

# BD

#### **Quality Confab**

October 21, 2014

**Essential Insights: Value Stream Mapping for Intermediate Practitioners, Prioritizing Projects and Selecting the Right Tools** 

- Value Stream Maps (VSMs) are the key to successful Lean projects.
- Their purpose is multifocal:
  - To expose opportunities for improvement.
  - Level-set everyone on the process.
  - Identify lack of standard work.
  - Identify deviation from policy.
- Their value is to provide a roadmap for the future.



#### **Intermediate Level Value Stream Mapping**

- Most everyone knows how to produce a VSM.
- What are the most efficient ways to produce VSMs?
  - Paper using cut-outs or just drawing on a large roll of butcher block paper.
  - Electronic using a common program such as Visio, Excel, or other common products.
  - Highly sophisticated add-on programs such as EVSM which lays on top of Visio.
  - Newer lower cost add ons such as Smartdraw which uses a more common platform (Excel) and is less costly to install and has a faster learning curve to use.



#### Advantage/Disadvantage

- Paper advantages:
  - Cheap.
  - Short learning curve to use.
  - Flexible.
- Paper disadvantages:
  - Takes a lot of space to use it.
  - Takes preparation work to have everything cut out.
  - Hard to move (taping down required before moving).



## Advantage/Disadvantage (cont.)

- Electronic Advantages:
  - Fast to create.
  - You can use a previous map as a template.
  - Easier to transport a laptop than a large roll of paper.
  - No problem with it coming unglued.
  - You can easily make changes.
- Electronic Disadvantages:
  - Expensive.
  - Learning curve, you can't show and use.
  - You have to have a projector for a large group to see it.
  - You can't always see the entire map in details at the same time.
  - To print a readable copy you need a large paper roll plotter.

#### Paper VSM









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#### EVSM



#### **SmartDraw**





#### Good Ol' Visio!





## So.. What's The Right Thing To DO?

- Like everything else with Lean, let the data drive the decision.
- Do you have money for the software?
- Do you have technical expertise to learn to use it?
- Do you have access to projectors where you will be using it to develop the Value Stream Maps?
- How often are you going to be using it?
- Do you need/want to share the maps with others who are not able to come to the exercise (virtual VSMs).



## EVSM



#### eVSM Software - New License

One license per computer.

eVSM allows easy capture of a wall VSM (value stream map) into electronic format for sharing, fast visual analysis of the waste, and focused selection of improvement ideas through what-if analysis. It has unique capability and a set of wizards to simplify VSM related calculations for each industry/VSM type.

Pre-requisites:

- Microsoft Visio 2003, 2007, 2010, 2013 (Standard or Professional, 32 or 64 bit)
- Microsoft Excel 2003, 2007, 2010, 2013 (32 or 64 bit)
- Windows XP, Win7, or Win8

Price includes a 1 year renewable maintenance agreement to provide upgrades and technical support.

#### Download only

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## EVSM

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#### **Smart Draw**



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#### **Samples Of Each**

- Exercise #1 The paper VSM.
- Exercise #2 EVSM.
- Exercise #3 Smartdraw.
- Exercise #4 Visio.



## **Selecting The Right Tool For The Job**

- Lean uses tools much like a carpenter, plumber, doctor, nurse, or laboratory tech does.
- The tools are common to all Lean projects, their application might vary somewhat with the use of each.
- The common Lean tools include:
  - Value Stream Map.
  - 5S.
  - RACI Chart.
  - Spaghetti Diagram.
  - Primary Visual Display.
  - Huddle Meetings.
  - Metrics.
  - Voice of the Customer.

- Brown Paper.
- Standard Work.
- Poke Yoke (error proof).
- Single Piece Flow.
- Kaizen/Blitz.
- 20 Keys.
- Hot Button List.



#### **Grouping Tools for Use**

- The tools can be grouped into:
  - Discovery/initiation of CI projects.
  - Implementation of change.
  - Monitoring to sustain change.



#### **Discovery/initiation of CI projects**

- Value Stream Map (Identifies potential opportunities)
- Spaghetti Diagram (Identifies waste)
- Huddle Meetings (Idea generation for change)
- Metrics (Quantifies potential project benefits)
- Voice of the Customer (Identifies opportunities)
- 20 Keys (quantifies and identifies opportunities)
- Hot Button List (Allows employees to speak up)
- Brown Paper (Identifies Opportunities)
- Primary Visual Display Board (Dashboard of activities, metrics, and success)



#### **Implementation of change**

- Value Stream Map (Future State shows how it could work)
- 5S (Removes waste/clutter)
- RACI Chart (Allows change to occur)
- Standard Work (Directs the new work)
- Poke Yoke (Error proof drives the change)
- Single Piece Flow (Directs the new work)
- Kaizen/Blitz (Provides the vehicle for change)
- 20 Keys (Provides the process for change)
- Huddle Meetings (Directs and educates change)
- Metrics (Quantifies what the change will be)
- Voice of the Customer (Allows employees to speak up concerning change)
- Primary Visual Display Board (Dashboard of activities, metrics, and success)

#### **Monitoring to Sustain Change**

- RACI Chart (Maintains the control of authority).
- Primary Visual Display (Dashboard of metrics and success/shortfalls).
- Huddle Meetings (Communication with the employees which keeps momentum going).
- Metrics (measures success and degree of success).
- Voice of the Customer (Allows employees/customers to speak up).
- 20 Keys (used to monitor success, continue improvements, discover next initiatives).



#### How to Engage Employees

- Engage ALL employees by knowing all employees.
- Assign employees to the tools.
  - Employees get scared easily.
  - Employees feel left out.
  - Employees fear their job will be eliminated.
- Make it interesting.
  - Golf Tee Game to teach Standard Work.
  - Single piece flow exercise to prove the value before asking them to believe.
  - Have them cut out the icons for the VSM, or at least have them at least review the work once it is done in an interview/presentation fashion.
  - Be creative! E.G. contests to decorate PVD Dashboard.



#### How to Engage... (cont.)

- Get everyone involved:
  - Make sure everyone has a "job" on a team.
  - Make it part of their job/evaluation/review.
- Reward good behavior:
  - Know your staff and what motivates them.
  - Provide a reward if metrics are met; pizza, ice cream, special parking place, special lab coat...
- Make the reward easy at first, harder as time goes on:
  - Reward good behavior even if failure has occurred!
  - Avoid money!!!!! It only makes it harder to motivate them later!
  - Make them feel like a team.



#### How to Engage... (cont.)

- High organizational visibility is a big plus.
  - Make sure administration/leadership recognizes the team's activities and is present at award/reward meetings.
  - Have Administration attend huddle meetings periodically.
  - Try not to make a big deal out of their attending; make it part of the plan.
  - Encourage them to speak BRIEFLY on any organizational global initiatives that the staff might be interested in.
  - Possibly the hardest behavior to change is the Administration!



- There is always a tendency to use your favorite tools and avoid some other tools.
- Understand when to use what tools and use them! Even the most difficult tools become easy when you are comfortable using them.
- Don't use the tools just to use them.
  - Once you have used a tool make sure that you show the results and discuss the outcome with the staff at huddle meetings or special meetings of time is needed to show, discuss, plan.
- It helps if you have a reference that discusses the use of the tools.



#### Try Some Games...

- Exercise #4 Standard Work (Golf Tee Game).
- Exercise #5 Single Piece Flow (Sort the Tubes Game), Golf Ball Game.
- Exercise #6 Draw The Pig!



- Standard work is necessary to make any process work efficiently.
- To prove this, we have a game for you to play.
- Play the game without standard instructions.
- The goal is to have only one golf tee left.
- The game plays like "Checkers".
  - As you jump a tee with another tee, remove the tee jumped.
- You have 3 minutes, good luck!



## Try it again!

- This time follow the instructions on the next slide.
- You should end up with only one tee left.
- You should always end up with the tee in the same hole (#13).
- You may keep the game as a reminder of the importance of Standard Work, and to remind you to think of BD when you think of Lean-Sigma!
- You have 3 minutes, good luck!



#### **Standard Work Practice**

#### Set up Triangle with hole #1 empty Begin with #4 jumping #2 landing in empty hole #1





- Hand out two pieces of blank paper.
- Place a grid on the paper as depicted in the next slide.
  - First use the attached Standard Work for making a Pig.
- The second piece of paper is to make a second version for the "customer" after improving the standard work.



#### **Standard Work**

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#### **Standard Work Instructions**

- Draw the letter M at the top left intersection. Bottom center of M touches the intersection.
- Draw the letter W at the bottom left intersection. Top center of W touches the intersection.
- Draw the letter W at the bottom right intersection. Top center of W touches the intersection.
- Draw an arc from the letter M to the top right intersection.
- Draw another arc from the top right intersection to the bottom right W.
- Draw an arc between the bottom W's.
- Draw the letter O in the center left box.



#### Standard Work... (cont.)

- Draw an arc from the letter M to the tangent of the circle.
- Draw an arc from the left W to the tangent of the circle.
- Draw an arc for the eye. Halfway between M and circle.
- Draw an arc for the mouth. Halfway between W and circle. Must be a happy pig!!
- Draw the cursive letter e near the top arc on the right.
- And finally draw two dots in the middle of the circle for the pigs nose.
- This is the exact the sequence which we must draw our pigs. This is the Standard Work for drawing a pig



## The Approach is to Provide Long-Term COMPANY CONFIDENTIAL SUStainable Results



