Multi-tasking Simulation Game

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The Rules of the Game

1. **YOU** are responsible for completing **3 Projects**
2. Each Project is for a **DIFFERENT customer**
3. Each Customer wants you to give **THEIR project TOP Priority** and wants a **RELIABLE Promised Completion Time**
4. Each Project has **20 tasks**
5. **Each Task takes ½ sec** (e.g. equivalent to ½ day)
   Total Work Content = 20 tasks x ½ sec/task x 3 projects = 30 sec
6. "**Murphy exists**" – so you give yourself double the time (**100% safety**)
   Promised Lead Time = 20 tasks x 1 sec/task x 3 projects = 60 sec

The Challenge

What is the "best" rule for completing these 3 projects?

Option #1: Multi-tasking - giving each project the same priority…

OR

Option #2: No Multi-tasking – doing one project at a time…

Round #1: Complete the 3 Projects by Multitasking

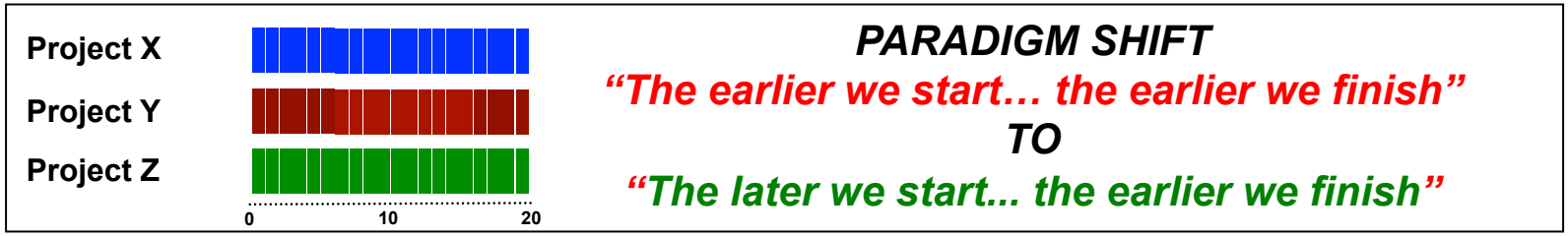
Task #	Project X	Project Y	Project Z
Task 1	1	A	Δ
Task 2	2	B	O
Task 3	3	C	□
Task 4	4	D	Δ
Task 5	5	E	O
Task 6	6	F	□
Task 7	7	G	Δ
Task 8	8	H	O
Task 9	9	I	□
Task 10	10	J	Δ
Task 11	11	K	O
Task 12	12	L	□
Task 13	13	M	Δ
Task 14	14	N	O
Task 15	15	O	□
Task 16	16	P	Δ
Task 17	17	Q	O
Task 18	18	R	□
Task 19	19	S	Δ
Task 20	20	T	O
PLAN	58 sec	59 sec	60 sec
ACTUAL	88 - 178 sec	89 - 179 sec	90 - 180 sec
GAP	50-200% Longer	50-200% longer	50 - 200% longer

Round #2: Complete the 3 Projects with NO Multitasking

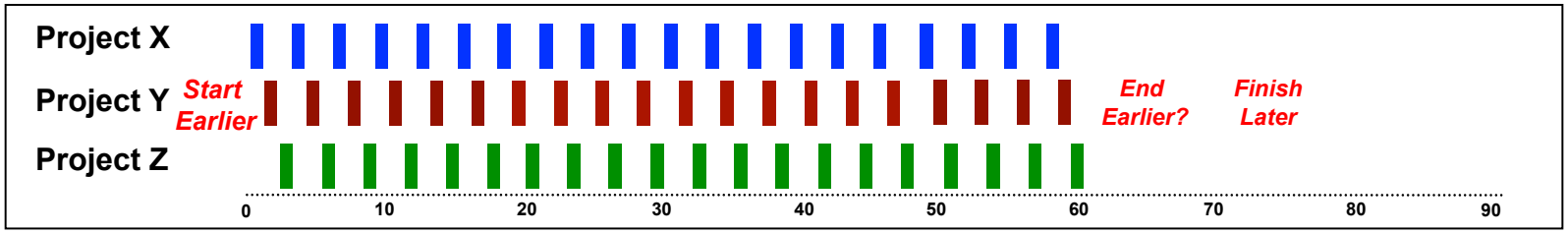
Task #	Project X	Project Y	Project Z
Task 1	1	A	Δ
Task 2	2	B	O
Task 3	3	C	□
Task 4	4	D	Δ
Task 5	5	E	O
Task 6	6	F	□
Task 7	7	G	Δ
Task 8	8	H	O
Task 9	9	I	□
Task 10	10	J	Δ
Task 11	11	K	O
Task 12	12	L	□
Task 13	13	M	Δ
Task 14	14	N	O
Task 15	15	O	□
Task 16	16	P	Δ
Task 17	17	Q	O
Task 18	18	R	□
Task 19	19	S	Δ
Task 20	20	T	O
PLAN	20 sec	40 sec	60 sec
ACTUAL	10 - 20sec	20 - 40sec	30 - 60 sec
GAP	Early / On time	Early / On time	Early / On time

The Results – What happened and Why?

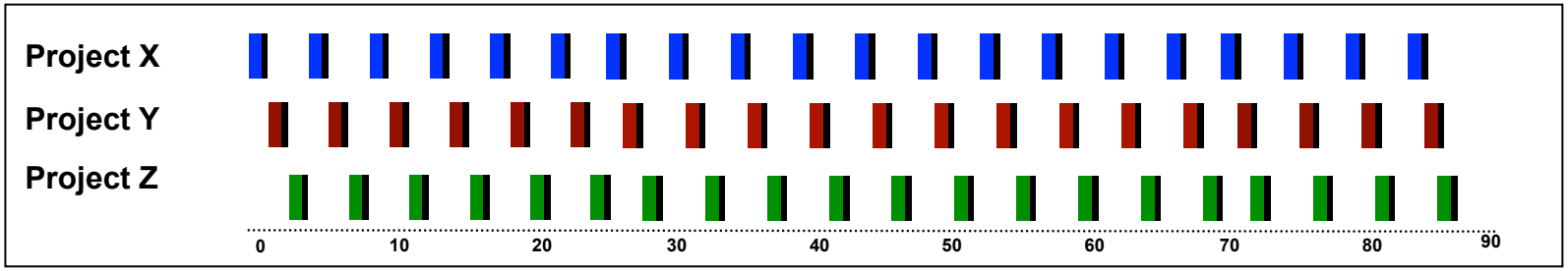
SCENARIO #1: No Capacity Constraints



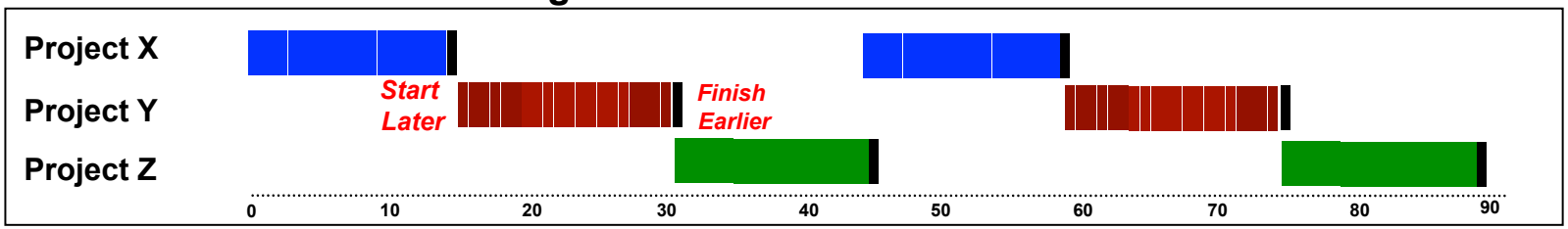
SCENARIO #2: Multi-tasking without Setup/Reporting Losses



SCENARIO #3: Multi-tasking with Setup/Reporting Delays



SCENARIO #4: No Multitasking



Industry Success Stories…from just NOT Multi-tasking…

INDUSTRY	COMPANY	BEFORE TOC/CCPM	AFTER TOC/CCPM	REFERENCE
Aerospace & Defense				
BOEING	**Boeing** Space Systems	Losses **$250m per quarter**	**Profitable.** Productivity **up 64%**	Realization.com
Manufacturing				
TATA STEEL	**TATA Steel**	Boiler Conversion projects **= 300-500 days.**	Boiler Conversion projects **= 120-160days** Saving = **$13.4m**	Goldratt.com
High Tech				
hp invent	**HP Digital Camera Group**	New cameras launched: 2004 = **6 per year** On-Time = **1 out of 6**	New cameras launched: 2005 = **15 per year** On-Time = **15 out of 15**	Realization.com
Public Sector				
	US Marine Corps Logistics Bases	Repair time MK48 = **168d** Repair time MK14 = **152d**	Repair time MK48 = **82d** Repair time MK14 = **59d**	tocico.com
Ministry of Land, Infrastructure and Transport Government of Japan	**Japan Ministry** of Land, Infrastructure and Transport	**Spiraling costs, Unhappy public, Many Late Projects (that costs lives)**	**All 6 Pilots OnTime/Early CCPM now Mandated to be used by all Sub-Contr**	tocico.com