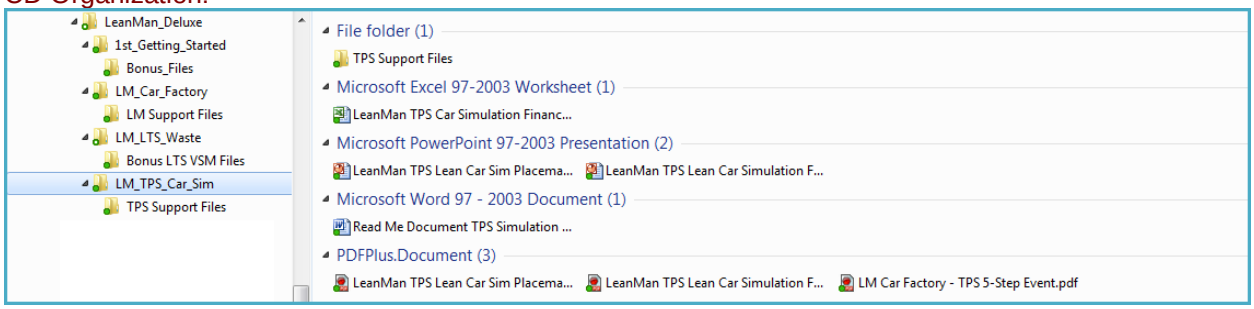
Read Me Document TPS Simulation Rev1701.doc

CD Organization:



The first action should be to look at each file type or name shown in the directory. Here you will find some navigation information to help you use the files provided with the product, starting with this Read Me Document file.

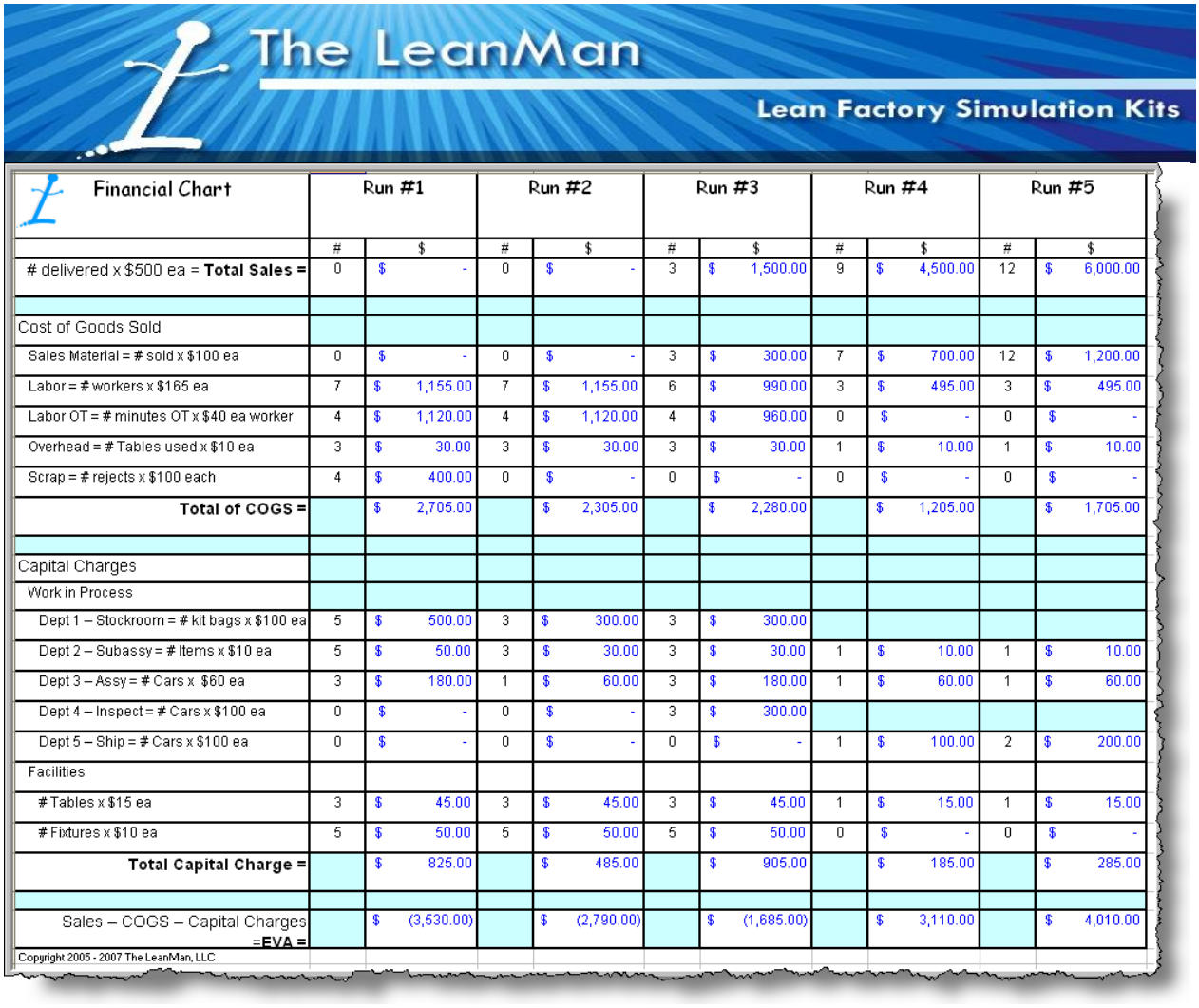
The Excel TPS Car Simulation Financial Chart provides the financial metrics for the simulation. Track progress as the work team continually improves the bottom line

The TPS Lean Car Simulation facilitators guide is available in PowerPoint and Adobe Acrobat file format. It is also printed and bound and provided as part of the Deluxe Car Factory package at the time of purchase.

The TPS participant instruction placemat set is also available in PowerPoint and Adobe Acrobat file format. The set is printed and laminated and provided as part of the Deluxe Car Factory package at the time of purchase.

It's always more fun when you can run two teams in competition. If you have a second set of Car Factory materials (such as a Companion or Basic set, or have the VSM two-kit package) then you can print and laminate a second set of TPS placemats from this file.

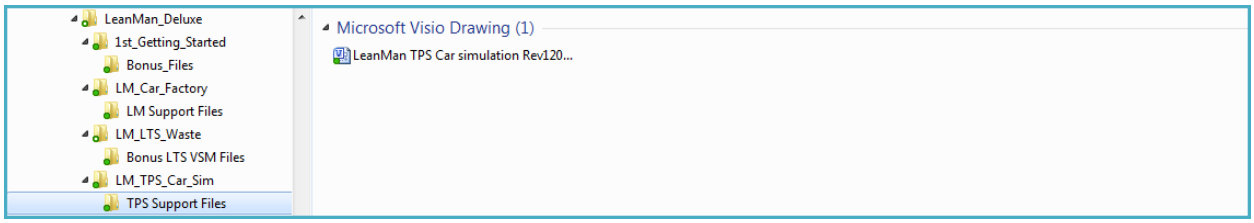
Metrics reporting is important and must be done with meaning.



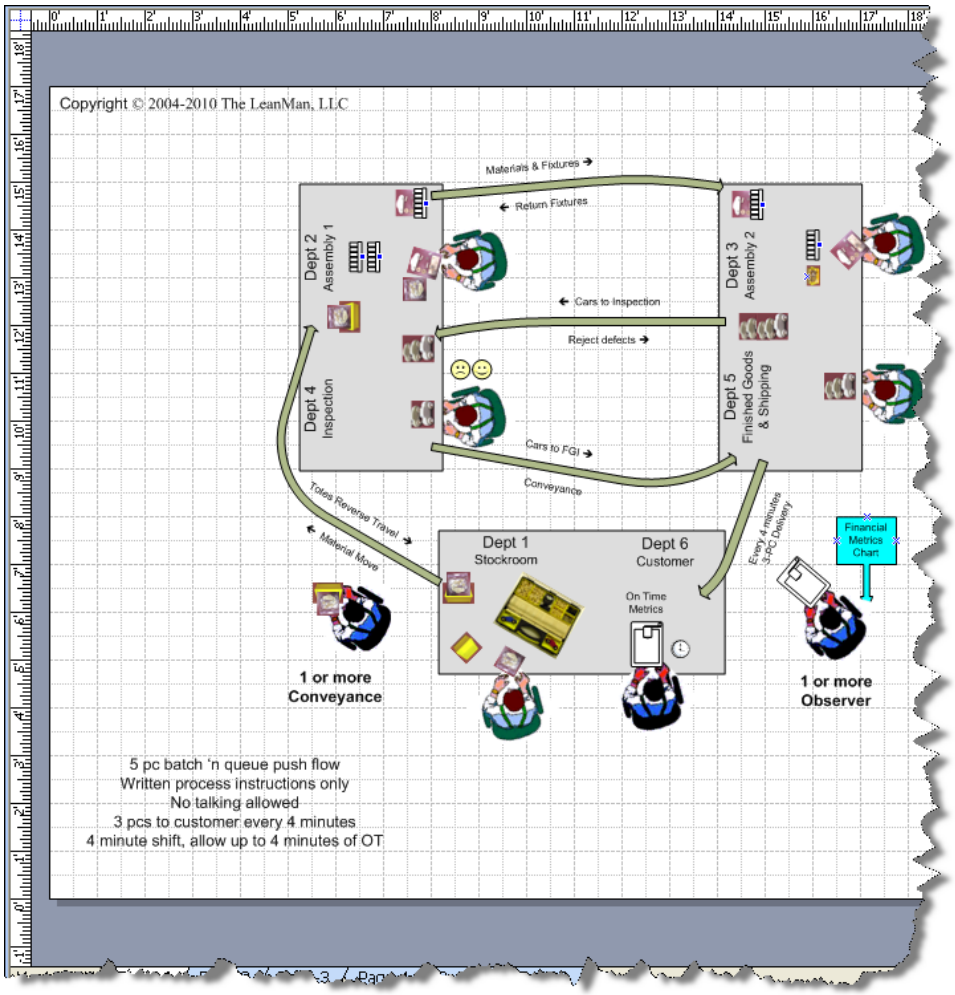
Financial Chart	Run #1		Run #2		Run #3		Run #4		Run #5	
	#	$	#	$	#	$	#	$	#	$
# delivered x $500 ea = **Total Sales =**	0	$ -	0	$ -	3	$ 1,500.00	9	$ 4,500.00	12	$ 6,000.00
Cost of Goods Sold										
Sales Material = # sold x $100 ea	0	$ -	0	$ -	3	$ 300.00	7	$ 700.00	12	$ 1,200.00
Labor = # workers x $165 ea	7	$ 1,155.00	7	$ 1,155.00	6	$ 990.00	3	$ 495.00	3	$ 495.00
Labor OT = # minutes OT x $40 ea worker	4	$ 1,120.00	4	$ 1,120.00	4	$ 960.00	0	$ -	0	$ -
Overhead = # Tables used x $10 ea	3	$ 30.00	3	$ 30.00	3	$ 30.00	1	$ 10.00	1	$ 10.00
Scrap = # rejects x $100 each	4	$ 400.00	0	$ -	0	$ -	0	$ -	0	$ -
Total of COGS =		$ 2,705.00		$ 2,305.00		$ 2,280.00		$ 1,205.00		$ 1,705.00
Capital Charges										
Work in Process										
Dept 1 – Stockroom = # kit bags x $100 ea	5	$ 500.00	3	$ 300.00	3	$ 300.00				
Dept 2 – Subassy = # Items x $10 ea	5	$ 50.00	3	$ 30.00	3	$ 30.00	1	$ 10.00	1	$ 10.00
Dept 3 – Assy = # Cars x $60 ea	3	$ 180.00	1	$ 60.00	3	$ 180.00	1	$ 60.00	1	$ 60.00
Dept 4 – Inspect = # Cars x $100 ea	0	$ -	0	$ -	3	$ 300.00				
Dept 5 – Ship = # Cars x $100 ea	0	$ -	0	$ -	0	$ -	1	$ 100.00	2	$ 200.00
Facilities										
# Tables x $15 ea	3	$ 45.00	3	$ 45.00	3	$ 45.00	1	$ 15.00	1	$ 15.00
# Fixtures x $10 ea	5	$ 50.00	5	$ 50.00	5	$ 50.00	0	$ -	0	$ -
Total Capital Charge =		$ 825.00		$ 485.00		$ 905.00		$ 185.00		$ 285.00
Sales – COGS – Capital Charges =**EVA =**		$ (3,530.00)		$ (2,790.00)		$ (1,685.00)		$ 3,110.00		$ 4,010.00

I'm often asked – why do a complex metric? The inclusion of fixtures, tooling and facilities improvements and the reduction in work in process inventory make a tremendous impact on the bottom line – it's not just a method of eliminating people, but rather total cost.

Take a look at the chart above at the improvement in EVA with Lean Flow. What better way to prove the concepts than to really show them?



The Visio support file provides the graphics used to create the presentation slides and participant placemats.



Use Visio to edit, add or change the features of the presentation materials to customize them for your use.

Then just cut and paste to the PowerPoint slides to provide a new flow, add an operation step, or add detail to the instruction placemats

Facilitator Notes:

The Toyota Production System five step simulation is a bit complex to perform, but the task is made easy to set up and facilitate with the laminated participant instruction placemats and full facilitator guide which has been printed and bound for your use. The reason this event is more complex is that many of the elements of the event we need to change are people's emotions about work and the identity "I am my work." Ask anyone who they are and they say driver; dentist; mechanic; machinist A. They also bring into the event pre-conceived conceptions of how things work, like training, or process instructions.

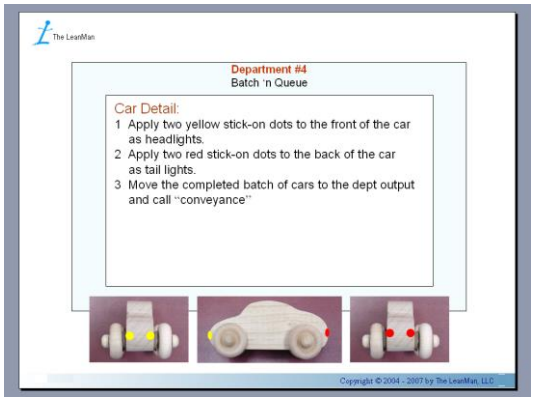
The TPS event is modeled after the concepts about work, work ownership, worker pride, work knowledge, knowledge and ownership transfer, and sense of responsibility. So some of the things the facilitator needs to do to provide the right environment can be difficult on the trainers own emotions if not prepared ahead. That is why this event should only be attempted after the facilitator is fully comfortable with the Car Factory Kit materials and has performed the Learning to See the Waste event a few times.

The TPS simulation starts with event #1 which uses vary simple instruction cards for the participants to build in batches of 5. They lack photos and detail. They just say what to do. This will result in many questions to the facilitator about what is really wanted. Do not tell them. Be very vague and repeat a few times "just follow the process." And *NO Talking!* The concept is to simulate what happens in many work situations in real companies, particularly in office areas and utility support functions. Let the team see what they can produce. When you complete the run, record the metrics and then sit and discuss lesions learned. What would help the team? Better instructions? What would make the customer happier? Better delivery? Discuss the 8 types of waste in this flow.

The TPS event #2 provides new placemats with photos and better instructions and a 3 pc batch. And this time, let them talk to each other. Run the event, and again record the metrics and then sit and discuss lesions learned. What would help the team? Better instructions? What would make the customer happier? Better delivery? Discuss the 8 types of waste in this revised flow.

The TPS events each continue to narrow down the barriers to success and amplify the Toyota concepts of Lean, such as worker cross training before just dropping someone into place, letting the line run a few steps to get the feel before full turn on, and letting the voice of the people and the voice of the process work together to create the simplest flow.

Add an additional assembly person to the event to apply small (1/4 dia) Avery 05790 red and Avery 05792 yellow color dots for head and tail lights (available at OfficeMax, Office Depot or Staples)



The dots should be applied half on the end and half wrapped to the side of the car body. Doing this will make pulling them off after the even very easy. If they are applied full flat to the car body end they adhere fairly well and will require scrapping with a fingernail to remove.

Good luck in your lean endeavors.

The LeanMan