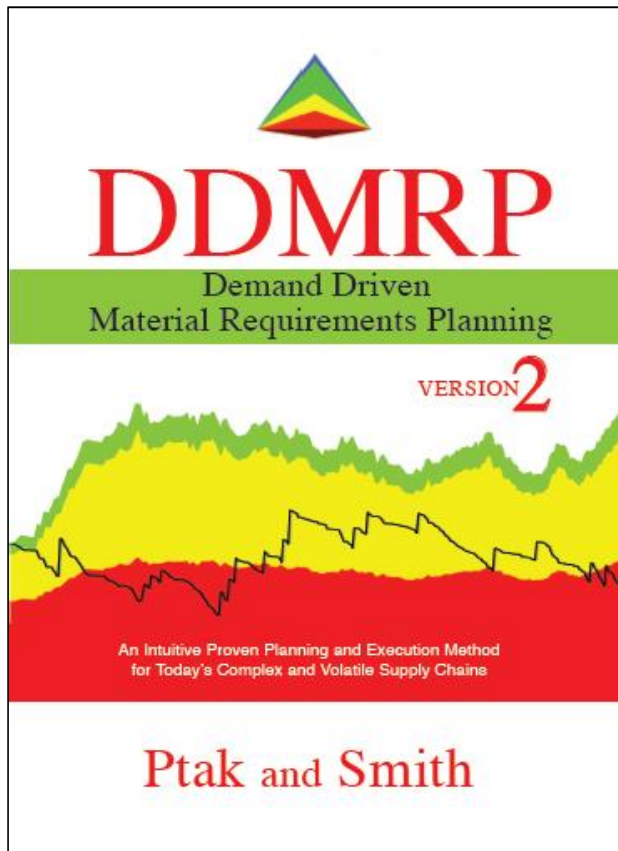




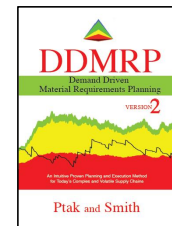
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Driven
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Figure and Graphics Download Pack (Chapters 1-8)

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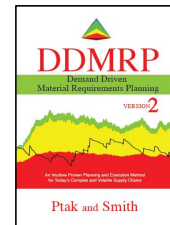




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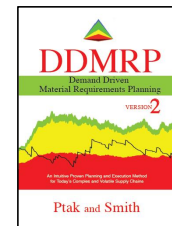
[The book is available at Amazon.](#)

The Kindle version of *Demand Driven Material Requirements Planning* is FULL COLOR! [Kindle version available here.](#)





Attend the Demand Driven Planner Program

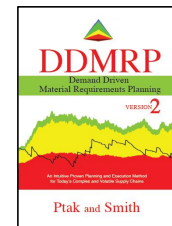


Demand Driven Material Requirements Planning is the official text book of the Demand Driven Planner (DDP) Program.



The [Demand Driven Planner \(DDP\) program](#) is designed for planning, purchasing and supply chain personnel responsible for implementing and maintaining a DDMRP implementation. Designed by the leading authorities on DDMRP at the Demand Driven Institute, the Demand Driven Planner program is comprised of 13 modules of in-depth DDMRP education. The DDP Program is THE official preparatory course for DDI's [Demand Driven Planner Professional \(DDPP\)TM](#) exam.





Chapter 1

Planning in the New Normal

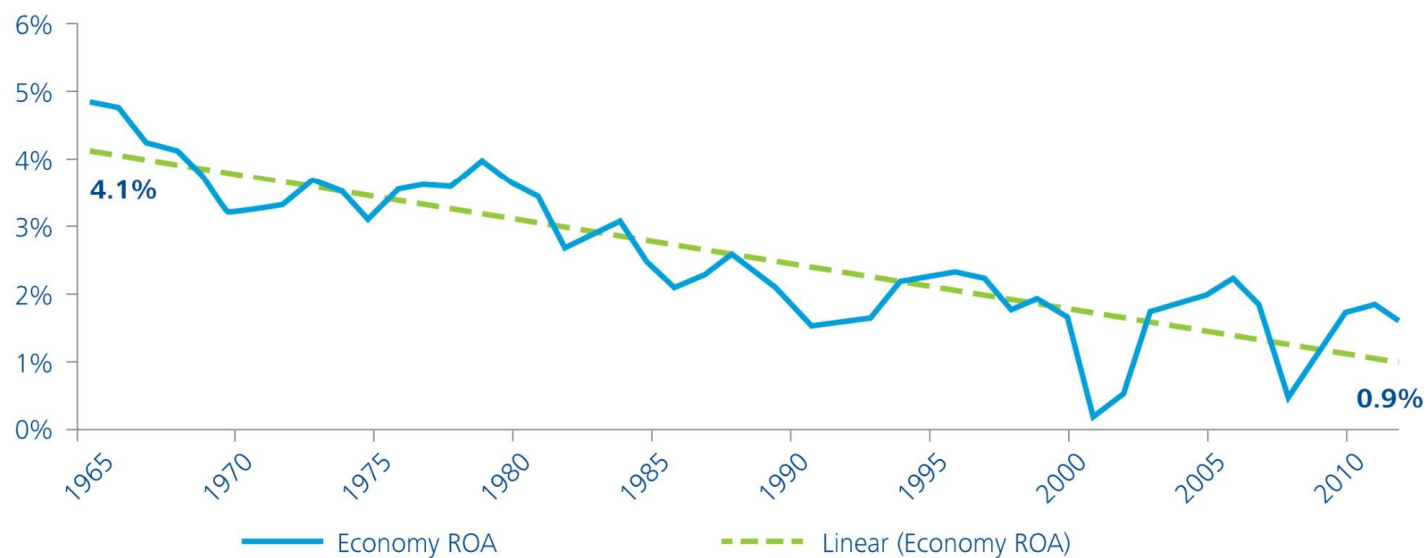


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Figure 1-1

Figure 1. Return on assets for the US economy (1965–2012)



US firms' ROA fell to a quarter of its 1965 levels in 2012. To increase, or even maintain, asset profitability, firms must find new ways to create value from their assets.

Graphic: Deloitte University Press | DUPress.com

Source: Compustat, Deloitte analysis

Figure 1-2

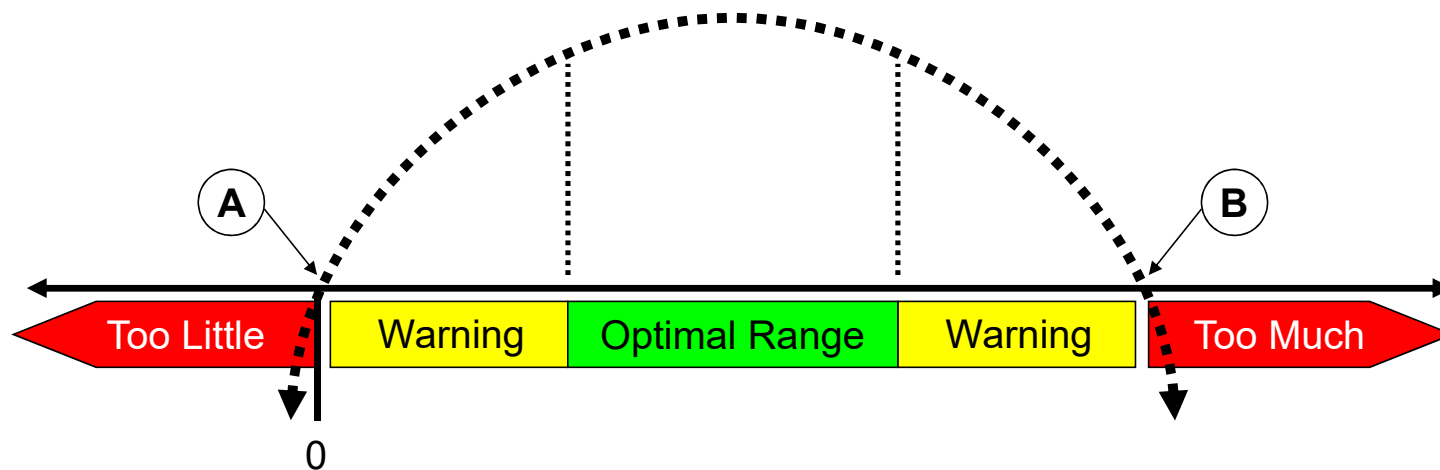


Figure 1-3

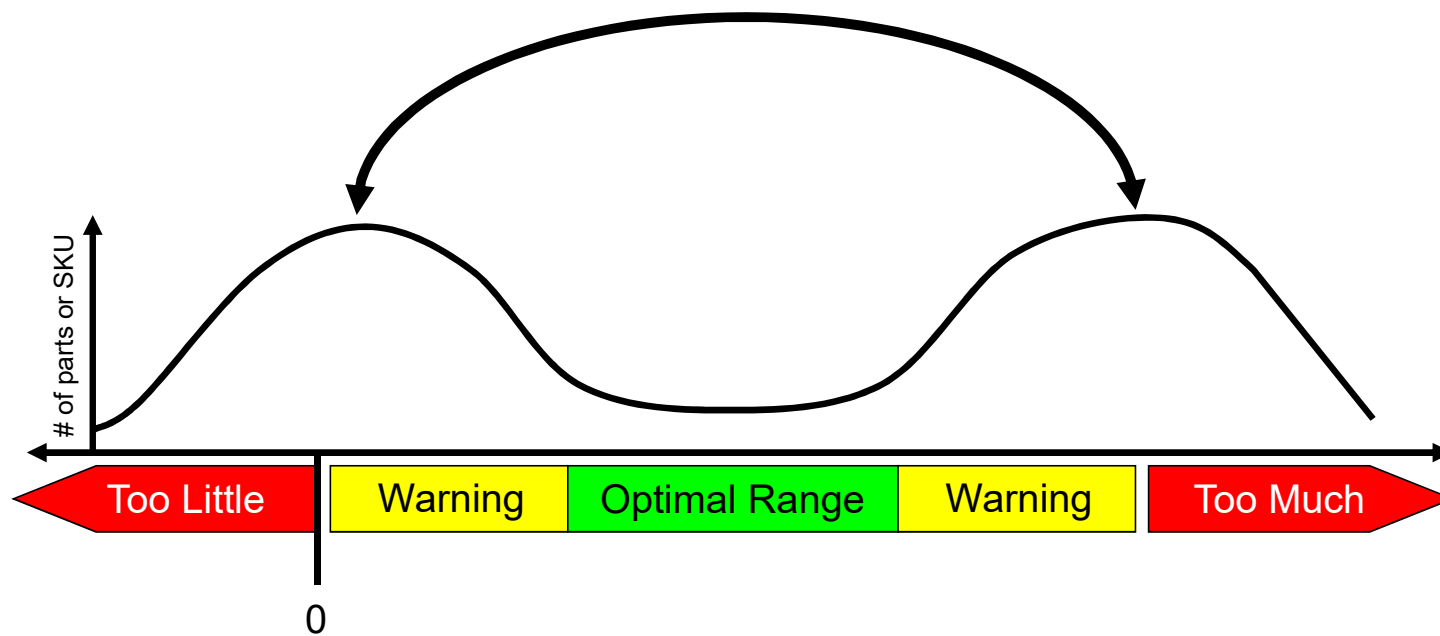
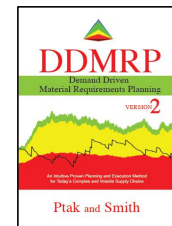


Figure 1-4

Circumstance	1965	2015
Supply Chain Complexity	Low. Supply chains looked like chains – they were more linear. Vertically integrated and domestic supply chains dominated the landscape	High. Supply chains look more like “supply webs” and are fragmented and extended across the globe.
Product Life Cycles	Long. Often measured in years and or decades (e.g. rotary phones)	Short. Often measured in months (particularly in technology)
Customer Tolerance Times	Long. Often measured in weeks and months	Short. Often measured in days with many situations dictating less than 24 hour turns
Product Complexity	Low.	High. Most products now have relatively complex mechanical and electrical systems and micro-systems. Can you even work on a modern car anymore?
Product Customization	Low. Few options or custom feature available.	High. Lots of configuration and customization to a particular customer or customer type.
Product Variety	Low. Example – toothpaste. In 1965 Colgate and Crest each made one type of toothpaste.	High – in 2012 Colgate made 17 types of toothpaste and Crest made 42!
Long Lead Time Parts	Few. Here the word “long” is in relation to the time the market is willing to wait. By default if customer tolerance times were longer it stands to reason that there were less long lead time parts. More so, however, is that fact that supply chains looked different. Most parts were domestically sourced and thus often much “closer” in time.	Many. Today’s extended and fragmented supply chains have resulted in not only more purchased items but more purchased items coming from more remote locations.
Forecast Accuracy	High. With less variety, longer life cycles and high customer tolerance times forecast accuracy was almost a non-issue. “If you build it, they will buy it.”	Low. The combined complexity of the above items is making the idea of improving forecast accuracy a losing battle.
Pressure for Leaner Inventories	Low. With less variety and longer cycles the penalties of building inventory positions was minimized.	High. At the same time operations is asked to support a much more complex demand and supply scenario (as defined above) they are required to do so with less working capital!
Transactional Friction	High. Finding suppliers and customers took exhaustive and expensive efforts. Choices were limited. People’s first experience with a manufacturer was often through a sales person sitting in front of them.	Low. Information is readily available at the click of the mouse. Choices are almost overwhelming. People’s first experience with a manufacturer is often through a screen sitting in front of them.



Chapter 2

The Importance of Flow

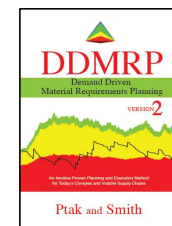


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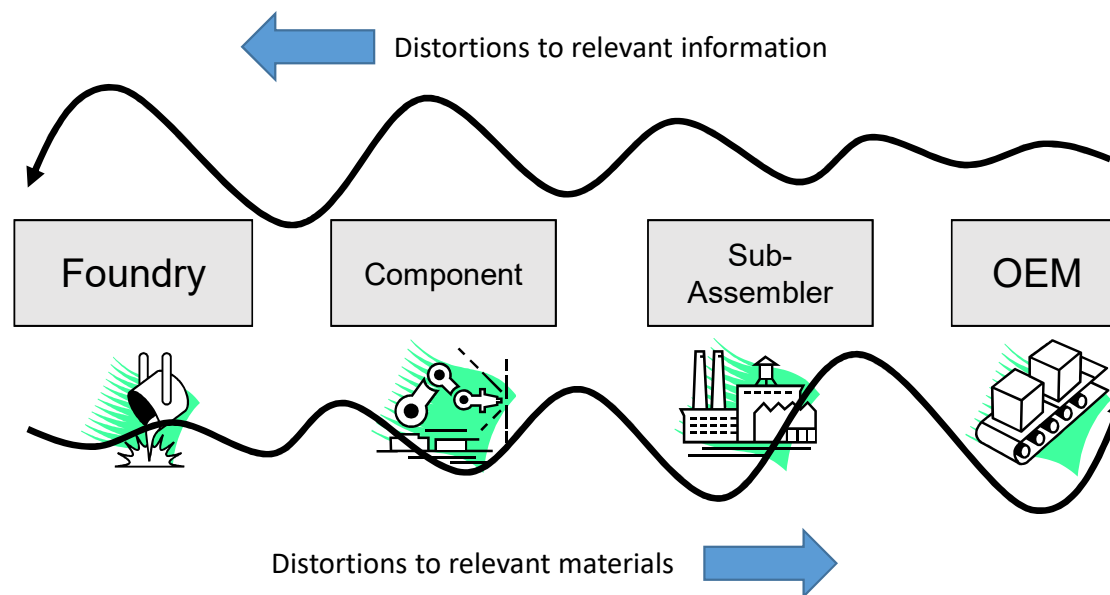


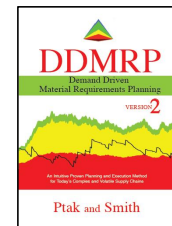
Figure 2-1



Organizational Function	Primary Objective	Example Metric
Planning	Synchronize supply and demand	Shortages and Excess Inventory
Finance	Drive shareholder equity	Return on Average Capital
Sales	Capture demand	Order book
Marketing	Create brand awareness and demand	Market share
Operations	Asset utilization	Overall Equipment Effectiveness (OEE)
Quality	Meet specification	Warranty claims

Figure 2-2





Chapter 3

Material Requirements Planning in the New Normal

Figure 3-1

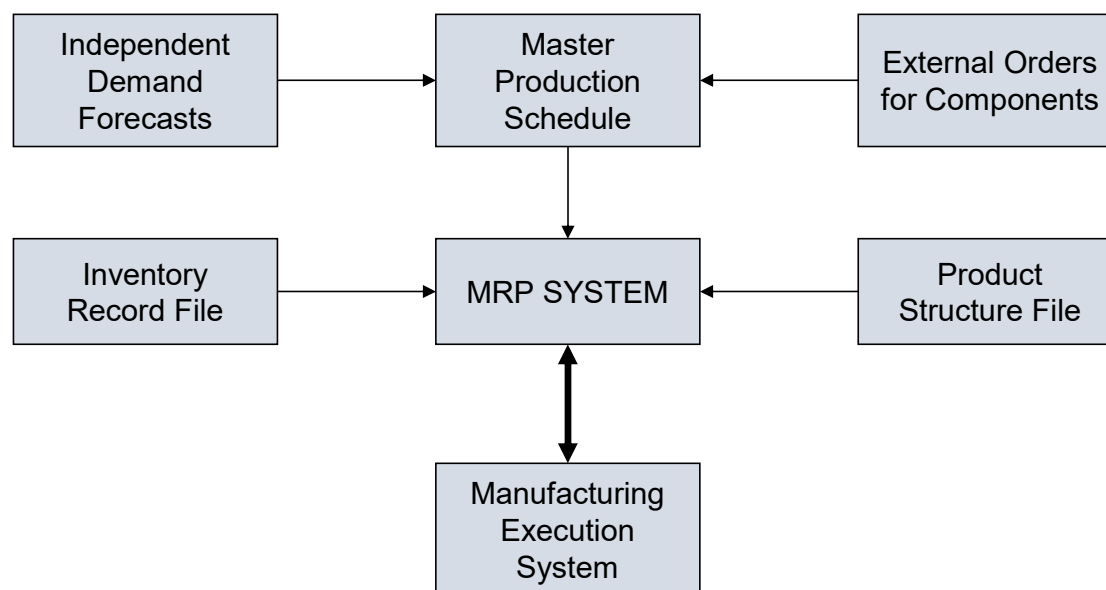


Figure 3-2

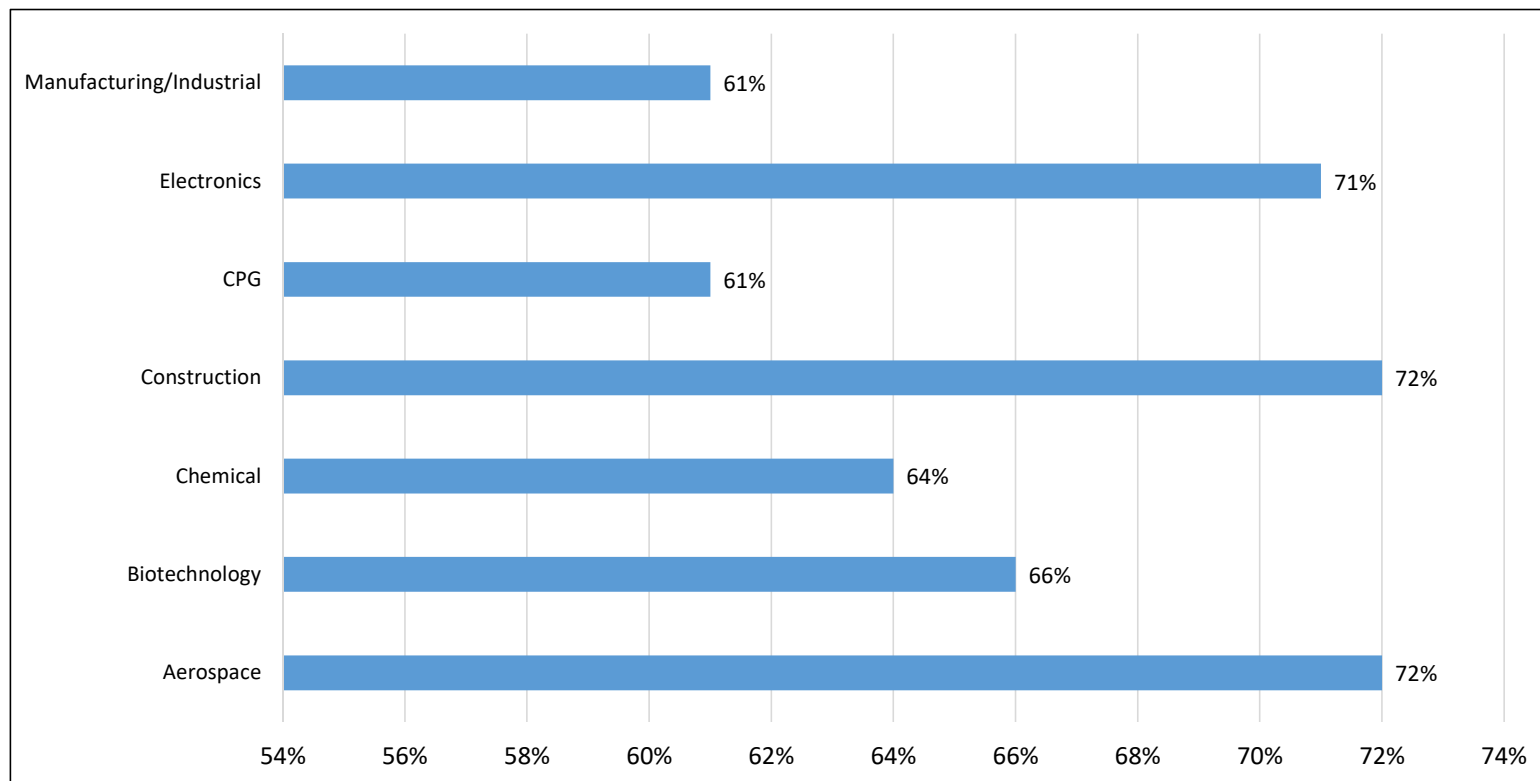


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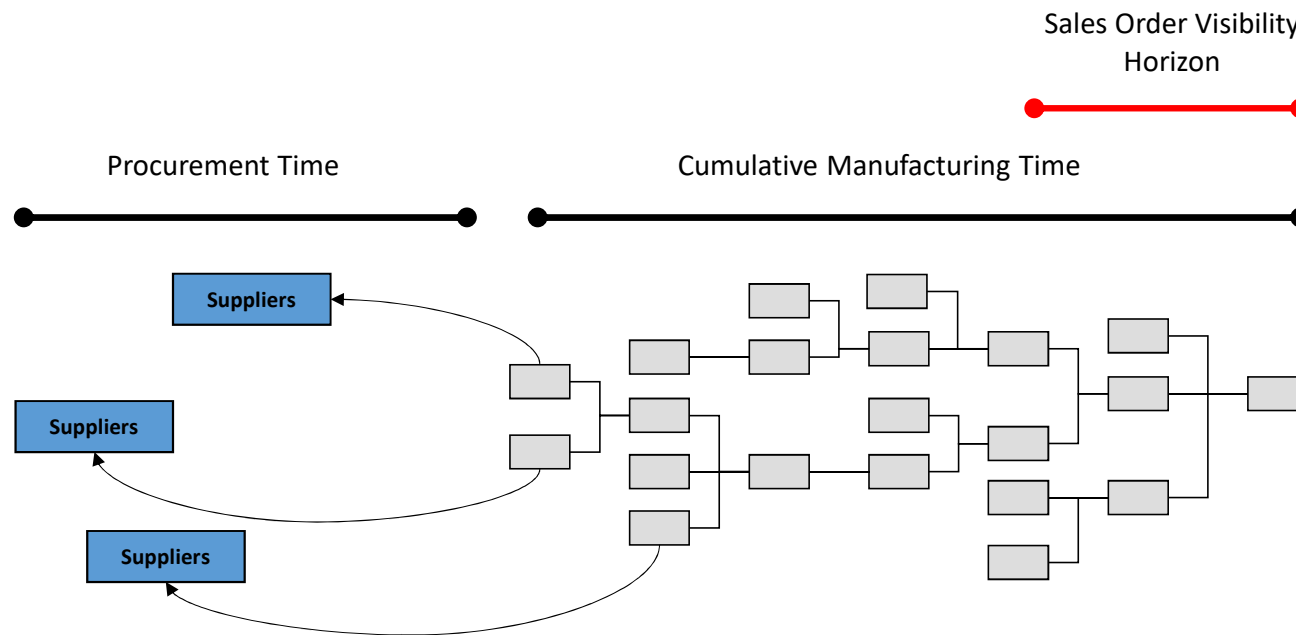


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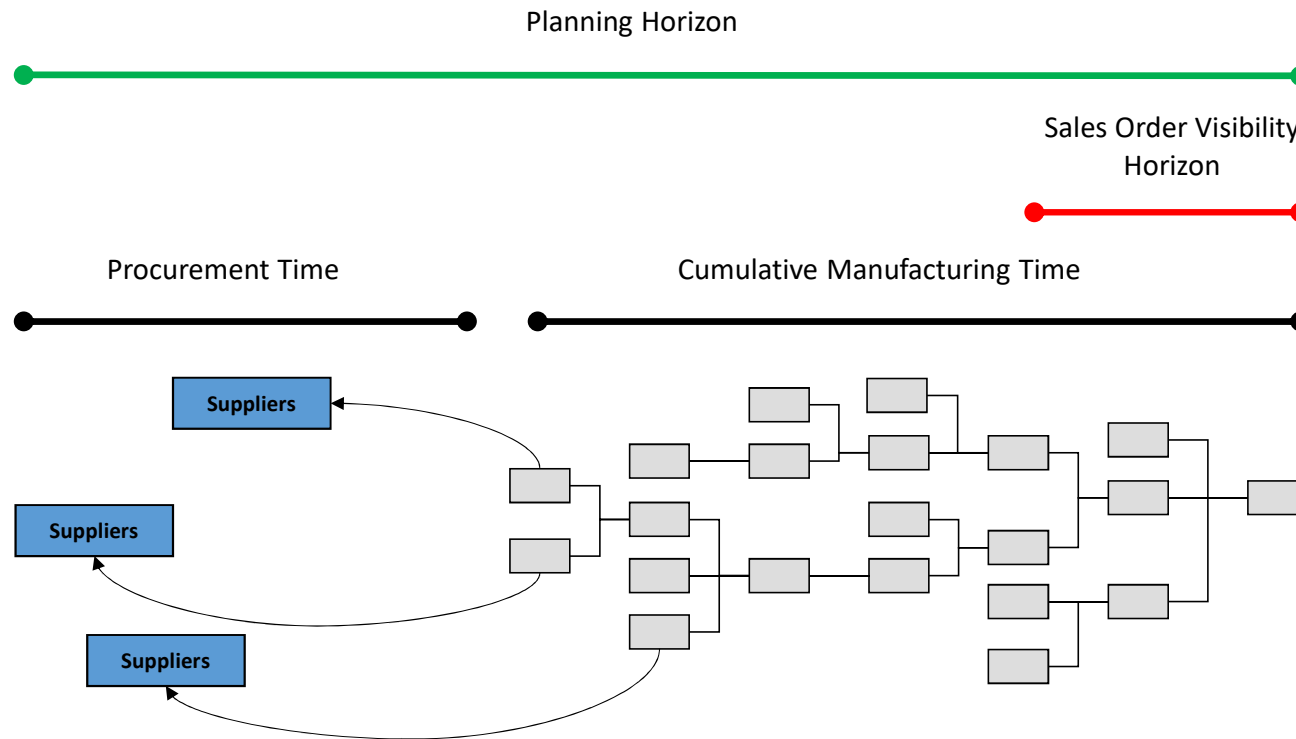


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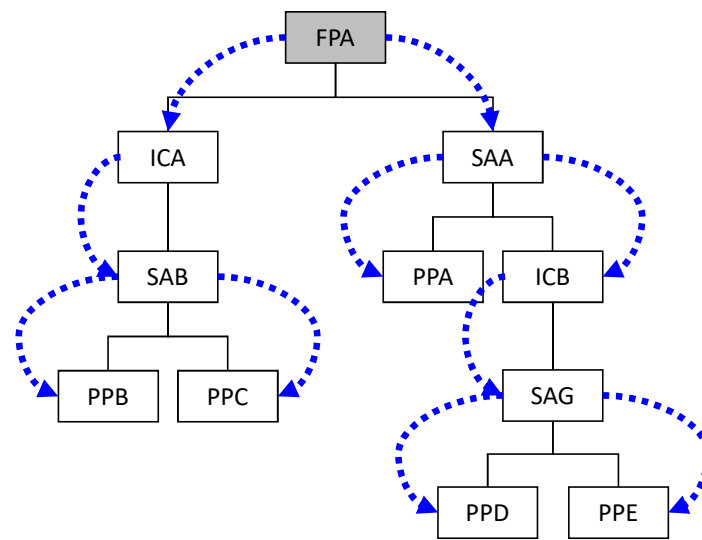


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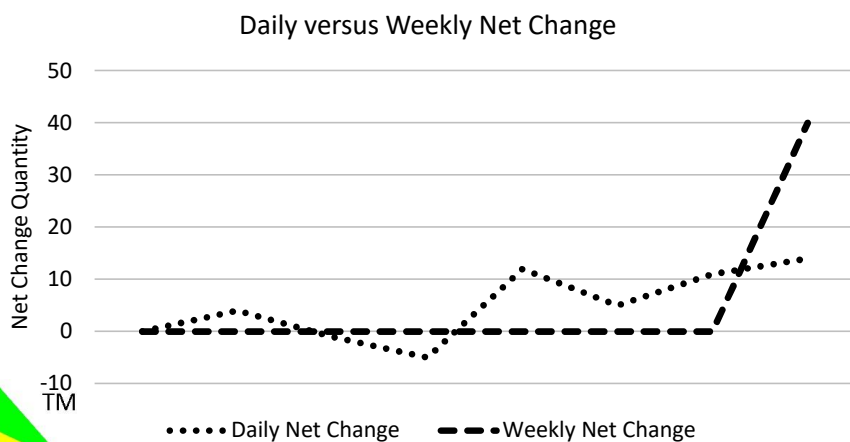
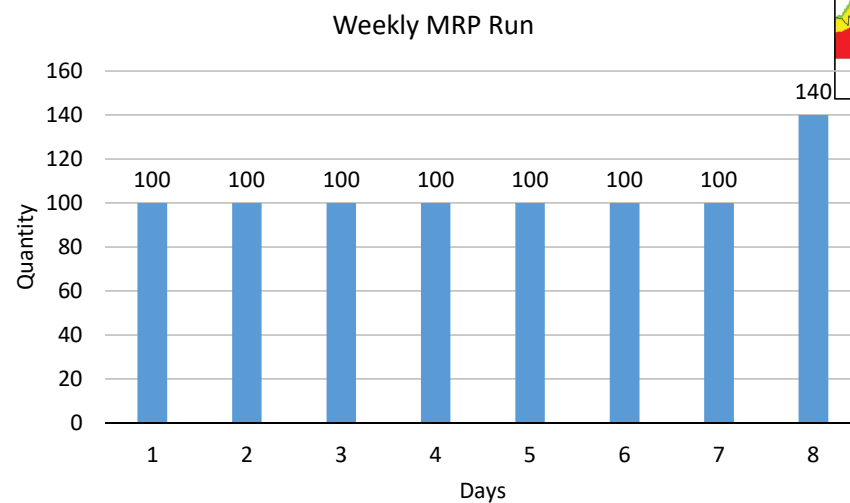
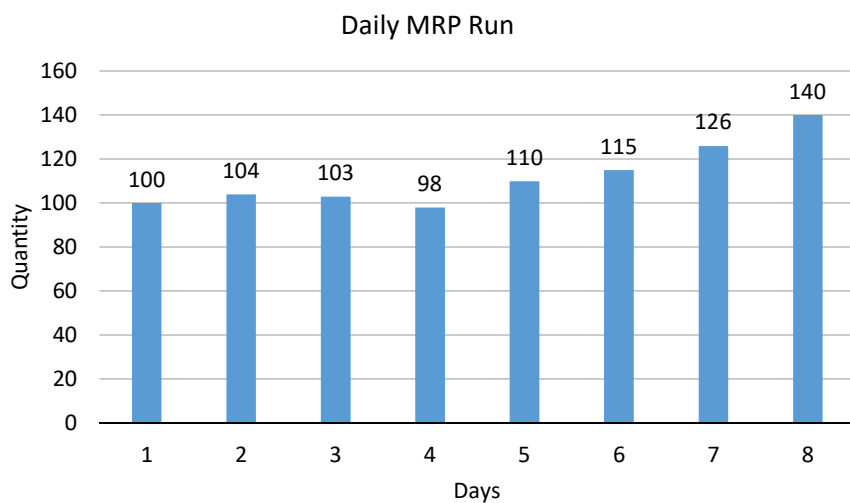


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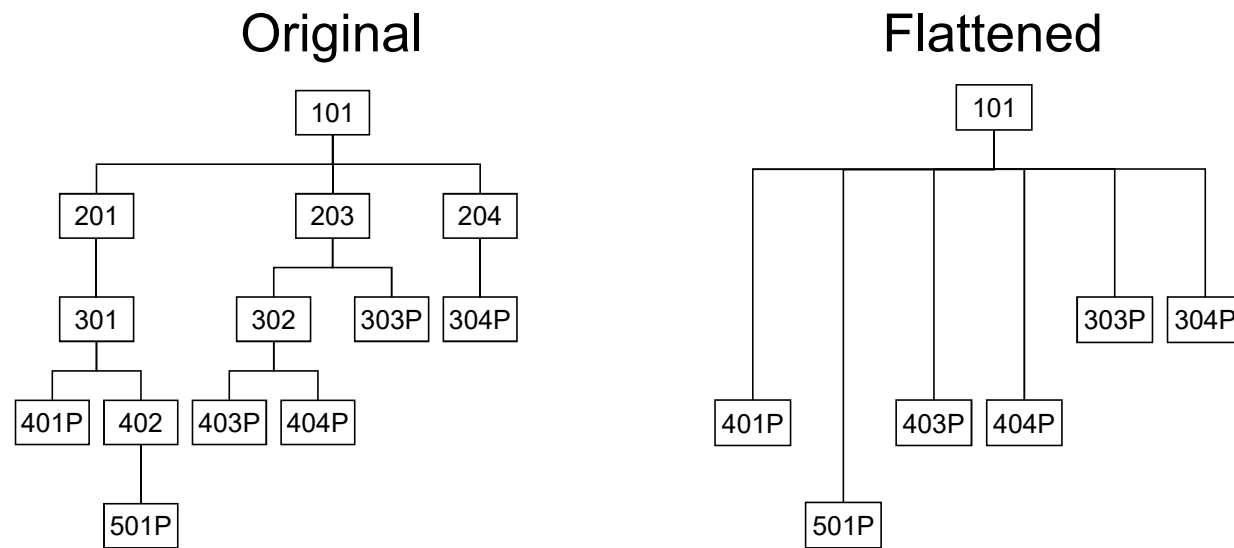


Figure 3-8

Number of Components	Availability Level	
	90%	95%
1	90.0%	95.0%
2	81.0%	90.3%
3	72.9%	85.7%
4	65.6%	81.5%
5	59.0%	77.4%
6	53.1%	73.5%
7	47.8%	69.8%
8	43.0%	66.3%
9	38.7%	63.0%
10	34.9%	59.9%
11	31.4%	56.9%
12	28.2%	54.0%
13	25.4%	51.3%
14	22.9%	48.8%
15	20.6%	46.3%
16	18.5%	44.0%
17	16.7%	41.8%
18	15.0%	39.7%
19	13.5%	37.7%
20	12.2%	35.8%
21	10.9%	34.1%
22	9.8%	32.4%
23	8.9%	30.7%
24	8.0%	29.2%
25	7.2%	27.7%

Figure 3-9

Component Number	Availability Level	Probability of Simultaneous Availability
1	95.0%	95.0%
2	72.0%	68.4%
3	98.0%	67.0%
4	97.0%	65.0%
5	99.0%	64.4%

Figure 3-10

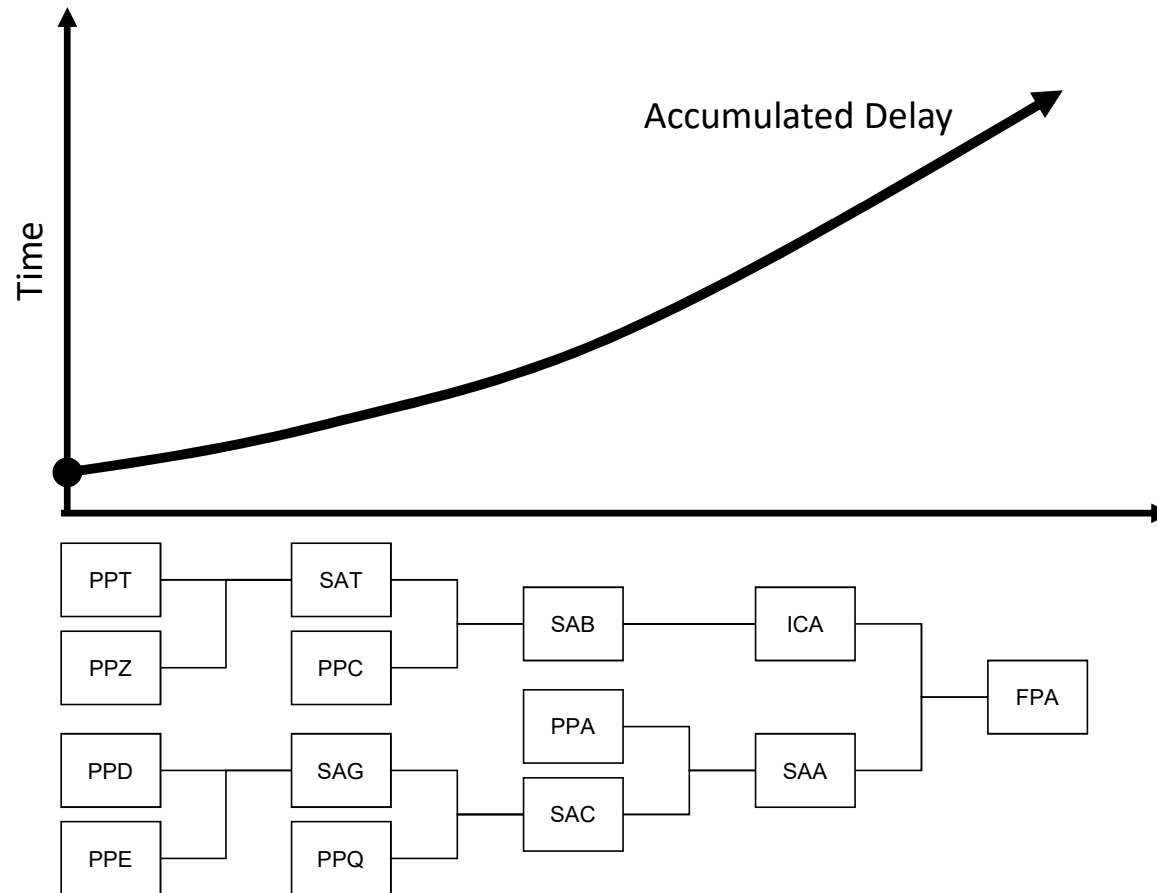


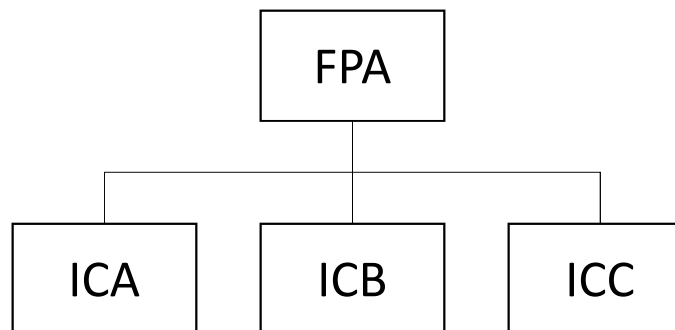
Figure 3-11

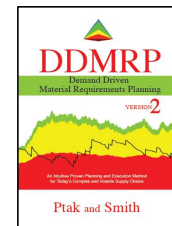
FPA Demand = 115

ICA Min = 100, Multiple = 50

ICB Min = 250, Multiple = 50

ICC Min = 100, Multiple = 100





Chapter 4

Unlocking a Solution – The Power of Decoupling



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Figure 4-1

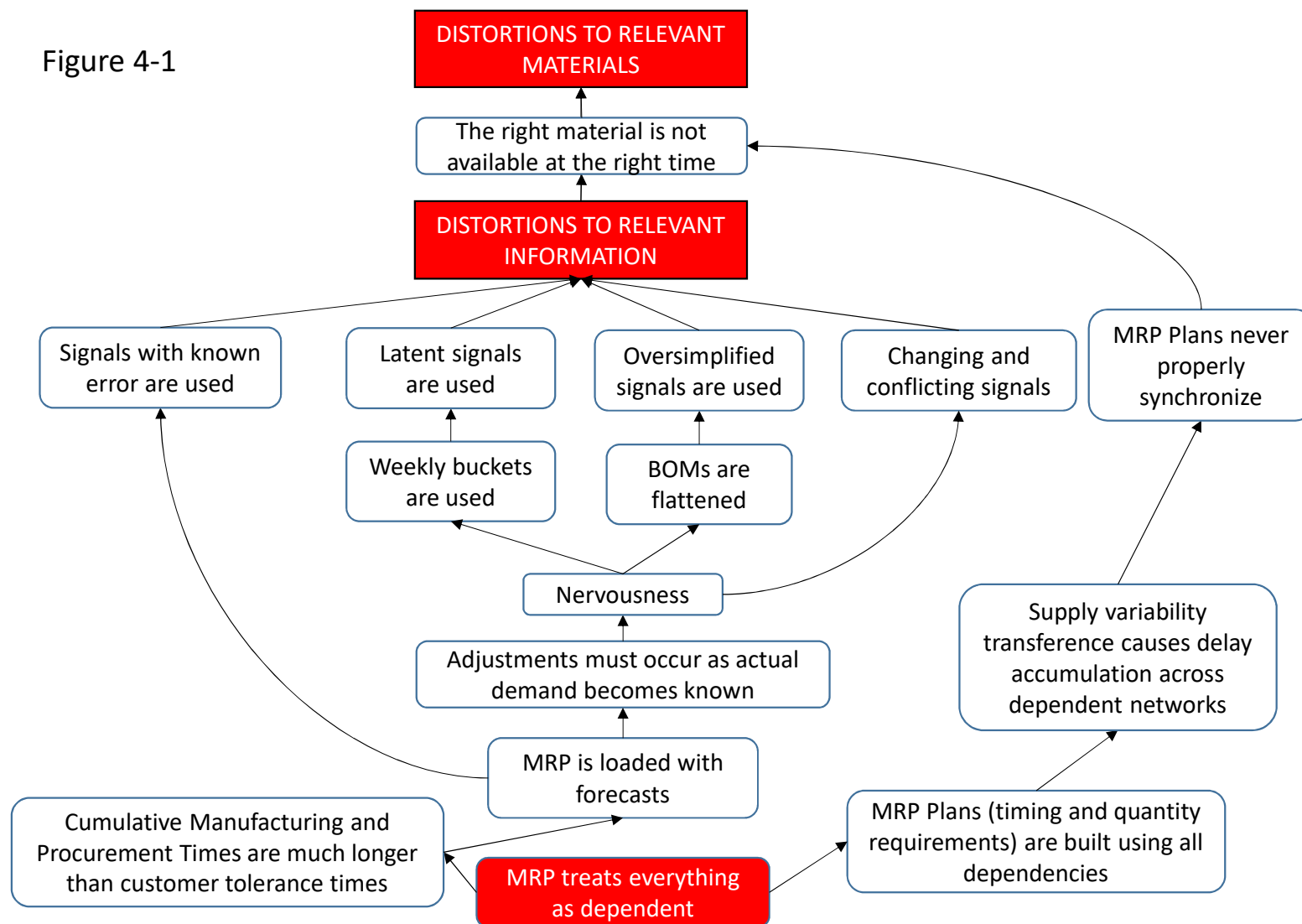


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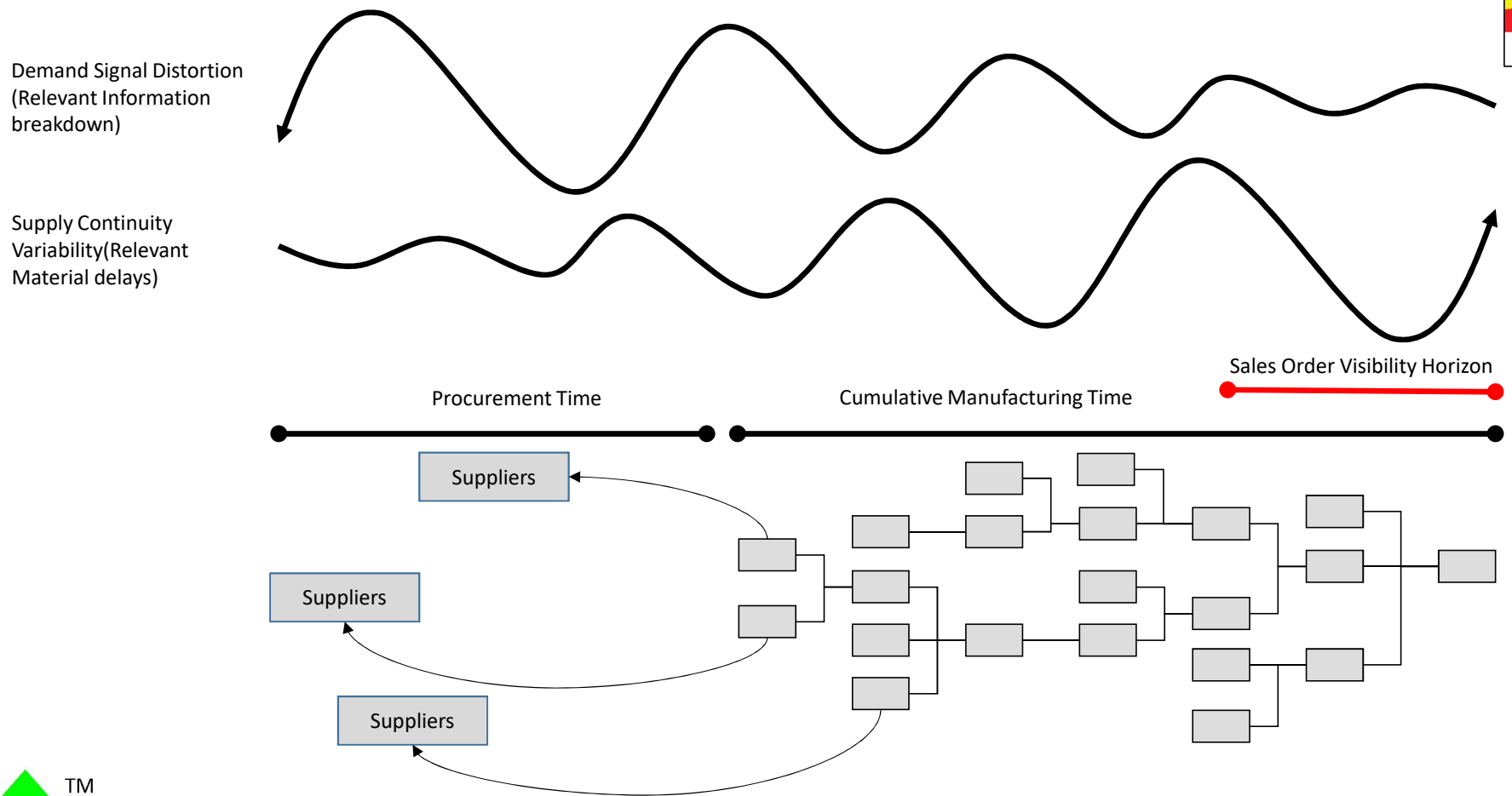
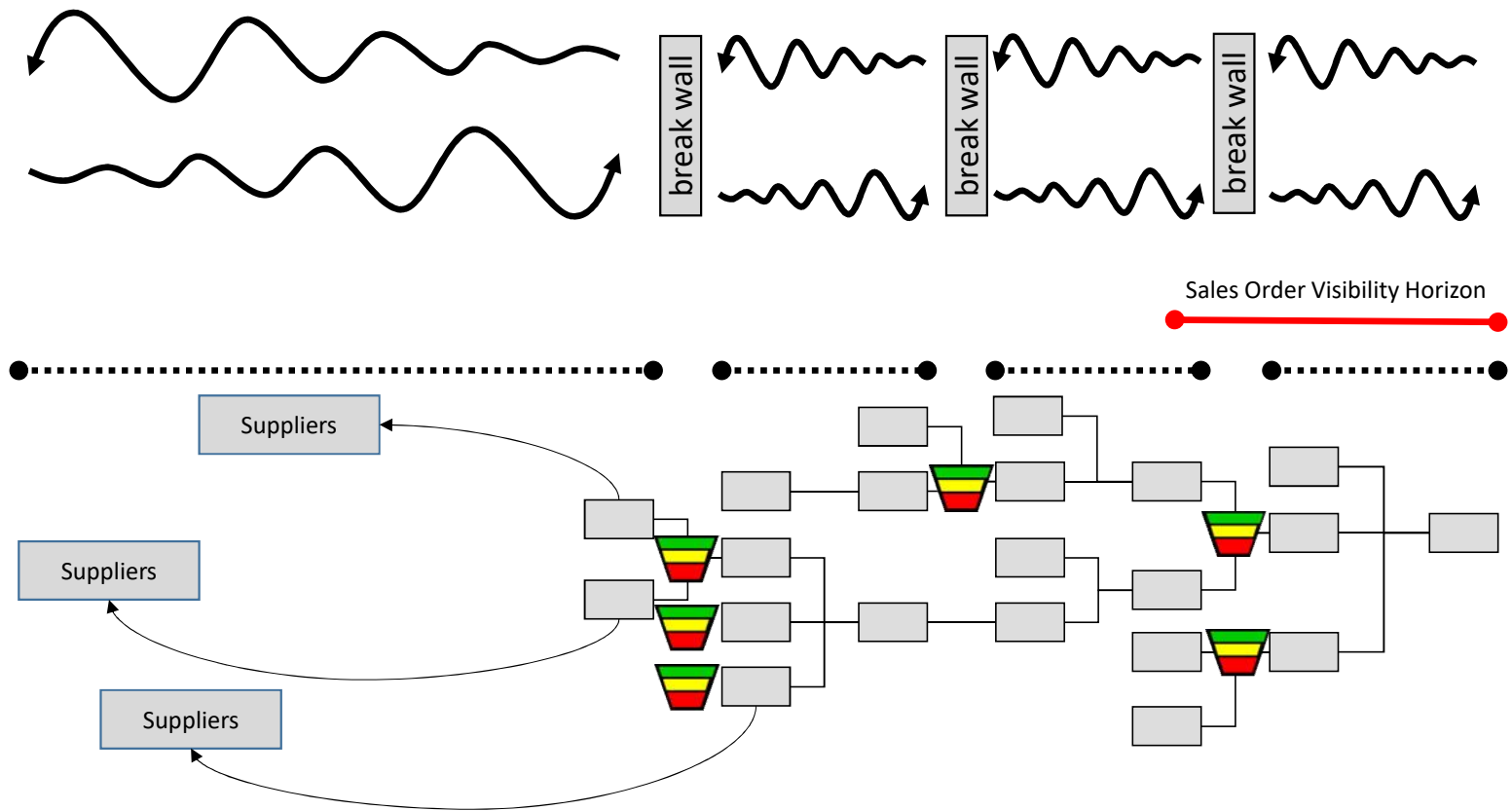
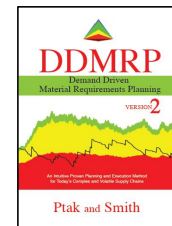


Figure 4-3

Demand Signal Distortion
(Relevant Information
breakdown)

Supply Continuity
Variability (Relevant
Material delays)





Chapter 5

Supply Order Generation and Execution for the New Normal



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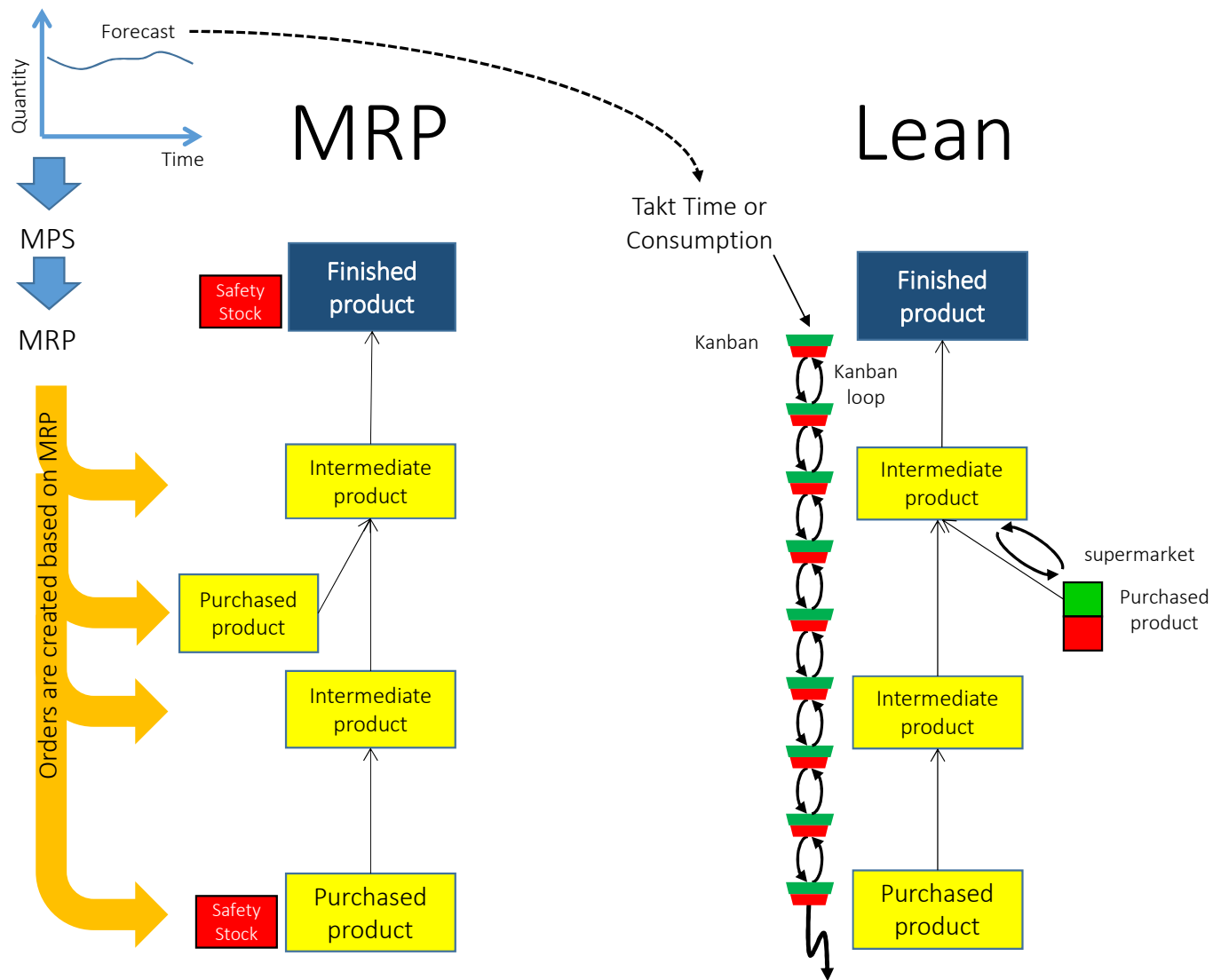


Figure 5-2

Common Objective

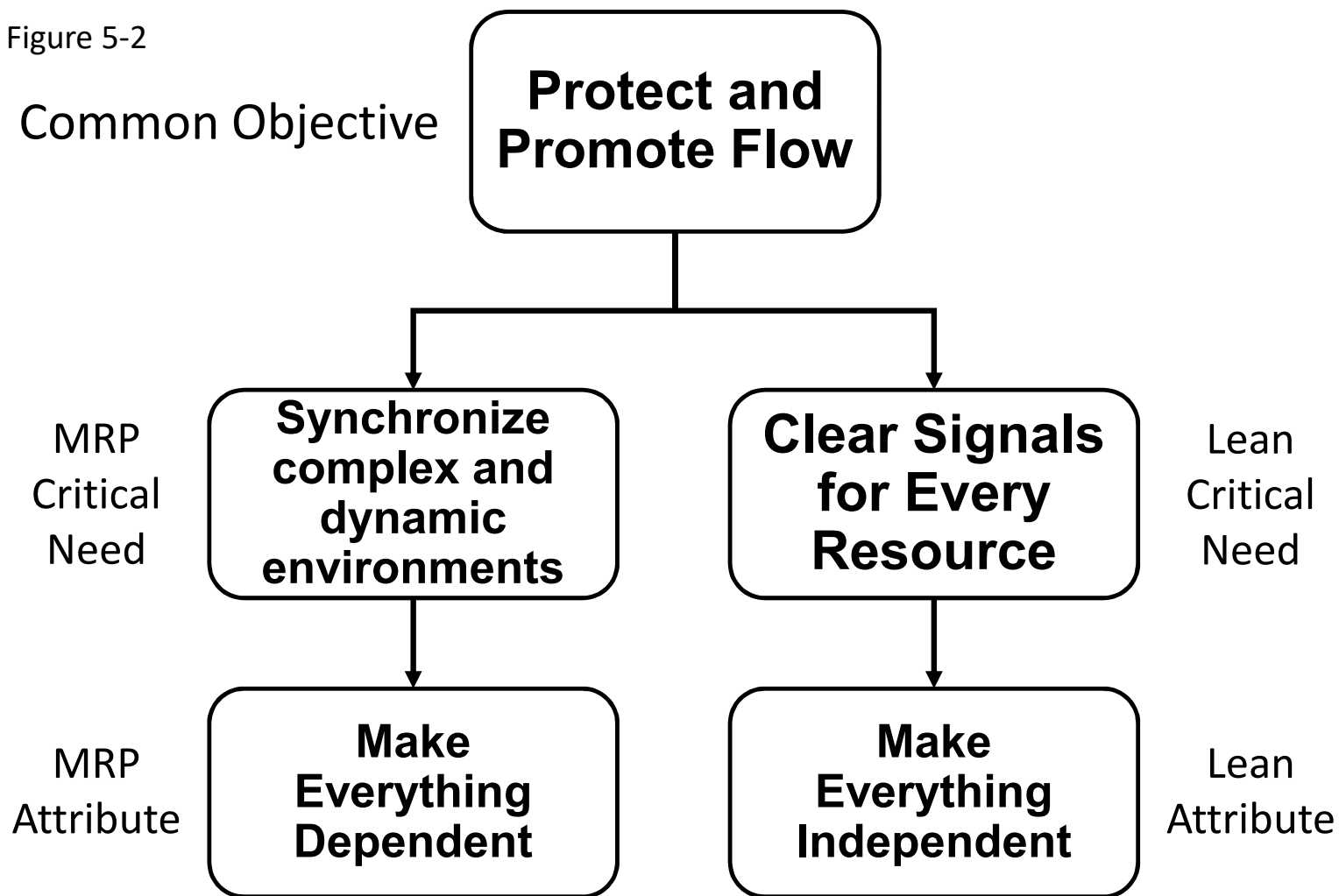
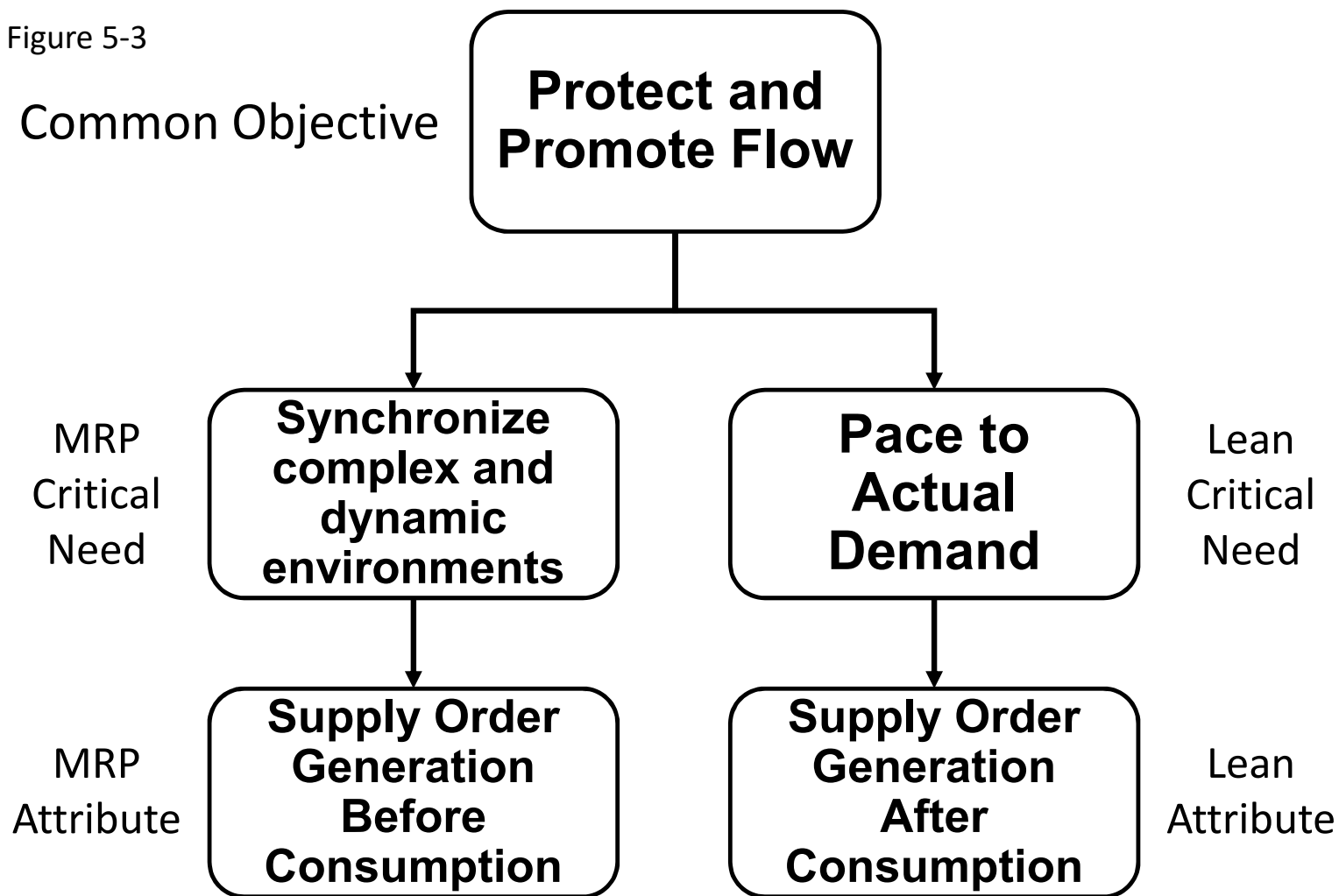
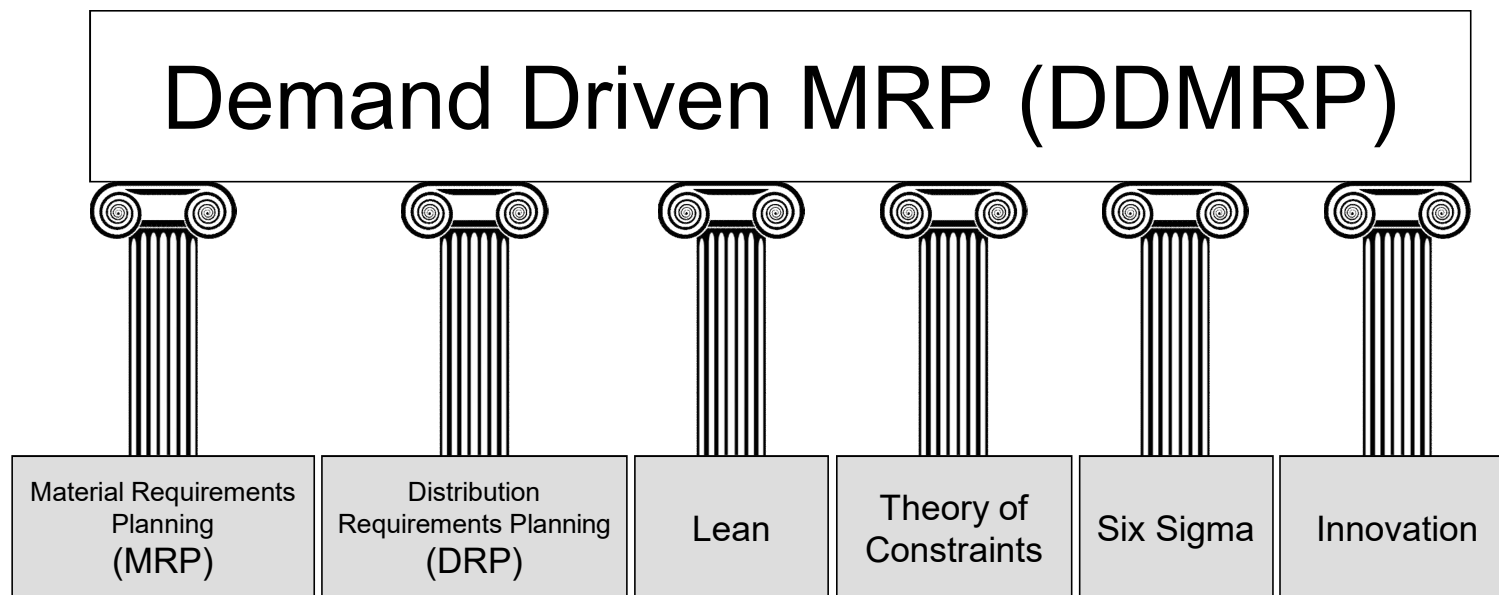
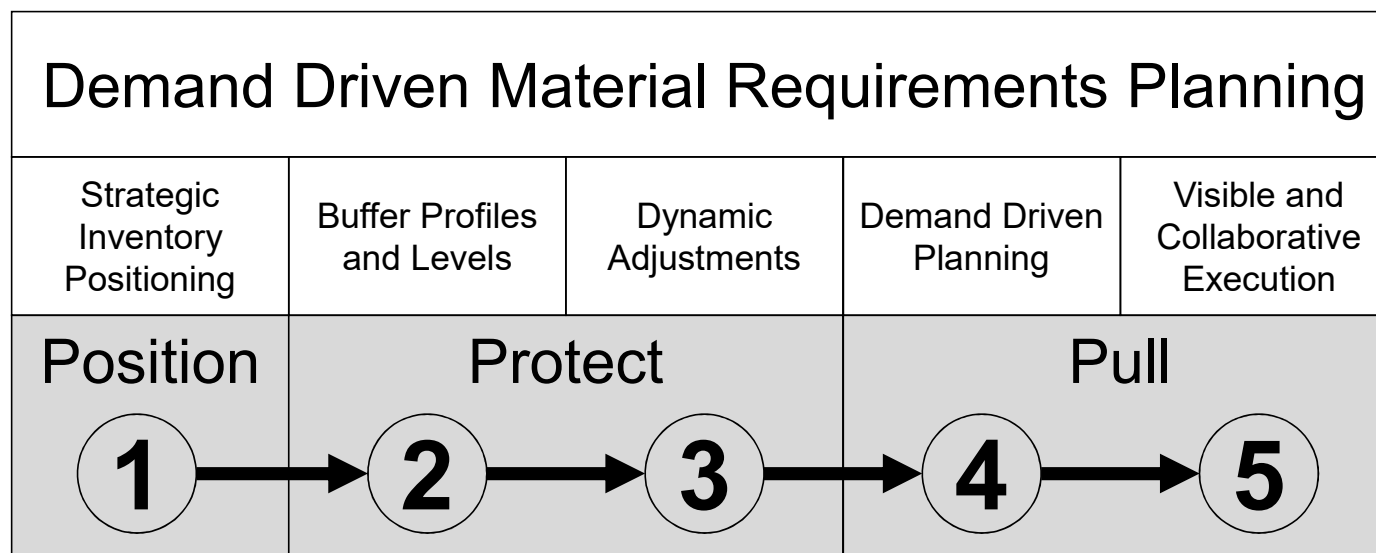


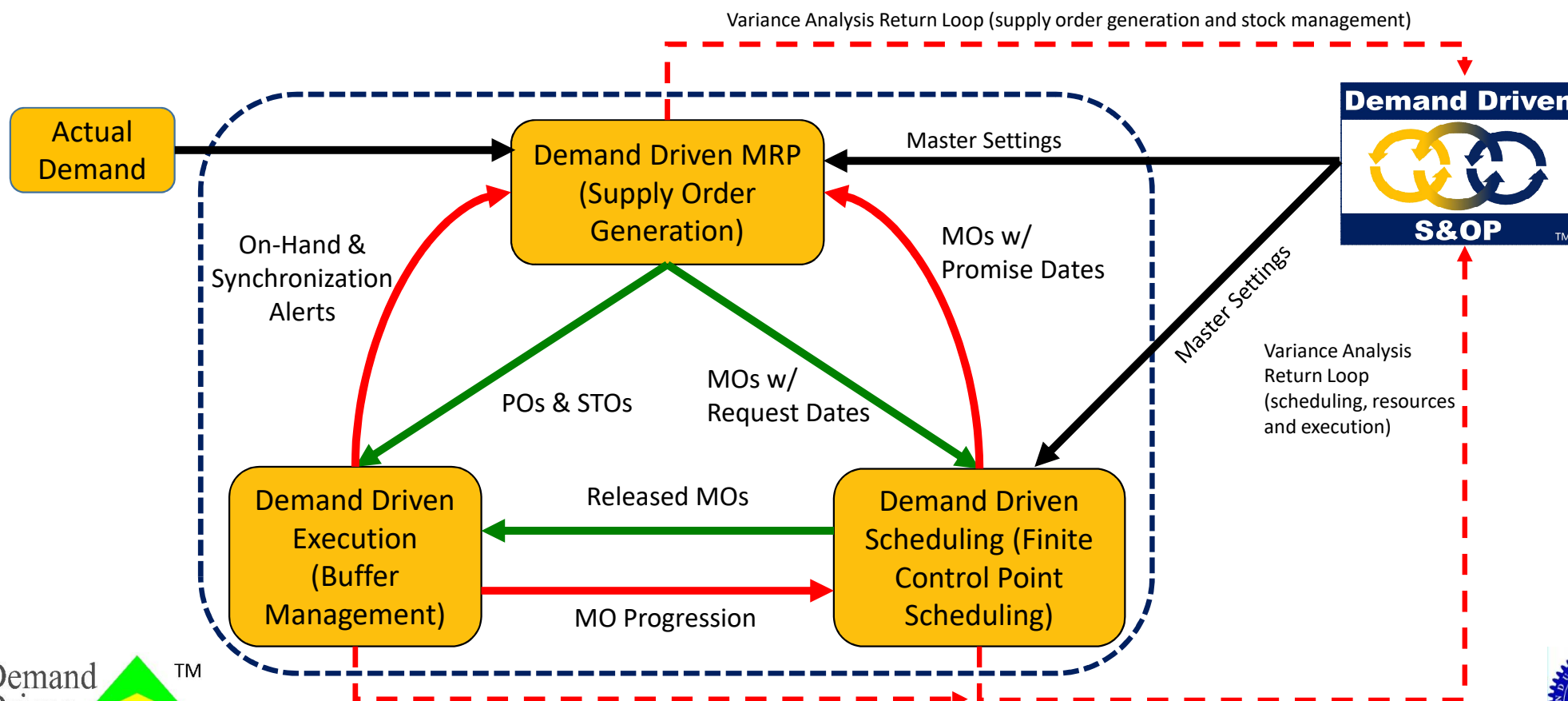
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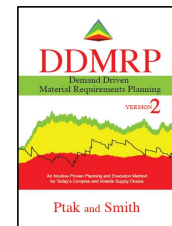
Common Objective











Chapter 6

Strategic Inventory Positioning

Figure 6-1

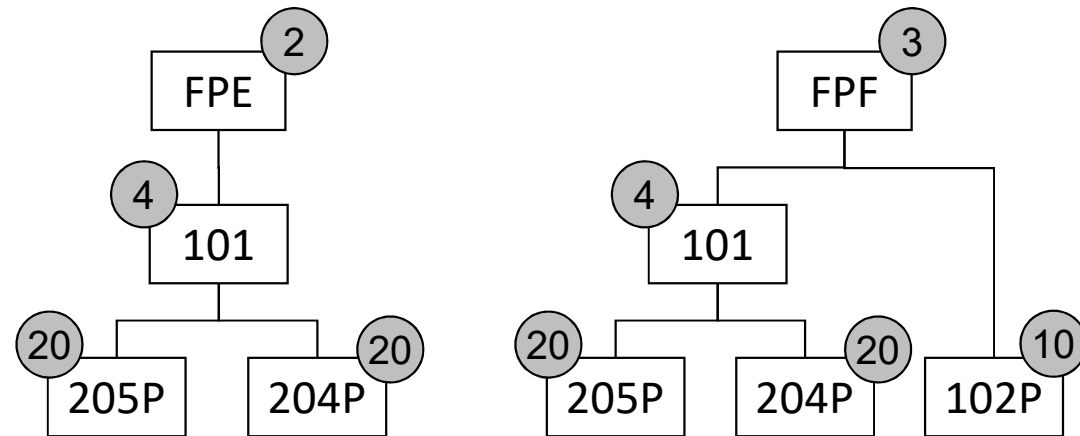


Figure 6-2

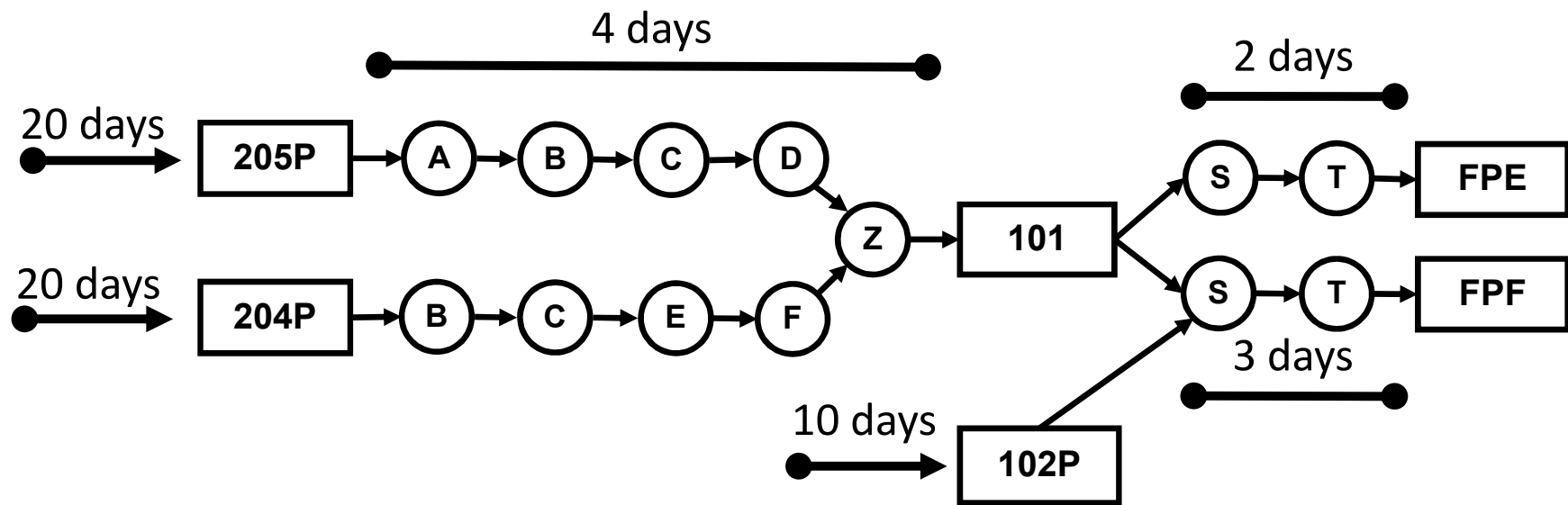


Figure 6-3

Decoupling Point Placement Criteria	Example Answers
Customer Tolerance Time	3 days for both FPE and FPF
Market Potential Lead Time	FPE has quick turn (1 day) business available
Sales Order Visibility Horizon	3+ days for most orders
External Variability	Demand: Large orders are typically known well in advance. Supply: 204P and 205P have decent reliability. 102P supplier is notorious for poor delivery and quality performance.
Inventory Leverage and Flexibility	101 is a common component for both FPE and FPF
Critical Operation Protection	Resource Z is an assembly operation that requires both routing paths to be complete before it begin its operation

Figure 6-4

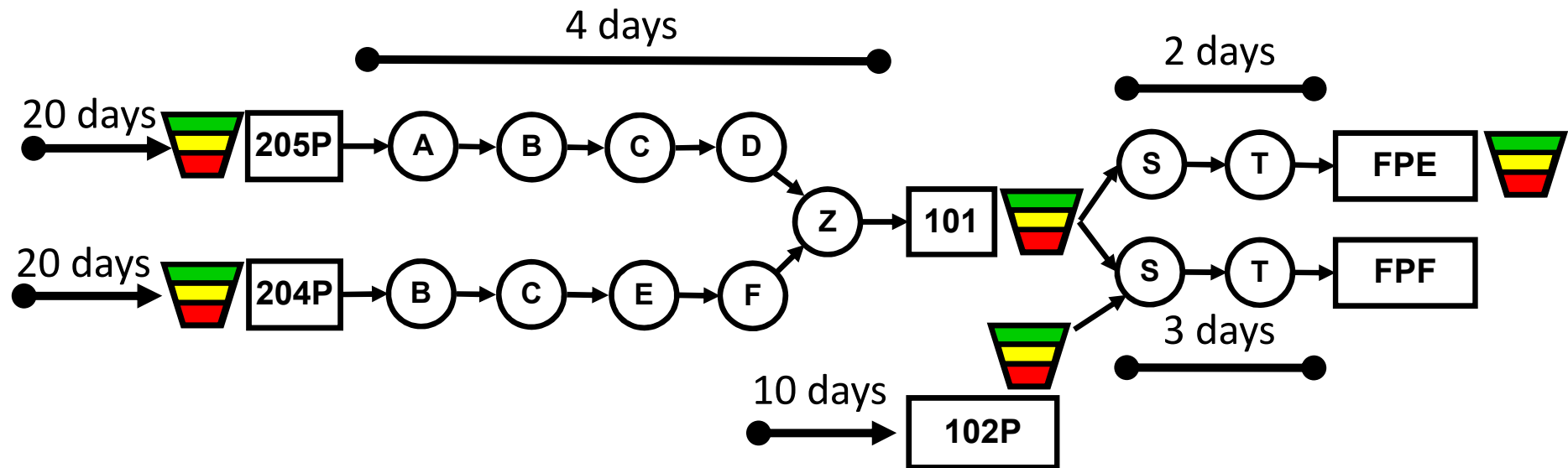


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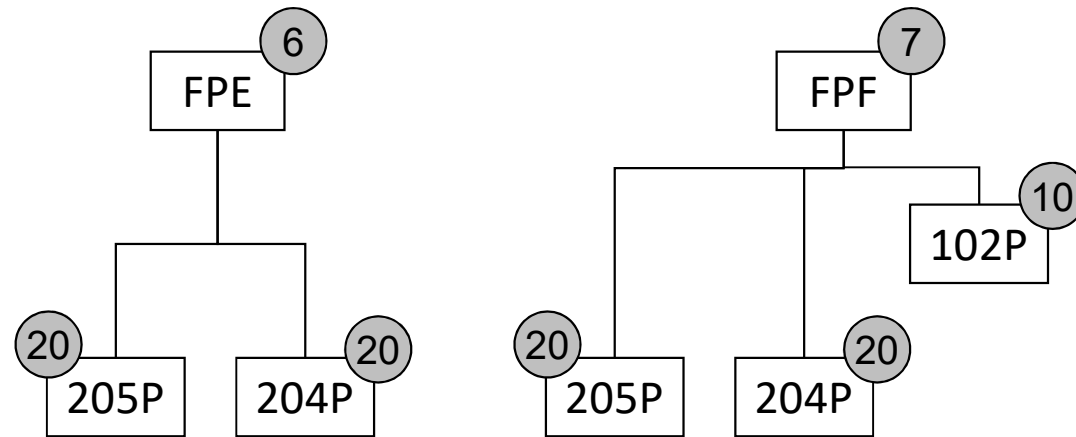


Figure 6-6

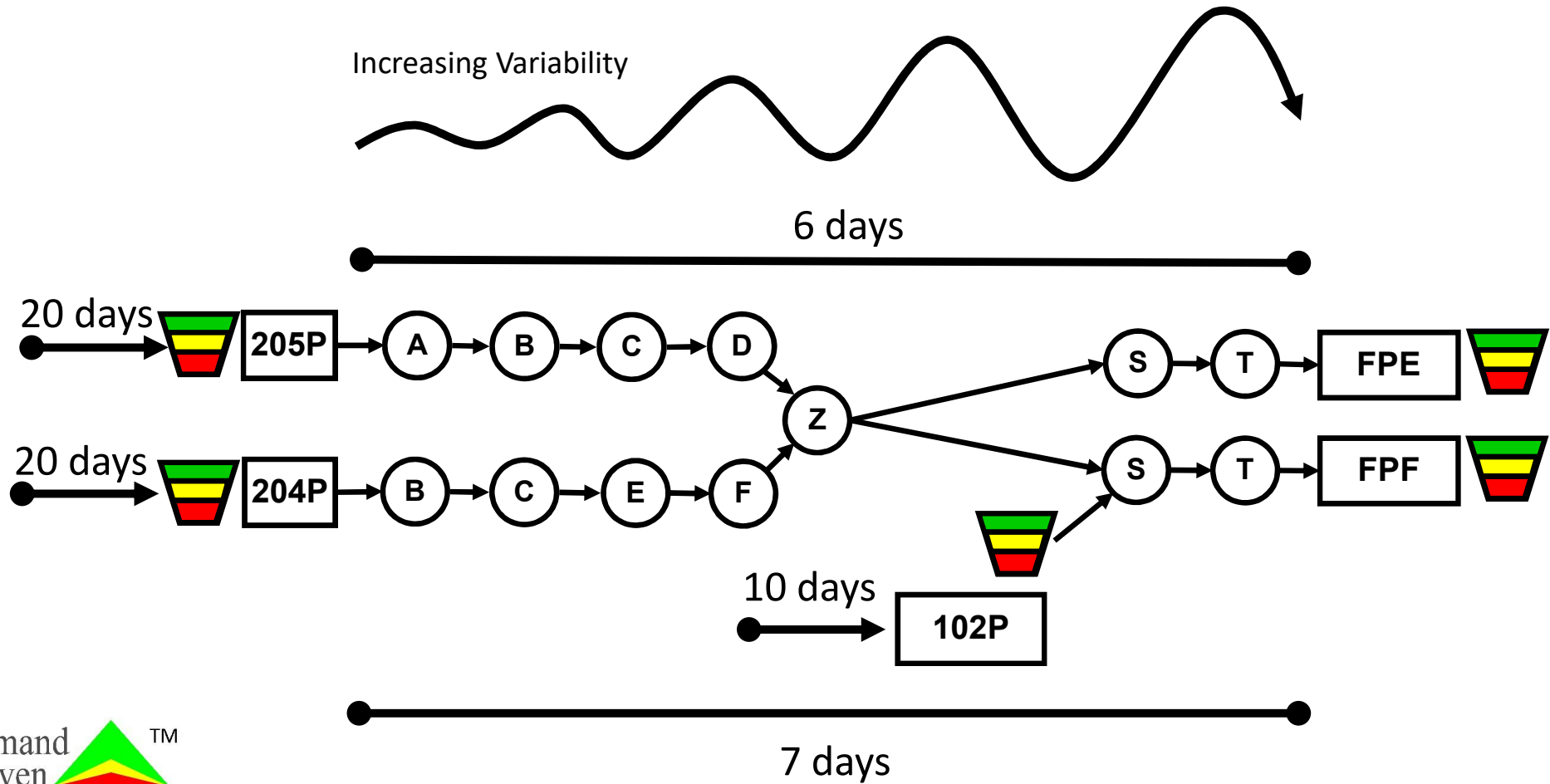


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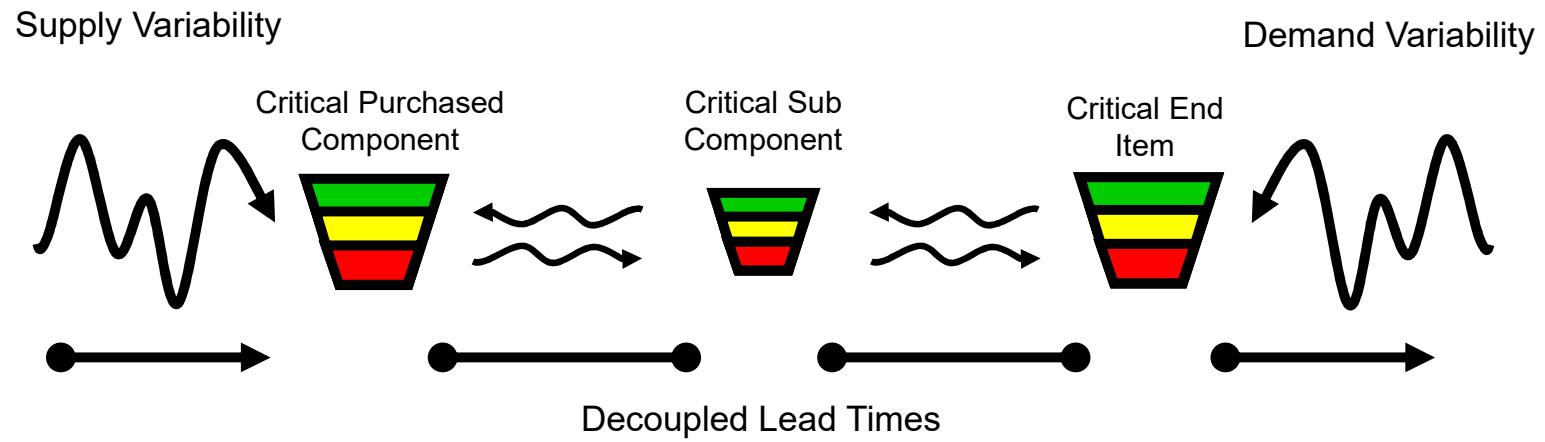


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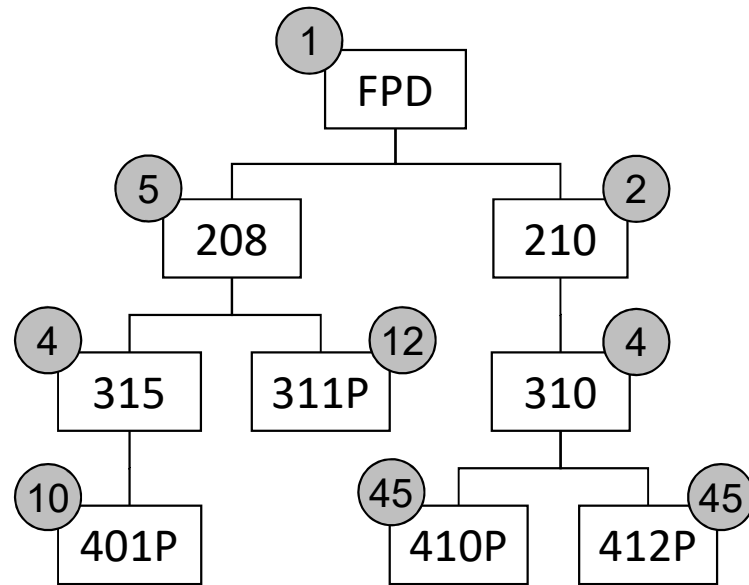


Figure 6-9

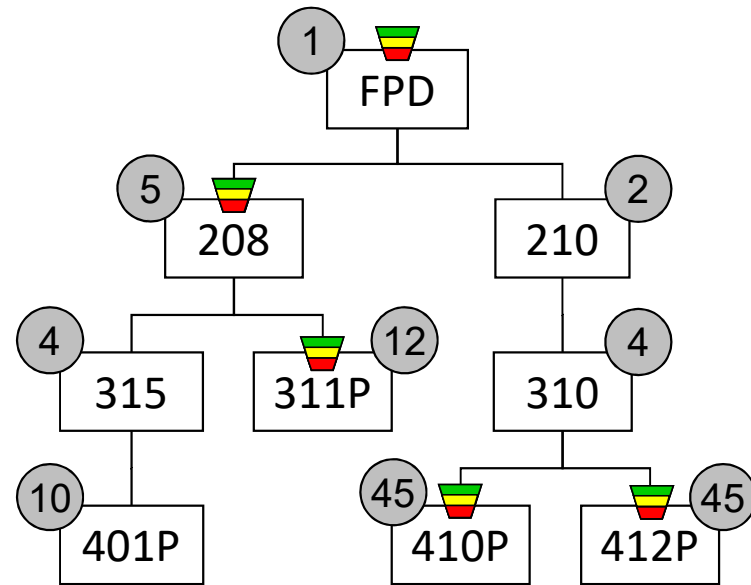


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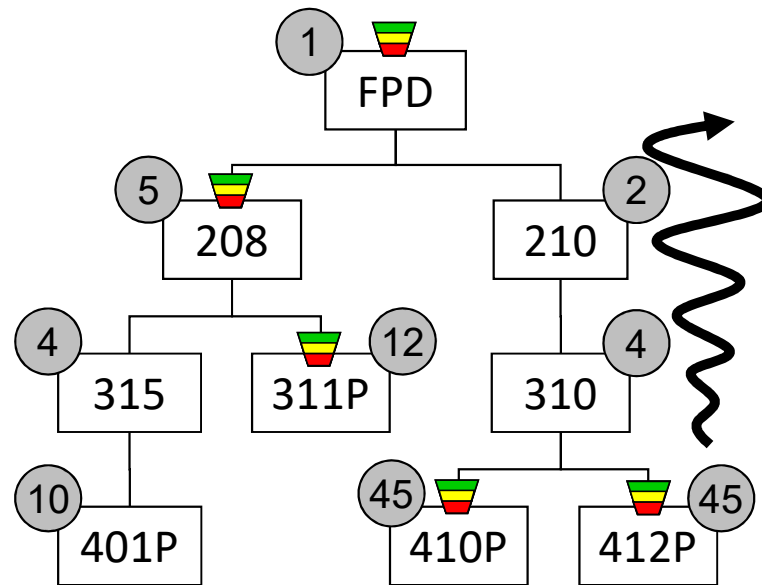


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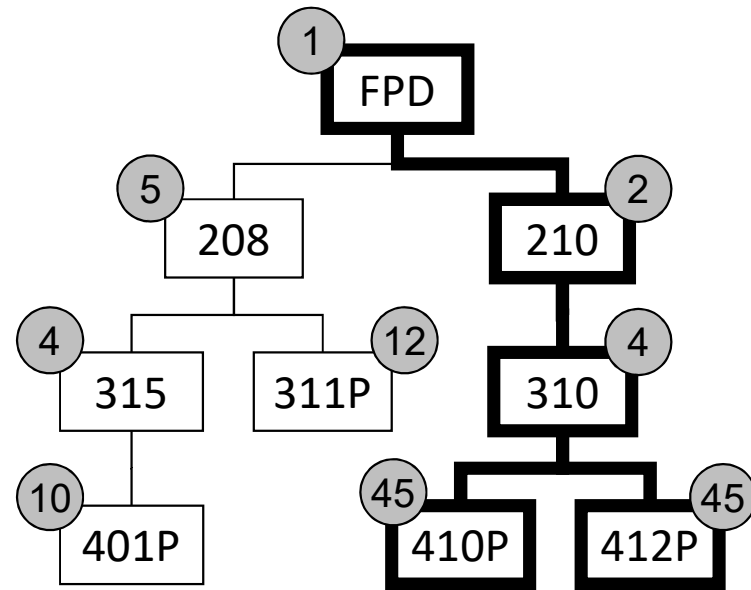


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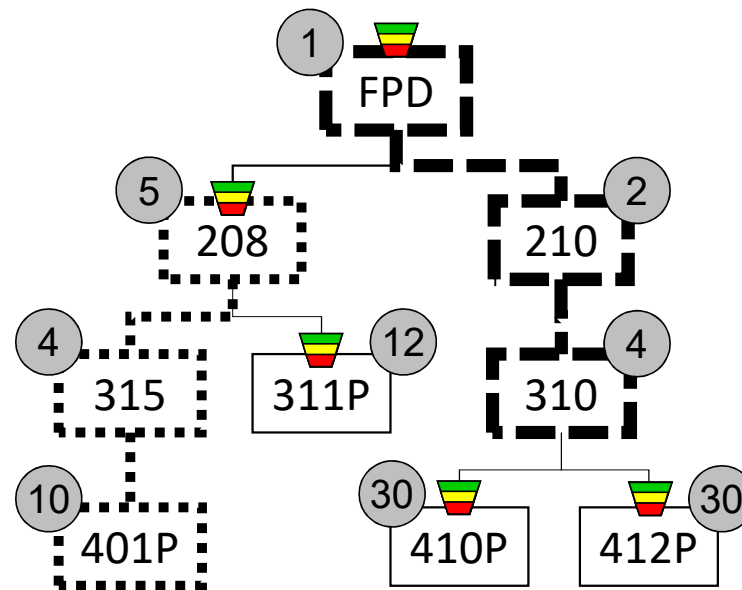


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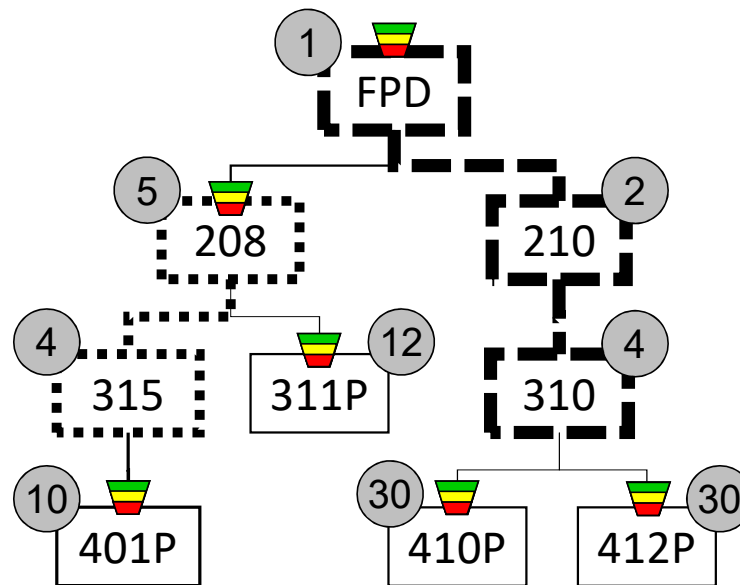


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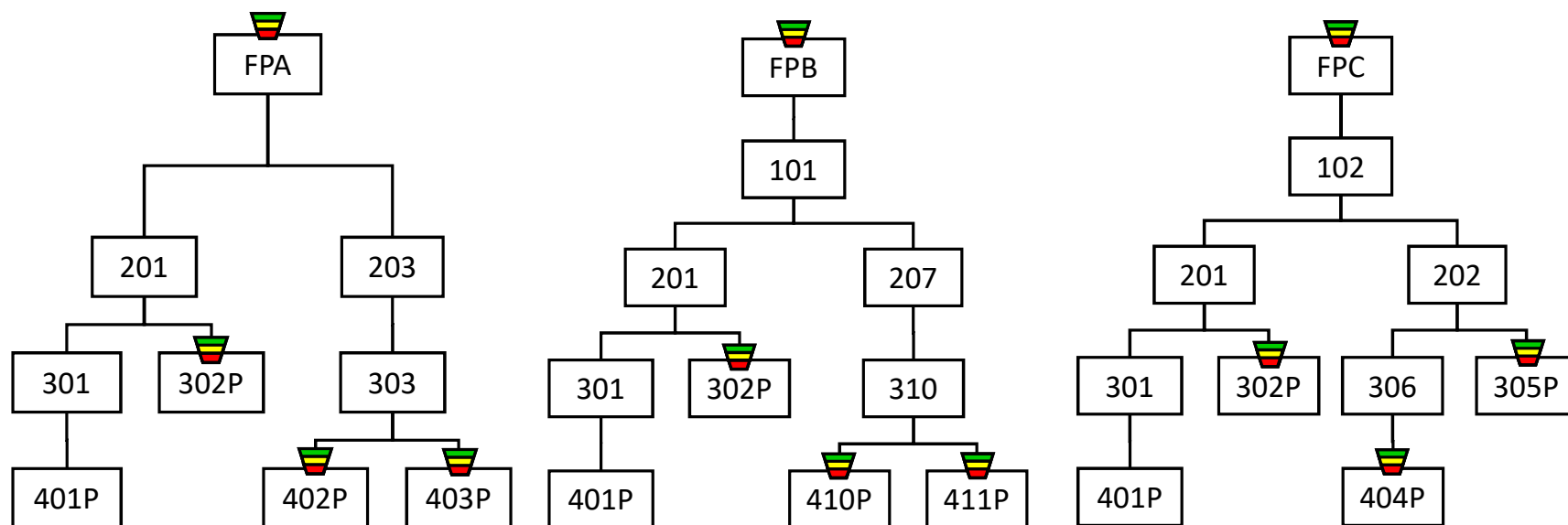


Figure 6-15

Initial Matrix BOM

		Parent items												
		FPA	FPB	FPC	101	102	201	203	207	202	301	303	310	306
Component items	101		1											
	102			1										
	201	1			1	1								
	203	1												
	207				1									
	202					1								
	301						3							
	302P						3							
	303							1						
	310								1					
	306									1				
	305P									1				
	401P										3			
	402P											1		
	403P											1		
	410P												1	
411P												1		
404P													1	

Figure 6-16

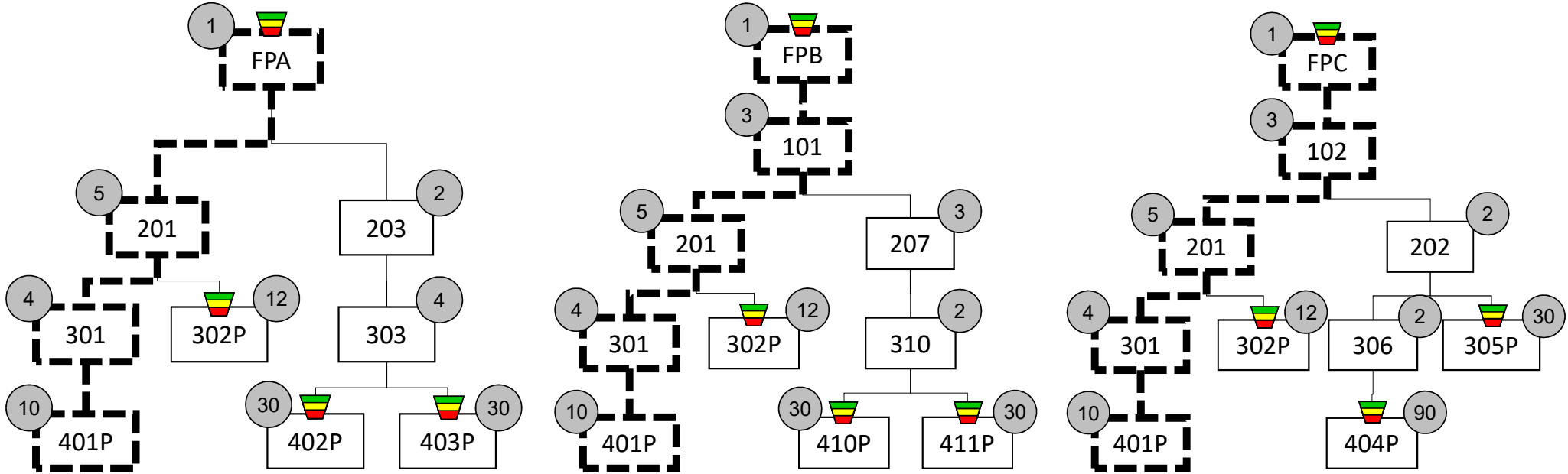


Figure 6-17

Initial Matrix BOM With DLT Chains Highlighted

		Parent items												
		FPA	FPB	FPC	101	102	201	203	207	202	301	303	310	306
Component items	101		1											
	102			1										
	201	1			1	1								
	203	1												
	207				1									
	202					1								
	301						3							
	302P						3							
	303							1						
	310								1					
	306									1				
	305P									1				
	401P										3			
	402P												1	
	403P												1	
	410P													1
	411P													1
	404P													

Note: three places to attack. 201, 301 or 401P

Figure 6-18

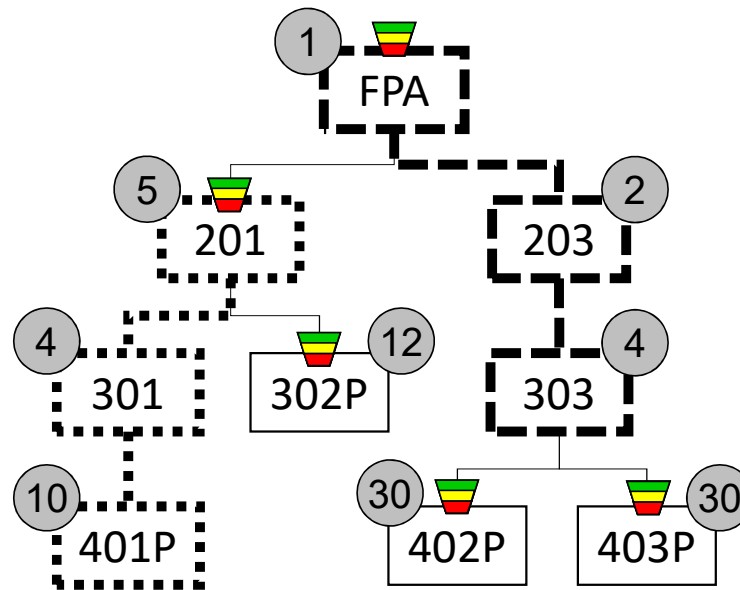


Figure 6-19

Matrix BOM with DLT and 201 Buffered (showing all parts on all DLT chains)

		Parent items												
		FPA	FPB	FPC	101	102	201	203	207	202	301	303	310	306
Component items	101		1											
	102			1										
	201	1			1	1								
	203	1												
	207				1									
	202					1								
	301						3							
	302P						3							
	303							1						
	310								1					
	306									1				
	305P									1				
	401P										3			
	402P												1	
	403P												1	
	410P													1
411P													1	
404P														1

Figure 6-20

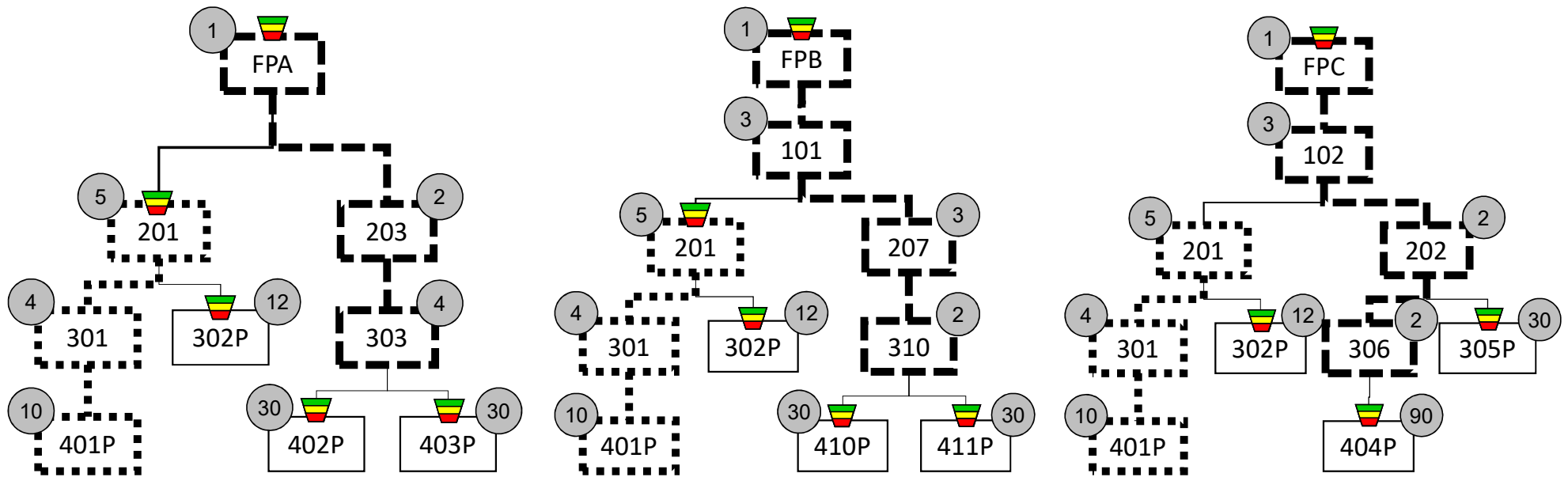


Figure 6-21

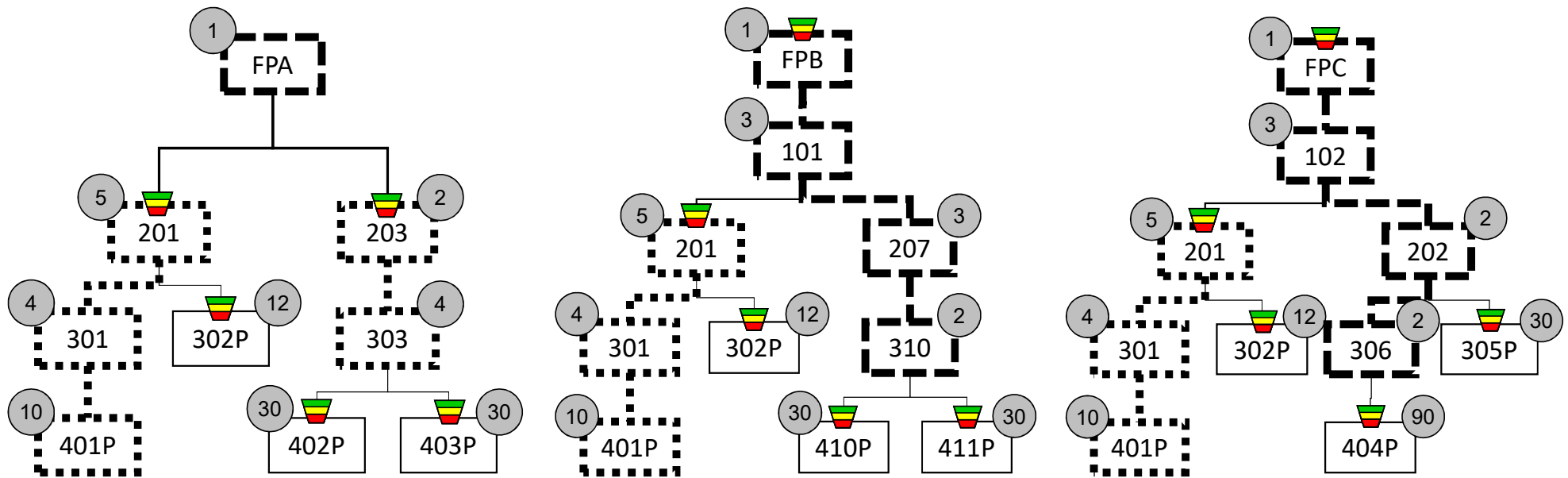


Figure 6-22

Matrix BOM with DLT and 201 and 203 Buffered (showing all parts on all DLT chains)

		Parent items												
		FPA	FPB	FPC	101	102	201	203	207	202	301	303	310	306
Component items	101		1											
	102			1										
	201	1			1	1								
	203	1												
	207				1									
	202					1								
	301						3							
	302P						3							
	303							1						
	310								1					
	306									1				
	305P									1				
	401P										3			
	402P												1	
	403P												1	
	410P													1
	411P													1
	404P													

Figure 6-23

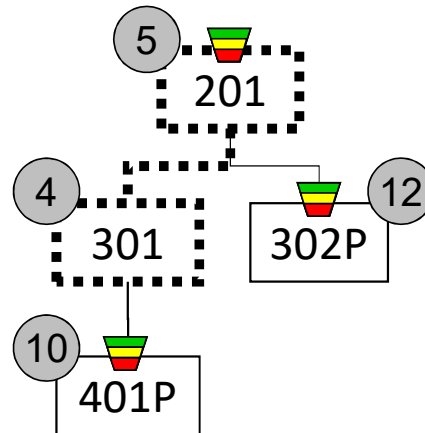


Figure 6-24

Matrix BOM with DLT and 201 and 203 and 401P Buffered (showing all parts on DLT chain)

		Parent items												
		FPA	FPB	FPC	101	102	201	203	207	202	301	303	310	306
Component items	101		1											
	102			1										
	201	1			1	1								
	203	1												
	207				1									
	202					1								
	301						3							
	302P						3							
	303							1						
	310								1					
	306									1				
	305P									1				
	401P										3			
	402P											1		
	403P											1		
	410P												1	
411P												1		
404P														

Figure 6-25

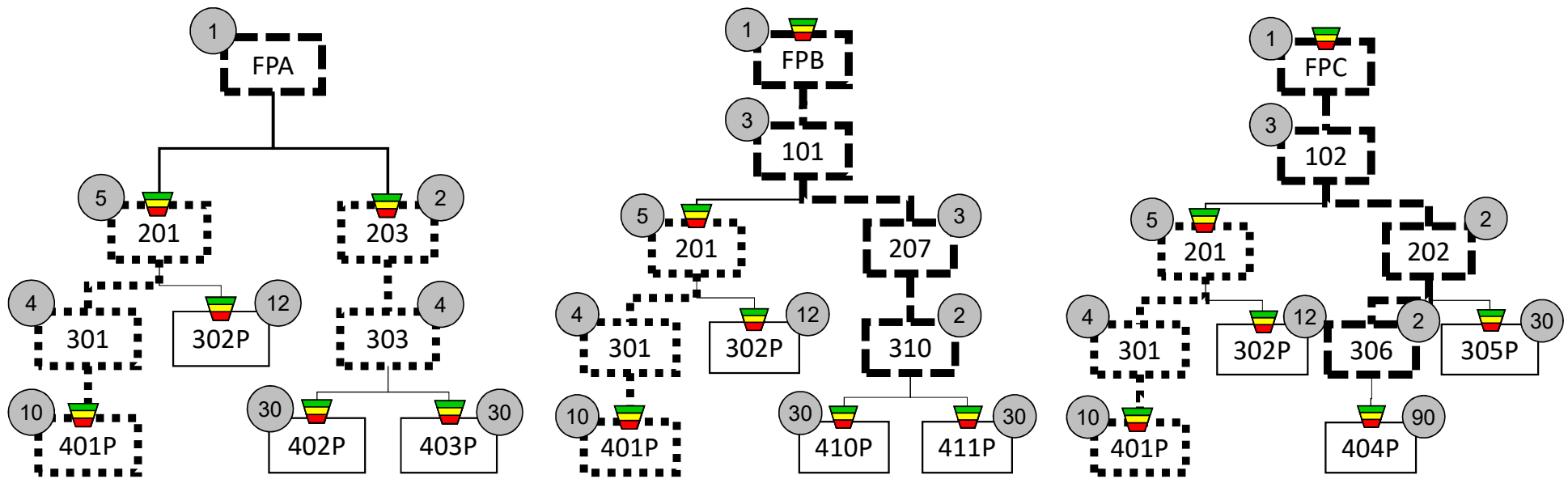


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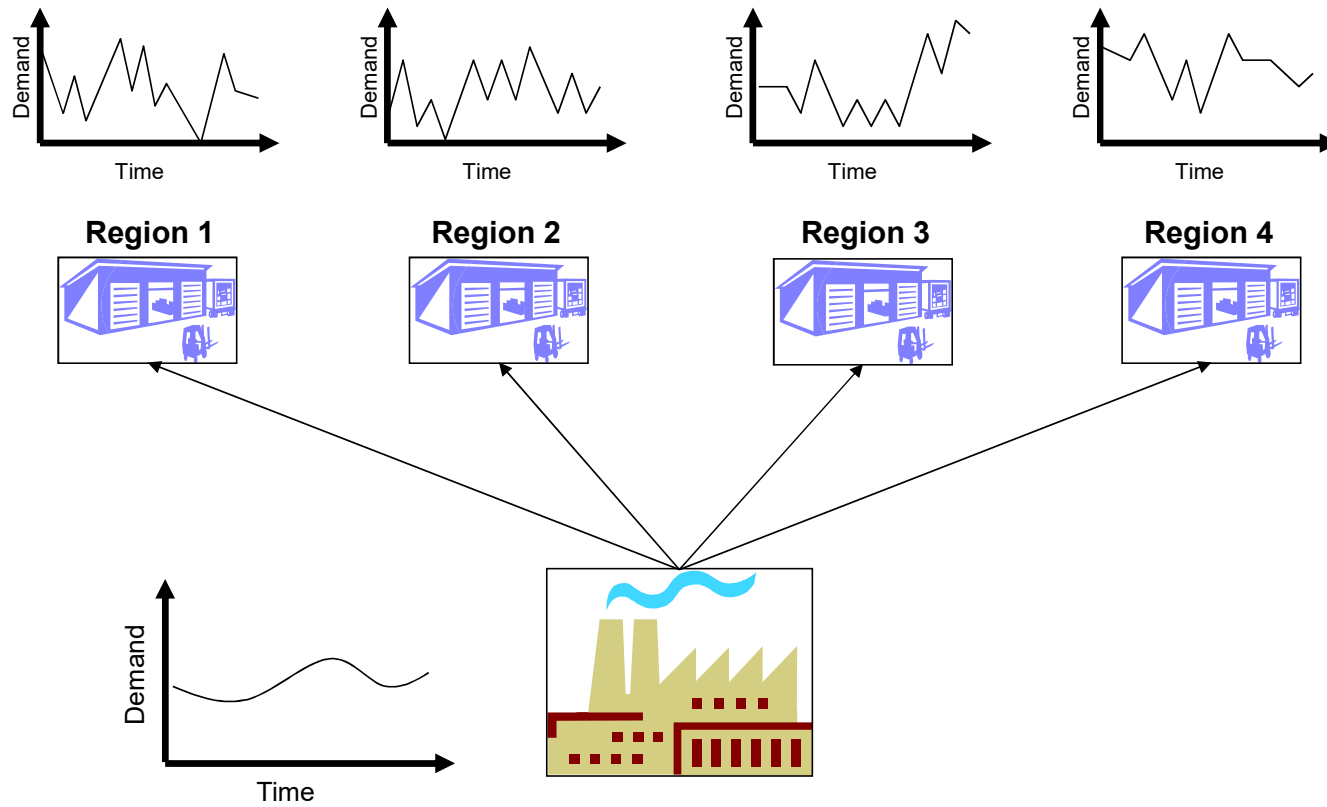
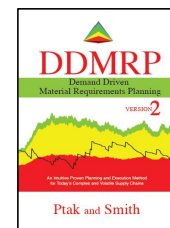




Figure 6-27



	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10	Day 11	Day 12	Day 13	Day 14	ADU
Warehouse 1	12	8	10	8	9	8	9	7	7	5	3	10	5	2	7.4
Warehouse 2	3	6	2	1	2	1	2	3	4	3	6	5	1	1	2.9
Warehouse 3	4	7	5	5	7	10	8	8	5	4	3	9	7	8	6.4
Warehouse 4	4	3	2	1	3	2	1	5	3	4	5	5	2	3	3.1
Sourcing Unit	23	24	19	15	21	21	20	23	19	16	17	29	15	14	19.7

Figure 6-28

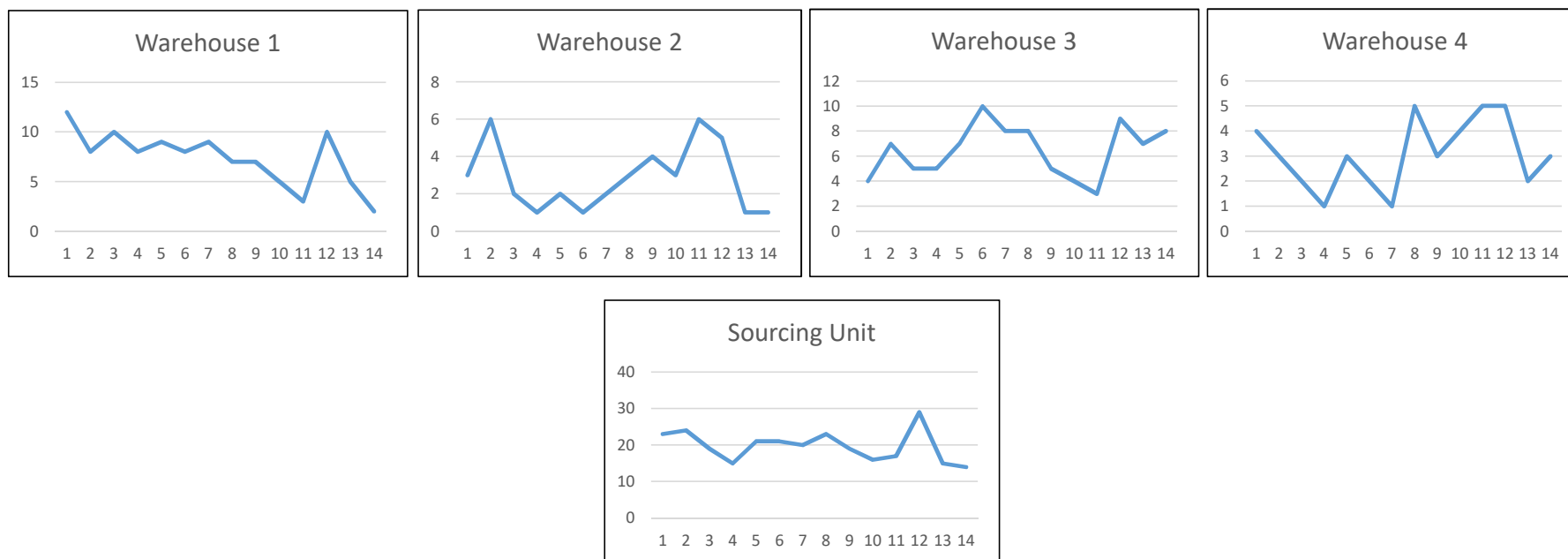


Figure 6-29

	ADU	SD	CV
Warehouse 1	7.357	2.68879	0.365467
Warehouse 2	2.857	1.726149	0.604152
Warehouse 3	6.429	2.02535	0.315054
Warehouse 4	3.071	1.334396	0.434454
Sourcing Unit	19.714	4.043135	0.205087

Figure 6-30

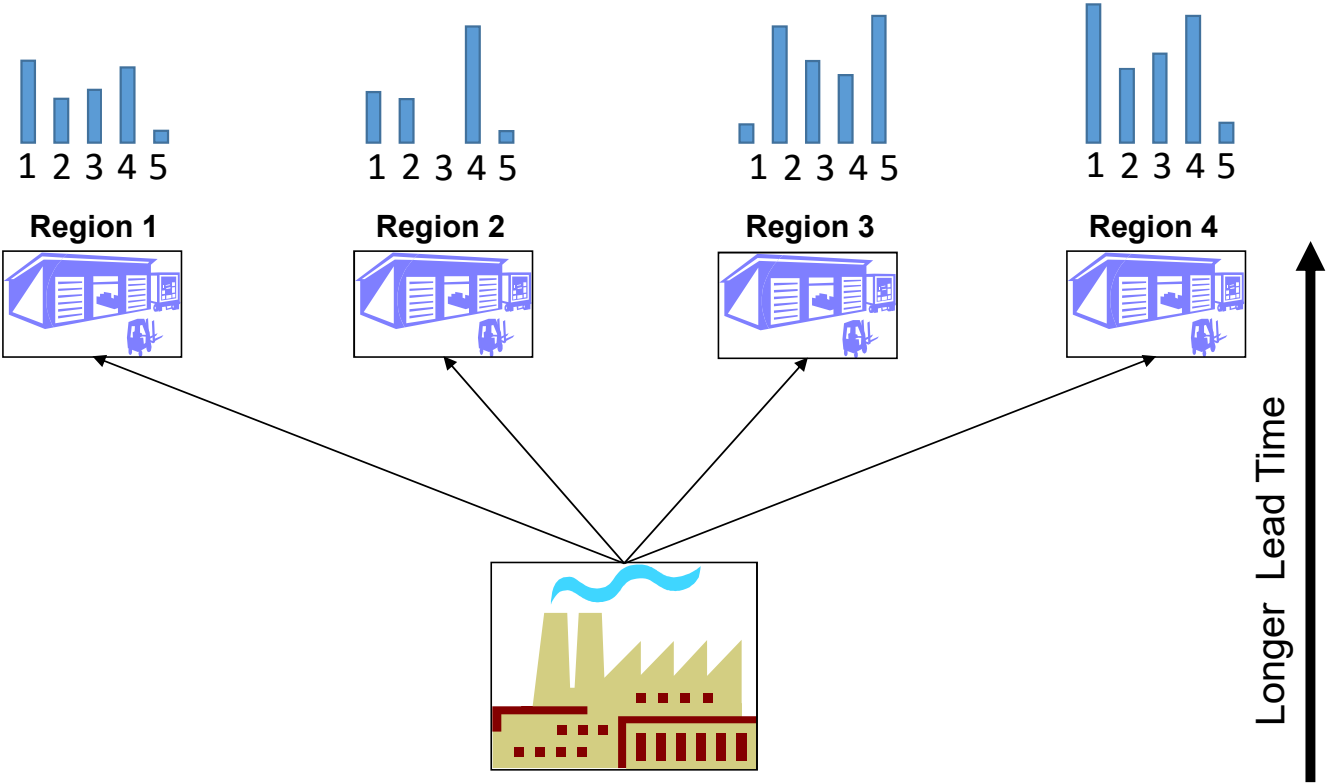


Figure 6-31

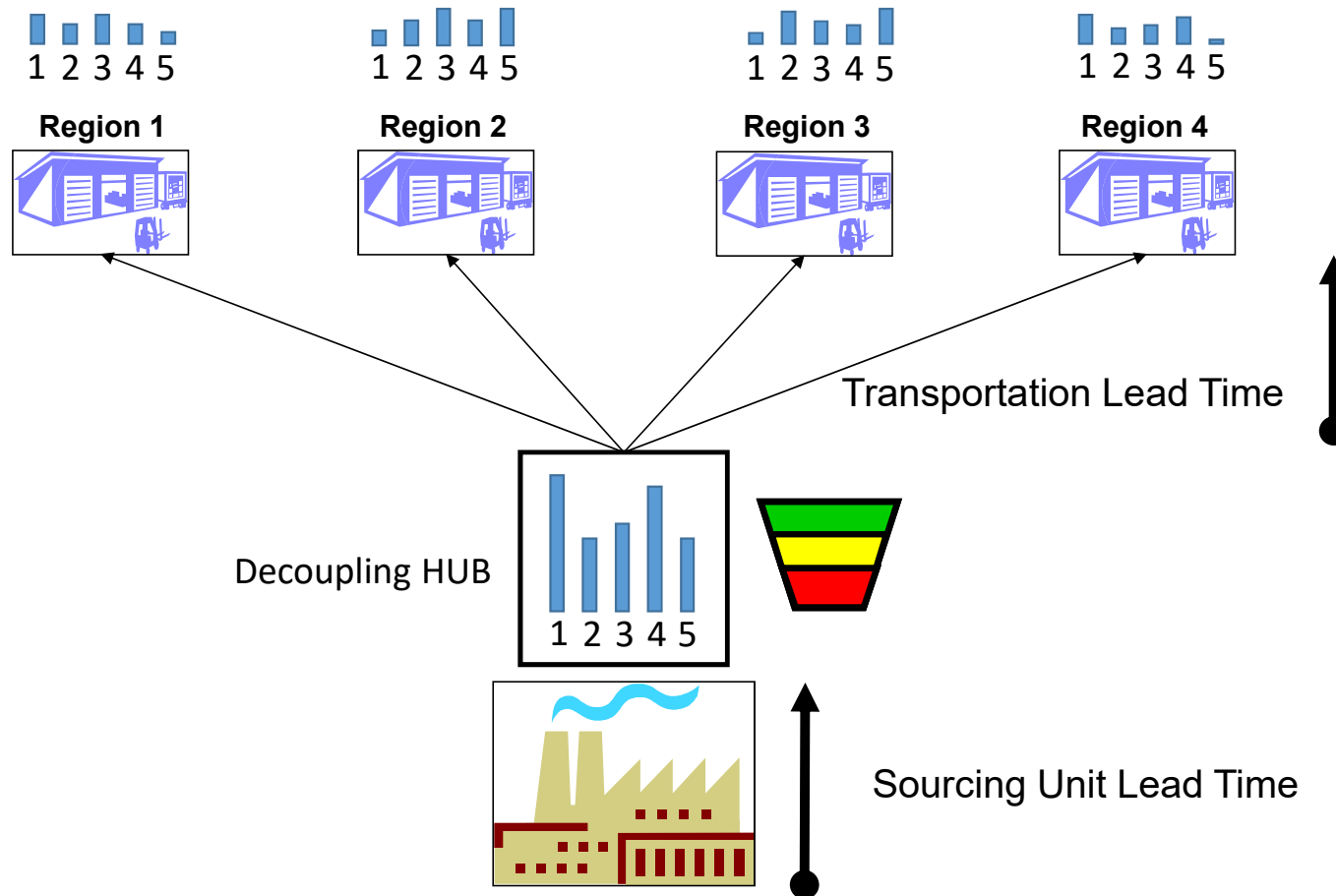


Figure 6-32

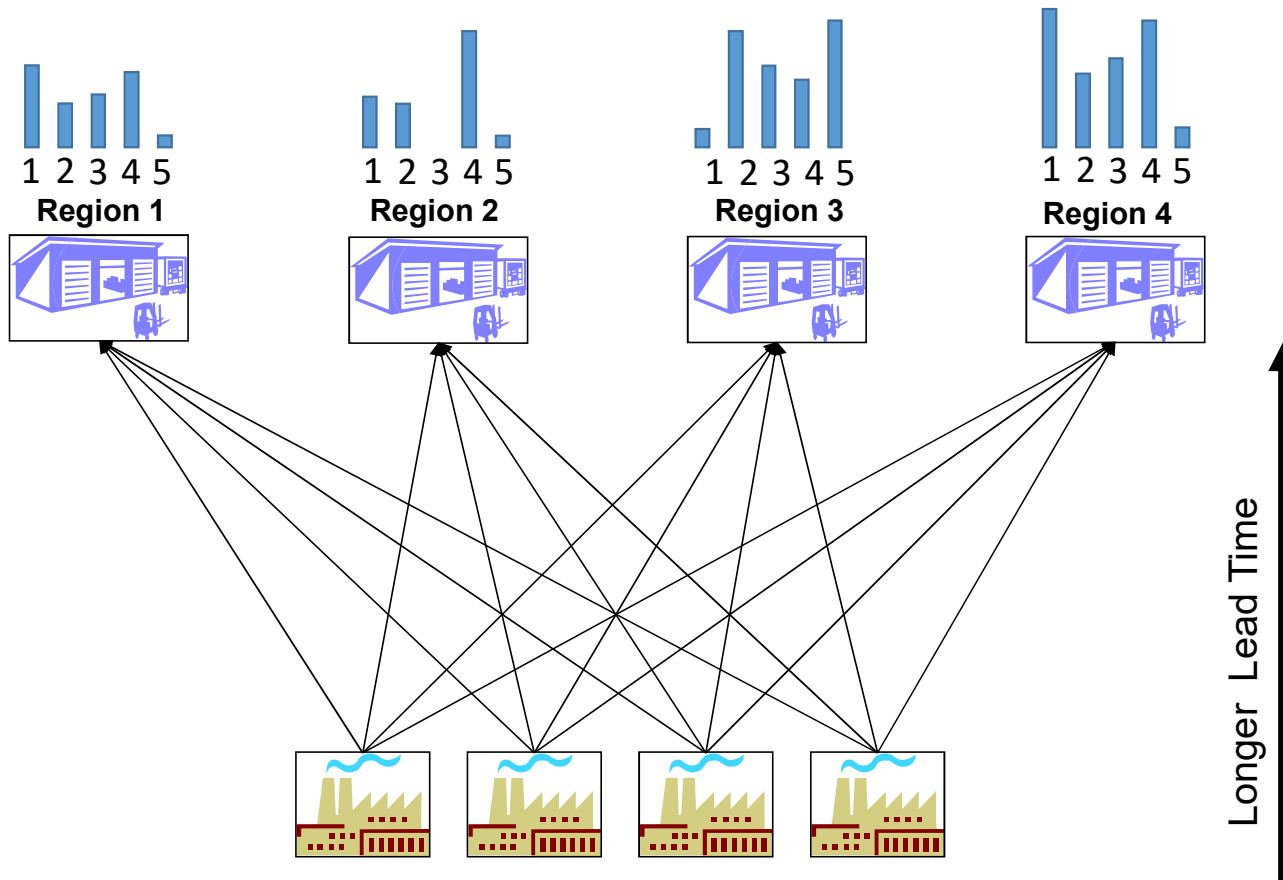


Figure 6-33

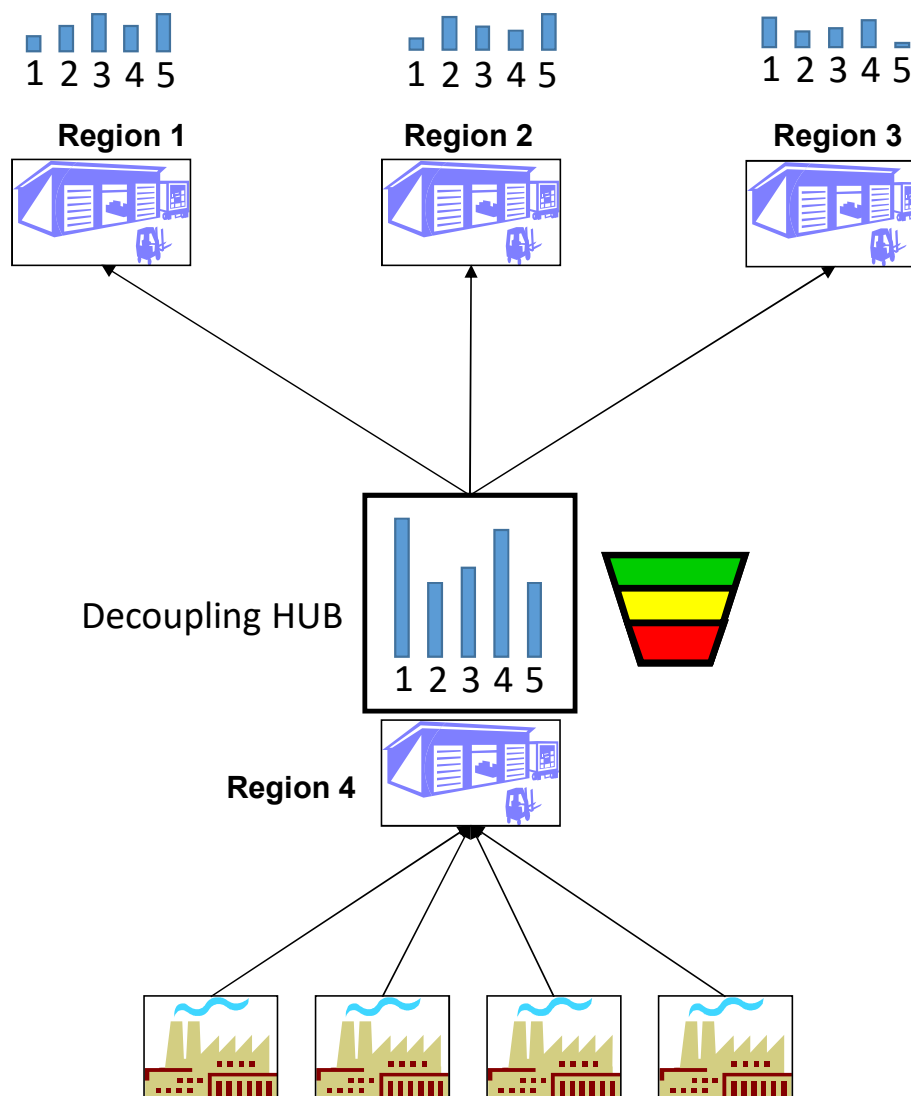


Figure 6-34

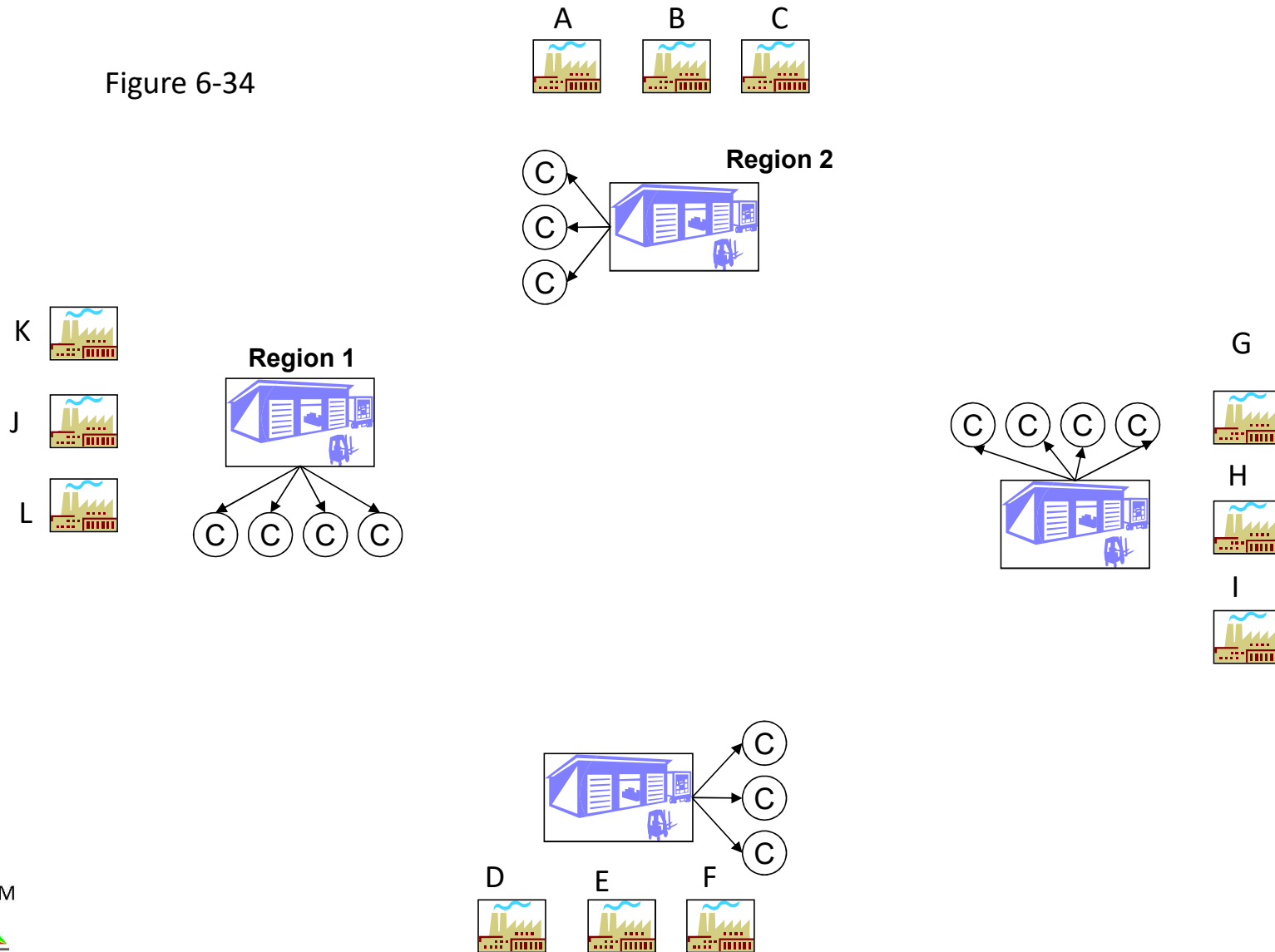


Figure 6-35

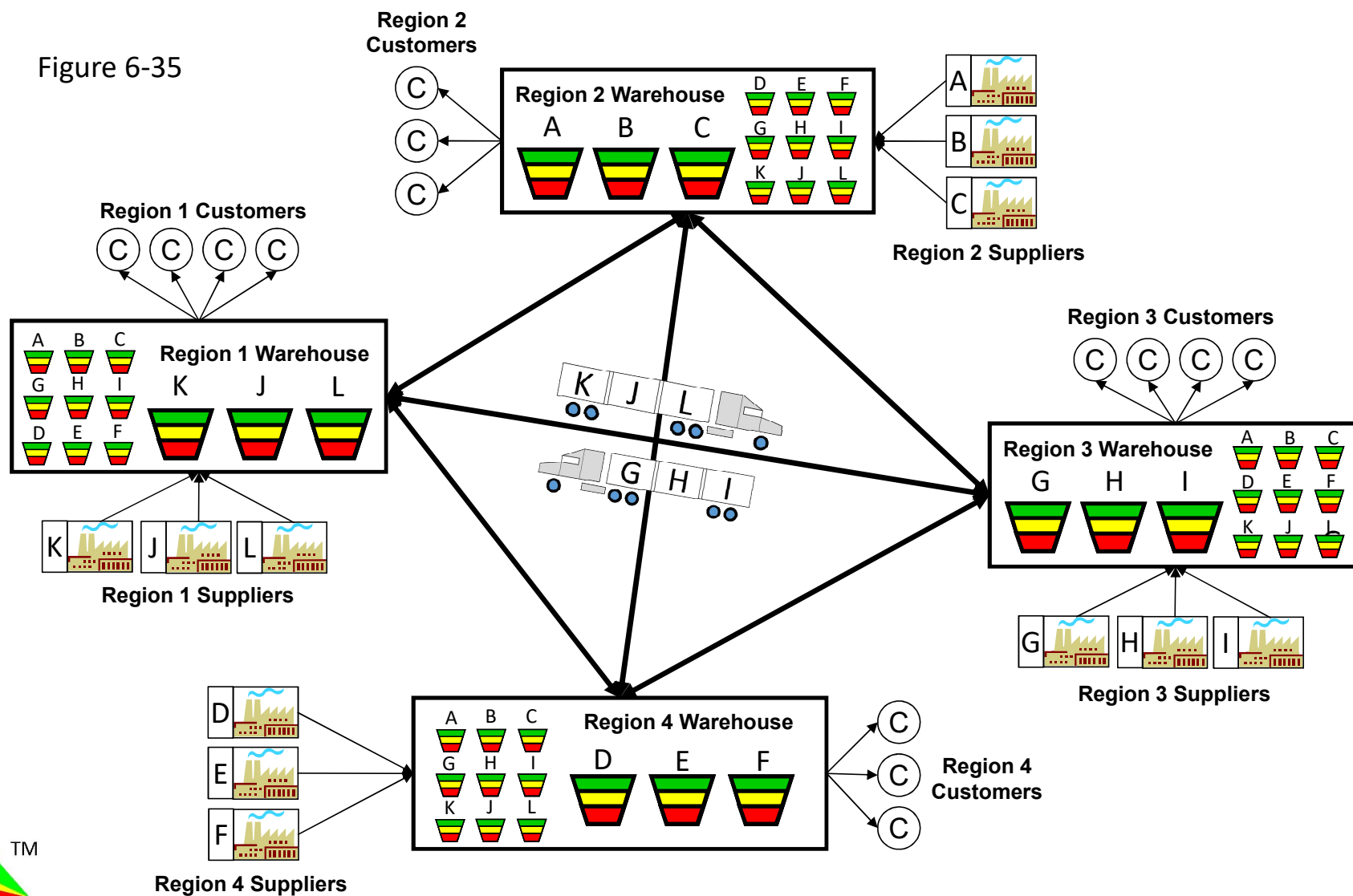
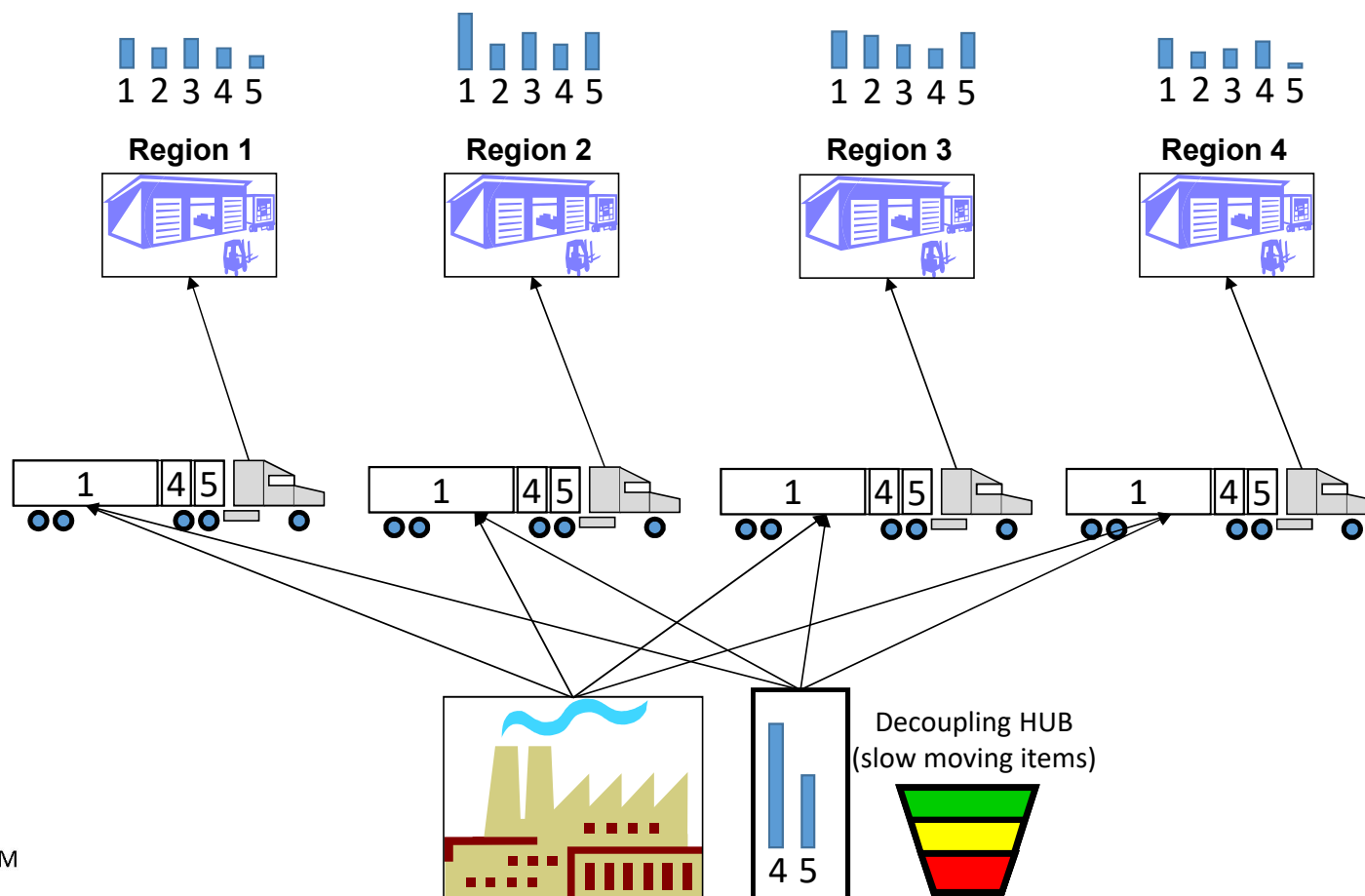
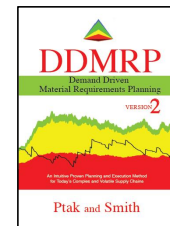


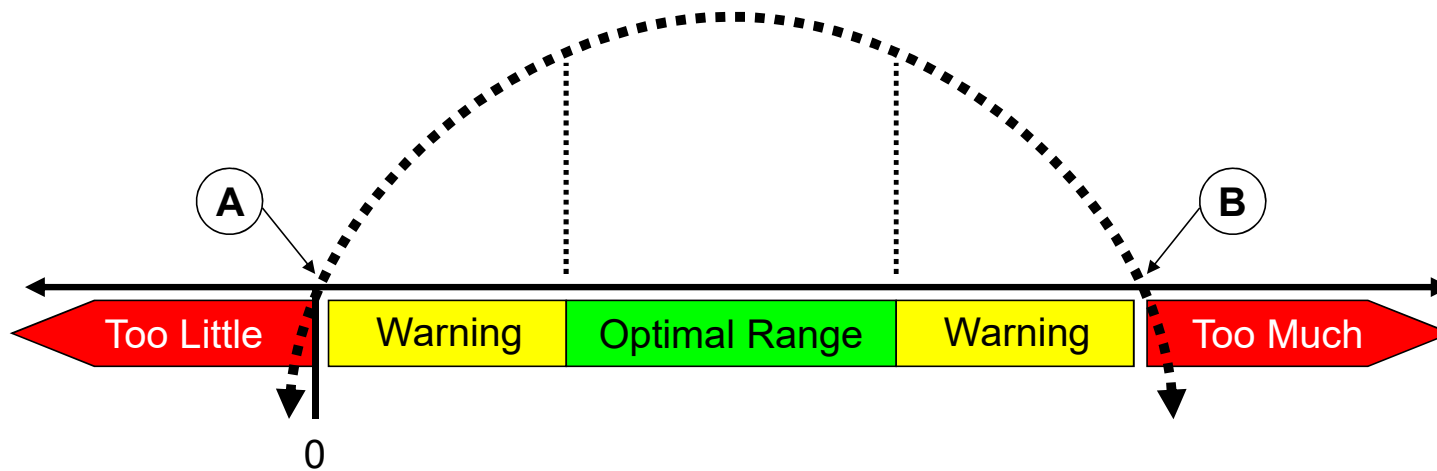
Figure 6-36

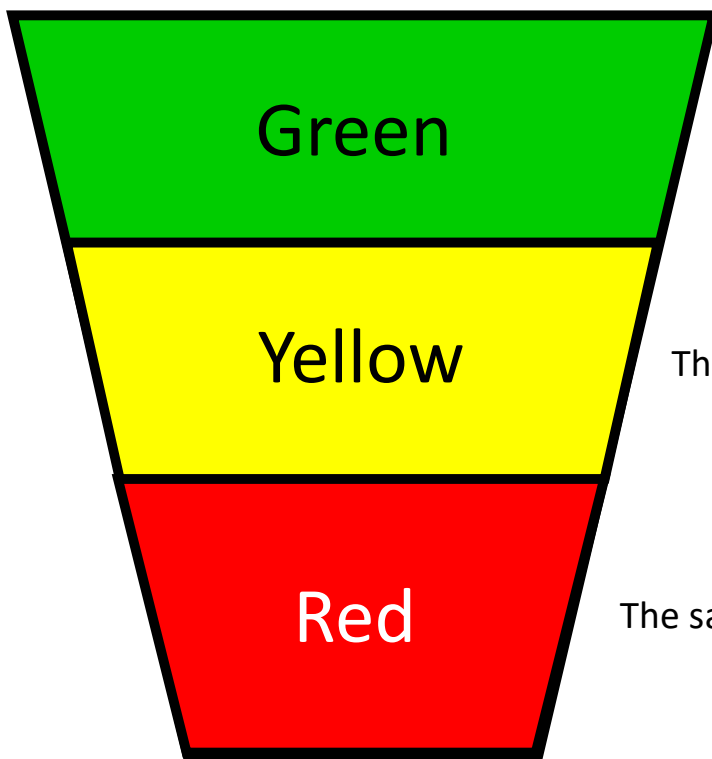




Chapter 7

Strategic Buffers

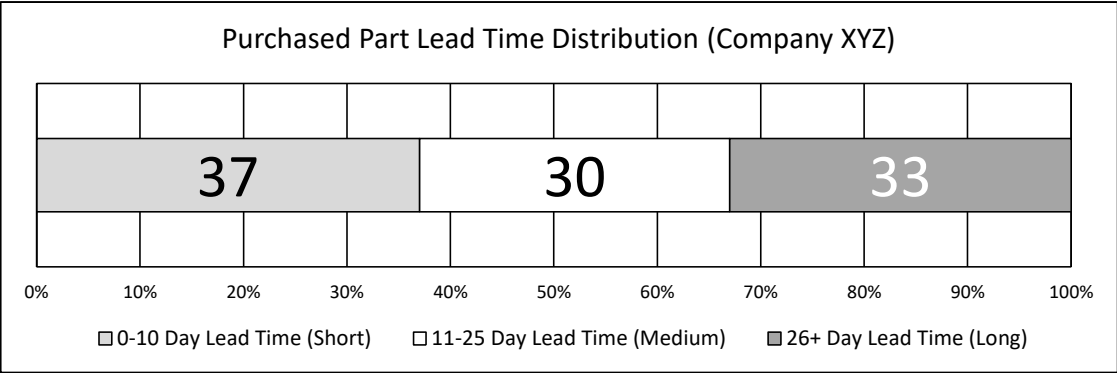


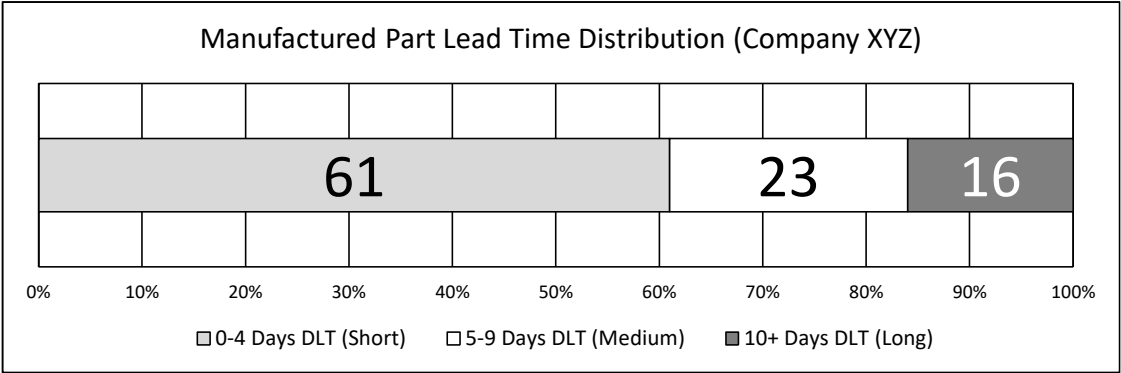


The heart of the order generation aspect of the buffer determining the frequency of order generation and the minimum size of each order.

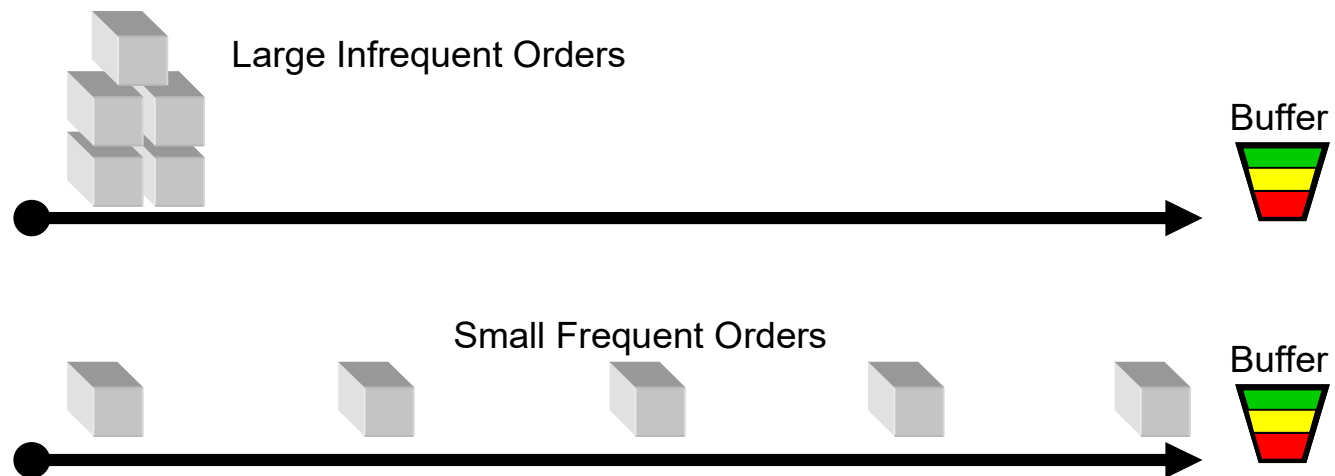
The heart of the demand coverage in the buffer

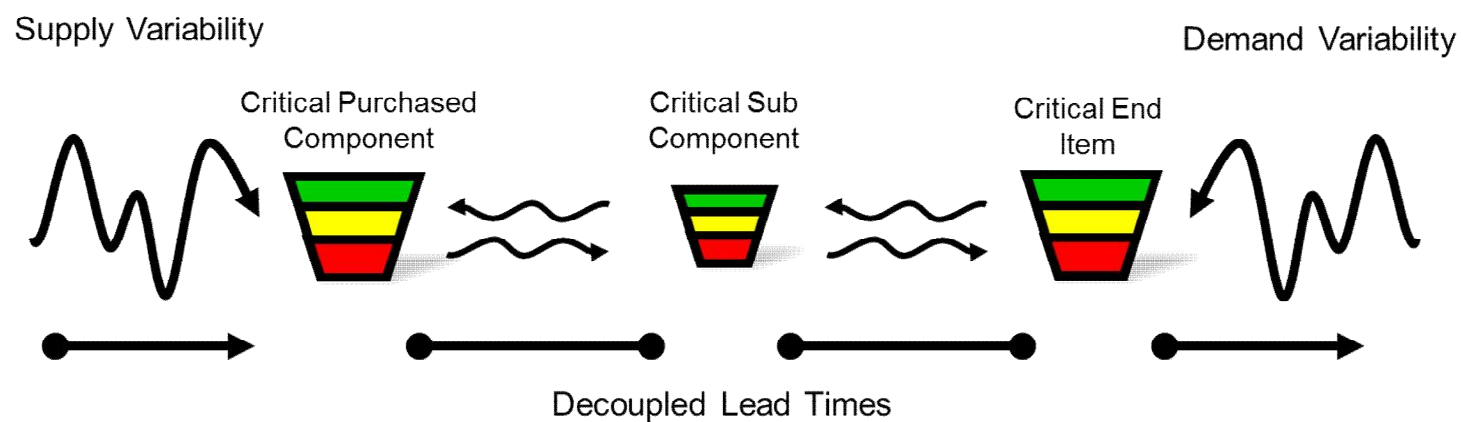
The safety embedded in the buffer position





Lead Time Factor Range	
Long Lead Time	20-40% Average Daily Usage (ADU) x Decoupled Lead Time (DLT)
Medium Lead Time	41-60% ADU x DLT
Short Lead Time	61-100% ADU x DLT





Purchased Parts (Company XYZ)

	Low	Medium	High	Total
Short	12	15	10	37
Medium	6	16	8	30
Long	11	14	8	33
Total	29	45	26	100

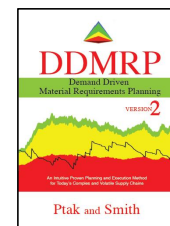
Manufactured Parts (Company XYZ)

	Low	Medium	High	Total
Short	51	21	5	77
Medium		6	1	7
Long		10	6	16
Total	51	37	12	100

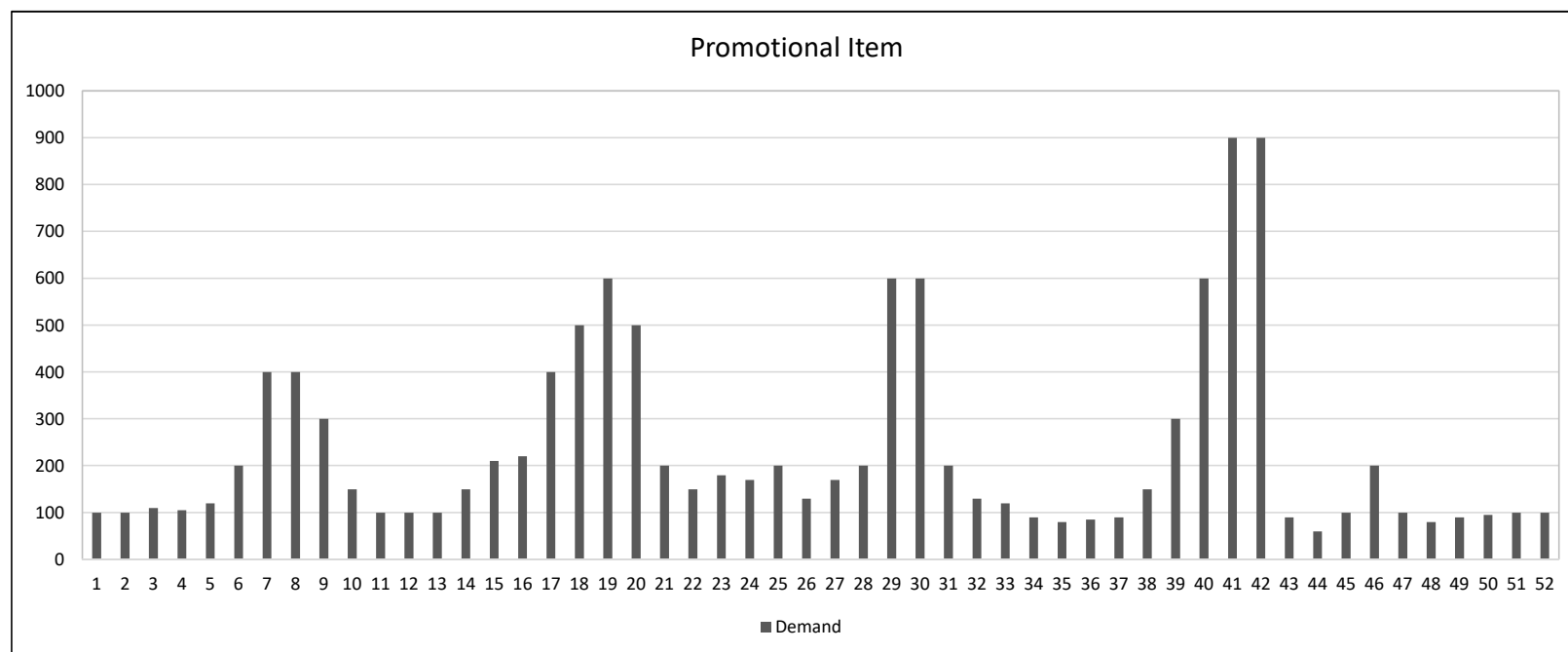


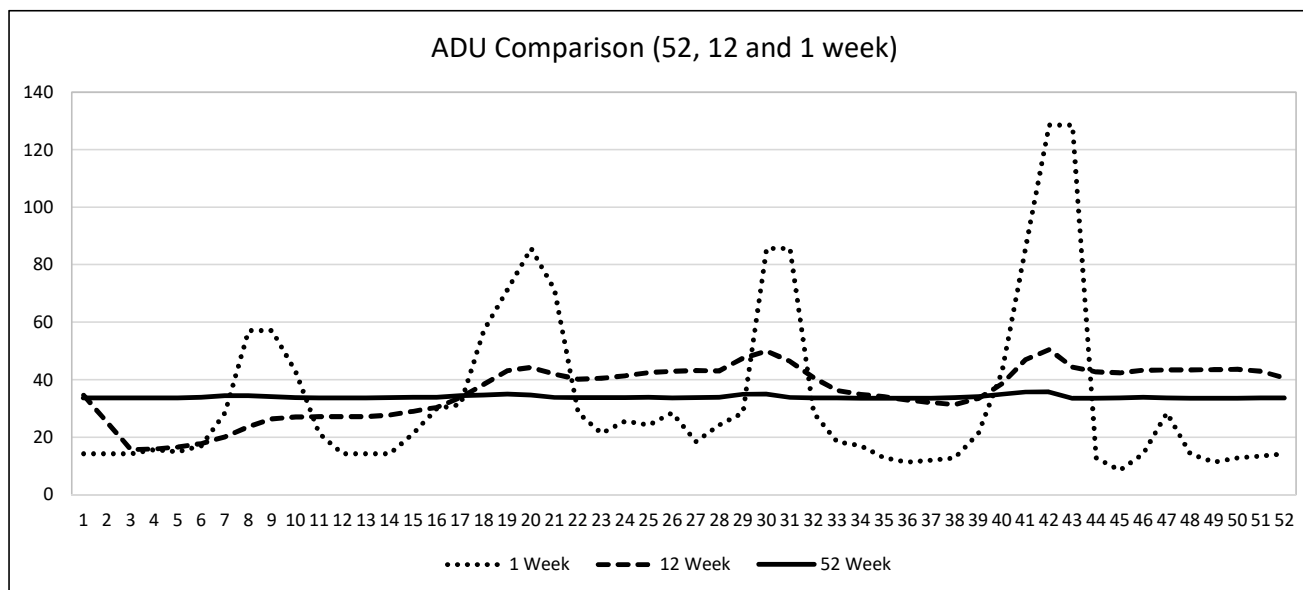
Figure 10

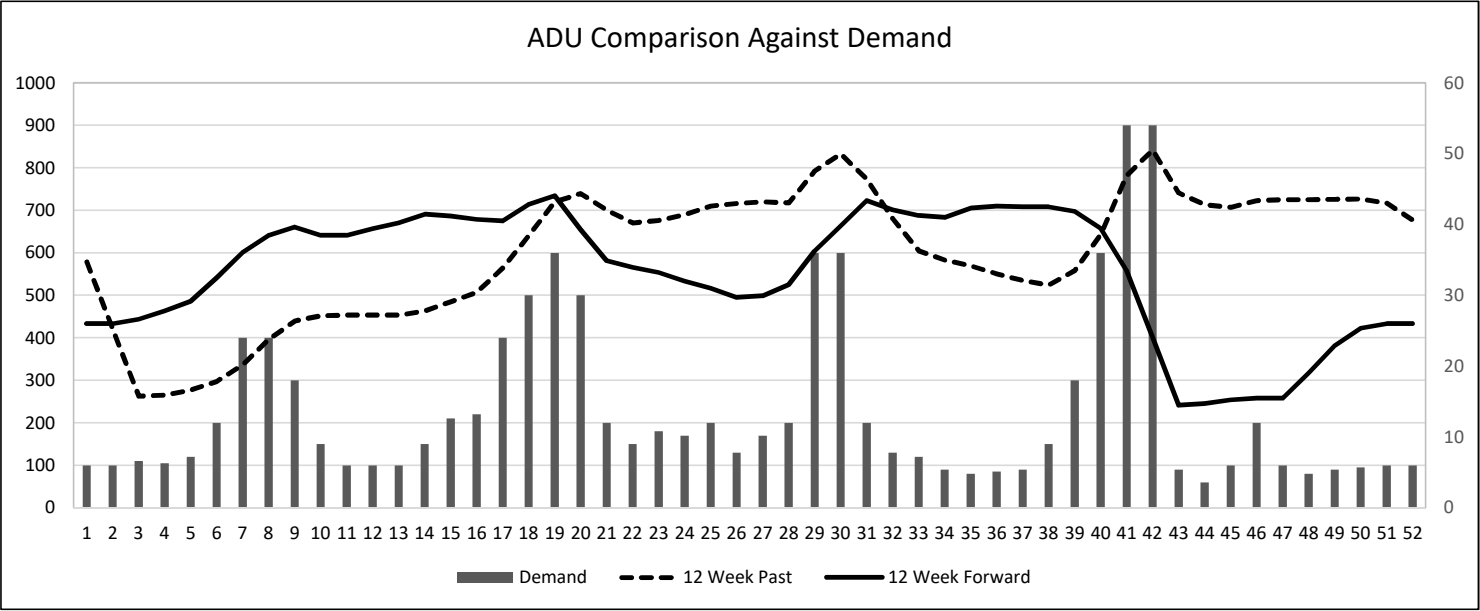
Variability Factor Range	
High Variability	61-100%+ of Safety Base
Medium Variability	41-60% of Safety Base
Low Variability	0-40% of Safety Base

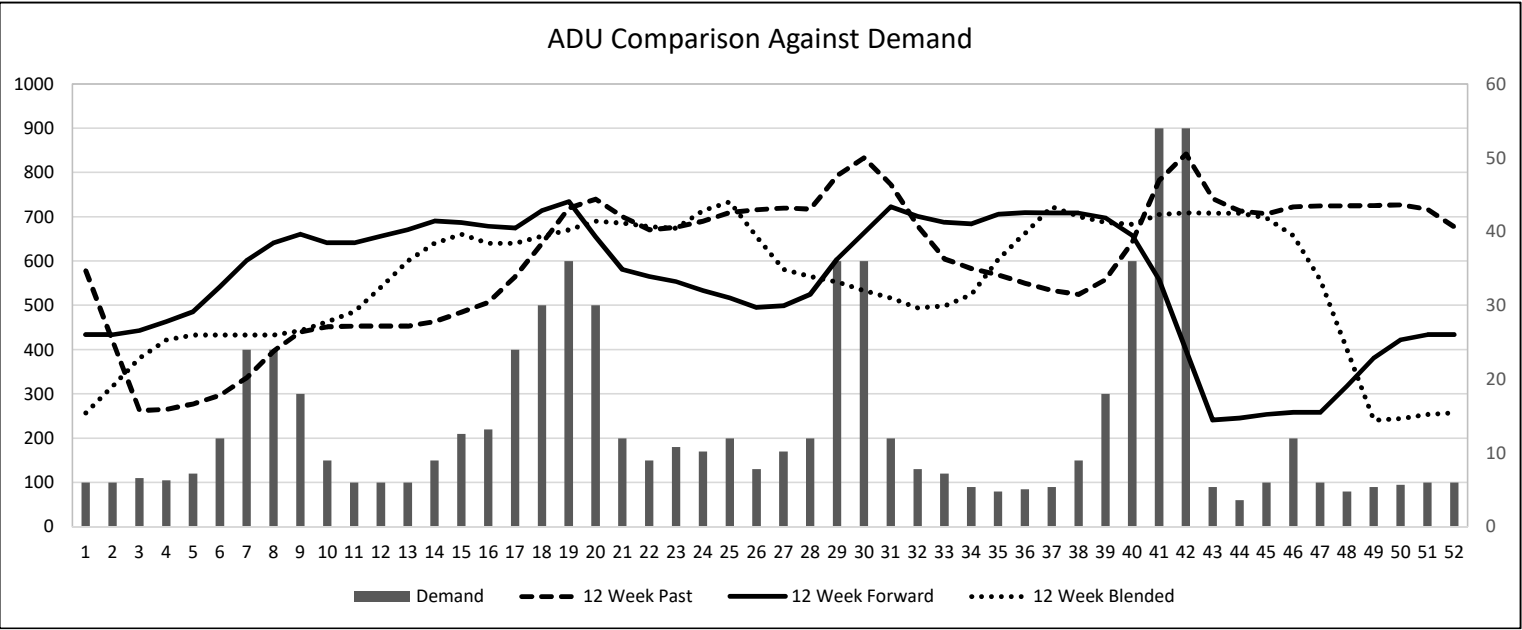


		Part Type					Variability Category
		Purchased	Manufactured	Distributed	Intermediate		
Lead Time Category	Short	PSL	MSL	DSL	ISL	Low	
		PSM	MSM	DSM	ISM	Medium	
		PSH	MSH	DSH	ISH	High	
	Medium	PML	MML	DML	IML	Low	
		PMM	MMM	DMM	IMM	Medium	
		PMH	MMH	DMH	IMH	High	
	Long	PLL	MLL	DLL	ILL	Low	
		PLM	MLM	DLM	ILM	Medium	
		PLH	MLH	DLH	ILH	High	









Week	Estimated ADU	Included Estimate	Actual ADU	Included Actual	Sum (Estimate and Actual)	Actualized ADU
1	3000.0	36000.0	2678	2678	35678.0	2973.2
2	3000.0	33000.0	3174	5852.0	35852.0	2987.7
3	3000.0	30000.0	2987	8839.0	35839.0	2986.6
4	3000.0	27000.0	3412	12251.0	36251.0	3020.9
5	3000.0	24000.0	3541	15792.0	36792.0	3066.0
6	3000.0	21000.0	3210	19002.0	37002.0	3083.5
7	3000.0	18000.0	3810	22812.0	37812.0	3151.0
8	3000.0	15000.0	2978	25790.0	37790.0	3149.2
9	3000.0	12000.0	3214	29004.0	38004.0	3167.0
10	3000.0	9000.0	3611	32615.0	38615.0	3217.9
11	3000.0	6000.0	2874	35489.0	38489.0	3207.4
12	3000.0	3000.0	3210	38699.0	38699.0	3224.9

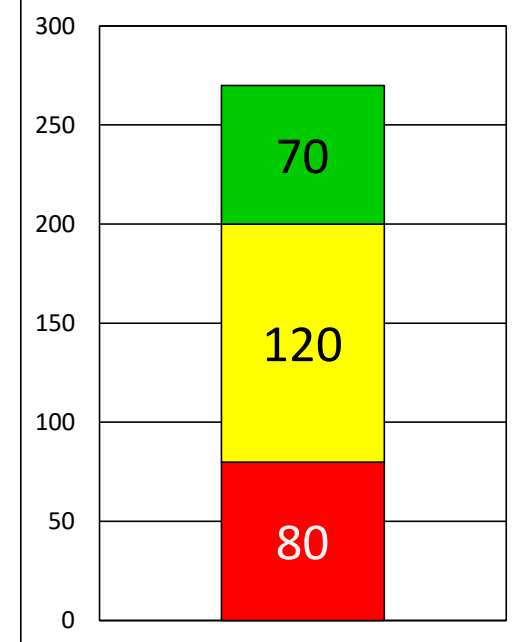
Part #123		
Location	ADU	Lead Time
Warehouse 1	7.4	2 days
Warehouse 2	2.9	2 days
Warehouse 3	6.4	3 days
Warehouse 4	3.1	4 days
Hub	19.7	1 day

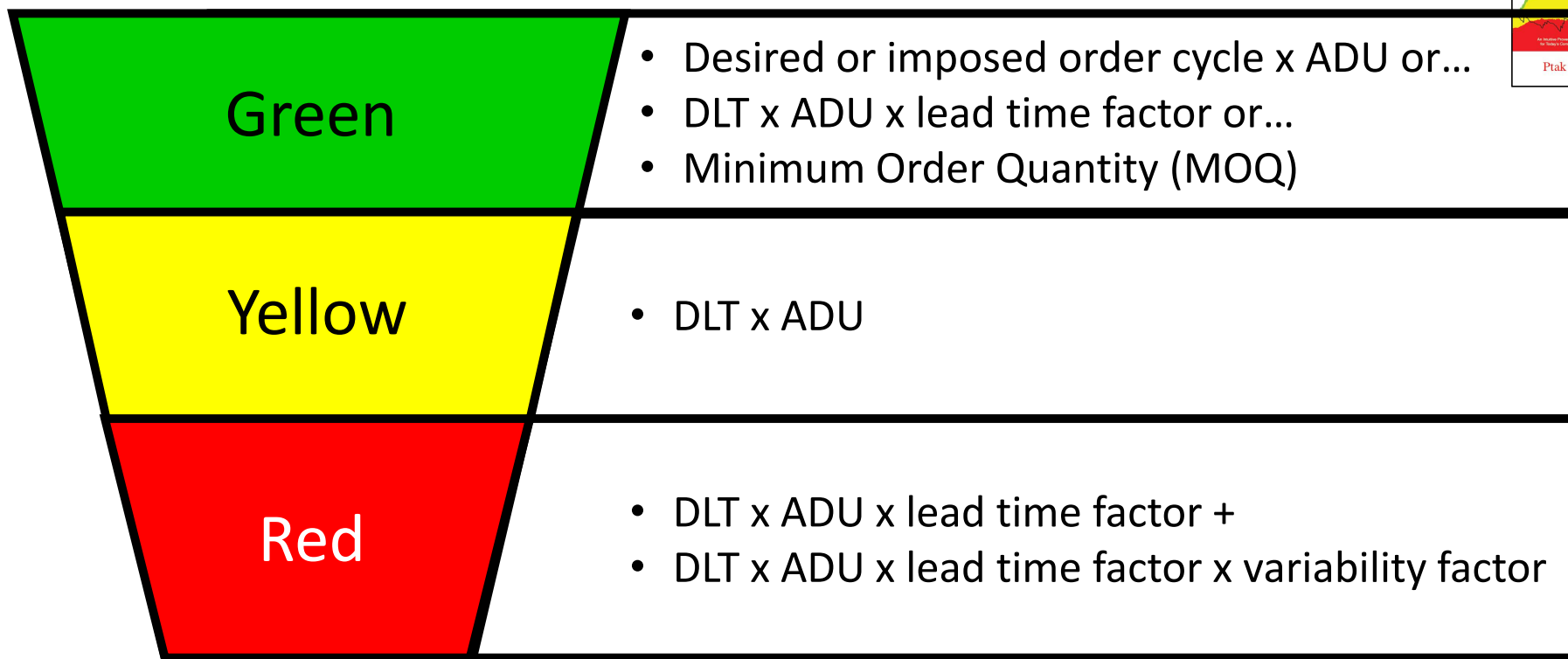
Part Trait	Buffer Profile Assignment			
Average Daily Usage (ADU)	X	Lead Time Factor	=	Buffer & Zone Levels
Lead Time				
Minimum Order Quantity (MOQ)				
Location (Distributed parts only)				

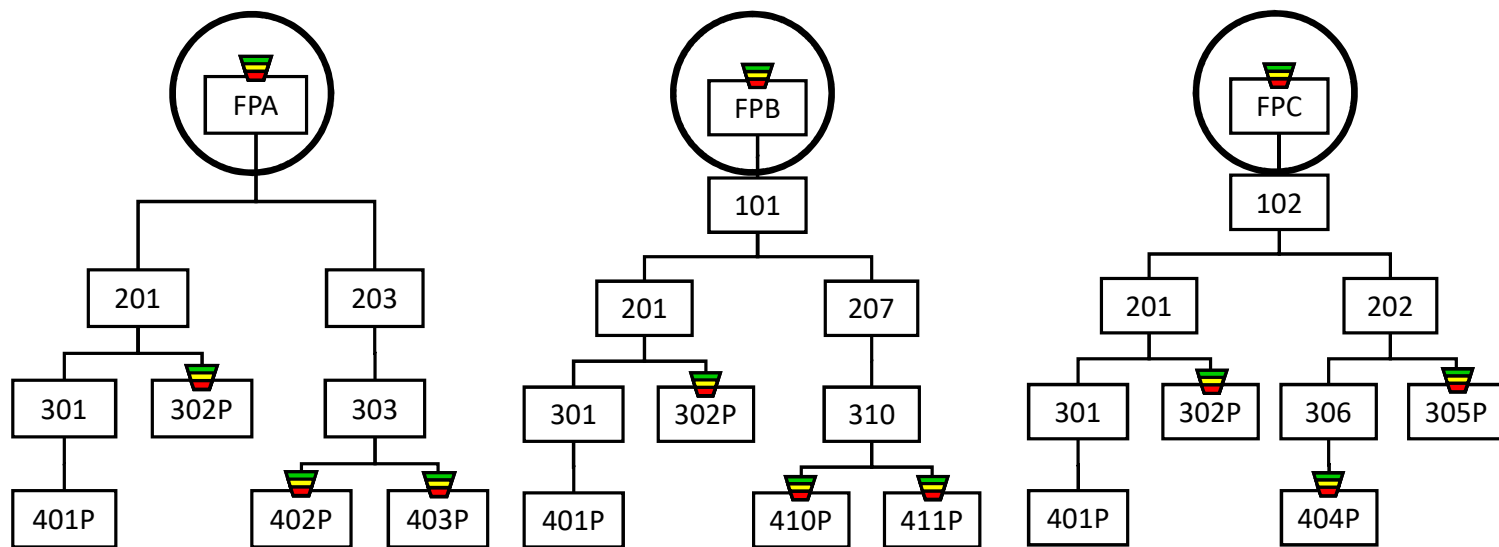
EXAMPLE	
Average Daily Usage	10
Buffer Profile	M, M (.5), L (.33)
MOQ	50
Imposed or Desired Order Cycle (DOC)	7 days
Decoupled Lead Time (DLT)	12 days

Example Part Buffer Calculation

Average Daily Usage	10	Green Zone	70
Buffer Profile	M, M (.5), L (.33)		LT Factor: 60 (DLT (12)x ADU (10) x Lead Time Factor (.5))
MOQ	50		Minimum Order Quantity: 50
Imposed or Desired Order Cycle (DOC)	7 days		Order Cycle: 70 (7(OC) x 10(ADU))
Decoupled Lead Time (DLT)	12 days	Yellow Zone	120 (12(DLT) x 10(ADU))
		Red Zone	80 (Red Base (60) + Red Safety (20))
			Red Base: 60 (DLT (12)x ADU (10) x Lead Time Factor (.5))
			Red Safety: 20 (Red Base (60) x Variability Factor (.33))



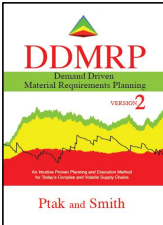




Parent Make Items (M)		Lead Time Factor	Variability Category	Variability Factor
Long Lead Time	8+ days	.25	High	.75
Medium Lead Time	3-8 days	.4	Medium	.5
Short Lead Time	1-2 days	.7	Low	.25
Intermediate Make Items (I)				
Long Lead Time	8+ days	.25	High	.7
Medium Lead Time	3-8 days	.4	Medium	.5
Short Lead Time	1-2 days	.7	Low	.2
Purchased Items (P)				
Long Lead Time	20+ days	.3	High	.75
Medium Lead Time	11-19 days	.5	Medium	.5
Short Lead Time	1-10 days	.7	Low	.25



Figure 7-24

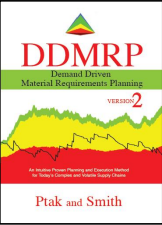


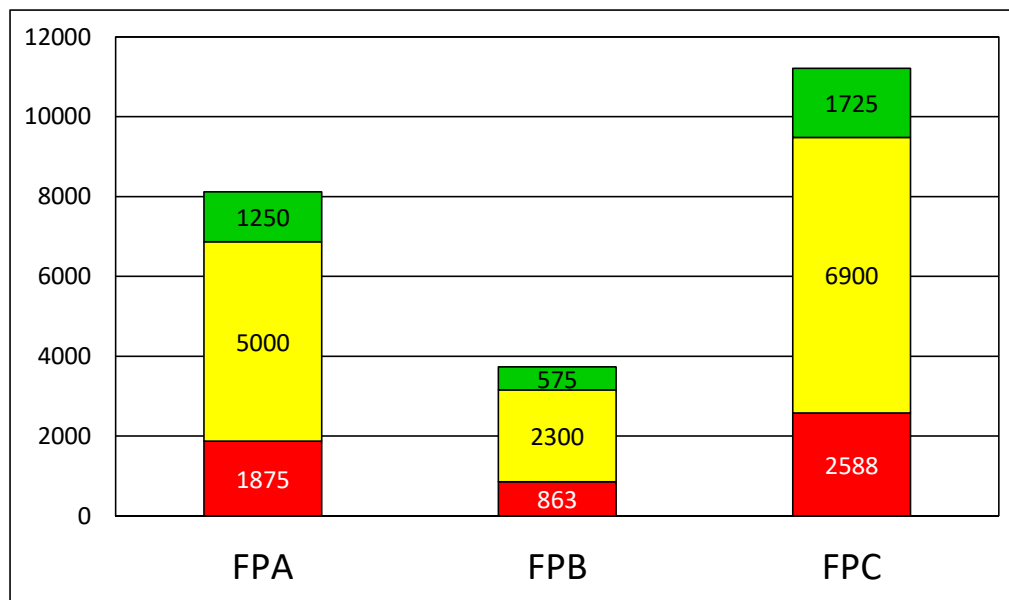
FPA	
Average Daily Usage	250
Buffer Profile	M, L (.25), M (.5)
MOQ	250
Desired Order Cycle (DOC)	3 days
Decoupled Lead Time (DLT)	20 days
FPB	
Average Daily Usage	100
Buffer Profile	M, L (.25), M (.5)
MOQ	250
Desired Order Cycle	3 days
Decoupled Lead Time (DLT)	23 days
FPC	
Average Daily Usage	300
Buffer Profile	M, L (.25), M (.5)
MOQ	250
Desired Order Cycle	3 days
Decoupled Lead Time (DLT)	23 days



Figure 7-25

FPA		FPC	
Green Zone	1250	Green Zone	1725
	LT Factor: 1250 (5000 x .25)		LT Factor: 1725 (6900 x .25)
	Minimum Order Quantity: 250		Minimum Order Quantity: 250
	Order Cycle: 750 (3(DOC) x 250(ADU))		Order Cycle: 900 (3(DOC) x 300(ADU))
Yellow Zone	5000 (20(DLT) x 250(ADU))	Yellow Zone	6900 (23(DLT) x 300(ADU))
Red Zone	1875 (1250 + 625)	Red Zone	2588 (1725 + 863)
	Base: 1250 (5000 x .25)		Base: 1725 (6900 x .25)
	Safety: 625 (1250 x .5)		Safety: 863 (1725 x .5)
FPB			
Green Zone	575		
	LT Factor: 575 (2300 x .25)		
	Minimum Order Quantity: 250		
	Order Cycle: 300 (3(DOC) x 100(ADU))		
Yellow Zone	2300 (23(DLT) x 100(ADU))		
Red Zone	863 (575 + 287.5)		
	Base: 575 (2300 x .25)		
	Safety: 287.5 (575 x .5)		



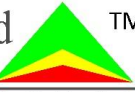


Demand Driven Inventory Planning
Figure 7-27

Driven
Planner™

Buffer Comparison (FPA)			
Before 201 Decoupling			
Average Daily Usage	250	Green Zone	1250
Buffer Profile	M, L (.25), M (.5)		LT Factor: 1250 (5000 x .25)
MOQ	250		Minimum Order Quantity: 250
Desired Order Cycle (DOC)	3 days		Order Cycle: 750 (3(DOC) x 250(ADU))
Decoupled Lead Time (DLT)	20 days	Yellow Zone	5000 (20(DLT) x 250(ADU))
		Red Zone	1875 (1250 + 625)
			Base: 1250 (5000 x .25)
			Safety: 625 (1250 x .5)
After 201 Decoupling			
Average Daily Usage	250	Green Zone	750
Buffer Profile	M, M (.4), L (.25)		LT Factor: 700 (1750 x .4)
MOQ	250		Minimum Order Quantity: 250
Desired Order Cycle	3 days		Order Cycle: 750 (3(DOC) x 250(ADU))
DLT After Decoupling	7 days	Yellow Zone	1750 (7(DLT) x 250(ADU))
		Red Zone	875 (700 + 175)
			Base: 700 (1750 x .4)
			Safety: 175 (700 x .25)

Demand
Driven
INSTITUTE

TM

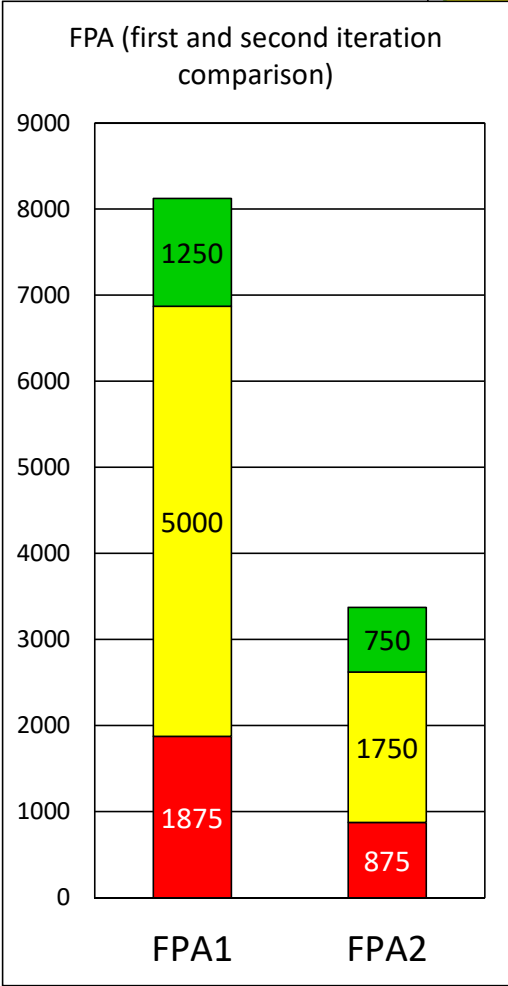


Figure 7-28



Buffer Comparison (FPB)

Before 201 Decoupling			
Average Daily Usage	100	Green Zone	575
Buffer Profile	M, L (.25), M (.5)		LT Factor: 575 (2300 x .25)
MOQ	250		Minimum Order Quantity: 250
Desired Order Cycle	3 days		Order Cycle: 300 (3(DOC) x 100(ADU))
Decoupled Lead Time (DLT)	23 days	Yellow Zone	2300 (23(DLT) x 100(ADU))
		Red Zone	863 (575 + 287.5)
			Base: 575 (2300 x .25)
			Safety: 287.5 (575 x .5)
After 201 Decoupling			
Average Daily Usage	100	Green Zone	360
Buffer Profile	M, M (.4), M (.5)		LT Factor: 360 (900 x .4)
MOQ	250		Minimum Order Quantity: 250
Desired Order Cycle	3 days		Order Cycle: 300 (3(DOC) x 100(ADU))
DLT After Compression	9 days	Yellow Zone	900 (9(DLT) x 100(ADU))
		Red Zone	540 (360 + 180)
			Base: 360 (900 x .4)
			Safety: 180 (360 x .5)

Demand
Driven
INSTITUTE



TM

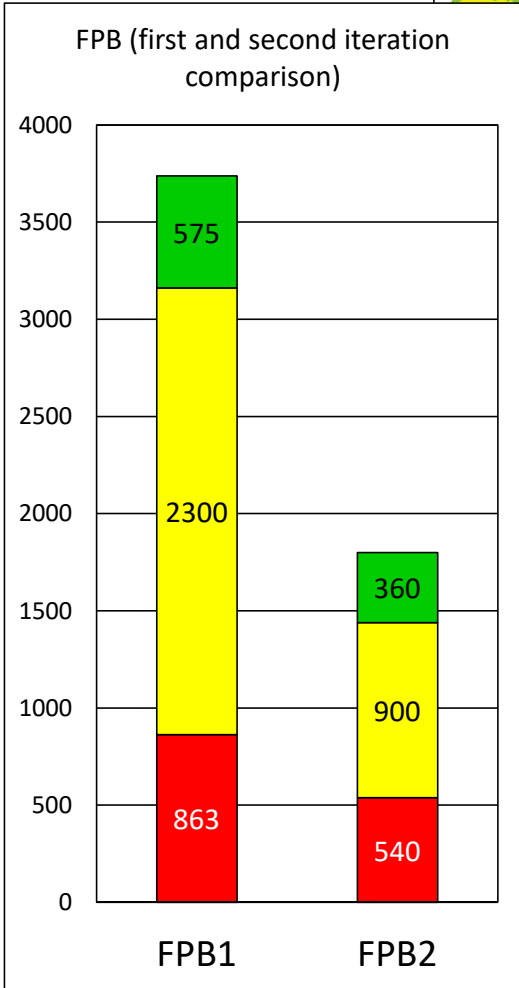


Figure 7-29

Comparison (FPC)

Before 201 Decoupling			
Average Daily Usage	300	Green Zone	1725
Buffer Profile	M, L (.25), M (.5)		LT Factor: 1725 (6900 x .25)
MOQ	250		Minimum Order Quantity: 250
Desired Order Cycle	3 days		Order Cycle: 900 (3(DOC) x 300(ADU))
Decoupled Lead Time (DLT)	23 days	Yellow Zone	6900 (23(DLT) x 300(ADU))
		Red Zone	2588 (1725 + 863)
			Base: 1725 (6900 x .25)
			Safety: 863 (1725 x .5)
After 201 Decoupling			
Average Daily Usage	300	Green Zone	960
Buffer Profile	M, M (.4), L (.25)		LT Factor: 960 (2400 x .4)
MOQ	250		Minimum Order Quantity: 250
Desired Order Cycle	3 days		Order Cycle: 750 (3(DOC) x 250(ADU))
DLT After Compression	8 days	Yellow Zone	2400 (8(DLT) x 300(ADU))
		Red Zone	1200 (960 + 240)
			Base: 960 (2400 x .4)
			Safety: 240 (960 x .25)

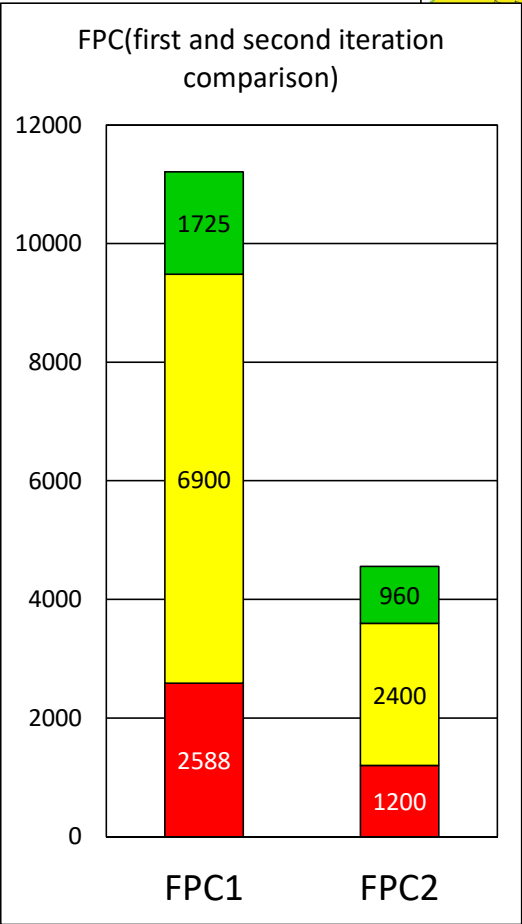


Figure 7-30

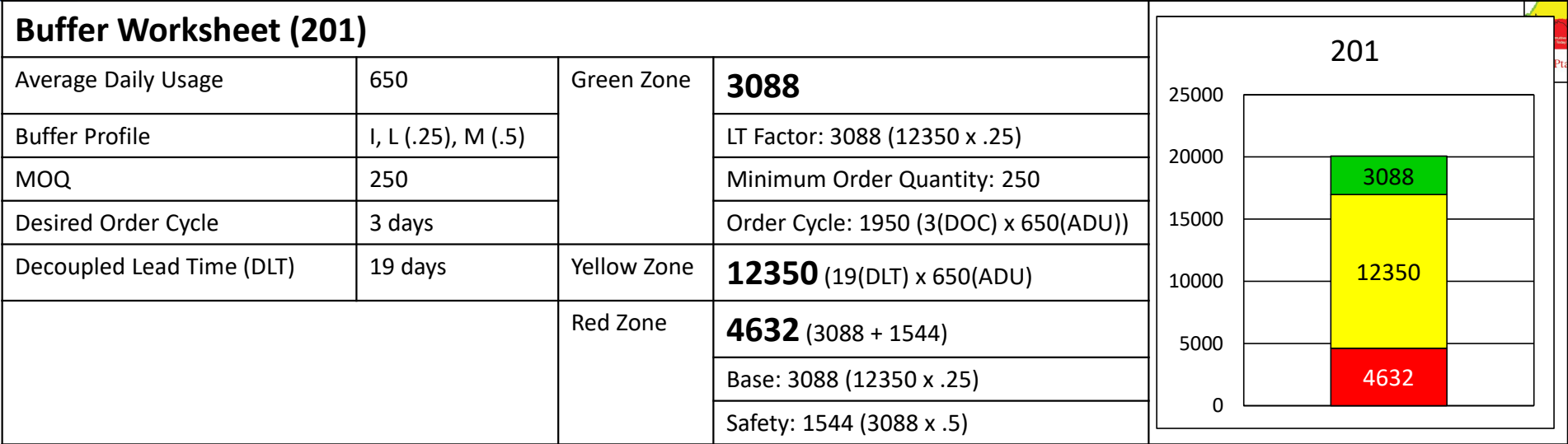
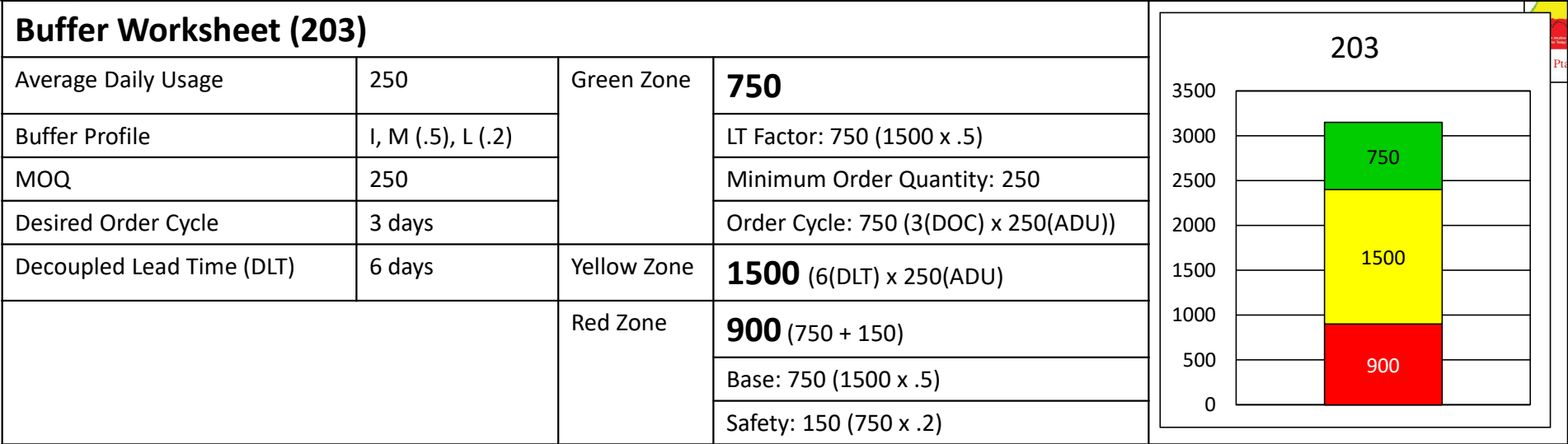


Figure 7-31



Demand Driven Buffer Comparison (201)

Driven
Planner™

Comparison (201)

Before 401P Decoupling			
Average Daily Usage	650	Green Zone	3088
Buffer Profile	I, L (.25), M (.5)		LT Factor: 3088 (12350 x .25)
MOQ	250		Minimum Order Quantity: 250
Desired Order Cycle	3 days		Order Cycle: 1950 (3(DOC) x 650(ADU))
Decoupled Lead Time (DLT)	19 days	Yellow Zone	12350 (19(DLT) x 650(ADU))
		Red Zone	4632 (3088 + 1544)
			Base: 3088 (12350 x .25)
			Safety: 1544 (3088 x .5)
After 401P Decoupling			
Average Daily Usage	650	Green Zone	1950
Buffer Profile	I, L (.25), L (.2)		LT Factor: 1463 (5850 x .25)
MOQ	250		Minimum Order Quantity: 250
Desired Order Cycle	3 days		Order Cycle: 1950 (3(DOC) x 650(ADU))
DLT After Compression	9 days	Yellow Zone	5850 (9(DLT) x 650(ADU))
		Red Zone	1756 (1463 + 293)
			Base: 1463 (5850 x .25)
			Safety: 293 (1463 x .2)

Demand
Driven
INSTITUTE™

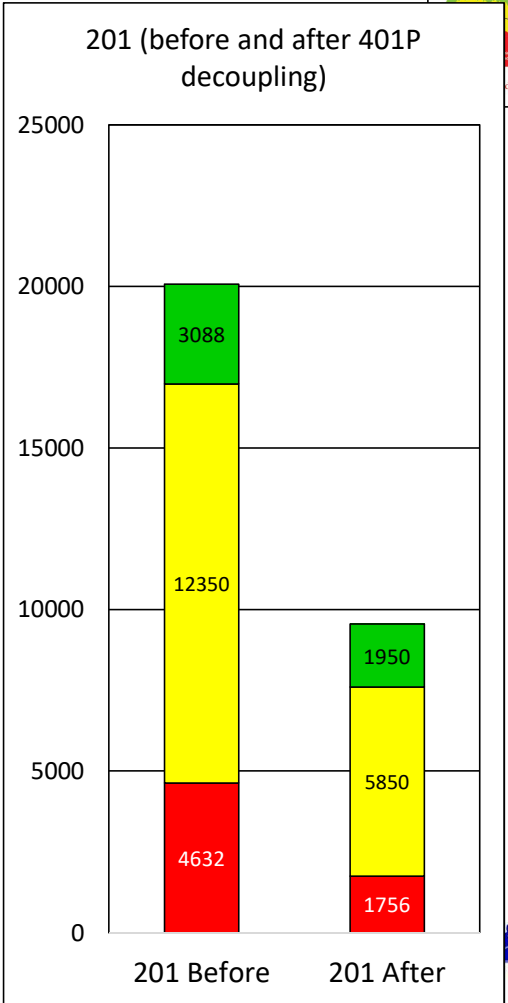


Figure 7-33

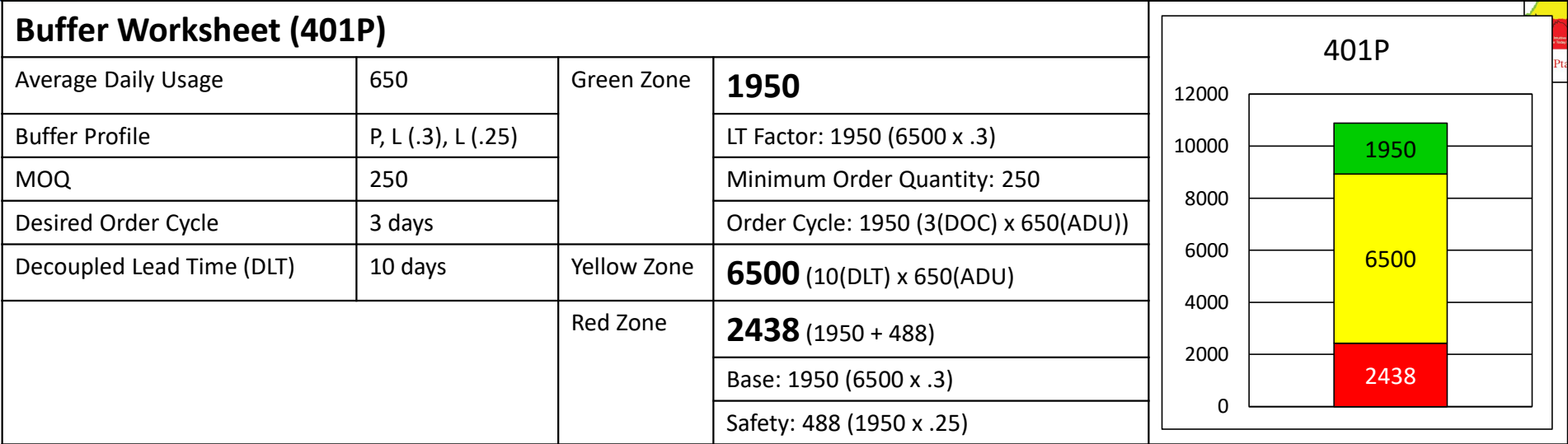


Figure 7-34 (portrait)

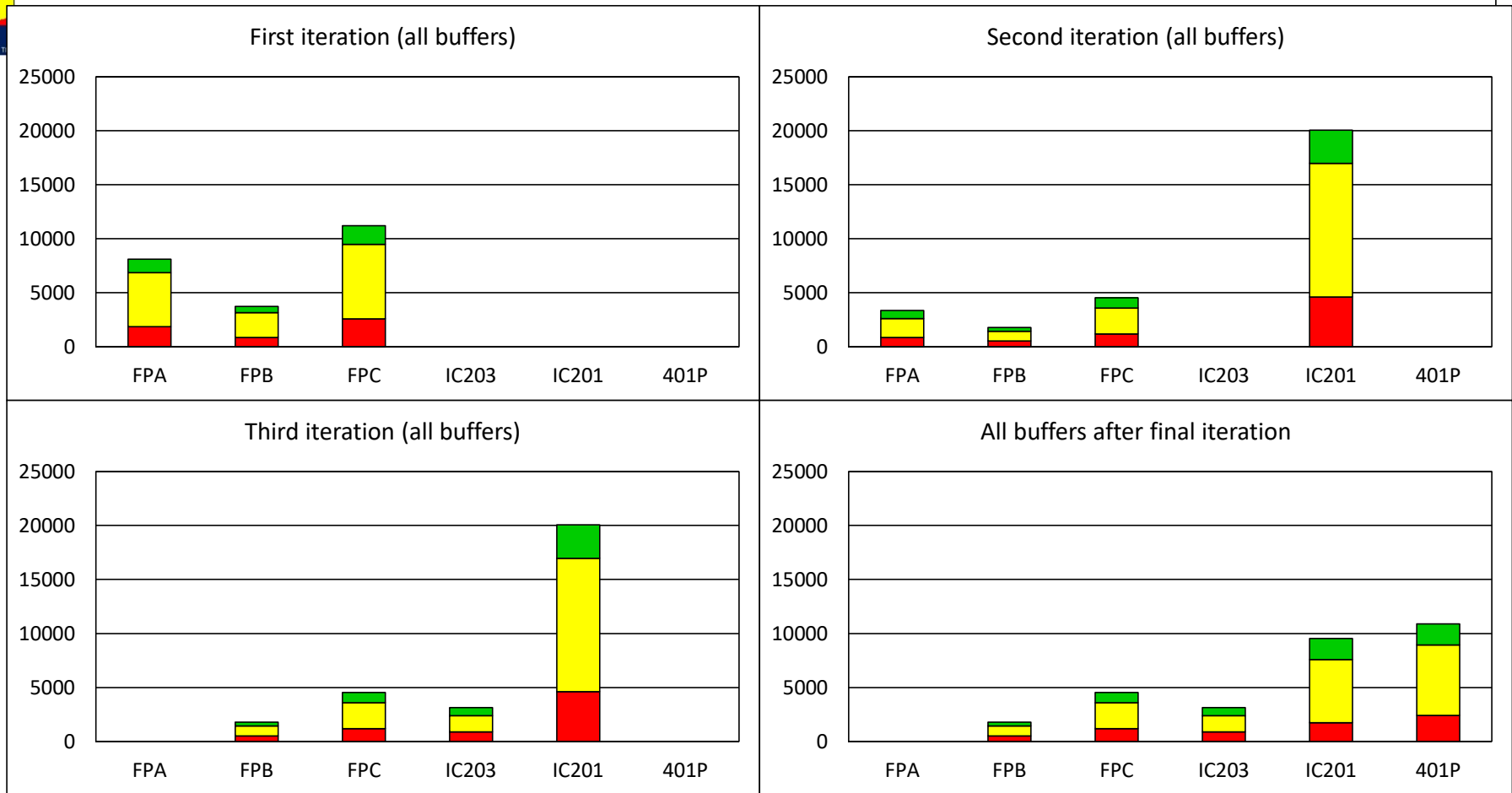
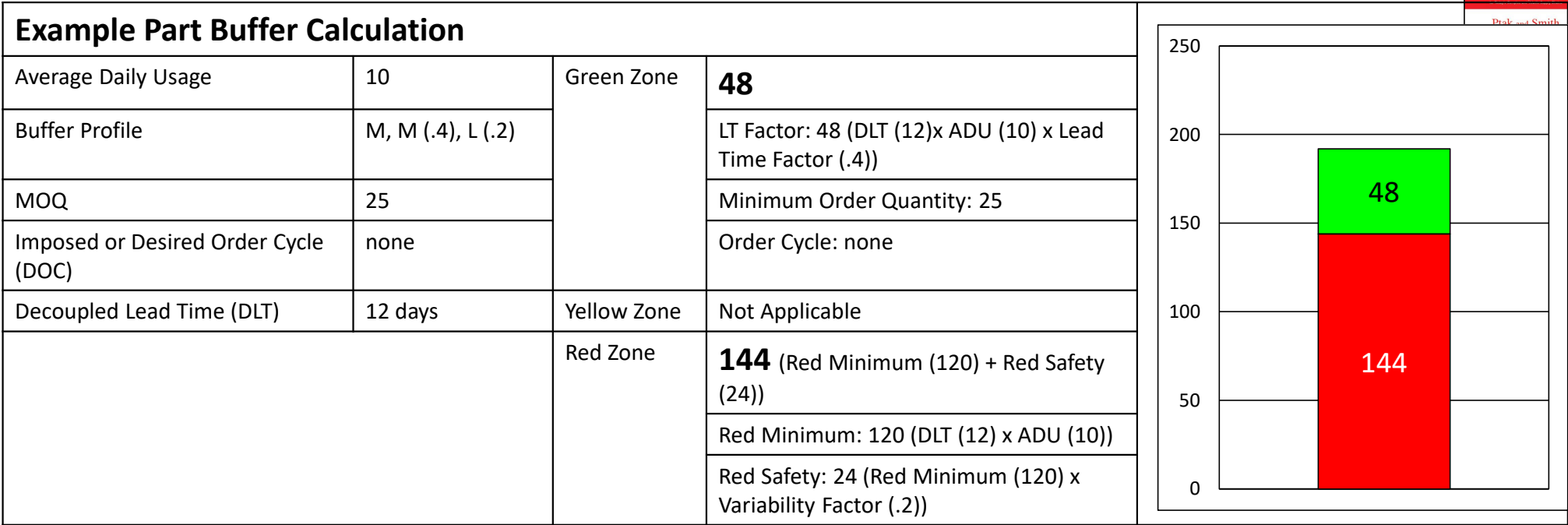
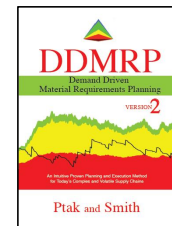


Figure 7-35





Chapter 8

Buffer Adjustments



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Figure 8-1

Date	Red	Yellow	Green	ADU	RedBase	RedSafety	DLT	LTF	VF
1-Jan	70	100	50	10	50	20	10	0.5	0.4
15-Jan	105	150	75	15	75	30	10	0.5	0.4
1-Feb	161	230	115	23	115	46	10	0.5	0.4
15-Feb	266	380	190	38	190	76	10	0.5	0.4
1-Mar	315	450	225	45	225	90	10	0.5	0.4
15-Mar	364	520	260	52	260	104	10	0.5	0.4
1-Apr	385	550	275	55	275	110	10	0.5	0.4
15-Apr	406	580	290	58	290	116	10	0.5	0.4
1-May	378	540	270	54	270	108	10	0.5	0.4
15-May	392	560	280	56	280	112	10	0.5	0.4
1-Jun	406	580	290	58	290	116	10	0.5	0.4
15-Jun	371	530	265	53	265	106	10	0.5	0.4

Figure 8-2

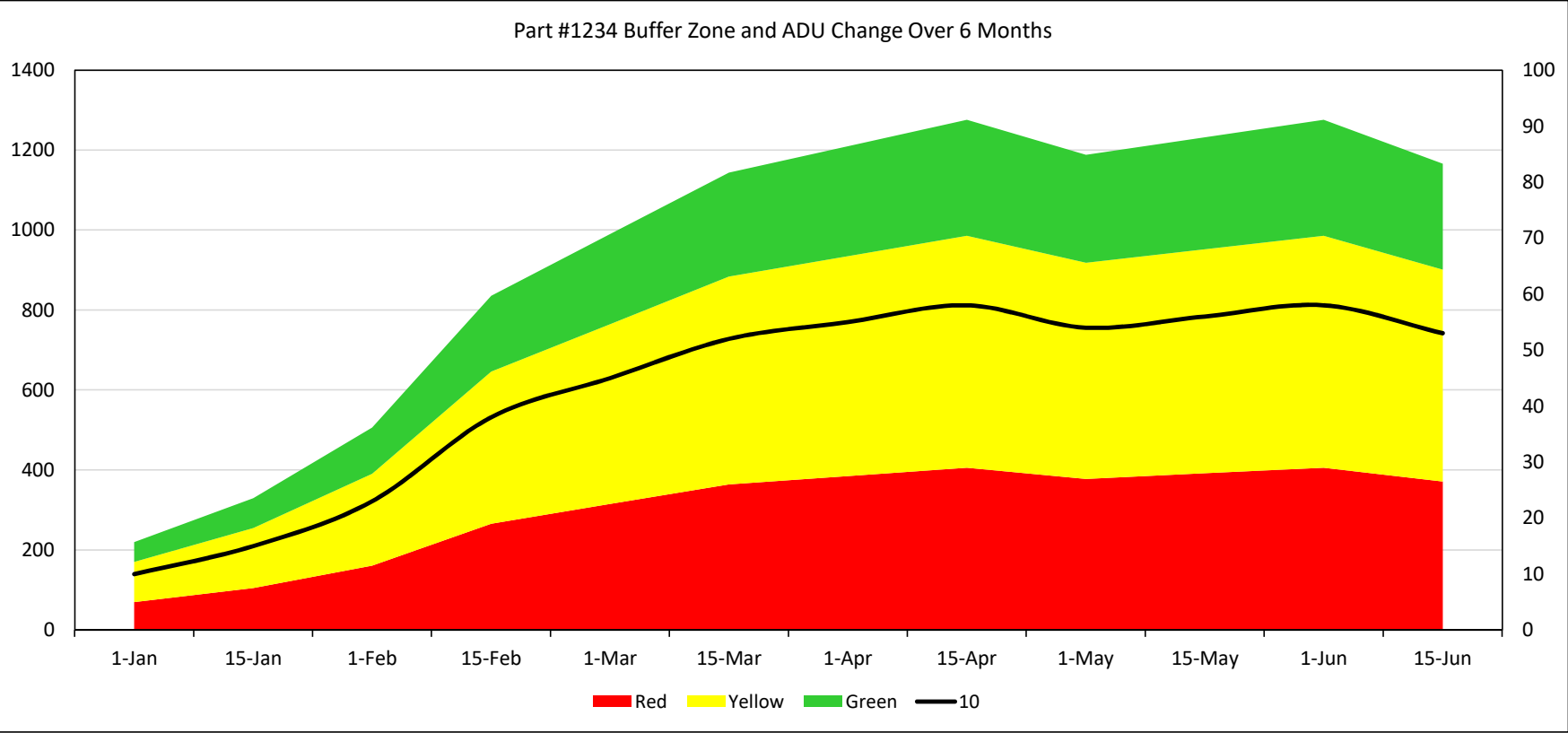


Figure 8-3

Date	Red	Yellow	Green	ADU	RedBase	RedSafety	DLT	LTF	VF	MOQ	Calc Green
1-Jan	70	100	50	10	50	20	10	0.5	0.4	0	50
15-Jan	105	150	75	15	75	30	10	0.5	0.4	0	75
1-Feb	161	230	115	23	115	46	10	0.5	0.4	0	115
15-Feb	266	380	190	38	190	76	10	0.5	0.4	0	190
1-Mar	315	450	225	45	225	90	10	0.5	0.4	0	225
15-Mar	254.8	260	182	52	182	72.8	5	0.7	0.4	0	182
1-Apr	269.5	275	192.5	55	192.5	77	5	0.7	0.4	0	192.5
15-Apr	284.2	290	203	58	203	81.2	5	0.7	0.4	0	203
1-May	264.6	270	189	54	189	75.6	5	0.7	0.4	0	189
15-May	274.4	280	196	56	196	78.4	5	0.7	0.4	0	196
1-Jun	284.2	290	203	58	203	81.2	5	0.7	0.4	0	203
15-Jun	259.7	265	185.5	53	185.5	74.2	5	0.7	0.4	0	185.5

Figure 8-4

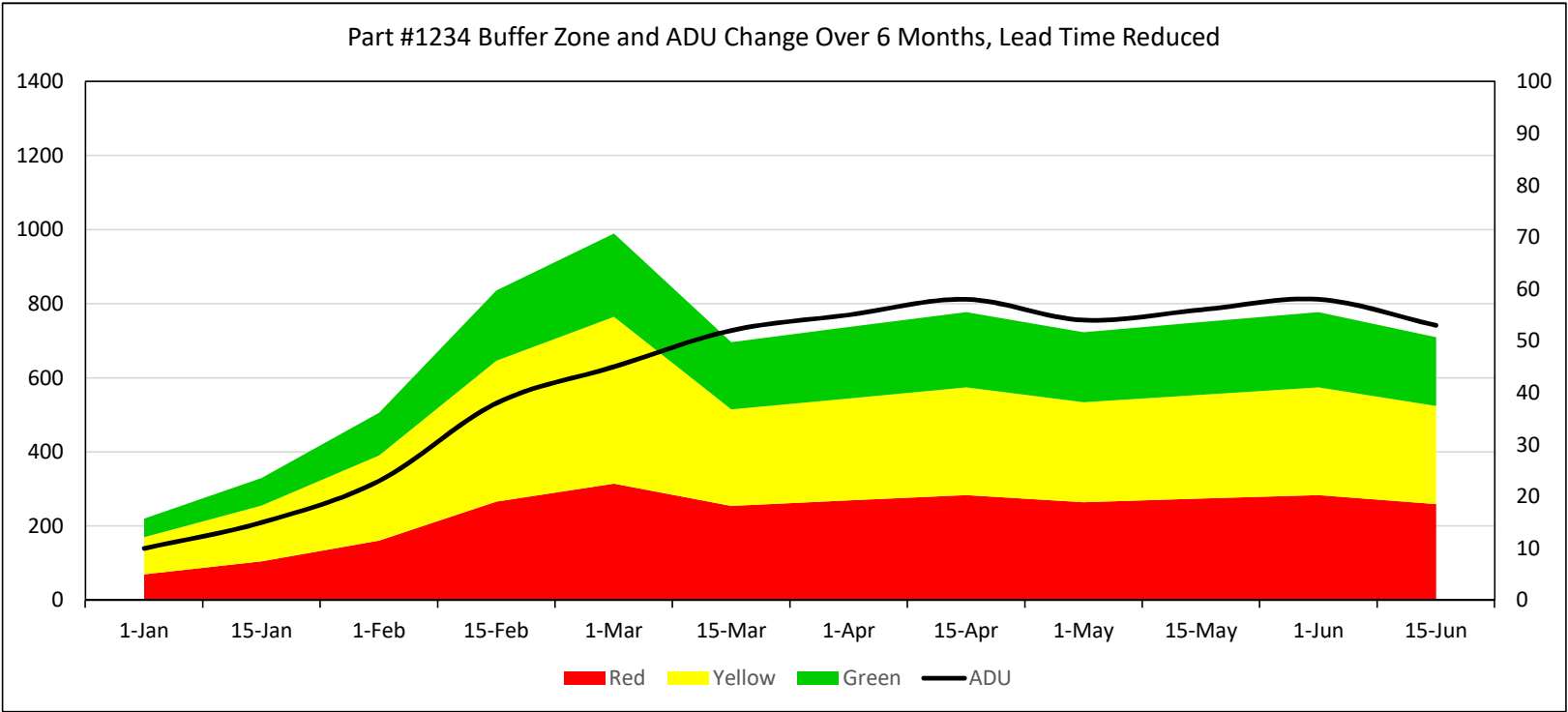


Figure 8-5

	Red	Yellow	Green	ADU	RedBase	RedSafety	DLT	LTF	VF	MOQ	Green (LTF)
1-Jan	70	100	50	10	50	20	10	0.5	0.4	0	50
15-Jan	105	150	75	15	75	30	10	0.5	0.4	0	75
1-Feb	161	230	115	23	115	46	10	0.5	0.4	0	115
15-Feb	266	380	190	38	190	76	10	0.5	0.4	0	190
1-Mar	315	450	225	45	225	90	10	0.5	0.4	0	225
15-Mar	254.8	260	104	52	182	72.8	5	0.7	0.4	0	104
1-Apr	269.5	275	110	55	192.5	77	5	0.7	0.4	0	110
15-Apr	284.2	290	400	58	203	81.2	5	0.7	0.4	400	116
1-May	264.6	270	400	54	189	75.6	5	0.7	0.4	400	108
15-May	274.4	280	400	56	196	78.4	5	0.7	0.4	400	112
1-Jun	284.2	290	400	58	203	81.2	5	0.7	0.4	400	116
15-Jun	259.7	265	400	53	185.5	74.2	5	0.7	0.4	400	106

Figure 8-6

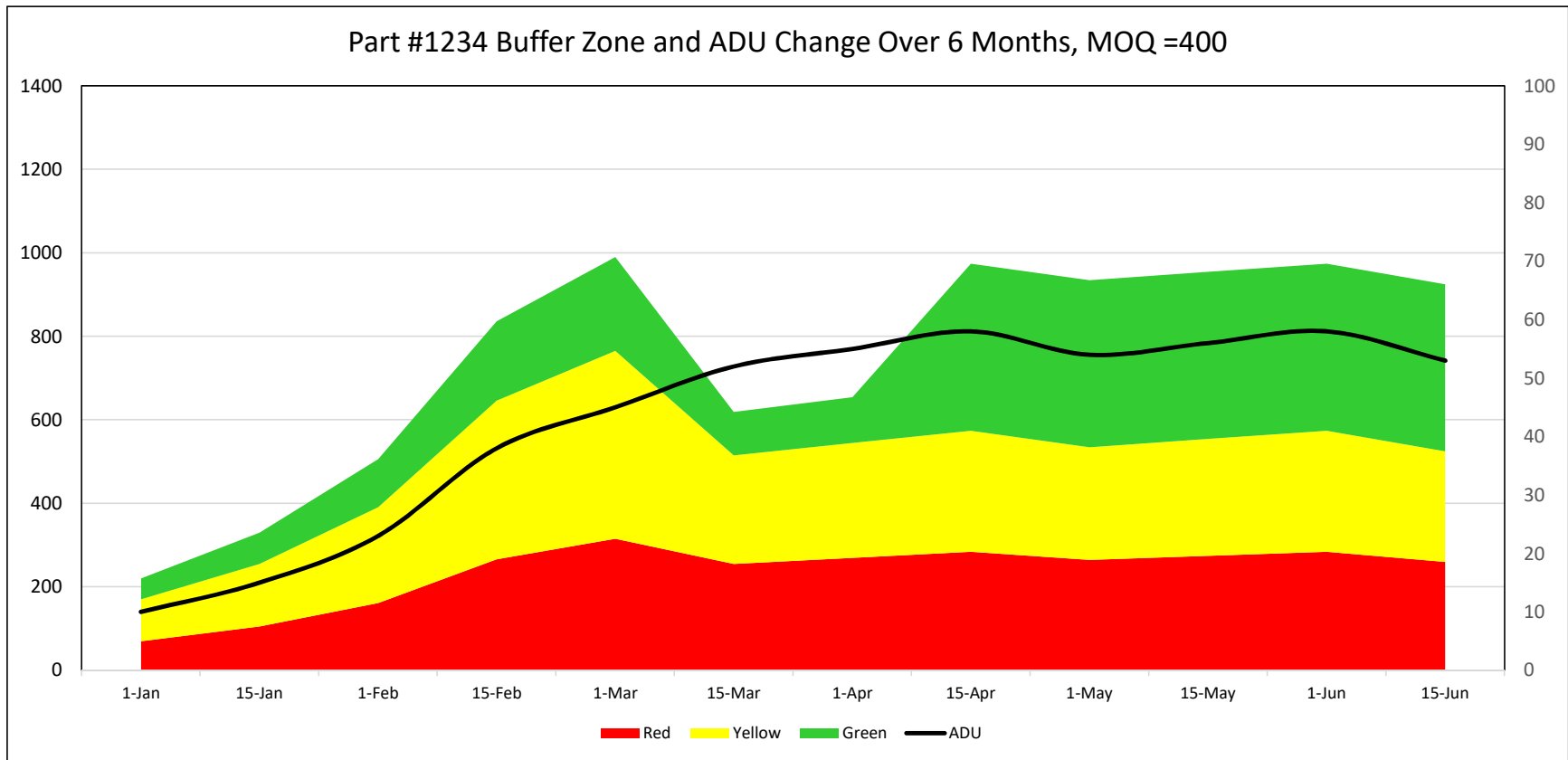


Figure 8-7

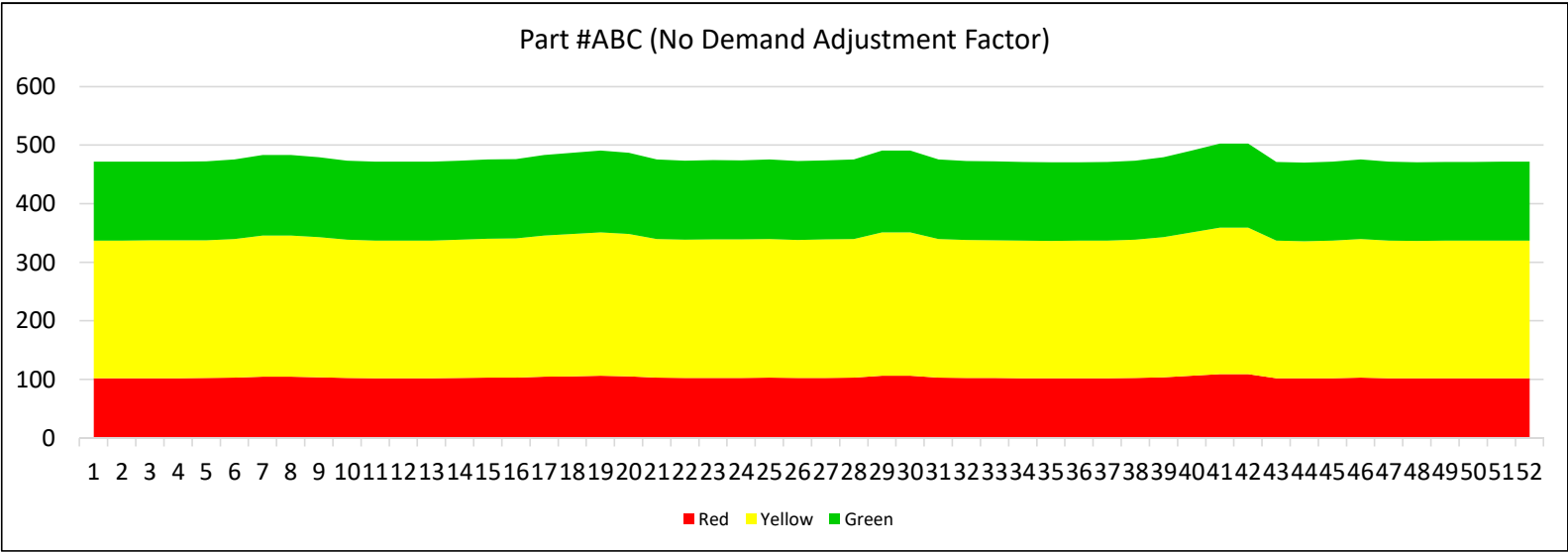


Figure 8-8

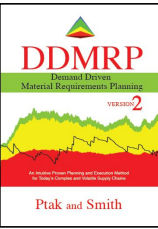
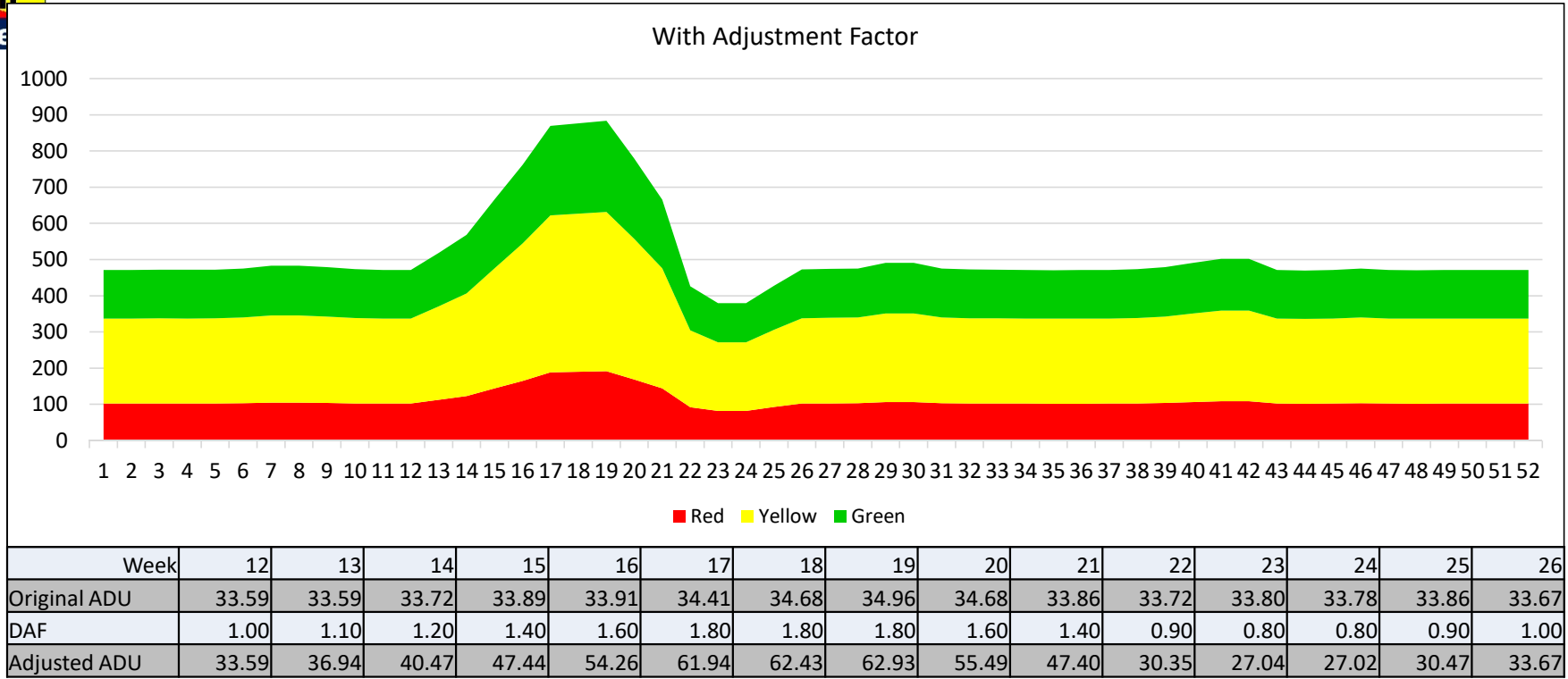




Figure 8-9

Week	Projected ADU	DAF	Adjusted ADU
1	2000	0	0
2	2000	0.1	200
3	2000	0.2	400
4	2000	0.3	600
5	2000	0.4	800
6	2000	0.5	1000
7	2000	0.6	1200
8	2000	0.7	1400
9	2000	0.8	1600
10	2000	0.9	1800
11	2000	1	2000
12	2000	1	2000

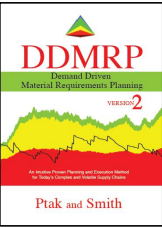


Figure 8-10

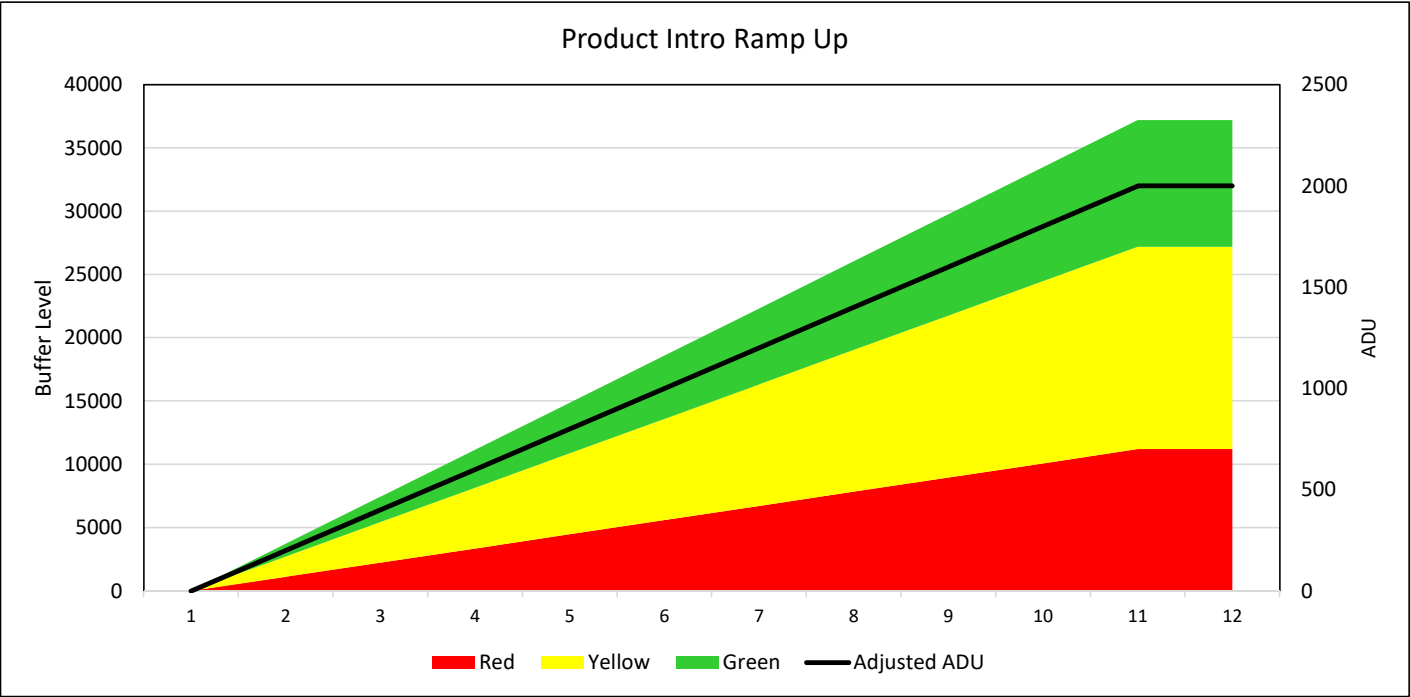




Figure 8-11

Week	ADU	DAF	Adjusted ADU
1	300	1	300
2	300	1	300
3	300	1	300
4	300	1	300
5	300	0.8	240
6	300	0.6	180
7	300	0.4	120
8	300	0.2	60
9	300	0	0
10	300	0	0
11	300	0	0
12	300	0	0

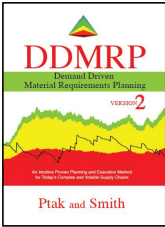


Figure 8-12

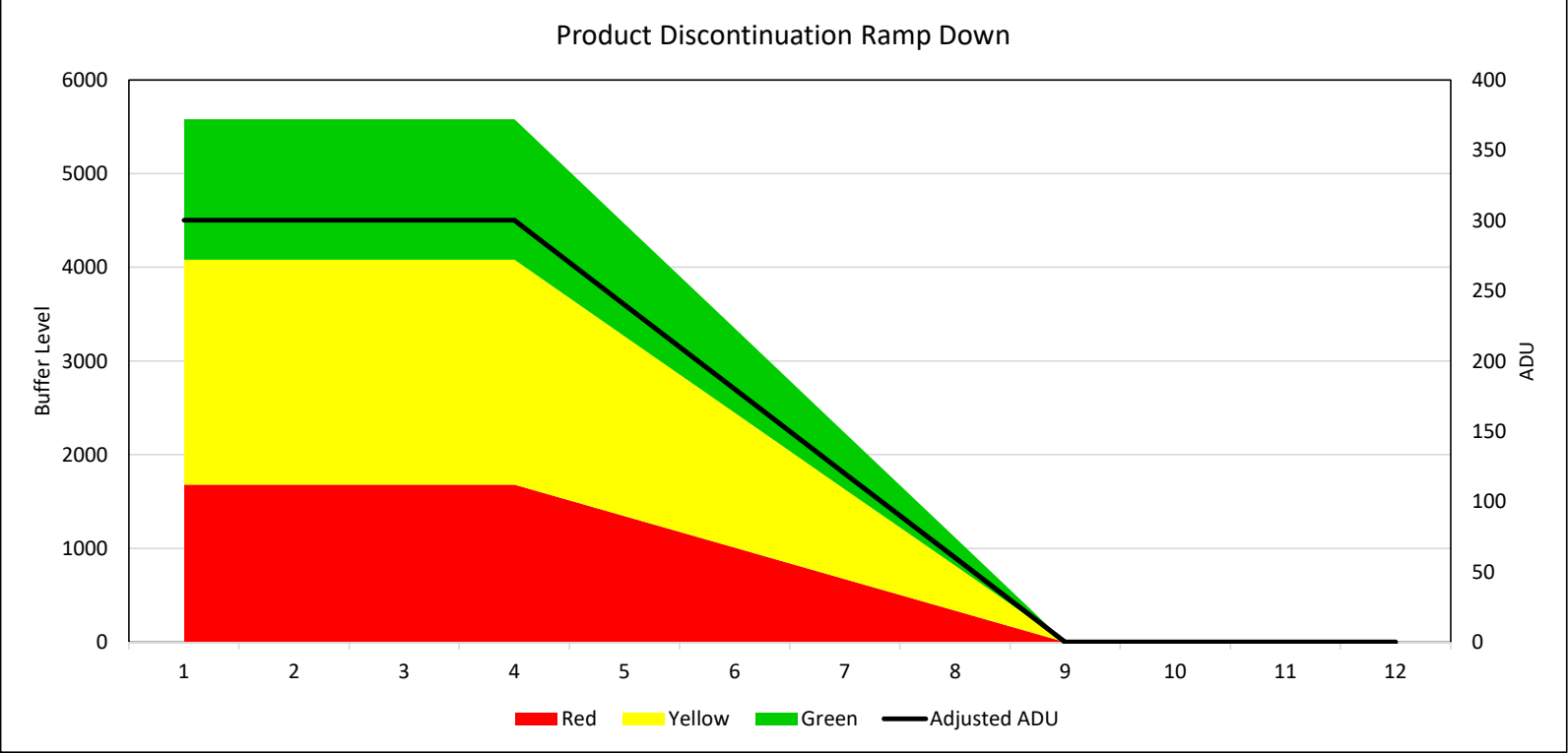


Figure 8-13

Week	ADU	DAF (Old)	Adjusted ADU(Old)	DAF (New)	Adjusted ADU(New)
1	30	1	30	0	0
2	30	1	30	0	0
3	30	0.9	27	0	0
4	30	0.8	24	0	0
5	30	0.7	21	0.2	6
6	30	0.6	18	0.4	12
7	30	0.5	15	0.6	18
8	30	0.4	12	0.8	24
9	30	0.3	9	1	30
10	30	0.2	6	1	30
11	30	0.1	3	1	30
12	30	0	0	1	30

Figure 8-14

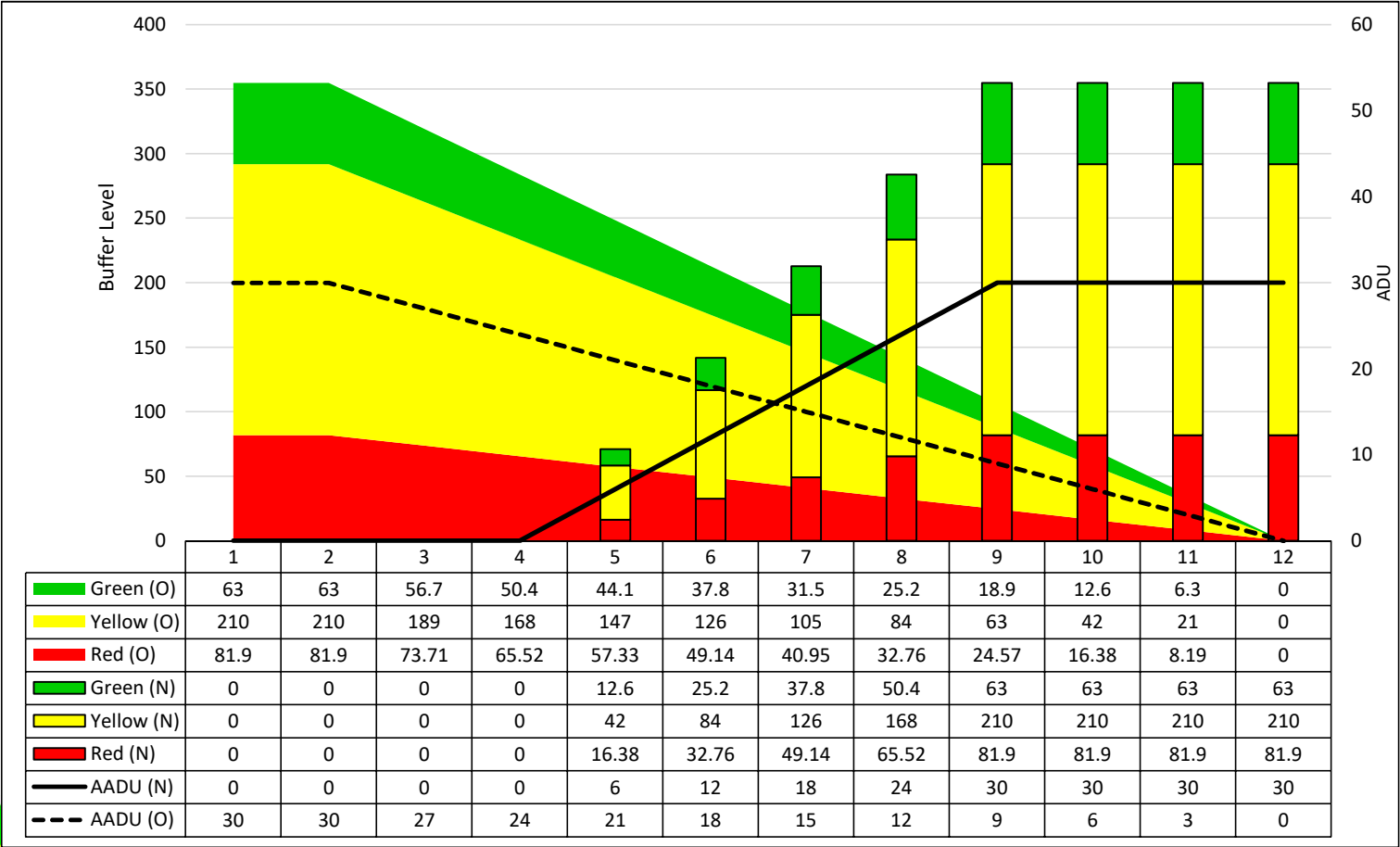
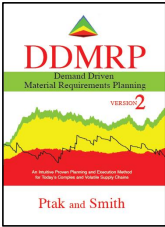




Figure 8-15



Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Sales	81	80	80	80	80	400	800	800	800	800	800	800	800	800	800	800	800
ADU (1 Week)	11.6	9.3	10.0	11.4	11.4	57.1	114.3	114.3	114.3	114.3	114.3	114.3	114.3	114.3	114.3	114.3	114.3
ADU (12 Week)	12.9	12.1	11.5	11.4	11.4	15.2	23.6	32.0	40.5	49.1	57.7	66.4	74.9	83.7	92.4	101.0	109.5
ADU Differential	0.9	0.8	0.9	1.0	1.0	3.8	4.8	3.6	2.8	2.3	2.0	1.7	1.5	1.4	1.2	1.1	1.0

Figure 8-16

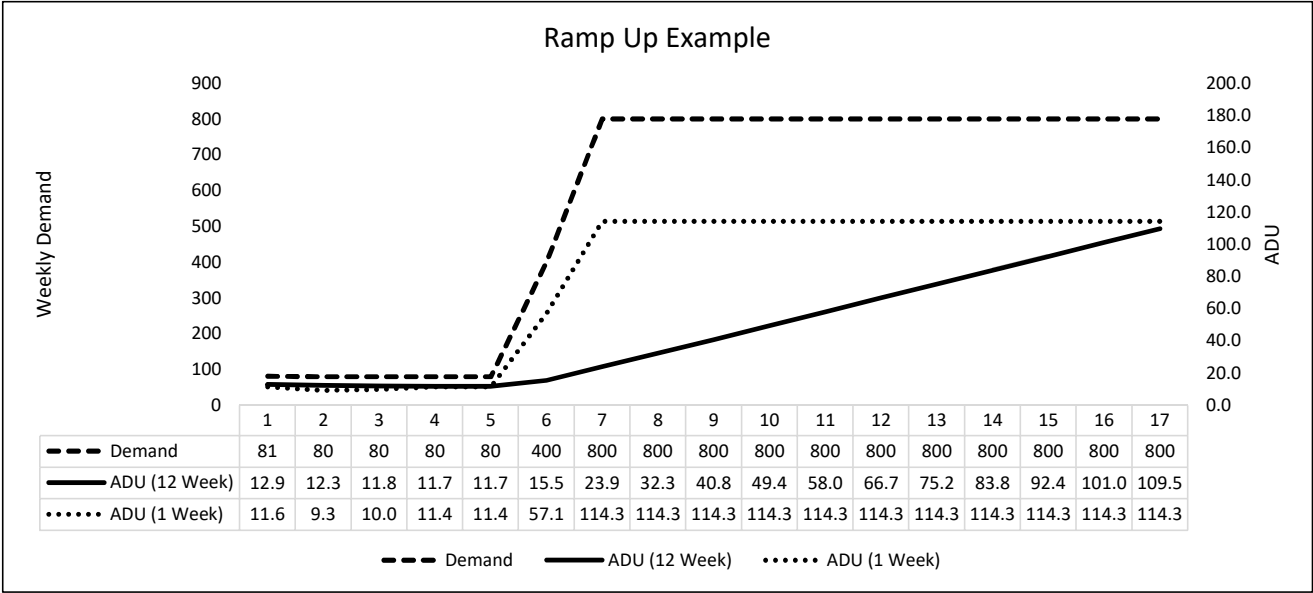


Figure 8-17

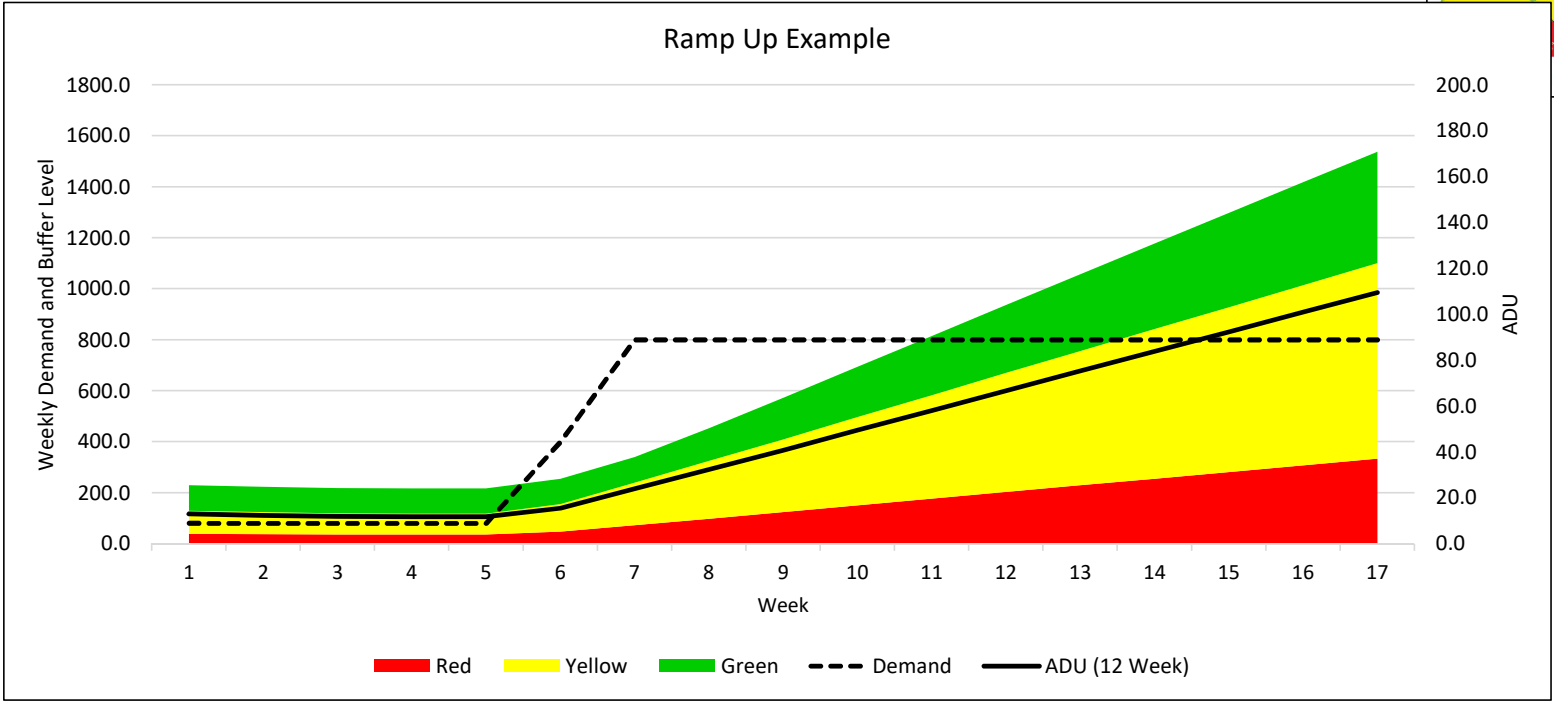
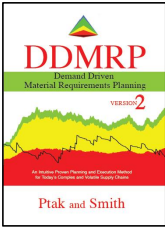




Figure 8-18



Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Sales	81	80	80	80	80	400	800	800	800	800	800	800	800	800	800	800	800
ADU (1 Week)	11.6	11.4	11.4	11.4	11.4	57.1	112.4	114.3	114.3	114.3	114.3	114.3	114.3	114.3	114.3	114.3	114.3
ADU (12 Week)	12.9	12.3	11.8	11.7	11.7	15.5	23.9	114.3	114.3	114.3	114.3	114.3	114.3	114.3	114.3	114.3	114.3
ADU Differential	0.9	0.9	1.0	1.0	1.0	3.7	4.8	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
DAF	1.0	2.5	3.5	4.5	6.0	6.0	4.7	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

Figure 8-19

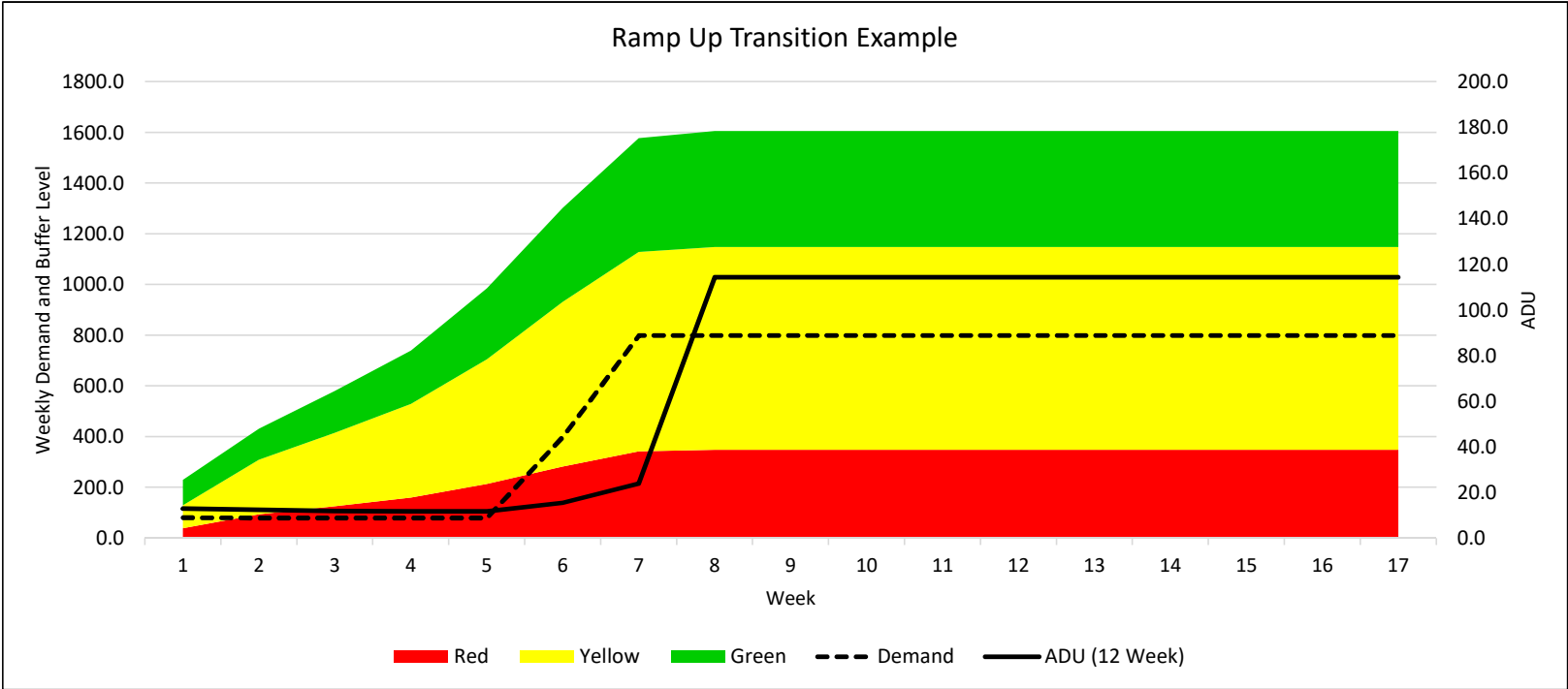


Figure 8-20

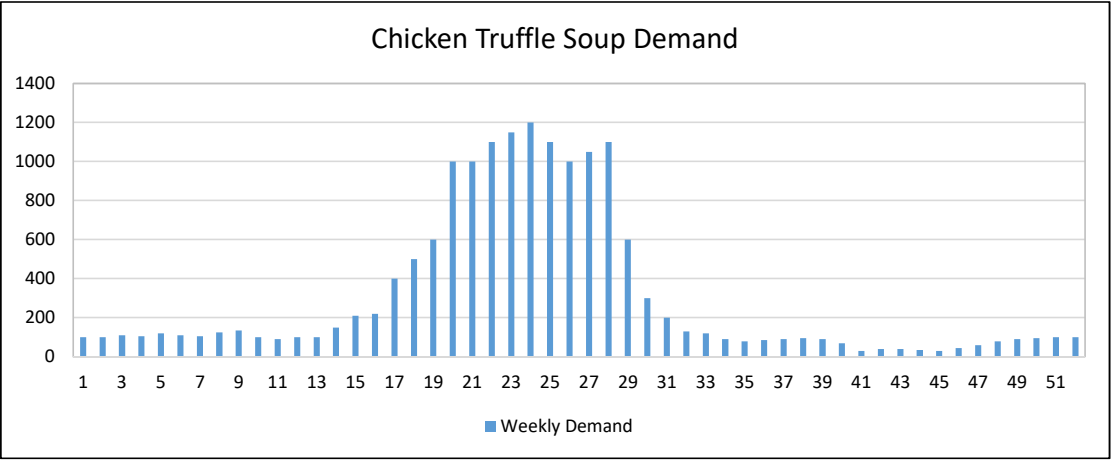


Figure 8-21

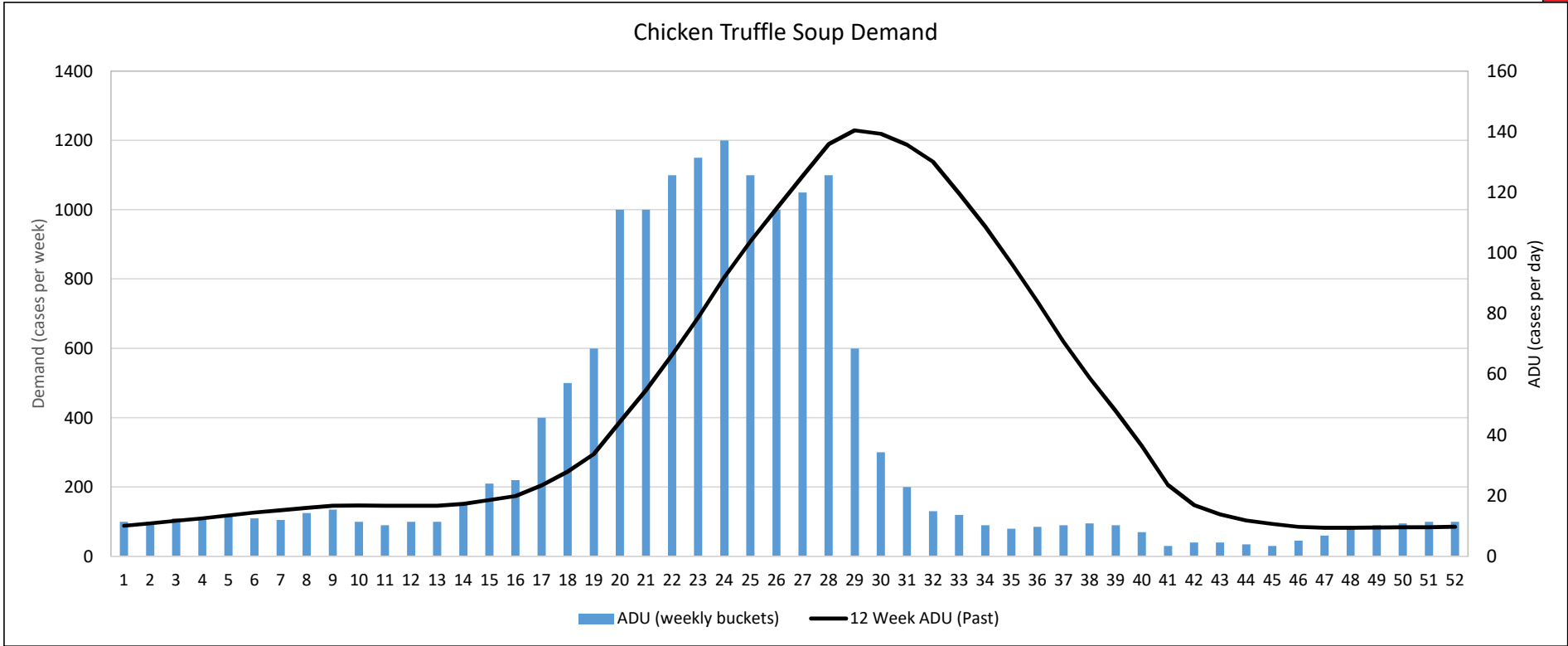


Figure 8-22

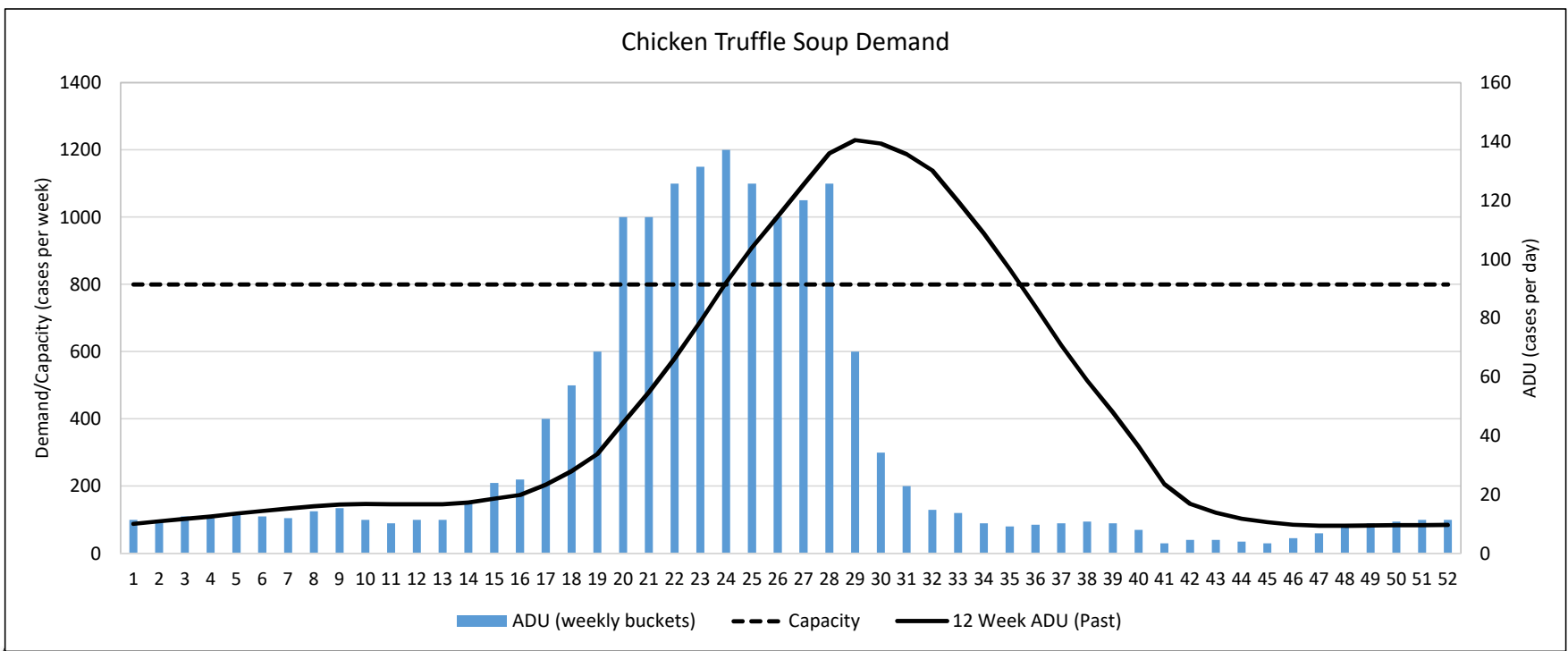


Figure 8-23

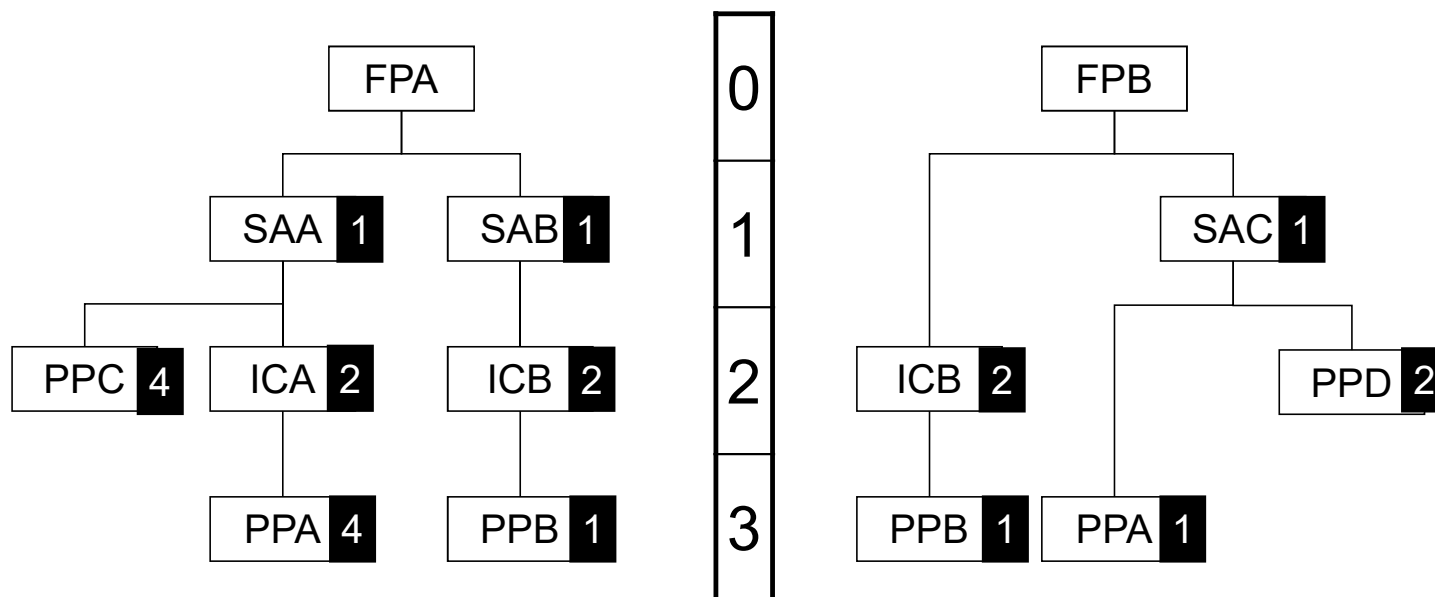
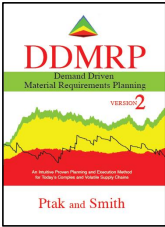


Figure 8-24



Item #	BOM Level	ADU	Adjusted ADU	FPA Ratio	FPB Ratio	DAF
FPA	0	100	140			2
FPB	0	200	200			1
SAA	1	100	200	1		2.0
SAB	1	100	200	1		2.0
SAC	1	200	200		1	1.0
PPC	2	400	800	4		2.0
ICA	2	200	400	2		2.0
ICB	2	600	800	2	2	1.3
PPD	2	400	400		2	1.0
PPA	3	600	1000	4	1	1.7
PPB	3	300	400	1	1	1.3