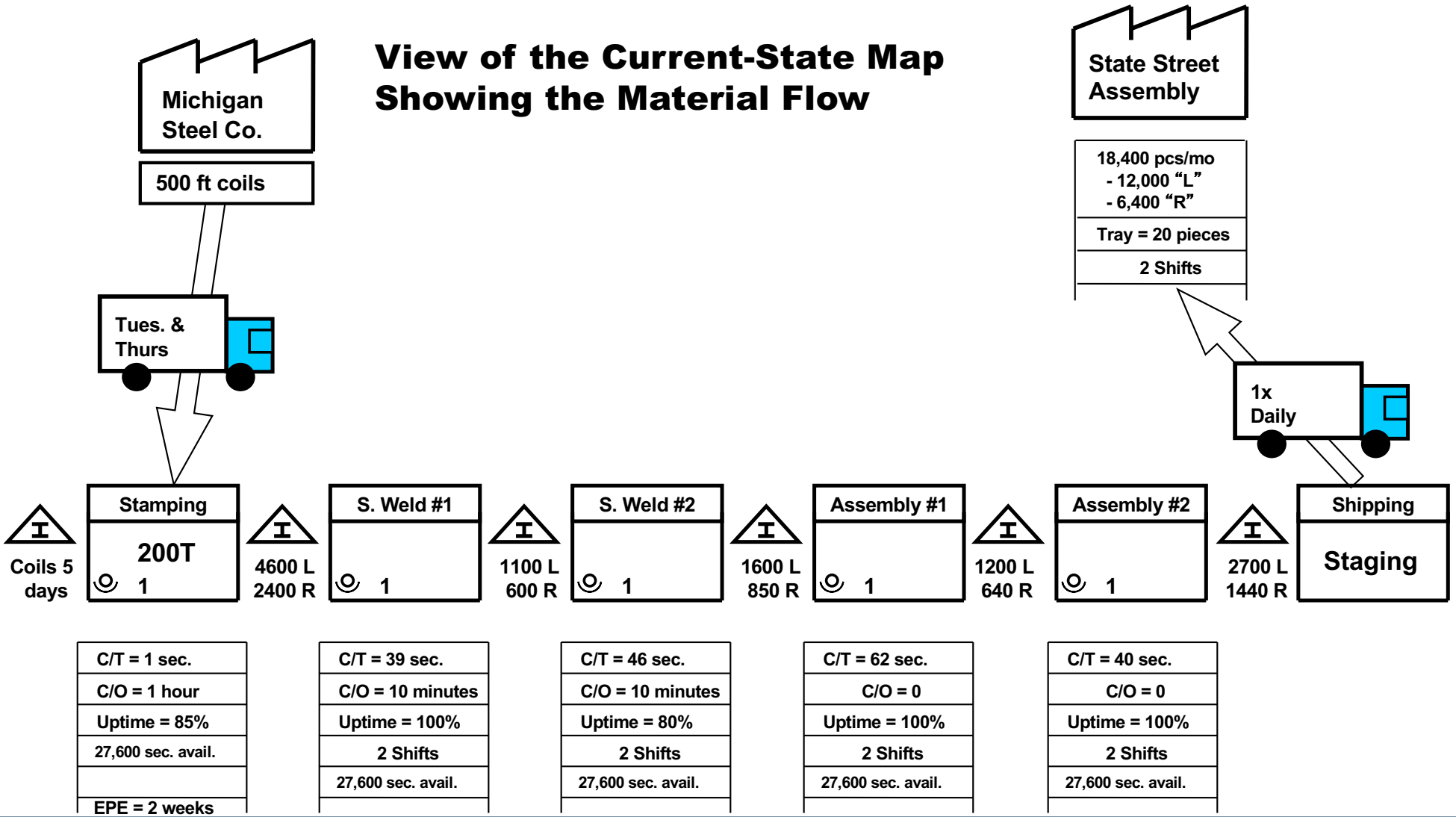


Second view of the VSM

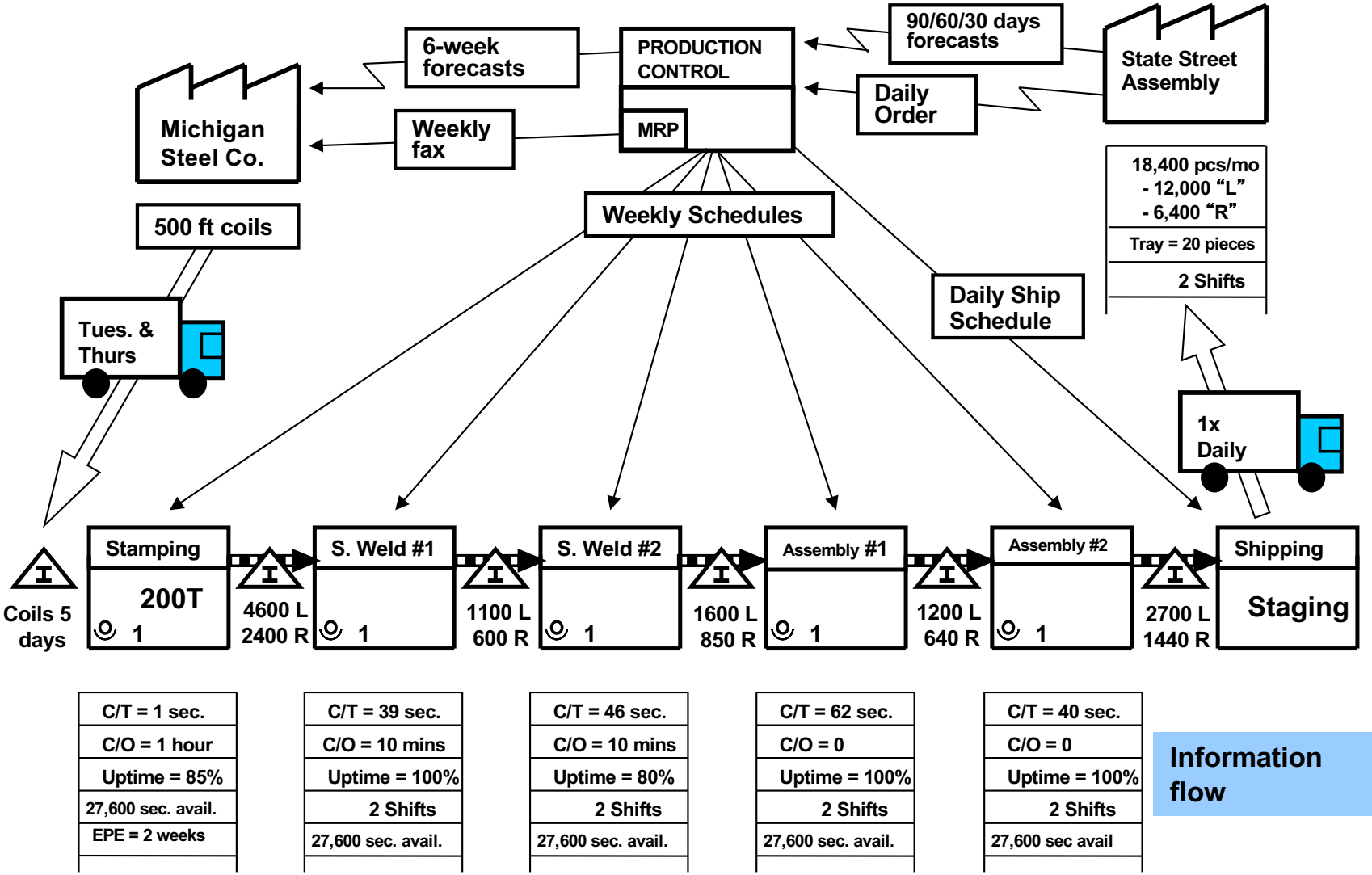
View of the Current-State Map with all Processes, Data Boxes, and Inventory Triangles



Third view of the VSM



Fourth view


6-week forecasts
PRODUCTION CONTROL
90/60/30 days forecasts
State Street Assembly
Michigan Steel Co.
Weekly fax
MRP
Daily Order
18,400 pcs/mo
- 12,000 "L"
- 6,400 "R"
Tray = 20 pieces
2 Shifts
500 ft coils
Weekly Schedules
Daily Ship Schedule
Tues. & Thurs
1x Daily
Coils 5 days
Stamping
200T
1
4600 L
2400 R
S. Weld #1
1
1100 L
600 R
S. Weld #2
1
1600 L
850 R
Assembly #1
1
1200 L
640 R
Assembly #2
1
2700 L
1440 R
Shipping
Staging
C/T = 1 sec.
C/O = 1 hour
Uptime = 85%
27,600 sec. avail.
EPE = 2 weeks
C/T = 39 sec.
C/O = 10 mins
Uptime = 100%
2 Shifts
27,600 sec. avail.
C/T = 46 sec.
C/O = 10 mins
Uptime = 80%
2 Shifts
27,600 sec. avail.
C/T = 62 sec.
C/O = 0
Uptime = 100%
2 Shifts
27,600 sec. avail.
C/T = 40 sec.
C/O = 0
Uptime = 100%
2 Shifts
27,600 sec avail
Information flow

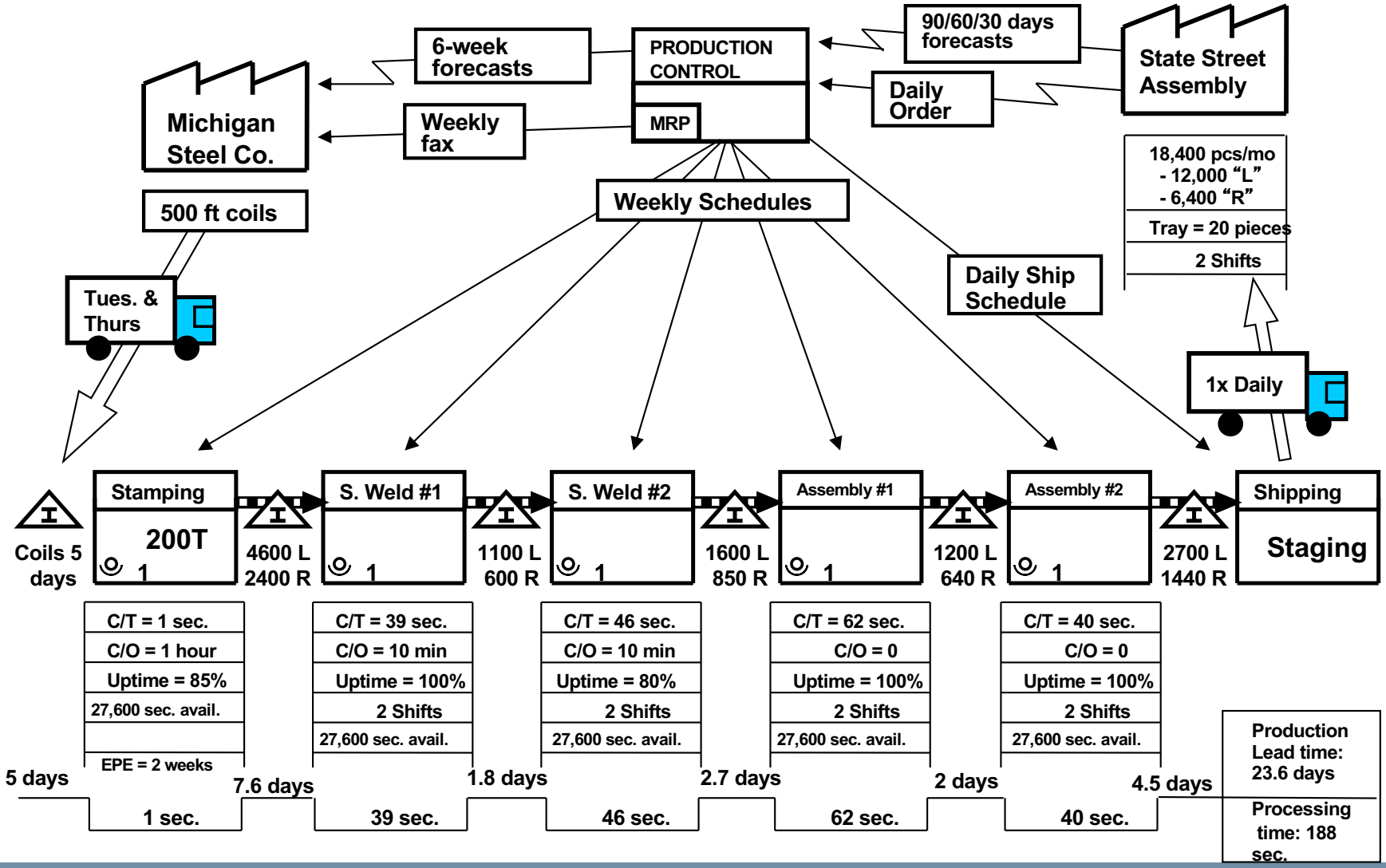
Little's law

$$\mathbf{LT * \lambda = Q}$$

Lead Time * Demand rate = Queue

$$\mathbf{LT = Q / \lambda}$$

Fourth view and the timeline



System performance

Value Added Time/Total Lead Time

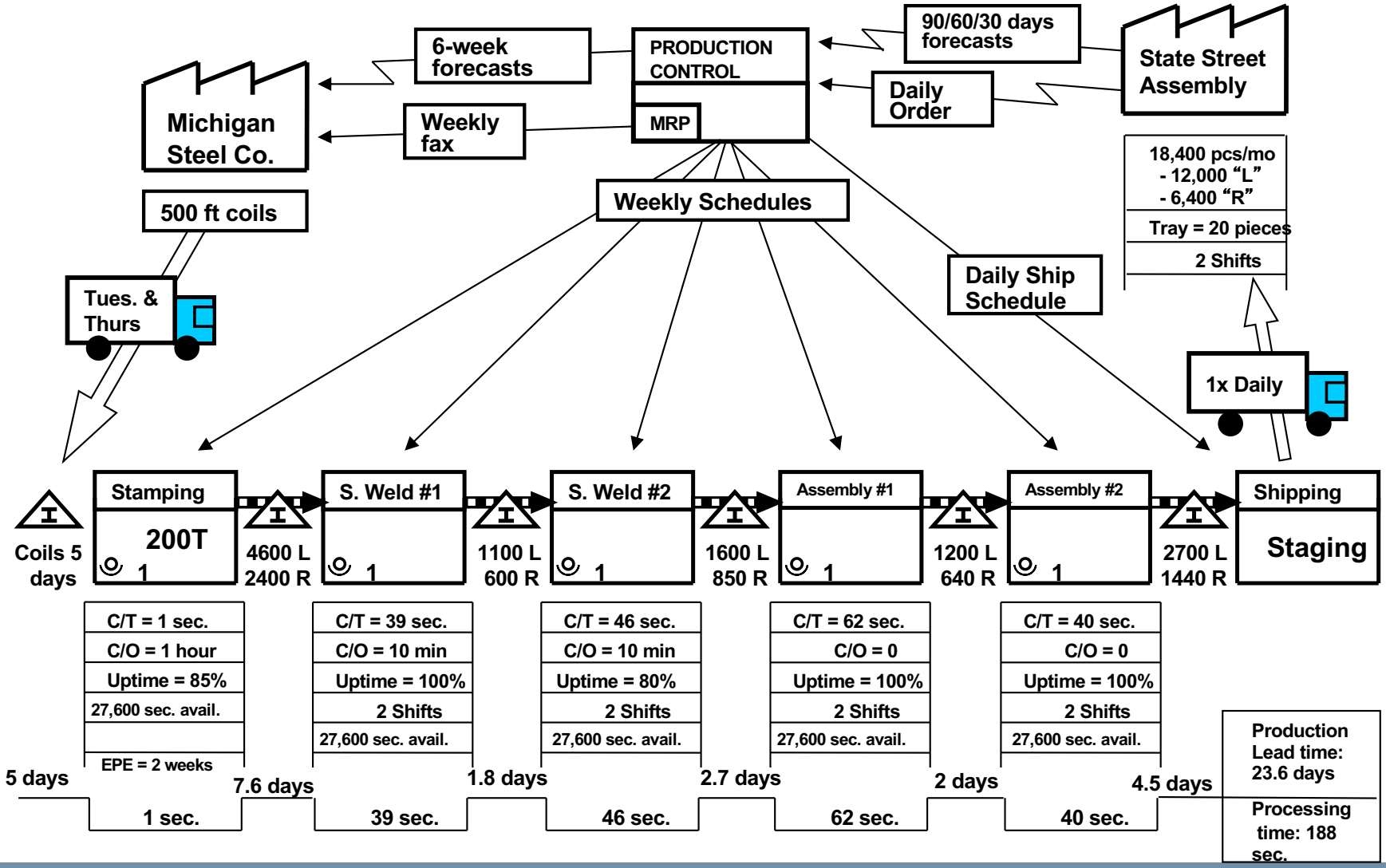
Approximated by

Processing time /Total Lead Time

As an alternative indicator

Waiting time = Total lead time – Processing time

Fourth view and the timeline



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MILANO 1863