Lean ViewTM

The Next Generation of Lean

Improving Lean Program Performance

Quick Start Tutorial

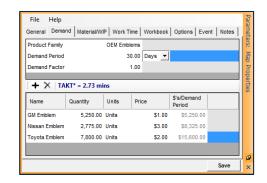


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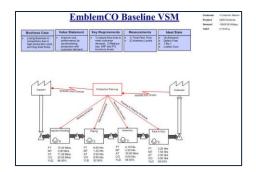
For use with versions 4.0.39 – 6.0.0 of LeanView

With LeanView , it's as simple as:

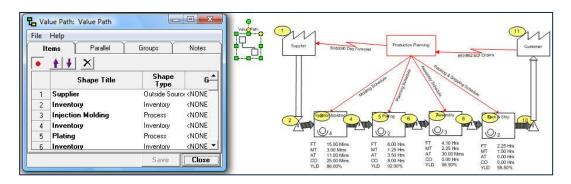
1 Enter Customer Demand



2 Draw the Value Stream



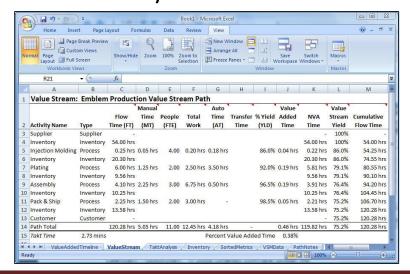
Record the Value Stream



Go

Now it's time to run the Analytics

(Map Analysis Report)



Objective

Learning Objective:

This tutorial is intended to familiarize the user with the basic capabilities of the LeanView environment, data entry, recording value streams, creating customer demand data and running the Map Analysis Report (Analytics). We will walk you through the following procedures:

- Opening a LeanView Template
- Developing & Entering Business Objectives
- Entering Value Stream Map Properties
- Entering Customer Demand Data **
- Understanding Work Time
- Creating a Master Raw Materials / WIP List
- Drawing a Basic Value Stream Map **
- Entering Process Properties
- Entering WIP at an Inventory location
- Recording a Value Stream **
- Producing a Map Analysis Report

Time to Complete Exercise:

You should allow 20-25 minutes to complete this exercise.

Advanced Functionality / Learning more about LeanView:

There are many more features in the LeanView solution. For information on those features, please visit us on the web at www.bluespringsoftware.com/products and click on the "LeanView" link, or contact us directly at 877.794.1764 to inquire about training.

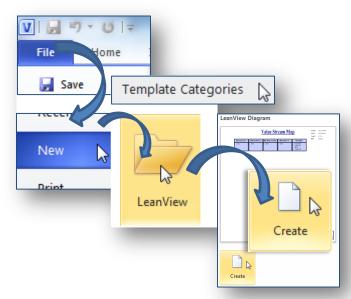
^{**} While there are many items in the list, Only Entering Customer Demand, Drawing the Value Stream Map, and Recording the Value Stream are strictly required for the system to produce a Map Analysis Report. Obviously, entering data for processes and inventory makes the report more meaningful.

I. Quick Start

A. Opening a LeanView™ Template

To open LeanView , launch Visio and, from the LeanView 6.0 ribbon, choose 'New LeanView Value Stream'. Alternatively, if working in versions 4, 5, or 6 of LeanView, from the Visio File menu, choose New → LeanView Diagram.





B. EmblemCo. Case Study Tutorial

Step 1: Objectives & Outcomes

It's always best to first develop objectives for performing a task. Let's start by entering our Business Case, Value Statement, Key Requirements, Measurements and the Ideal State which we expect to achieve.

Let's begin with the Business Case, or reason for performing this exercise. Double-click the blue "Business Case" box at the top left of the Value Stream Map

"Items" should be highlighted, and lets replace this with "Losing Business to competitors due to high production costs and long lead times".

After completing this entry, click anywhere else on the VSM (or use the escape key) to see your changes. Your VSM should look similar to the one in the picture.

Before moving on, save the diagram. Click File \rightarrow Save, enter the filename "EmblemCo Example" in the dialog, and click Save.



Now complete this task for the Value Statement, Key Requirements, and Measurements (see text below). The Ideal State, as you will notice, comes pre-filled for you. You can either change it to meet your needs or leave it with the standard content.

Value Statement:

Improve cost performance by synchronizing production with customer demand.

Key Requirements:

- 1) No New Hires
- 2) No Overtime

Measurements:

- 1) Total Flow Time
- 2) Inventory Cost and Quantity

Ideal State: Use the default values

- 1) On-Demand
- 2) Defect Free
- 3) 1-By-1
- 4) Lowest Cost

The Business Case Analysis Work Area of your VSM should now look like this:

Business Case	Value Statement	Key Requirements	Measurements	Ideal State
Losing Business to competitors due to high production costs and long lead times.	Improve cost performance by synchronizing production with customer demand.	No New HiresNo Overtime	Total Flow Time Inventory Cost and Quantity	On-DemandDefect Free1-By-1Lowest Cost

- Note: While entering some of the statements, you may get text that overflows these boxes. If this happens, you can highlight the text and change the font size to a smaller value, or you can change the size of the box.
- Note: If the auto-save functionality is enabled, Visio will automatically save your work at set intervals. It is a good idea, however, to get into the habit of saving your work to avoid unintentional loss of data by using File → Save or using the shortcut Ctrl-S.

Next, let's move on to the Map Properties.

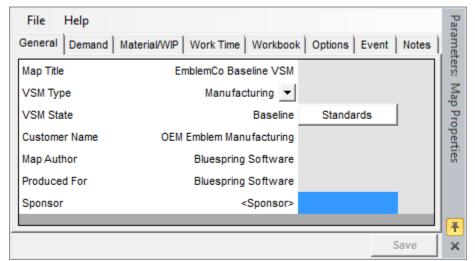
Step 2: Entering Map Properties

The map properties can be accessed by right-clicking the Map Properties Clipboard shape, located on the lower left corner of the VSM, and choosing "VSM Properties".

You will then be presented with the VSM Properties Dialog.

Let's start with the General Tab:

On this tab, you will find general information about the VSM.



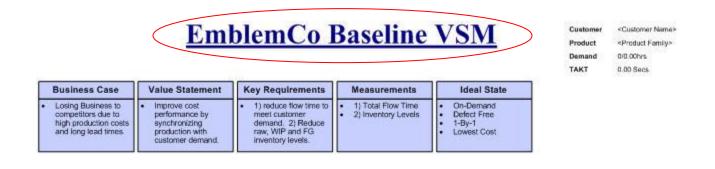
VSM Type: Manufacturing or Transactional

VSM State: Click on the Standards button to choose whether this is the Baseline, Current, Future, Ideal, As-Is or To-Be state. You can also type over the text and write in your own VSM state.

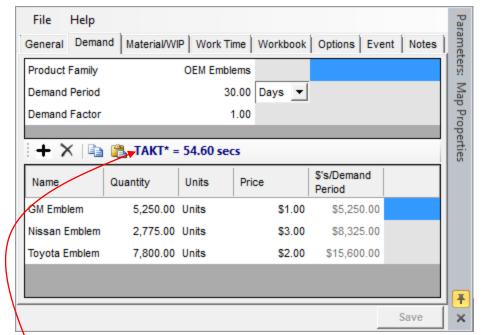
Also included are **Customer Name**, **Map Author**, **Produced For** and **Sponsor**fields.

The Map Title will change the title located at the top of the Value Stream Map.

Fill these in as depicted in the picture, then click the Save button. You will notice some of this information appears in the upper right corner of your VSM drawing.



Now Let's move to the Customer Demand Tab:



At EmblemCo, we manufacture 3 different types of Emblems in our O.E.M. Emblems Product Family. On the Customer Demand tab, you will define the Product Family and Customer Demand Period. In the table, you will list each product, the quantity (needed during the defined customer demand period), and the price per unit size.

You may define unit size as anything you want (each, case, batch etc...).

Once you've entered the data as it appears, a TAKT time of 54.6 seconds is computed by LeanView. The total dollar value of product that will be produced (Quantity x Price) is computed automatically in the far right column.

Click the save button on this dialog to make sure you've saved your changes to the LeanView diagram.

Now let's move to the Work Time tab:

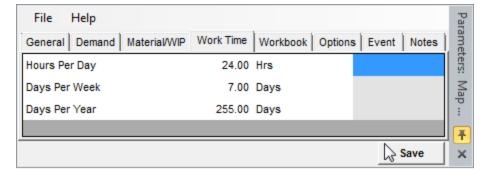
The Work Time tab allows you to define average work hours per day, work days per week and work days per year during which your plant operates.

You should not include days or hours that your plant is closed, or time you shut the operation down for breaks,

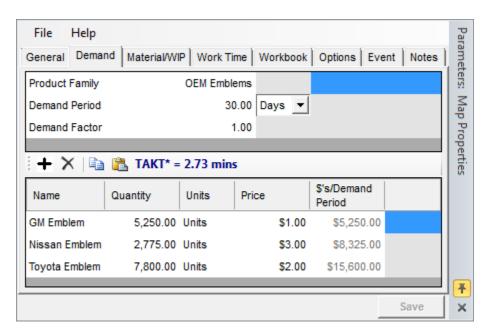
lunches etc...

For this example, let's use 24 hrs per day, 7 days per week and 255 days per year.

When you are finished adjusting these numbers, then click "Save".



■ **Note**: After saving these changes, you will notice that your takt time on the Customer Demand tab has now changed to 2.73 minutes.



Let's move to the Raw Material/WIP tab:

The Raw Material/WIP tab is set up much like the Customer Demand tab.

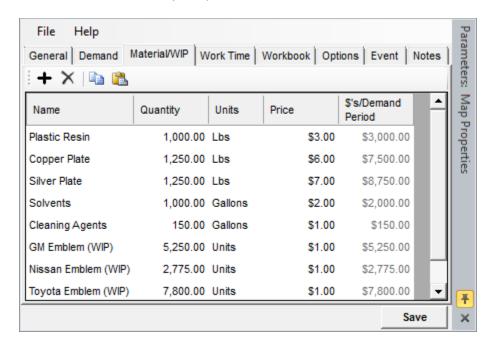
Enter the Item, Quantity, Units and Price per Unit and the Total for the demand period is calculated in the last column.

Enter the following values:

Plastic Resin	1000 Lbs	\$3.00
Copper Plate	1250 Lbs	\$6.00
Silver Plate	1250 Lbs	\$7.00
Solvents	1000 Gal	\$2.00
Cleaning Agents	150 Gal	\$1.00
Nissan Emblem (WIP)	2775 Units	\$1.00
Toyota Emblem (WIP)	7800 Units	\$1.00
GM Emblem (WIP)	5250 Units	\$1.00

Click "Save", then click "Close" to close the dialog.

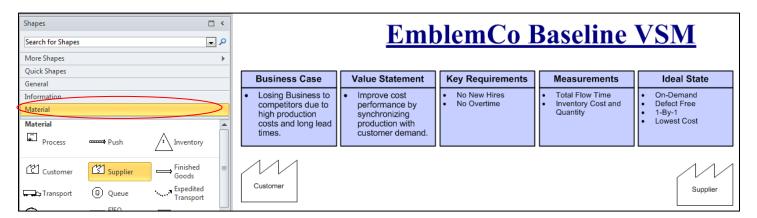
- **Note**: After Saving, you will notice that the total value for the Customer Demand Period of each WIP item is calculated in the last column on the right
- **Note**: Try to click the "Save" button after entering data on any tab in LeanView ... This will ensure that your data is saved in the event of computer error.



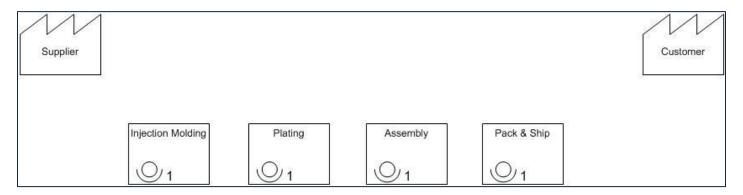
Step 3: Drawing the VSM

Let's start drawing our Value Stream Map for the EmblemCo Emblem Manufacturing line.

First, start out by applying the Supplier and Customer Shapes to the map. These items can be found on the Material Stencil. Left click on the shape and, while holding the left mouse key down, drag the shapes onto the VSM.



At EmblemCo, we have 4 processes in the production of Emblems: Injection Molding, Plating, Assembly and Pack & Ship. Drag and drop 4 Process shapes onto the map.



Once you've placed the processes on the map, you can double click each one to change its title. We will enter the process data a little later.

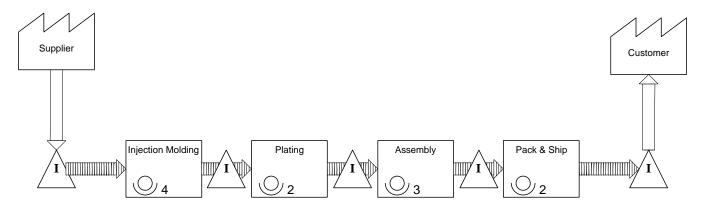
Remember to Save your diagram.

Step 3: Drawing the VSM Continued

We'll use finished goods arrows from the supplier and to the customer; then, we'll use push arrows to connect all other Processes within the value stream.

Add Inventory shapes before Injection Molding, between each Process and after Pack & Ship.

Your diagram should now look like the one below:

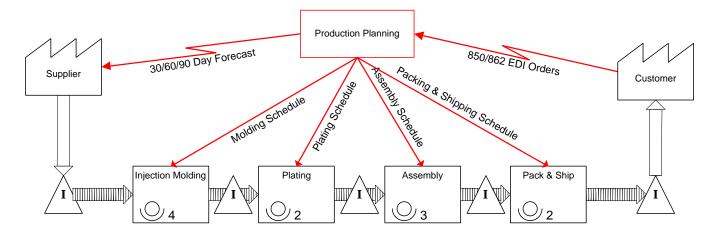


To define the information flow, let's add in a production planning model with communications between customer, plant and supplier.

On the Information Stencil, we can drag an information shape onto the map and name it "Production Planning". Then add Electronic information arrows from Production Planning to Supplier (named "30/60/90 Day Forecast") and from Customer to Production Planning (named "850/862 EDI Orders").

Next add Manual Information arrows from Production Planning to each of the Processes. From left to right, name them "Molding Schedule", "Plating Schedule", "Assembly Schedule", and "Packing & Shipping Schedule"

After completion, your VSM should look like this:

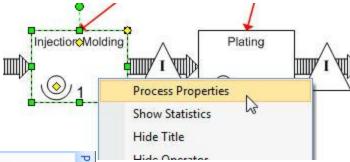


Note: You will need to right click on the information arrows and select "Show Title" to get the title to appear. Alternatively, you can use the Ctrl key to select multiple information arrows, then go to the LeanView menu and select View \rightarrow Shape Title \rightarrow Show.

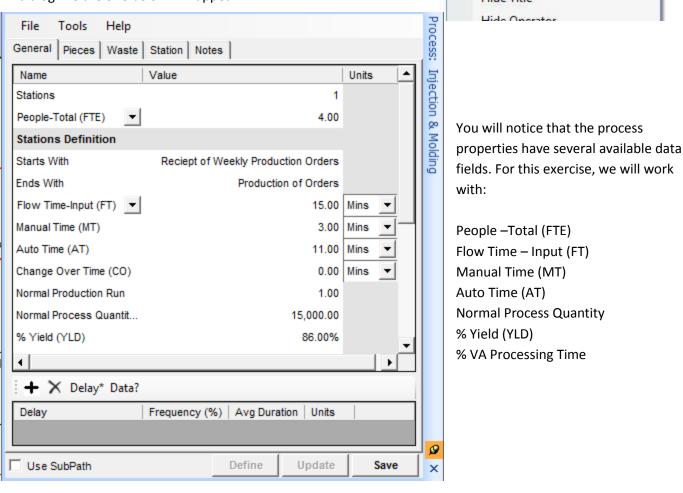
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Step 4: Entering Process Properties

Now that we've drawn the VSM, let's add Properties to each of the processes. Right-click on the Injection Molding Process, and choose Process Properties from the menu.



A dialog like the one below will appear:



Note: You will notice that People-Total (FTE) has a dropdown list. You can choose to define total People for this process or the number of people per station. We will use People-Total (FTE) for this exercise. You will also notice that Flow Time-Input (FT) has a dropdown list. Flow Time-Input (FT) allows you to enter your own value. You can also choose Flow Time-Calculated (FT) to allow LeanView to compute the total Flow Time for you. We will use Flow Time-Input (FT) for this exercise.

Add the properties from the tables on the next page to the General tab of each of the processes, clicking Save after completing each one.

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Process Properties:

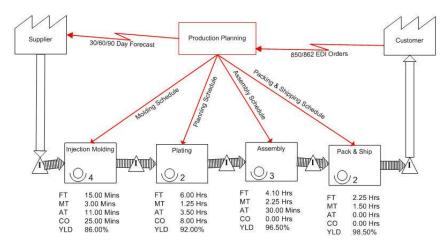
NOTE: NPR = Normal Production Run, NPQ = Normal Process Quantity

Process		Injection	Injection Molding				
Starts With		Receipt o	Receipt of Weekly Production Orders				
Ends With		Production of Orders					
People	Flow Time	MT	AT	C/O Time	NPR	NPQ	% Yield
4	15 Mins	3 Mins 11 Mins 0 15,000 15,000 86%				86%	
%VA Processir	ng Time	•	•	15%	•		•

Process		Plating	Plating				
Starts With		Receipt of	Receipt of Emblem Totes				
Ends With		Plated Emblems					
People	Flow Time	MT	AT	C/O Time	NPR	NPQ	% Yield
2	6 Hrs	1.25 Hrs 3.5 Hrs 0 15,000 15,000 92%				92%	
%VA Processing Time			4%		•		

Process		Assembly	Assembly				
Starts With		Receipt of	Receipt of Plated Emblem Totes				
Ends With		Assembled Emblems					
People	Flow Time	MT	AT	C/O Time	NPR	NPQ	% Yield
3	4.1 Hrs	2.25 Hrs 30 Mins 0 Hrs 22,000 22,000 96.5				96.5%	
%VA Process	sing Time	•	•	7%	•		

Process		Pack & Sh	Pack & Ship				
Starts With		Receipt o	Receipt of Assembled Emblem Totes				
Ends With		Emblems Packed by Ship-to Customer					
People	Flow Time	MT	AT	C/O Time	NPR	NPQ	% Yield
2	2.5 Hrs	1.5 Hrs			98.5%		
%VA Processing Time 3%			•				



Upon completion, your VSM should look like this (Note that you must right click on the process and choose "Show Stats" to see the statistics below each process):

Note: To show statistics on a shape, right click and choose "Show Statistics". Alternatively, custom displays can be created using the Microsoft Visio Data Graphics (available in Visio 2007 Professional and Visio 2010 Professional and Premium).

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Step 5: Entering WIP / Inventory

Inventory on the plant floor is determined using the "Go See" method, or by sampling to determine, on average, what is present at a particular location.

Note: The Map Properties – Raw Material/WIP tab contains a master list of WIP Items used in the value stream.

You must first enter this data in the Map Properties shape before

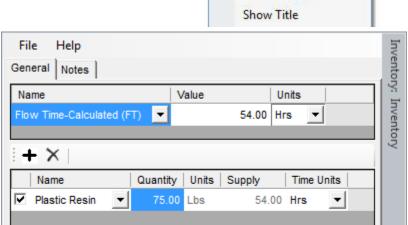
defining inventory shape properties.

Right click on the inventory shape just before the Injection Molding process and choose "Inventory Properties. This will bring up the inventory properties Dialog.

The inventory properties dialog allows you to choose which WIP or Raw Material items are in a given location. You can also enter the Quantity of the items that you see.

In this location, select "Plastic Resin" in the Name column and enter "75" for its Quantity and click "Save".

Inventory supply time is calculated for you after clicking the save button (in this case 54 Hours).



Injection Molding

Inventory Properties

Show Supply

Use the information below to enter inventory in each of the inventory location (shapes):

4

Inventory location before Injection Molding:

Name	Quantity
Plastic Resin	75

Inventory location before Plating:

Name	Quantity
Toyota Emblem (WIP)	300
Nissan Emblem (WIP)	225
GM Emblem (WIP)	175
Silver Plate	50
Solvents	50

Note: Some items may appear in Red. This shows that they are product items (finished goods) as opposed to Raw Material / WIP items.

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Save

Inventory location before Assembly:

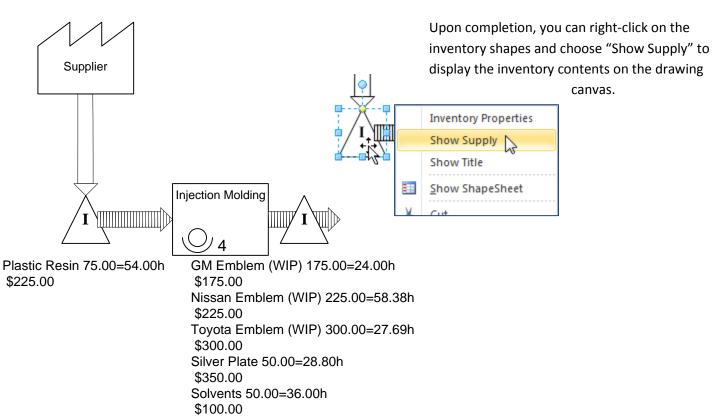
Name	Quantity
GM Emblem WIP	175
Toyota Emblem WIP	250
Nissan Emblem WIP	150

Inventory location before Packing & Shipping:

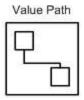
Name	Quantity
GM Emblem WIP	190
Toyota Emblem WIP	225
Nissan Emblem WIP	175

Inventory location after Packing & Shipping:

Name	Quantity
GM Emblem	400
Toyota Emblem	600
Nissan Emblem	250



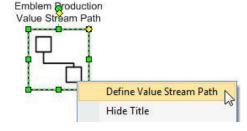
In the lower right hand corner of the Value Stream Map, you will see a Value Path shape. The Value Path shape is used to record a value stream in LeanView. You can have as many value stream paths as you would like by adding additional Value Path shapes from the General stencil.

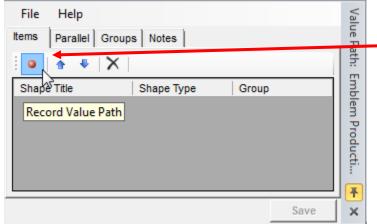


Let's rename this value path shape to reflect the Value Stream we want to record. Double click the Value Path shape and rename it "Emblem Production Value Stream Path".

To record a Value Stream, we begin by right-clicking on the Value Path shape and choosing "Define Value Stream Path".

You will be presented with the Value Path dialog.

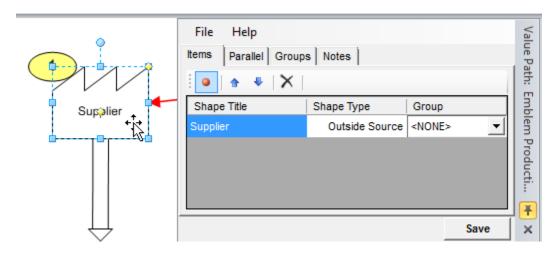




Click the red record button on the "Items" tab to begin recording a Value Stream.

This will allow you to begin selecting the shapes you want to be included in your value stream.

Now begin with the Supplier shape. Once you click on it, you will notice a numbered oval appear over the shape, and you will notice the shape will appear in the Value Path dialog.

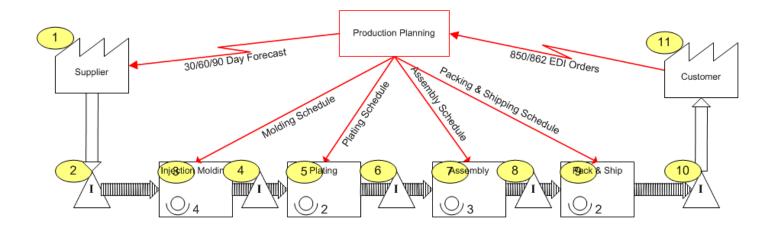


You can now record the full value stream, in order: Supplier, Inventory, Injection Molding, Inventory, Plating, Inventory, Assembly, Inventory, Pack & Ship, Inventory, and Customer.

Note: In order to capture a shapes data in your analysis, it must be recorded in the Value Stream Path. If a shape is not recorded, its data is excluded from the Map Analysis Report (MAR).

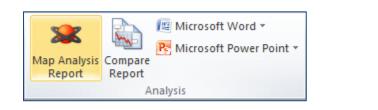
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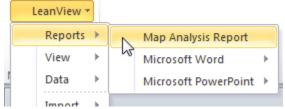
Your fully recorded value stream should appear as follows:



Step 7: Producing the Map Analysis Report (MAR)

To produce a map analysis report, go to the Analysis section of the LeanView ribbon and click Map Analysis Report. (If working in versions 4 or 5 of LeanVeiw, go to the LeanView menu, click on Reports \rightarrow Map Analysis Report.)





The 'Select Value Stream Analysis Path' dialog is presented so you can identify the value stream path to be analyzed and the time units to be used to report Flow Time, Manual Time, and other time-based performance metrics.



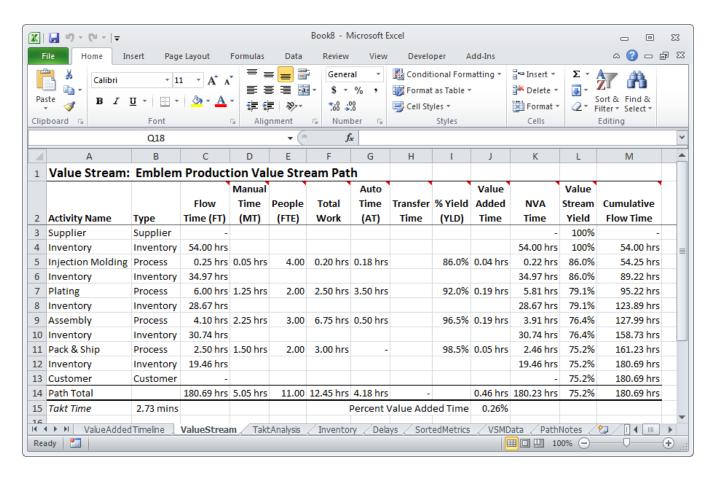
Choose the "Emblem Production Value Stream Path". Leave the Report Time Units at the default "Hrs", and click "Ok".

Note: Depending on your system and software, reports may take a few moments to complete.

LeanView will open Microsoft Excel, and output the analytics (Map Analysis Report) from your Value Stream. You should avoid pressing any keys while the report is running.

Step 7: Producing the Map Analysis Report (MAR) Continued

When LeanView is finished writing value stream performance information to Microsoft Excel, several worksheets will be available for review.



To obtain a detailed description of the Map Analysis Report and to review information about LeanView's other reporting options, explore the User's Guide. (LeanView \rightarrow Help \rightarrow User's Guide)

This tutorial should have given you a broad overview of just some of the capabilities of the LeanView value stream mapping and analysis solution. Now, you should understand how you can utilize the software to very quickly and accurately capture current manufacturing or transactional operations, analyze critical data, share documents and perform what-if analysis to explore the impact of change before investing in modifying your process.

This concludes this tutorial, but you may review the User's Guide for information about additional capabilities, like building VA/NVA timelines, creating an A3 report, and more.

Please visit us at <u>www.bluespringsoftware.com</u> for more information on Advanced Functionality and Training or call us directly at 877.794.1764.