FORTIVE

VSM Challenges Guide

About the Challenges

VSM Challenges

In addition to the digital learning, we've included four challenges you can access at the end of each lesson.

You can complete one or more of these challenges to ensure you understand the fundamental principles of VSM and apply your knowledge in different scenarios.

The challenges give you a variety of business scenarios and roles in which to apply your new VSM knowledge. Each challenge gets a little harder but, the case study and challenges will prepare you for a VSM Kaizen.

Can you complete the challenges?

QUICK LINKS

- Fortive Learn
- InsideFortive

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Unlimited Opportunities

1

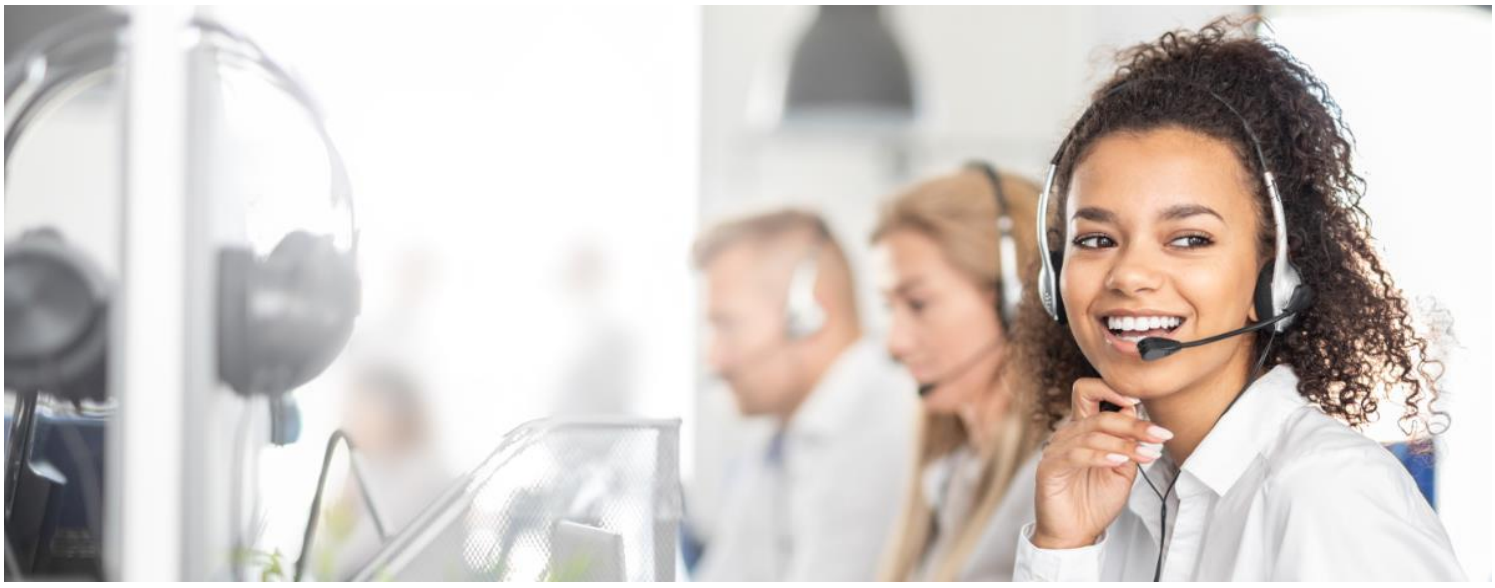
Quote to Cash

Introduction

Unlimited Opportunities

provides software to customers who create solutions for their end customers

Unlimited Opportunities has received feedback from their customers that **the process for quoting new direct software sales via responding to a request to quote is cumbersome and competitors are doing a much better job.** This matches internal feedback and frustration in the many departments that touch a Deal. Management decides they need to improve the process and identifying the major problems by doing a Value Stream Map.



Challenge 2:
Creating a Current State Map

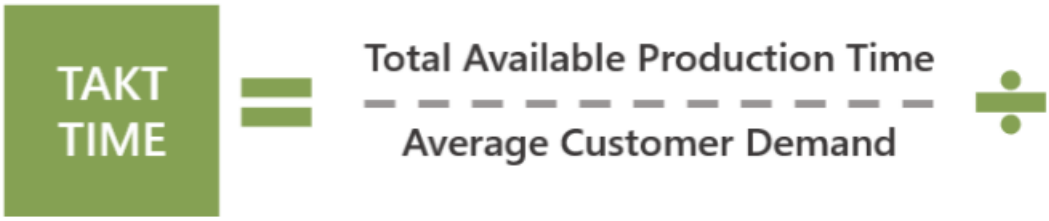
Directions: Look at the following background information and then calculate the Takt Time for Unlimited Opportunities in the box below.

Unlimited Opportunities

The kaizen team at Unlimited Opportunities starts by seeking to understand the core problem of quote to cash. Unlimited Opportunities know they need to "Close Won" 2400 deals each year.

- There are 240 workdays annually for the sales team.
- The team works 10 hour days.

From this information - can you calculate Takt Time?



Challenge 2:
Creating a Current State Map

Directions: Look at the following background information and then determine how you will use this data to create the Current State Map for Unlimited Opportunities.

A team is chartered to review the process from Quote creation to Close Won.

The team starts by seeking to understand the core problem they will focus on. Unlimited Opportunities needs to "Close Won" 2400 deals each year (use this to calculate Takt Time). It is decided to improve the Quote creation to close Won process from average 50 days to 25 days. There is also clear management view that within that process the deal review step is taking too long (7 days).

While walking the process together, starting at the step closest to the customer, the team gathers some data at each process box (numbered 1, 2, etc. below):

1. The Opportunity Close Process is the final process step before the invoice is sent to the customer; this step is where contracts and invoices are generated. Data for the process data box:
    a) There are 4 functions that touch this process (all captured in one process/data box); there is interaction between the functions as they do their work:
        I. Sales moves the opportunity to deal review and submits the documentation (15 minutes/deal) in the Customer Relationship Management (CRM) System
        II. Pricing audits the pricing (30 minutes/deal) using the Pricing Audit Tool and documents in CRM
        III. Legal which audits the contract language (30 minutes); all contracts are stored in the Legal SharePoint site
        IV. Accounting which audits terms, has final say on the agreement, and moves the deal to closed won (30 minutes) in CRM
    b) 50% of all deals have to be reworked
    c) 300 deals are waiting to be started

Challenge 2:
Creating a Current State Map

Directions: Continued …

2. Prior to closing an opportunity, there is the Negotiation Step where terms of the deal are determined between the company and the customer. Data for the process data box:
    a) 3 functions are involved in this negotiation:
        I. Sales rep delivers initial documents to the customer, discusses terms, works between the company and the customer (5.5 hours)
        II. Legal reviews, agrees to, negotiates legal terms and contract language (2 hours)
        III. Pricing use the new Pricing Audit Tool to audit pricing and the Price Creation Tool to rework pricing (30 minutes)
        IV. Sales rep moved opportunity in CRM to “deal Review” to trigger next process (30 minute)
    b) 10% of all deals must go back through the process for rework
    c) 200 deals are waiting to be started
    d) 100 deals are in process at this step
    e) Process has many potential paths depending on deal size, pricing, discounts, contract terms, etc.
3. The initial process step is Initial Document Creation and Delivery; the Order documents, Statement of Work, and MSA are created and delivered back to Sales. Data for the data process box:
    a) Sales rep creates the quote request in CRM (10 minutes)
    b) Pricing use the Price Creation Tool to generate the price and documents in CRM (40 minutes)
    c) Sales rep delivers to the customer (10 minutes)
    d) 100 deals are waiting to be started
    e) 0% rework
4. Information/system interactions
    a) Customer Relationship Management System
    b) SharePoint
    c) Price Audit Tool
    d) Price Creation Tool

Challenge 2:
Creating a Current State Map

Directions: Using the information on the previous pages, create the Current State Map for Unlimited Opportunities.

Challenge 3:
Adding Kaizen Bursts

Directions: Look at the following information and determine how you will use this data to add kaizen bursts to the Current State Map on the next page.

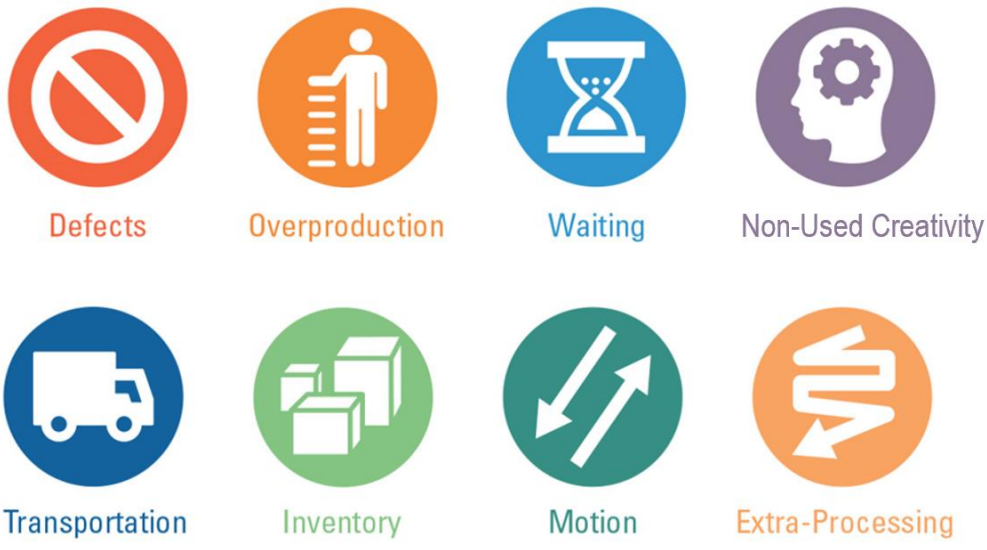
Unlimited Opportunities

Now that we have the current state map documented, we are ready to document the wastes that we observe.

We will document these wastes as we create the Current State Value Stream Map with Kaizen Bursts. We can see a VERY large discrepancy between the Lead Time and the Process Time (60 days vs 660 minutes) so we know there is plenty of opportunity for improvement.

During the kaizen, we would be walking the value stream, talking to people, observing what gets done (or doesn't get done) and noting wastes and things that just don't make sense. We want to focus on the areas that need to improve, not on the solutions (yet). Use the 8 waste framework (and common sense) to come up with a examples of wastes and document on your map with kaizen bursts. The Inventory waste is obvious (300 deals sitting in from of opportunity close as example) as is the Defect waste (50% rework during opportunity close).

What other wastes do you see?



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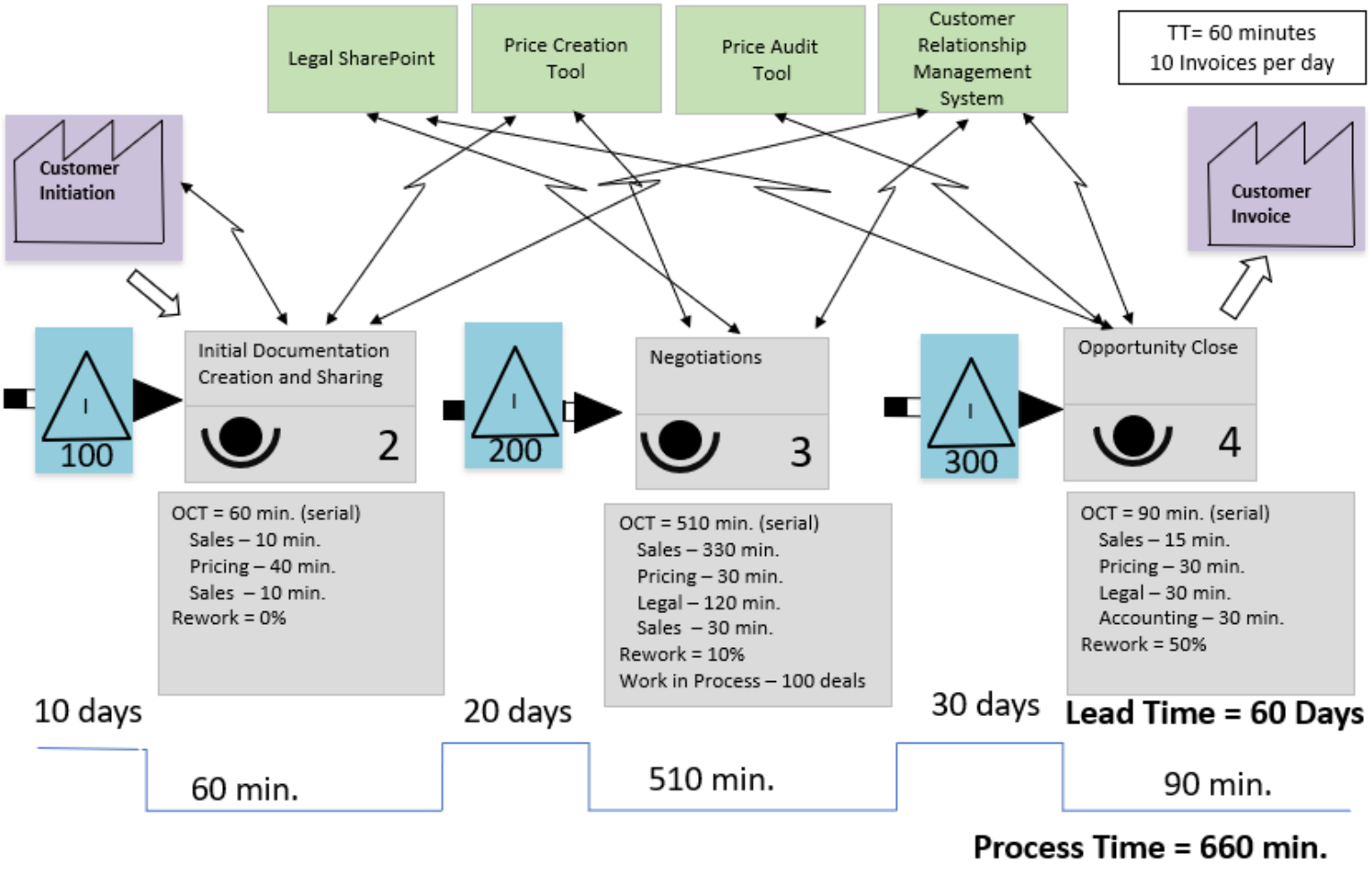
Adding Kaizen Bursts

Directions: Add kaizen bursts to the Current State Map for Unlimited Opportunities.

Unlimited Opportunities



Challenge 4:
Building the Impact Matrix

Directions: Look at the following background information and determine how you will use this information to add items to the Impact Matrix on the next page.

As we document the wastes we will develop ideas for what we can do to make improvements.

Some ideas may be well thought out (fix x by doing y); some may need further understanding (problem solve metric z). For each of the kaizen burst areas identified on the Current State Value Stream Map, we brainstorm the list of improvements and use an affinity diagram to group them together.

Once grouped, we rate improvement ideas for the Impact they would have on the wastes identified as well as the ease of implementation. We then take the improvement ideas and map them on the impact matrix. For example, we have a kaizen burst around there being 2 different pricing tools which leads to defects and lost time.

An idea for improvement could be to combine the pricing tools and we have rated that as high impact and hard to implement (meaning we would need further planning to make that happen).

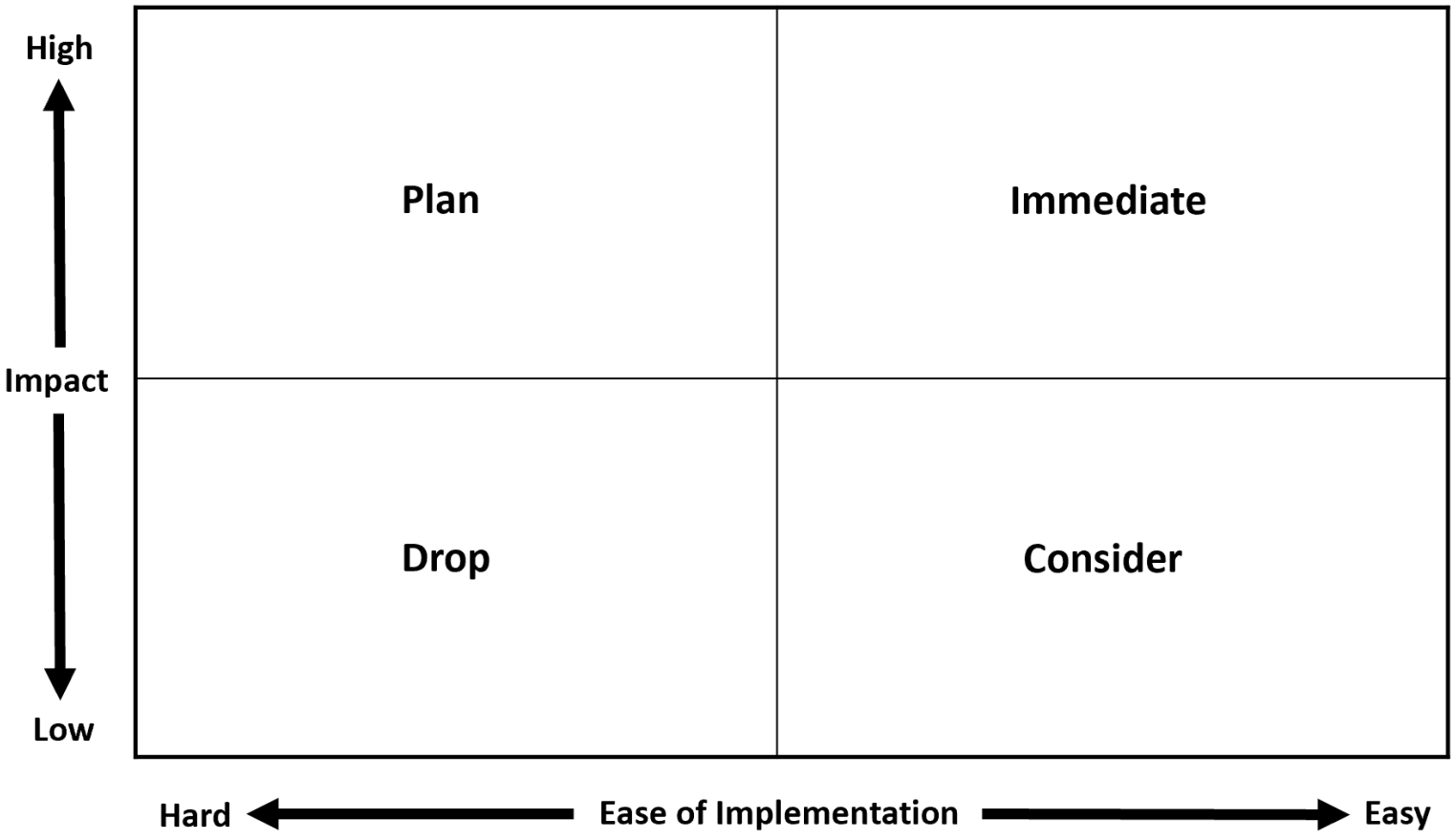
Another idea would be to align the 2 pricing tools as they are today to make sure the way the fields are used and calculations are made will give us the same answers. We believe that has a medium impact and would be a medium ease of implementation.

What other ideas for improvement would you document?

Challenge 4:
Building the Impact Matrix

Directions: Add your top improvement ideas to the Impact Matrix for Unlimited Opportunities based on your estimates on the level or effort and impact for each.

Unlimited Opportunities



Challenge 5:
Creating a Future State Map

Directions: Look at the following background information and determine how you will fill out your Future State Map on the next page.

Given the impact matrix information on the impact of our future efforts, we will create a Future State Value Stream Map.

This will document the improvements we commit to make to improve the customer and employee experience. Note: We may not have the "how" fully figured out (and will document our actions to close the gap next in the action plan). An example of a large change from the current state to the future state is the reduction in rework from 50 % to 5%.

- **What other changes would you make to create the Future State Value Stream Map?**
- **What is the new Lead Time and Process Time based on your changes?**

Challenge 5:
Creating a Future State Map

Directions: Using the information on the previous pages, create the Future State Map for Unlimited Opportunities.

Challenge 6:
Creating the Action Plan

Directions: Look at the following background information and determine how you will fill out your Action Plan on the next page.

Unlimited Opportunities

Before our kaizen report out, we create the Action Plan. This is the commitments we have made to close the gap from the current state to the future state. For example, if we are going to reduce the backlog in front of opportunity close (and take out 27 days of Lead Time!), we need to reduce the amount of rework that happens. An action we could take is to do a Variation Reduction Kaizen on the process to identify where the process breaks down and implement fixes to eliminate the rework.

What other actions would you capture on the action plan?

Action Plan

FORTIVE

Improvement Priority or Process to be Improved:					Revision Date:			Current High Level Situation Summary:																	
Action Plan Owner:		Action Plan & PSP Gemba:																							
Management Owner:		Meeting Cadence & Specific Time:																							
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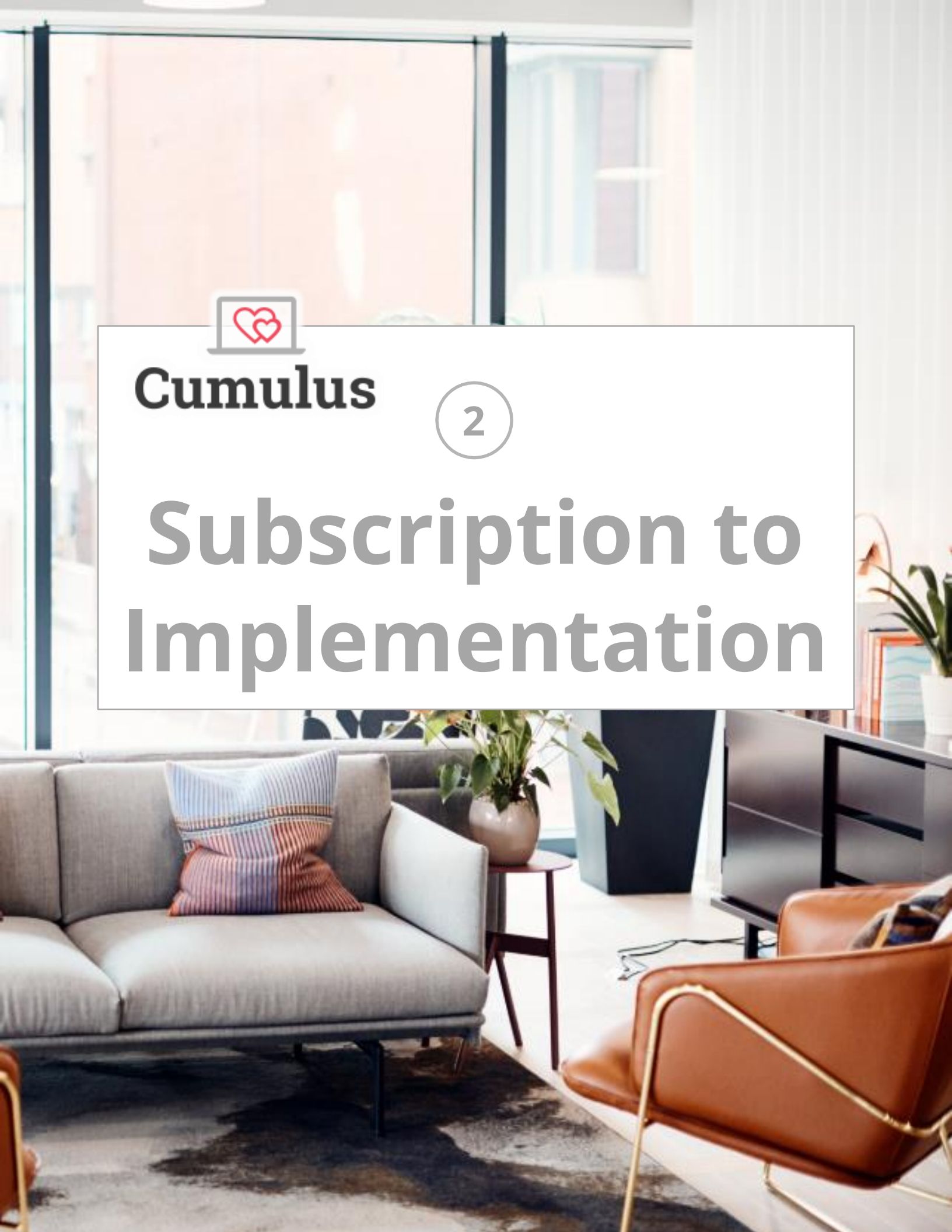
Be sure to include Negative Events that may Impact your TTI. For example Known Life Time Buy Inventory will off set planned Inventory Reductions																									

Click here to download the Action Plan template file from Inside Fortive.



Cumulus

2

Subscription to Implementation

Introduction

Cumulus

provides software solutions that monitor key activities in a customer's processes.

Cumulus has received feedback that **the lead time from a customer subscribing to a service and actually having the service implemented is much too long**. The delays are causing frustration among the team and the increasing pressure of competition. Management decides do a Value Stream Map to identify the issues.

Challenge 1: Calculating Takt Time

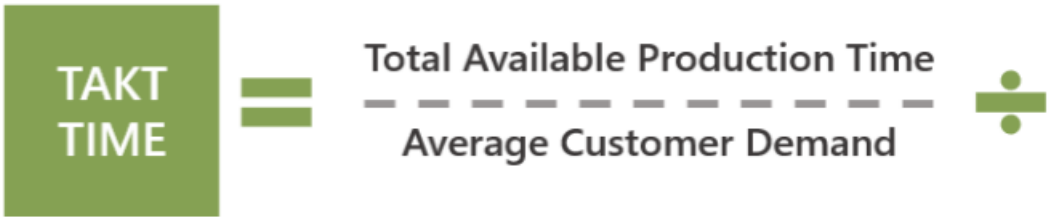
Directions: Look at the following background information and then calculate the Takt Time for Cumulus in the box below.

Cumulus

A team is chartered to review the process from Subscription to Implementation. The team starts by determining how many projects they need to complete every week.

- Cumulus needs to hand off 5 projects every week to the Customer and into Post Go-Live Support.

From this information - can you calculate Takt Time?



Challenge 2:
Creating a Current State Map

Directions: Look at the following background information and then determine how you will use this data to create the Current State Map for Cumulus.

While walking the process together, starting at the step closest to the customer, the team gathers some data:

1. The Deployment Process is the final step before the customer is live on the solution and can be handed off to the Support team. It includes planning for the cutover date, training all users, preparation for post-go-live support, and migrating data to support the Go-Live process. Data for the process data box:
   a) 1 project manager manages multiple resources/functions as appropriate (on average 3 per project).
   b) Cycle time varies from 1 day to 1 week with an average of 3 days.
   c) 0% reject rate
   d) There are 30 projects waiting to be deployed
   e) There are 15 projects in deployment

2. Testing occurs prior to Deployment and includes testing process and data as well as training lead users:
   a) 1 project manager with 3 functional resources
   b) Cycle time is typically 5 days
   c) 25% reject rate
   d) 10 projects are waiting for testing
   e) 4 projects currently in test

Challenge 2:
Creating a Current State Map

Directions: Continued …

3. Configure occurs prior to Testing and includes setting the system parameters as well as migrating/validating data in a test environment:
   a) 1 project manager with 3 functional resources
   b) Cycle time is 3 days
   c) 25% reject rate
   d) 50 projects are waiting for Configure
   e) 25 projects in configure

4. Design occurs prior to Configure
   a) 1 project manager with 3 functional resources
   b) Cycle time is 10 days
   c) Reject rate of 10%
   d) 75 projects are waiting for Design
   e) 10 projects are in process at Design

5. Project Plan
   a) 15 people initiate the project plans
   b) It takes about 4 hours to project plan and line up resources
   c) Projects are planned 1 per week on Fridays
   d) There is a 50% reject rate for the initial project plans
   e) 25 projects are waiting to start project planning

6. The customer subscription comes into the Customer Relationship Management system when a sale (with service) is closed.

7. All interactions are documented and supported in the Customer Relationship Management system.

Challenge 2:
Creating a Current State Map

Directions: Using the information on the previous pages, create the Current State Map for Cumulus.

Challenge 3:
Adding Kaizen Bursts

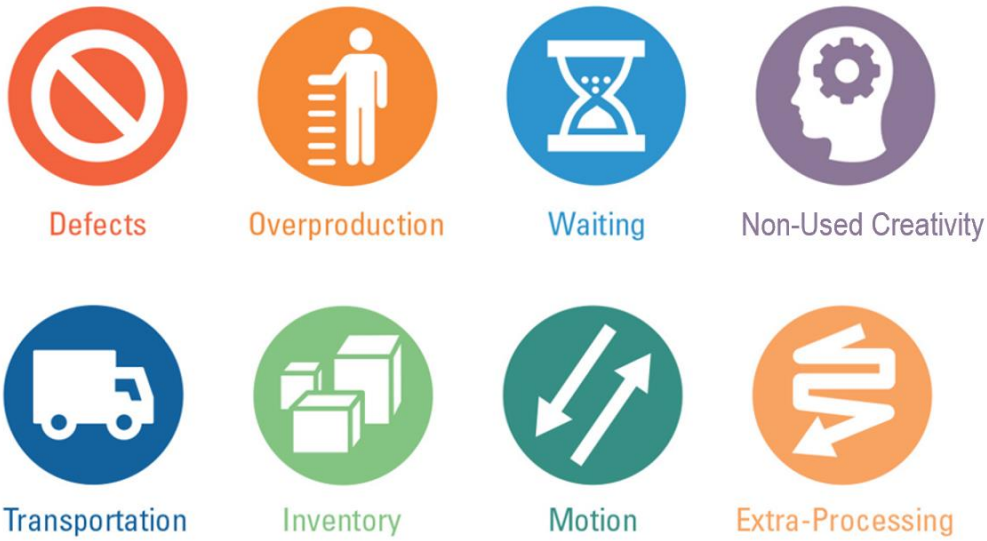
Directions: Look at the following information and determine how you will use this data to add kaizen bursts to the Current State Map on the next page.

Cumulus

Now that we have the current state map documented, we are ready to document the wastes that we observe.

We will document these wastes as we create the Current State Value Stream Map with Kaizen Bursts. We can see a VERY large discrepancy between the Lead Time and the Process Time (220 days vs 21.5 days) so we know there is plenty of opportunity for improvement. During the kaizen, we would be walking the value stream, talking to people, observing what gets done (or doesn't get done) and noting wastes and things that just don't make sense. We want to focus on the areas that need to improve, not on the solutions (yet). Use the 8 waste framework (and common sense) to come up with a examples of wastes and document on your map with kaizen bursts. The Inventory waste is obvious (75 projects waiting for design as an example) as is the Defect waste (25% reject/rework during Configure).

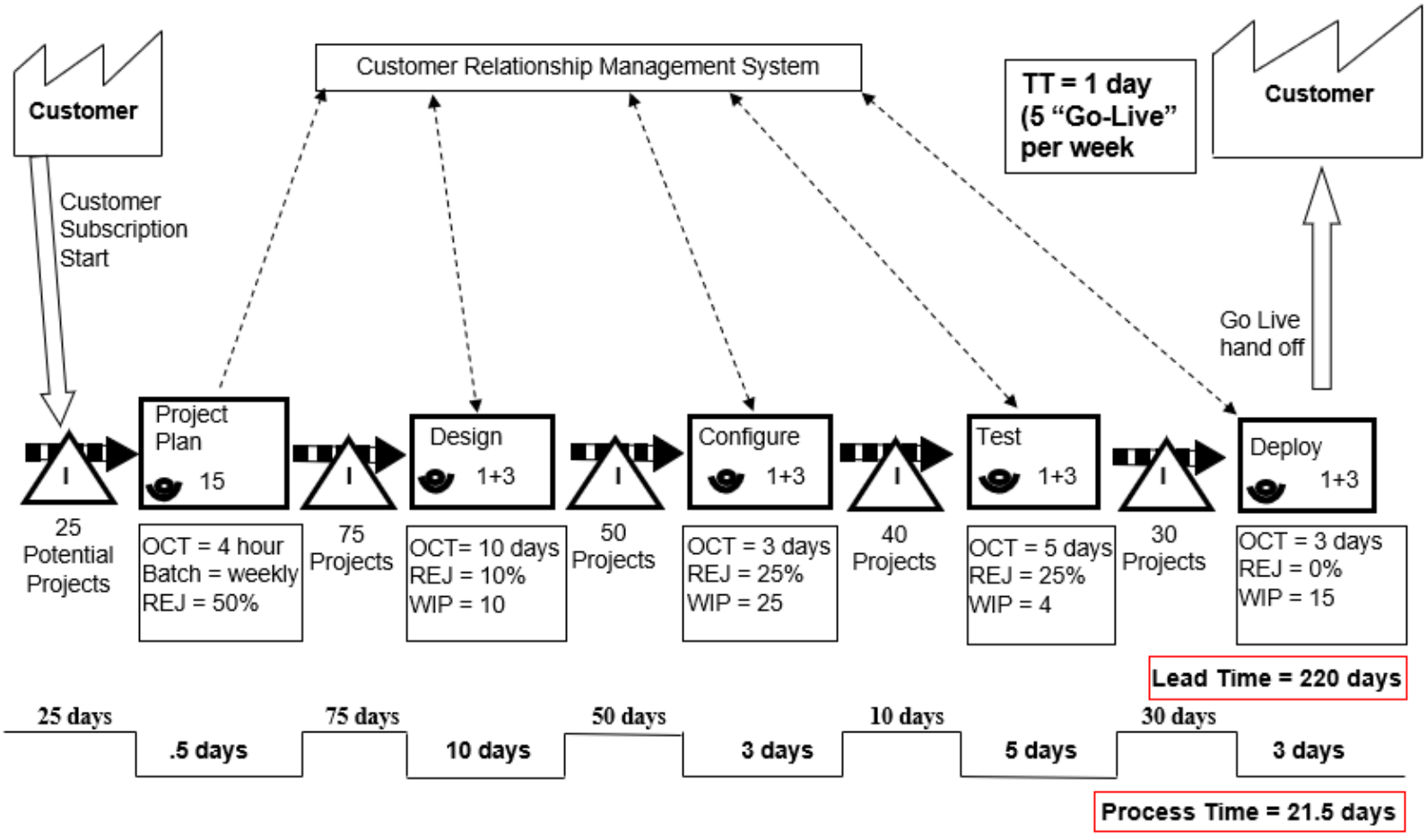
What other wastes do you see?



Challenge 3:
Adding Kaizen Bursts

Directions: Add kaizen bursts to the Current State Map for Cumulus.

Cumulus



Challenge 4:
Building the Impact Matrix

Directions: Look at the following background information and determine how you will use this information to add items to the Impact Matrix on the next page.

As we document the wastes we will develop ideas for what we can do to make improvements.

Some ideas may be well thought out (fix x by doing y); some may need further understanding (problem solve metric z). For each of the kaizen burst areas identified on the Current State Value Stream Map, we brainstorm the list of improvements and use an affinity diagram to group them together.

Once grouped, we rate improvement ideas for the Impact they would have on the wastes identified as well as the ease of implementation. We then take the improvement ideas and map them on the impact matrix. For example, we have a kaizen burst around there being 2 different pricing tools which leads to defects and lost time. An idea for improvement could be to combine the pricing tools and we have rated that as high impact and hard to implement (meaning we would need further planning to make that happen).

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What other ideas for improvement would you document?

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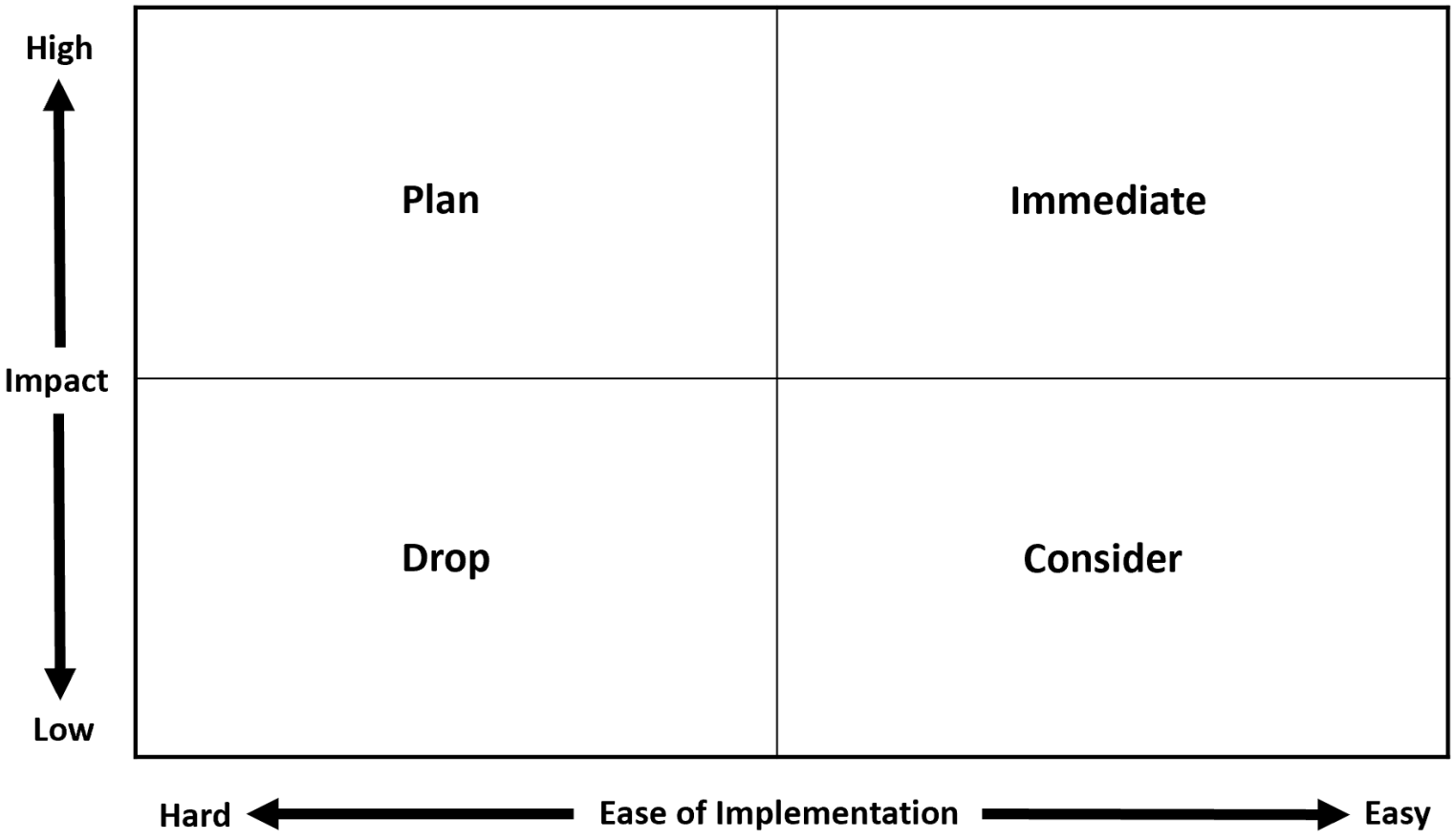
Building the Impact Matrix

Directions: Add your top improvement ideas to the Impact Matrix for Cumulus based on your estimates on the level or effort and impact for each.



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Creating a Future State Map

Directions: Look at the following background information and determine how you will fill out your Future State Map an on the next page.

Given the impact matrix information on the impact of our future efforts, we will create a Future State Value Stream Map.

This will document the improvements we commit to make to improve the customer and employee experience. Note: We may not have the "how" fully figured out (and will document our actions to close the gap next in the action plan). An example of a large change from the current state to the future state is the reduction in reject rate from 25% to 10% at Configure.

- **What other changes would you make to create the Future State Value Stream Map?**
- **What is the new Lead Time and Process Time based on your changes?**

Challenge 5:
Creating a Future State Map

Directions: Using the information on the previous pages, create the Future State Map for Cumulus.

Challenge 6:
Creating the Action Plan

Directions: Look at the following background information and determine how you will fill out your Action Plan on the next page.

Before our kaizen report out, we create the Action Plan. This is the commitments we have made to close the gap from the current state to the future state. For example, if we are going to reduce the backlog in front of Configure (and take out 40 days of Lead Time!), we need to reduce the amount of rework that happens. An action we could take is to do develop Pre-Configured Configuration Templates.

What other actions would you capture on the action plan?

Action Plan

FORTIVE

Improvement Priority or Process to be Improved:							Revision Date:		Current High Level Situation Summary:																
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Marketing Gurus

3

Lead to Proposal

Introduction

Marketing Gurus is a consulting firm that provides customers with marketing solutions that fit their needs.

Marketing Gurus' revenue is falling behind the industry benchmarks. Discussions with customers and employees points **to the Lead to Proposal process being too long and competitors are doing a much better job**. Management decides that they need to do something to improve the process and decide to create a Value Stream Map.

Challenge 1: Calculating Takt Time

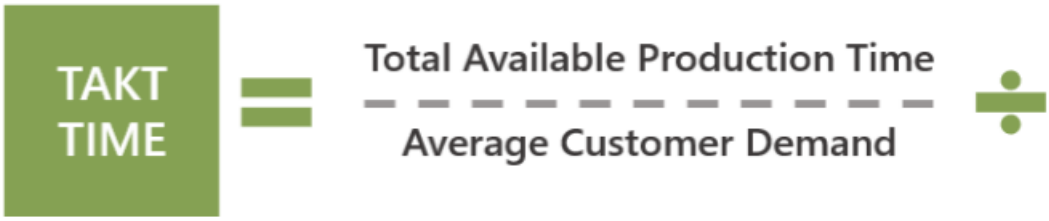
Directions: Look at the following background information and then calculate the Takt Time for Marketing Gurus in the box below.

Marketing Gurus

A team is chartered to review the process from administering a Potential Lead through sending the Proposal to the customer for approval. The team needs to reduce the time it takes to get a proposal to the customer.

- Marketing Gurus needs to send out 60 proposals per week.
- The team works eight hour days, five days per week.

From this information - can you calculate Takt Time?



Challenge 2:
Creating a Current State Map

Directions: Look at the following background information and then determine how you will use this data to create the Current State Map for Marketing Gurus.

While walking the process together, starting at the step closest to the customer, the team gathers some data:

1. The Proposal Process is where proposals are prepared and then sent to the customer for purchase order approval. Final Process Step; data for the process data box:
   a) There are 45 people that work on proposals
   b) Cycle Time of 60 minutes
   c) Reject rate of 70%
   d) There are 200 Request for Proposals waiting to be worked on

2. Prior step is performing a demo with the customer:
   a) 62 people can perform demos
   b) Demos take 8 hours in person
   c) 20% of the demos don't turn into Request for Proposals (rejection rate)
   d) There are 300 Demos waiting to be planned

3. Prior to doing a demo, potential Projects are Managed to get a demo planned:
   a) 62 people can project manage creating demo plans (same people as perform the demo)
   b) Demo plans are documented in the Customer Relationship Management System
   c) Cycle time is 9 hours
   d) There are 2100 projects waiting to be managed
   e) 60% of the potential projects don't become demo plans

Challenge 2:
Creating a Current State Map

Directions: Continued …

4. Prior to that is Dispositioning takes leads and turns them into projects:
   a) 70 people disposition leads/create projects
   b) Cycle time is 30 minutes
   c) There are 1600 leads waiting to become projects
   d) 75% of the leads don't turn into projects (reject rate)

5. First process step is Administration of potential Leads:
   a) 6 people administer the leads into the Customer Relationship Management System
   b) Rejection rate is 0%

6. Information/system interactions
   a) All information is entered/interacted with in the Customer Relationship Management System

Challenge 2:
Creating a Current State Map

Directions: Using the information on the previous pages, create the Current State Map for Marketing Gurus.

Challenge 3:
Adding Kaizen Bursts

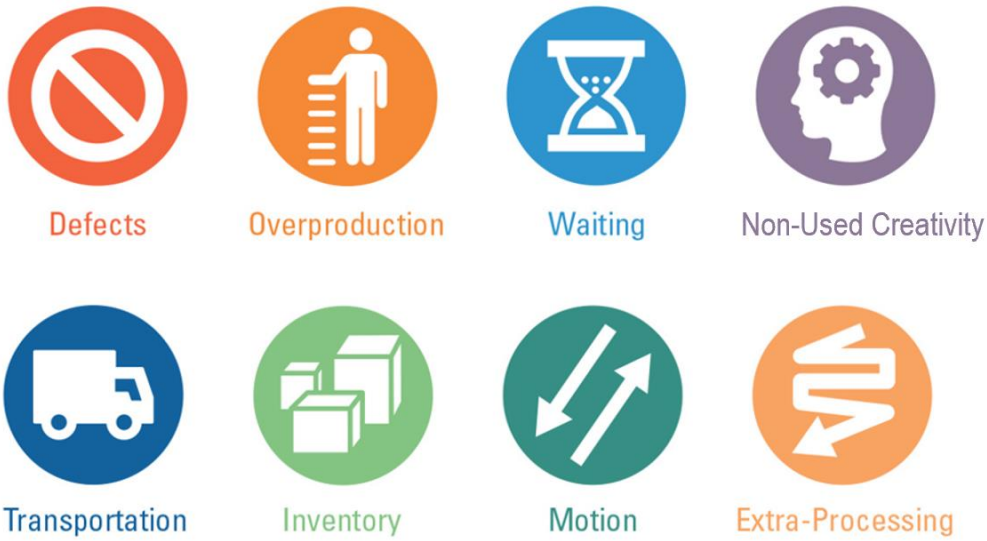
Directions: Look at the following information and determine how you will use this data to add kaizen bursts to the Current State Map on the next page.

Marketing Gurus

Now that we have the current state map documented, we are ready to document the wastes that we observe.

We will document these wastes as we create the Current State Value Stream Map with Kaizen Bursts. We can see a VERY large discrepancy between the Lead Time and the Process Time (350 days vs 1,140 minutes) so we know there is plenty of opportunity for improvement. During the kaizen, we would be walking the value stream, talking to people, observing what gets done (or doesn't get done) and noting wastes and things that just don't make sense. We want to focus on the areas that need to improve, not on the solutions (yet). Use the 8 waste framework (and common sense) to come up with a examples of wastes and document on your map with kaizen bursts. The Inventory waste is obvious (300 demo plans sitting in from of demo as example) as is the Defect waste (60% rework during project management).

What other wastes do you see?



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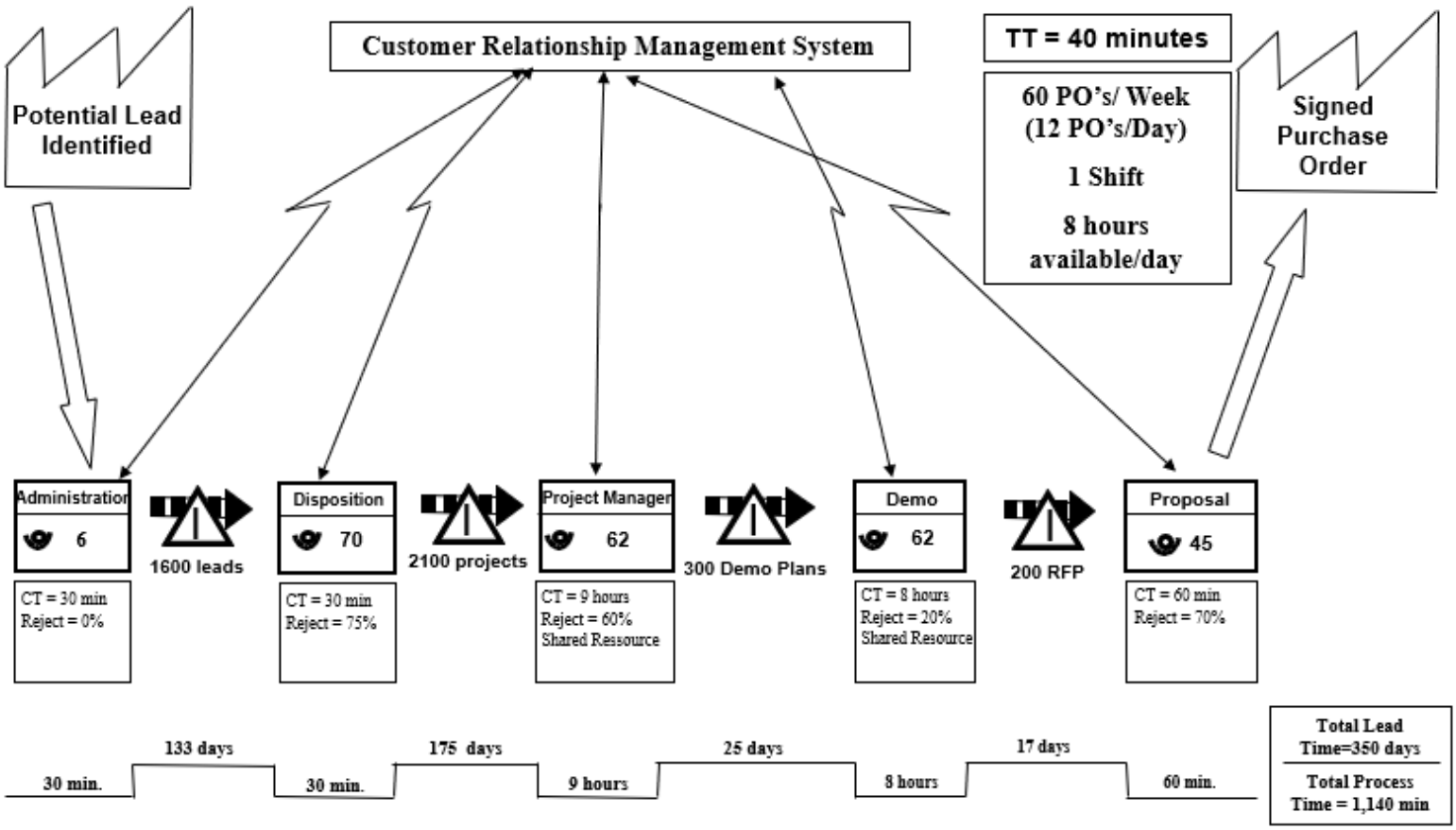

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As we document the wastes we will develop ideas for what we can do to make improvements.

Some may be well thought out (fix x by doing y); some may need further understanding (problem solve metric z). For each of the kaizen burst areas identified on the Current State Value Stream Map, we brainstorm the list of improvements and use an affinity diagram to group them together.

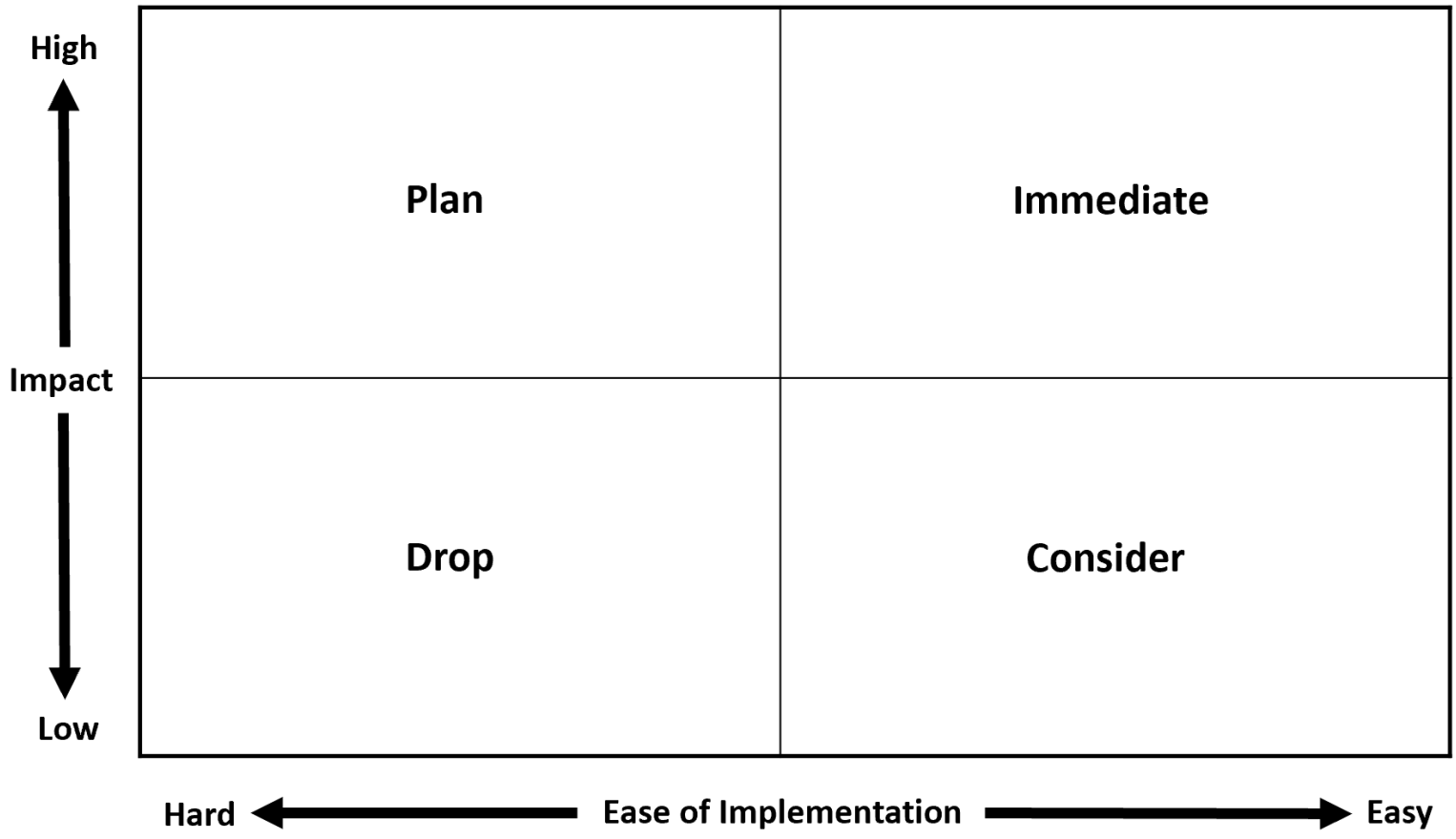
Once grouped, we rate them for the Impact they would have on the wastes identified as well as the Ease of Implementation. We then take the improvement ideas and map them on the Impact Matrix. For example, we have a kaizen burst around the demos taking a long time. An idea could be to create a customer self-paced demo which wouldn't require internal resources; we might view that as High Impact and Hard in terms of the Ease of Implementation.

Another idea could be to create standard work for how we do demos (High impact, Medium effort).

What other ideas for improvement would you document?

Challenge 4: Building the Impact Matrix

Directions: Add your top improvement ideas to the Impact Matrix for Marketing Gurus based on your estimates on the level or effort and impact for each.



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This will document the improvements we commit to make to improve the customer and employee experience. Note: We may not have the "how" fully figured out (and will document our actions to close the gap next in the action plan). An example of a large change from the current state to the future state is the reduction in rejects from 60% to 20% in the Proposal process.

- **What other changes would you make to create the Future State Value Stream Map?**
- **What is the new Lead Time and Process Time based on your changes?**

Challenge 5:
Creating a Future State Map

Directions: Using the information on the previous pages, create the Future State Map for Marketing Gurus.

Challenge 6:
Creating the Action Plan

Directions: Look at the following background information and determine how you will fill out your Action Plan on the next page.

Marketing Gurus

Before our kaizen report out, we create the Action Plan. This is the commitments we have made to close the gap from the current state to the future state. For example, if we are going to reduce the backlog in front of demo (and take out 45 days of Lead Time!), we need to create standard work for how we demo.

What others actions would you capture on the action plan?

Action Plan

FORTIVE

Improvement Priority or Process to be Improved:					Revision Date:			Current High Level Situation Summary:																
Action Plan Owner:		Action Plan & PSP Gemba:																						
Management Owner:		Meeting Cadence & Specific Time:																						
Action Plan Team:																								
Metric to be Improved:		Planned Dates			Target to Improve			Timeline																
								= PLAN X = Actual completion date																
								2018		2019														
Action Step / Kaizen Events	Owner	Start	Finish	Status	Planned Impact	Realized Impact	Status	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec			
Break Up Action Plans by Major Headings or Categories to Make it Easier to Follow																								
Do this particular Activity	John	10/08/14	10/22/14	On-Track	100	25	On-Target																	
Be sure to include Negative Events that may Impact your TTI. For example Known Life Time Buy Inventory will off set planned Inventory Reductions																								

Click here to download the Action Plan template file from Inside Fortive.

WeMakeStuff

4

Stamping to Assembly

Introduction

WeMakeStuff
stamps, machines, and assembles products that their customers incorporate into full machine builds.

WeMakeStuff has received feedback from their customers that **the lead time from placing an order to receiving product is much too long and the cost of the product is too high**. Management has heard similar feedback from internal employees and decide to do a Value Stream Mapping Kaizen to identify where the problems are occurring.

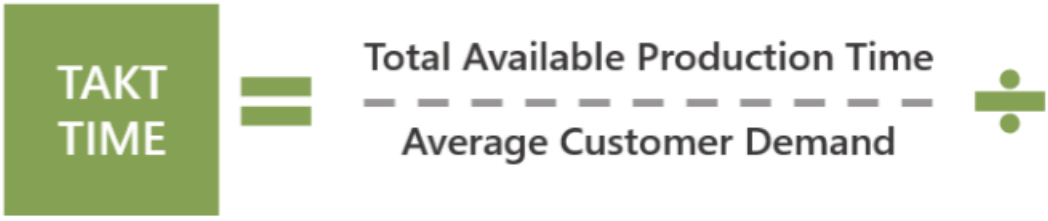
Challenge 1: Calculating Takt Time

Directions: Look at the following background information and then calculate the Takt Time for WeMakeStuff in the box below.

A team is chartered to review the process from Stamping to Assembly. The team starts by seeking to improve the stamping to the assembly process. There are a lot of variables here -- ready?

1. WeMakeStuff needs to improve performance for two products: Product L and Product R. Both follow the same process steps using the same teams.
2. Monthly demand (20 days) of 12,000 “L” and 6,400 “R.”
3. The plant runs two shifts of 9 hours.
4. Each shift, employees get a 30-minute meal break and two 15-minute breaks

From this information - can you calculate Takt Time?



Challenge 2:
Creating a Current State Map

Directions: Look at the following background information and then determine how you will use this data to create the Current State Map for WeMakeStuff.

While walking the process together, starting at the step closest to the customer, the team gathers some data:

1. Products are staged and then shipped daily via truck to the customer.
   a) Inventory of 2700 “L”s and 1440 “R”s waiting to be shipped

2. The Assembly Process is prior to shipping; data for the process data box:
   a) 1 operator does the assembly with a cycle time of 40 seconds
   b) 7% reject rate
   c) Inventory of 1200 “L”s and 640 “R”s waiting to be assembled

3. Sub-Assembly occurs prior to Assembly:
   a) 1 operator with cycle time of 62 seconds
   b) 6% reject rate
   c) Inventory of 1600 “L”s and 850 “R”s waiting for sub-assembly

4. 4. Welding occurs prior to Sub-Assembly:
   a) 1 operator with cycle time of 46 seconds
   b) Machine uptime is 80%
   c) Change over time is 10 minutes
   d) Reject rate of 5%
   e) Inventory of 1100 “L”s and 600 “R”s waiting to be welded

Challenge 2:
Creating a Current State Map

Directions: Continued …

5. Machining is before Welding
   a) 1 operator with cycle time of 39 seconds
   b) Reject rate of 0%
   c) Inventory of 4600 “L”s and 2400 “R”s waiting to be machined

6. The first step in the operation is Stamping
   a) 1 operator with a machine cycle time of 1 second
   b) Changeover of 10 hours
   c) Batch of 1000
   d) Inventory of 5 days’ worth of coils waiting to be stamped

7. The supplier ships coil every Tuesday and Thursday

8. Information flows:
   a) The customer sends a daily order
   b) Every month the customer sends a 90/60/30-day forecast
   c) Production controls receives orders and forecasts and enters into the MRP system
   d) d. MRP system sends a daily shipment schedule to shipping
   e) MRP system produces a printed weekly schedule that each manufacturing area looks up
   f) MRP systems sends a 6-week forecast and a weekly order to the supplier

Challenge 2:
Creating a Current State Map

Directions: Using the information on the previous pages, create the Current State Map for WeMakeStuff.

Challenge 3:
Adding Kaizen Bursts

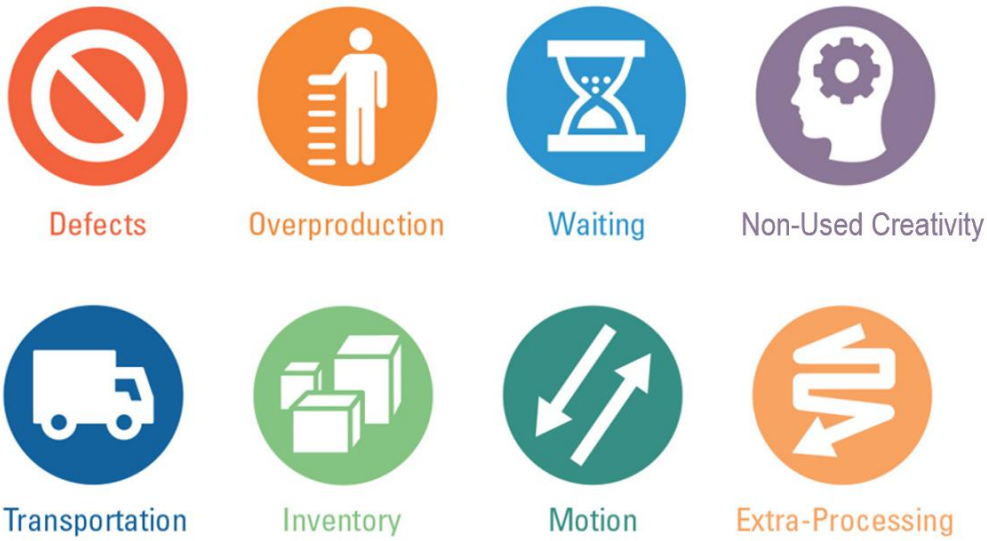
Directions: Look at the following information and determine how you will use this data to add kaizen bursts to the Current State Map on the next page.

WeMakeStuff

Now that we have the current state map documented, we are ready to document the wastes that we observe.

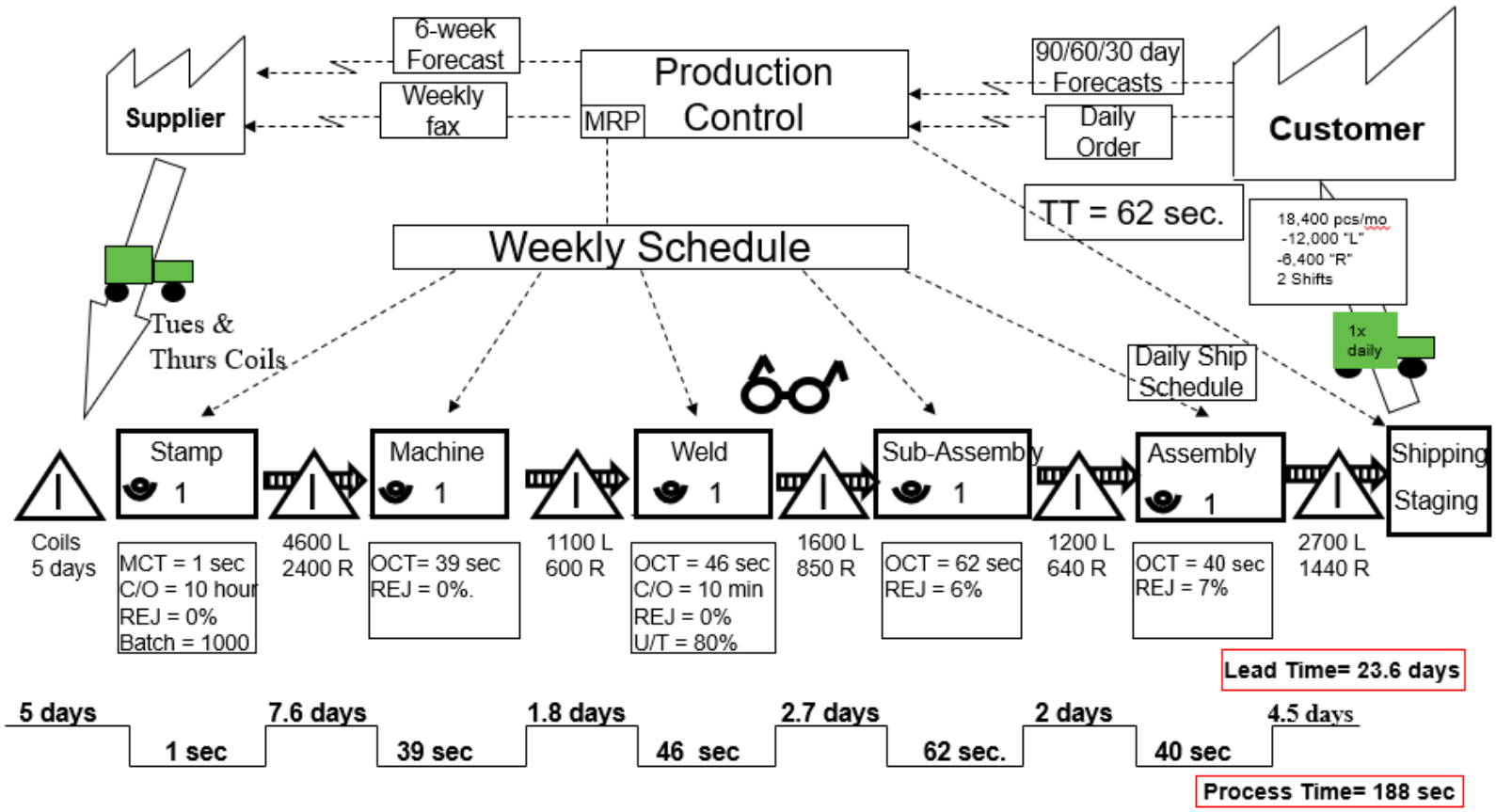
We will document these wastes as we create the Current State Value Stream Map with Kaizen Bursts. We can see a VERY large discrepancy between the Lead Time and the Process Time (23.6 days vs 188 seconds) so we know there is plenty of opportunity for improvement. During the kaizen, we would be walking the value stream, talking to people, observing what gets done (or doesn't get done) and noting wastes and things that just don't make sense. We want to focus on the areas that need to improve, not on the solutions (yet). Use the 8 waste framework (and common sense) to come up with a examples of wastes and document on your map with kaizen bursts. The Inventory waste is obvious (7000 parts waiting to be machined as an example) as is the Defect waste (7% rejects during assembly).

What other wastes do you see?



Challenge 3:
Adding Kaizen Bursts

Directions: Add kaizen bursts to the Current State Map for WeMakeStuff.



Challenge 4:
Building the Impact Matrix

Directions: Look at the following background information and determine how you will use this information to add items to the Impact Matrix on the next page.

As we document the wastes we will develop ideas for what we can do to make improvements.

Some may be well thought out (fix x by doing y); some may need further understanding (problem solve metric z). For each of the kaizen burst areas identified on the Current State Value Stream Map, we brainstorm the list of improvements and use an affinity diagram to group them together.

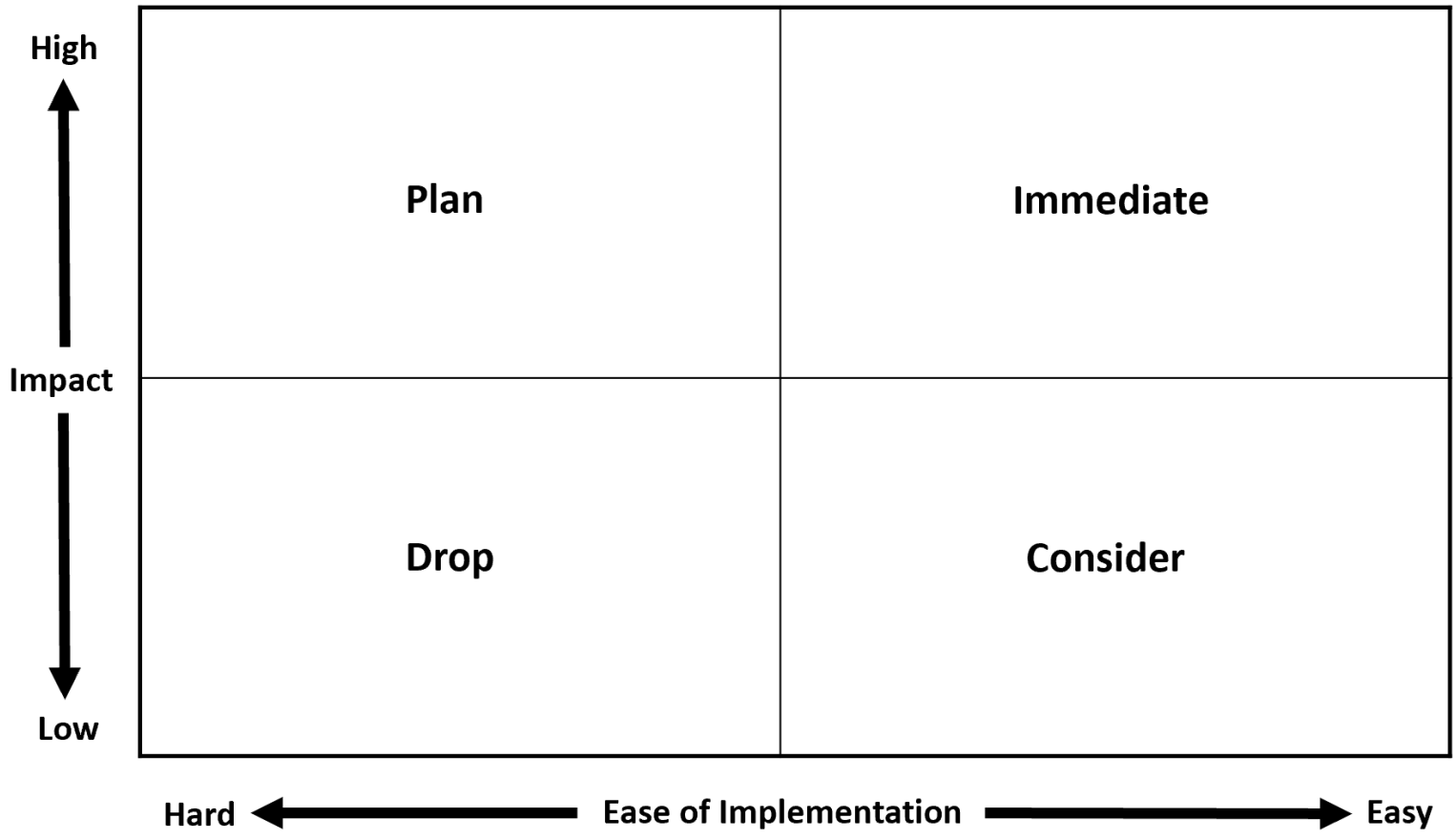
Once grouped, we rate them for the Impact they would have on the wastes identified as well as the Ease of Implementation. We then take the improvement ideas and map them on the Impact Matrix. For example, we have a kaizen burst around the demos taking a long time. An idea could be to create a customer self-paced demo which wouldn't require internal resources; we might view that as High Impact and Hard in terms of the Ease of Implementation.

Another idea could be to create standard work for how we do demos (High impact, Medium effort).

What other ideas for improvement would you document?

Challenge 4:
Building the Impact Matrix

Directions: Add your top improvement ideas to the Impact Matrix for WeMakeStuff based on your estimates on the level or effort and impact for each.



Challenge 5:
Creating a Future State Map

Directions: Look at the following background information and determine how you will fill out your Future State Map on the next page.

Given the impact matrix information on the impact of our future efforts, we will create a Future State Value Stream Map.

This will document the improvements we commit to make to improve the customer and employee experience. Note: We may not have the "how" fully figured out (and will document our actions to close the gap next in the action plan). An example of a large change from the current state to the future state is the reduction in rejects from 60% to 20% in the Proposal process.

- **What other changes would you make to create the Future State Value Stream Map?**
- **What is the new Lead Time and Process Time based on your changes?**

Challenge 5:
Creating a Future State Map

Directions: Using the information on the previous pages, create the Future State Map for WeMakeStuff.

Challenge 6:
Creating the Action Plan

Directions: Look at the following background information and determine how you will fill out your Action Plan on the next page.

Before our kaizen report out, we create the Action Plan. This is the commitments we have made to close the gap from the current state to the future state. For example, if we are going to reduce the backlog in front of demo (and take out 45 days of Lead Time!), we need to create standard work for how we demo.

What others actions would you capture on the action plan?

Action Plan

FORTIVE

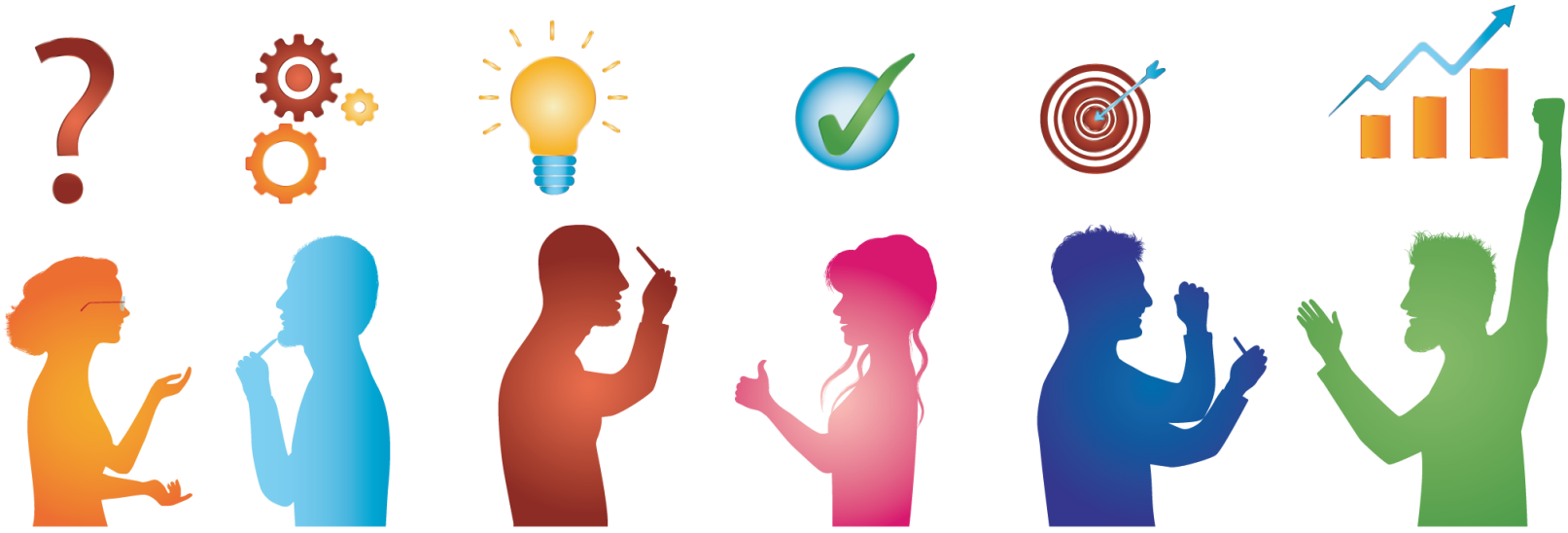
Improvement Priority or Process to be Improved:					Revision Date:			Current High Level Situation Summary:																
Action Plan Owner:		Action Plan & PSP Gemba:																						
Management Owner:		Meeting Cadence & Specific Time:																						
Action Plan Team:																								
Metric to be Improved:		Planned Dates			Target to Improve			Timeline																
								= PLAN																
								X = Actual completion date																
								2018		2019														
Action Step / Kaizen Events	Owner	Start	Finish	Status	Planned Impact	Realized Impact	Status	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec			
Break Up Action Plans by Major Headings or Categories to Make it Easier to Follow																								
Do this particular Activity	John	10/08/14	10/22/14	On-Track	100	25	On-Target																	
Be sure to include Negative Events that may Impact your TTI. For example Known Life Time Buy Inventory will off set planned Inventory Reductions																								

Click here to download the Action Plan template file from Inside Fortive.

VSM CHALLENGES

Answer Key

Look at the following pages for answers to each challenge.



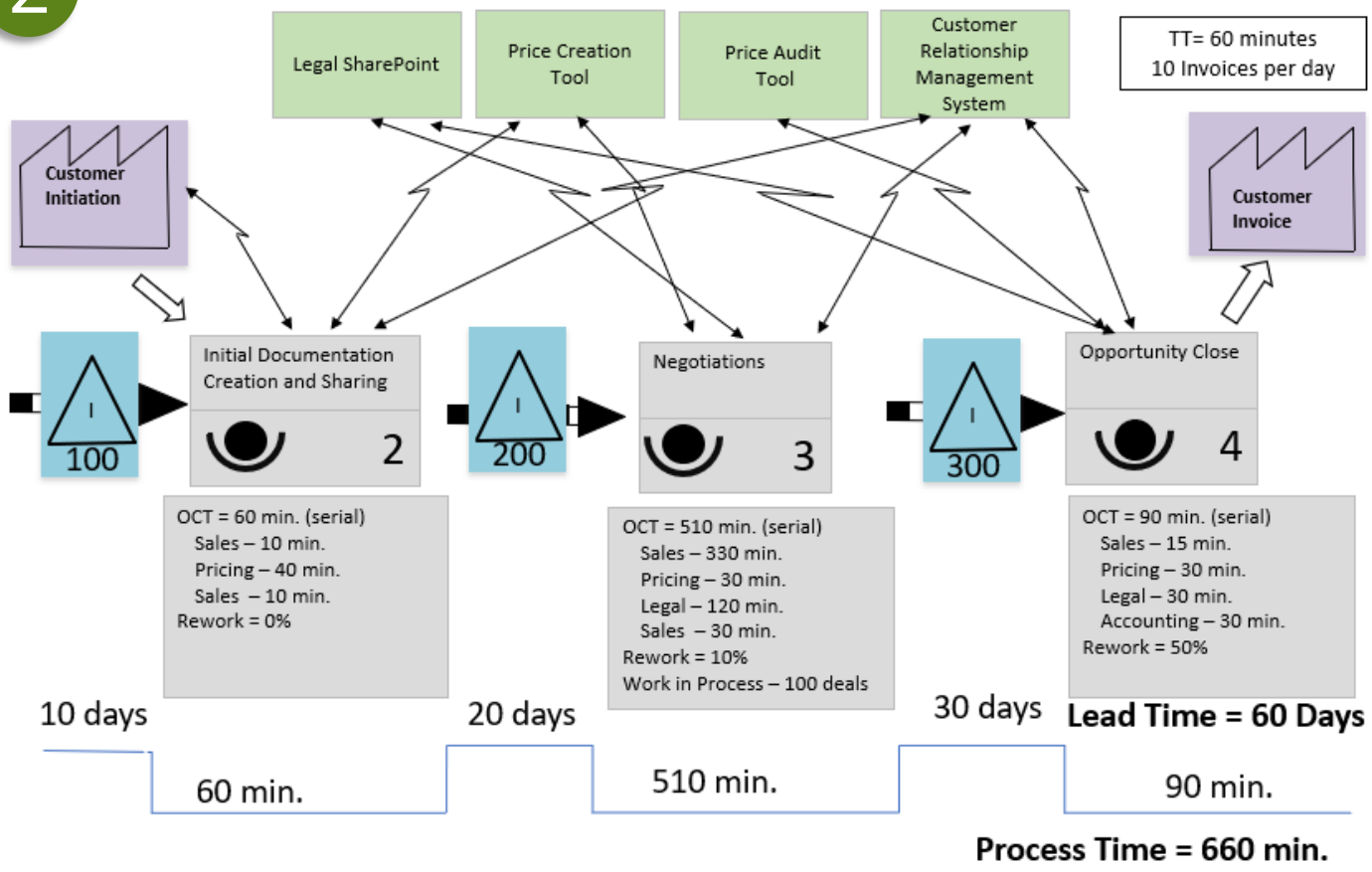
Unlimited Opportunities

Challenge Answer Key

1

Calculated in Hours	Calculated in Minutes
1. 240 working days x 10 hours per day = 2400 2. 2400 (hours) divided by 2400 (sales needed) = **1 hour**	1. 240 working days x 10 hours per day = 2400 2. 2400 x 60 (minutes in an hour) = 144,000 3. 144,000 divided by 2400 (sales needed) = **60 minutes**

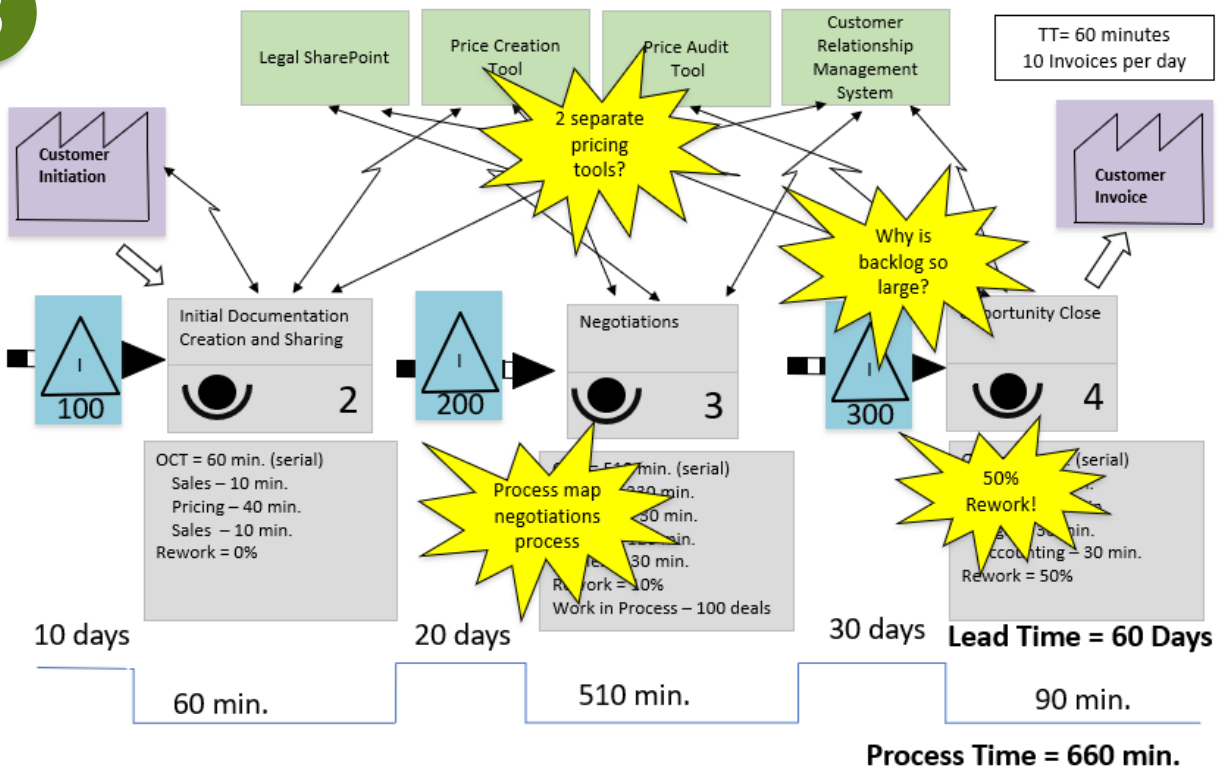
2



Unlimited Opportunities

Challenge Answer Key

3



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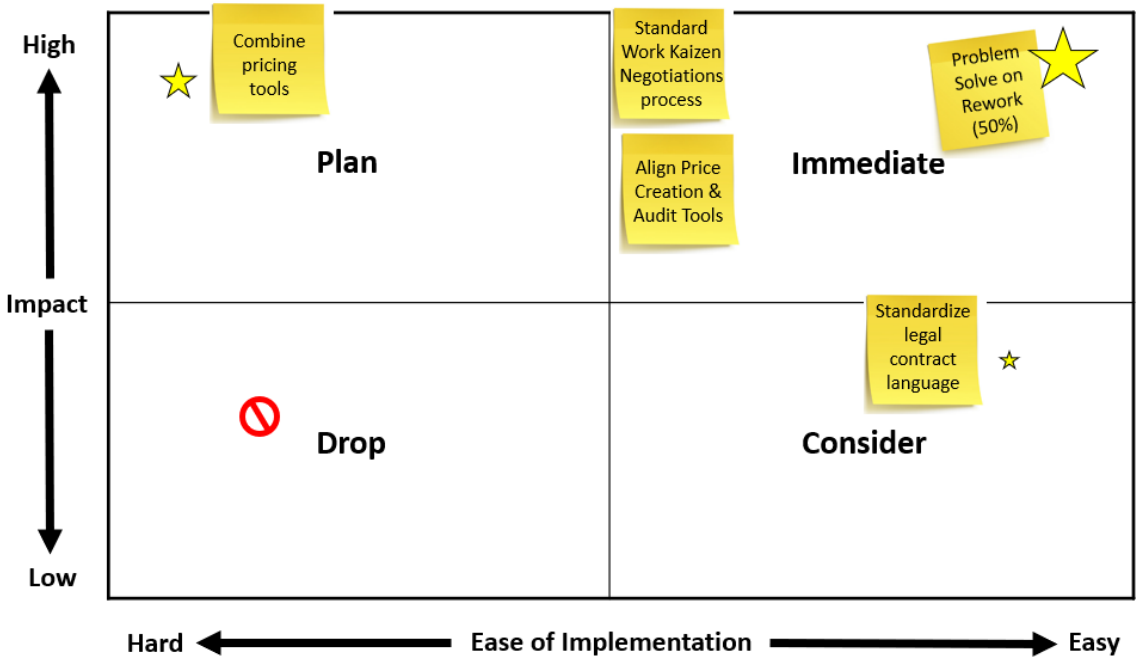
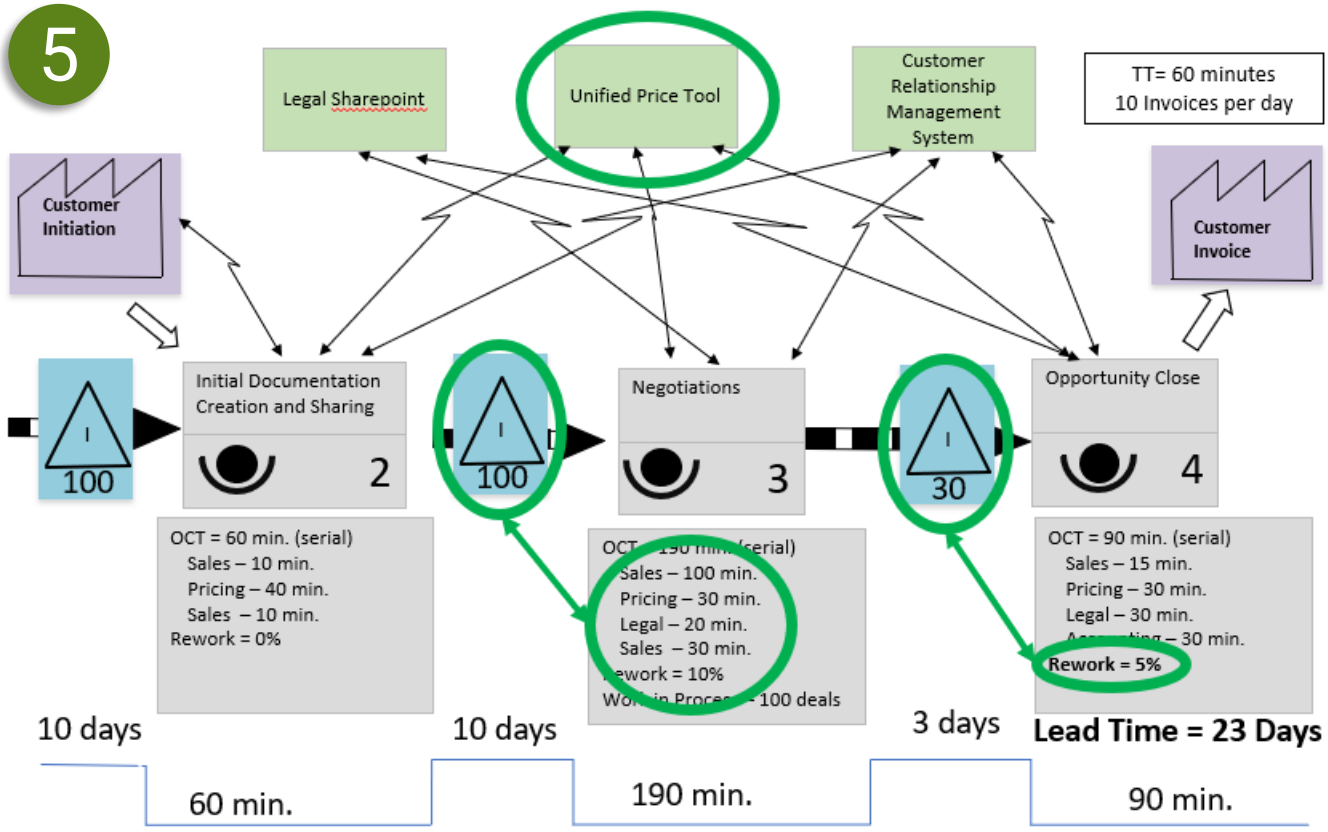


Unlimited Opportunities

Challenge Answer Key

5



6

Action Plan

Improvement Priority or Process to be Improved: New Direct Software Sales Quote to Cash Process	**Revision Date:** Updated Today
Action Plan Owner: Project Manager	**Action Plan & PSP Gemba:** Project management and at customers
Management Owner: Sales and Marketing Leader	**Meeting Cadence & Specific Time:** Fridays 8-9am
Action Plan Team: Sales Manager (SM), Account Manager (AM), Price Developer, (P), Legal (L), Accounting (A)	
Metric to be Improved: Reduction in time for quote to cash from 60 days to 25 days	**Planned Dates** / **Target to Improve**

Current High Level Situation Summary:

Unlimited Opportunities provides software to customers that then use it to create solutions for their end customers. Unlimited Opportunities has received feedback from their customers that the process for quoting new direct software sales via responding to a request to quote is cumbersome and competitors are doing a much better job. This matches internal feedback and frustration in the many departments that touch a Deal. The local management decides that they need to do something to improve the process and decide to see where the major problems are by doing a Value Stream Map.

Timeline (= PLAN, x = COMPLETE) — 20??

Action Step / Kaizen Events	Owner	Start	Finish	Status	Planned Impact	Realized Impact	Status	May	Jun	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb
Break Up Action Plans by Major Headings or Categories to Make it Easier to Follow																	
Charter Kaizen Team	SM	23-May	23-Jun	Complete	0	0	complete	x	x								
Variation Reduction for Rework at Case Closing	SM	9-Jul	16-Jul	Complete	20 days	20 days	Effective!			x							
Standardize Legal Language	L	9-Jul	9-Jul	Complete	2 days	2 days	Effective			x							
Align Price Creation and Audit Tools	P	23-Jul	23-Aug	In process	7 days	0	too early										
Combine Price and Audit Tools	SA	23-Aug	23-Sep	not started	5 days	0	not started										
Be sure to include Negative Events that may Impact your TTI. For example Known Life Time Buy Inventory will off set planned Inventory Reductions																	

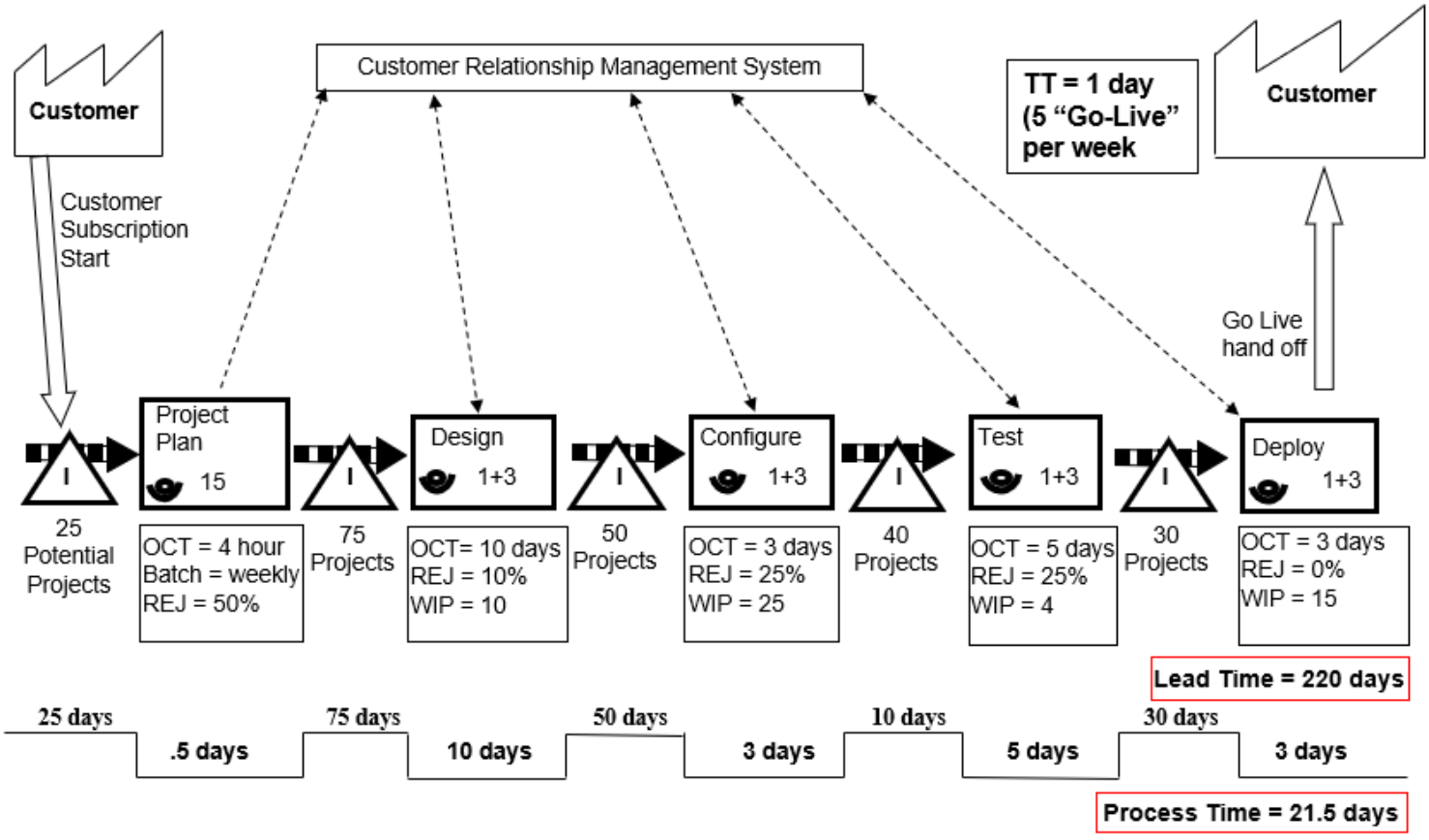
Cumulus

Challenge Answer Key

1

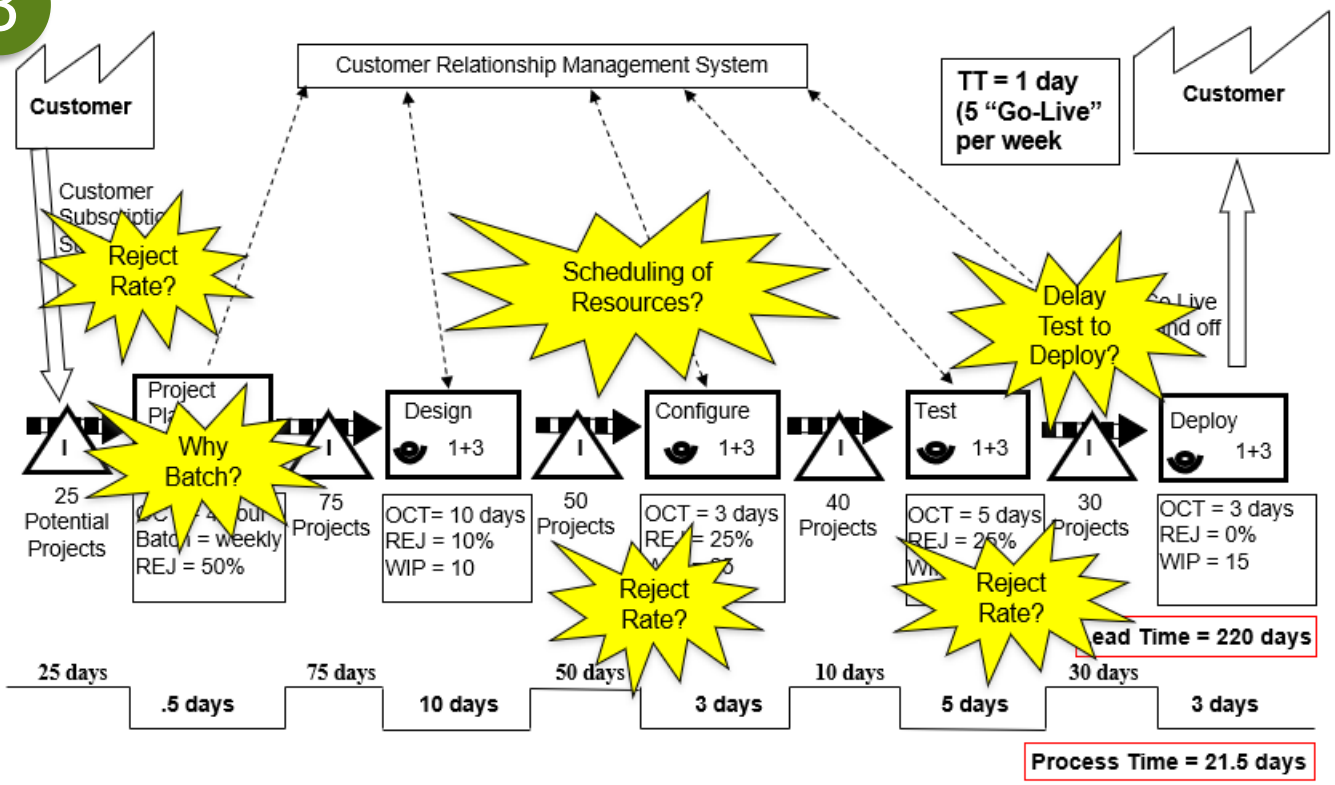
Calculated in Days per Week
1. 5 work days per week divided by 5 projects per week (customer requirement) = **1 day**.

2



Challenge Answer Key

3



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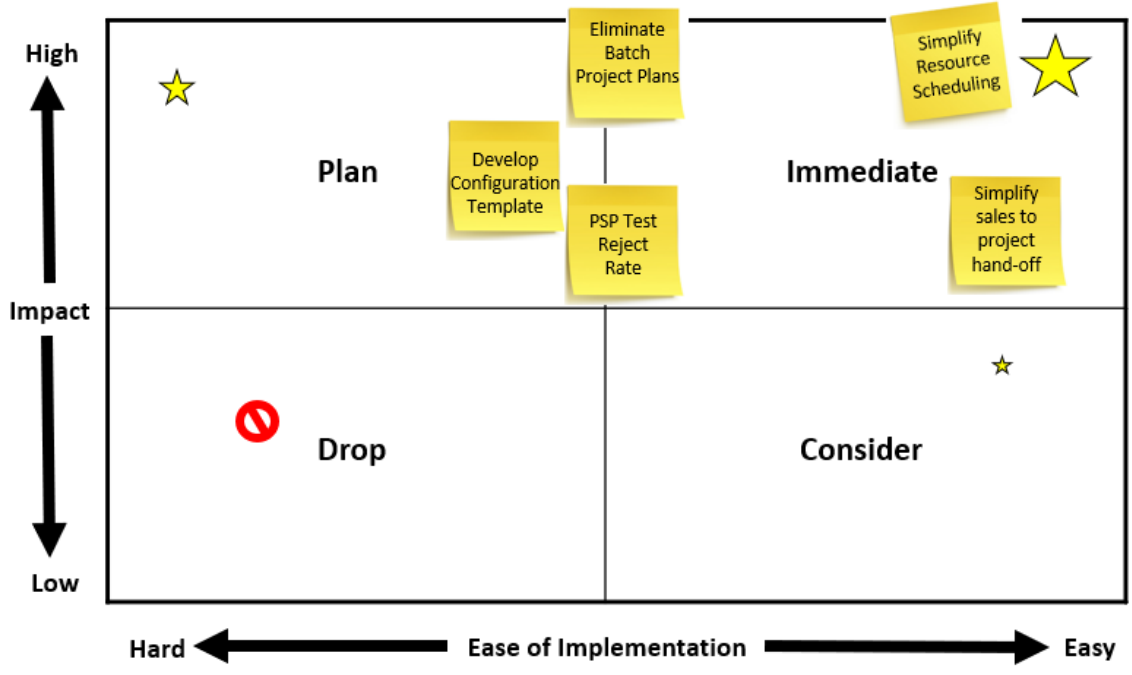
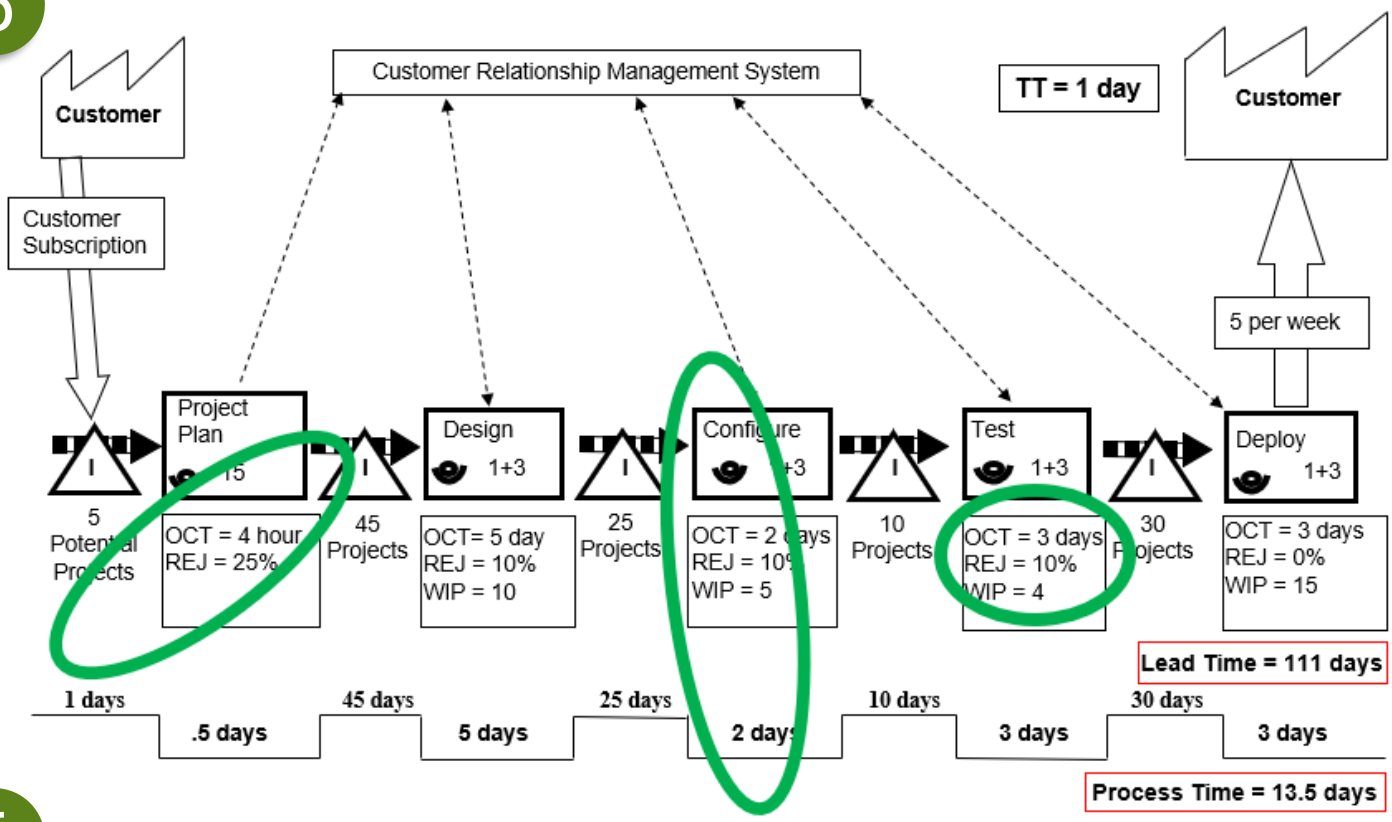


Cumulus

Challenge Answer Key

5



6

Action Plan

Improvement Priority or Process to be Improved: Subscription to Implementation process	**Revision Date:** Updated Today
Action Plan Owner: Project Manager	**Action Plan & PSP Gemba:** Project management and at customers
Management Owner: Sales and Marketing Leader	**Meeting Cadence & Specific Time:** Fridays 8-9am
Action Plan Team: Project Manager (PM), Sales Associate (SA), Software Developer (SD), Testing Manager (TM)	
Metric to be Improved: Improve the Subscription Start to Implementation Complete process from 200 days to a target of 45 days.	**Planned Dates** / **Target to Improve**

Current High Level Situation Summary:

Cumulus provides software solutions that are used on an ongoing basis by their customers to monitor key activities in the customer's processes. Cumulus has received feedback from their customers that the lead time from a customer subscribing to a service and actually having the service implemented is much too long. This matches internal feedback and frustration amongst the team and the increasing pressure of competition. The local management decides that they need to do something to improve the process and decide to see where the major problems are by doing a Value Stream Map.

Timeline (= PLAN, x = COMPLETE) — 20??

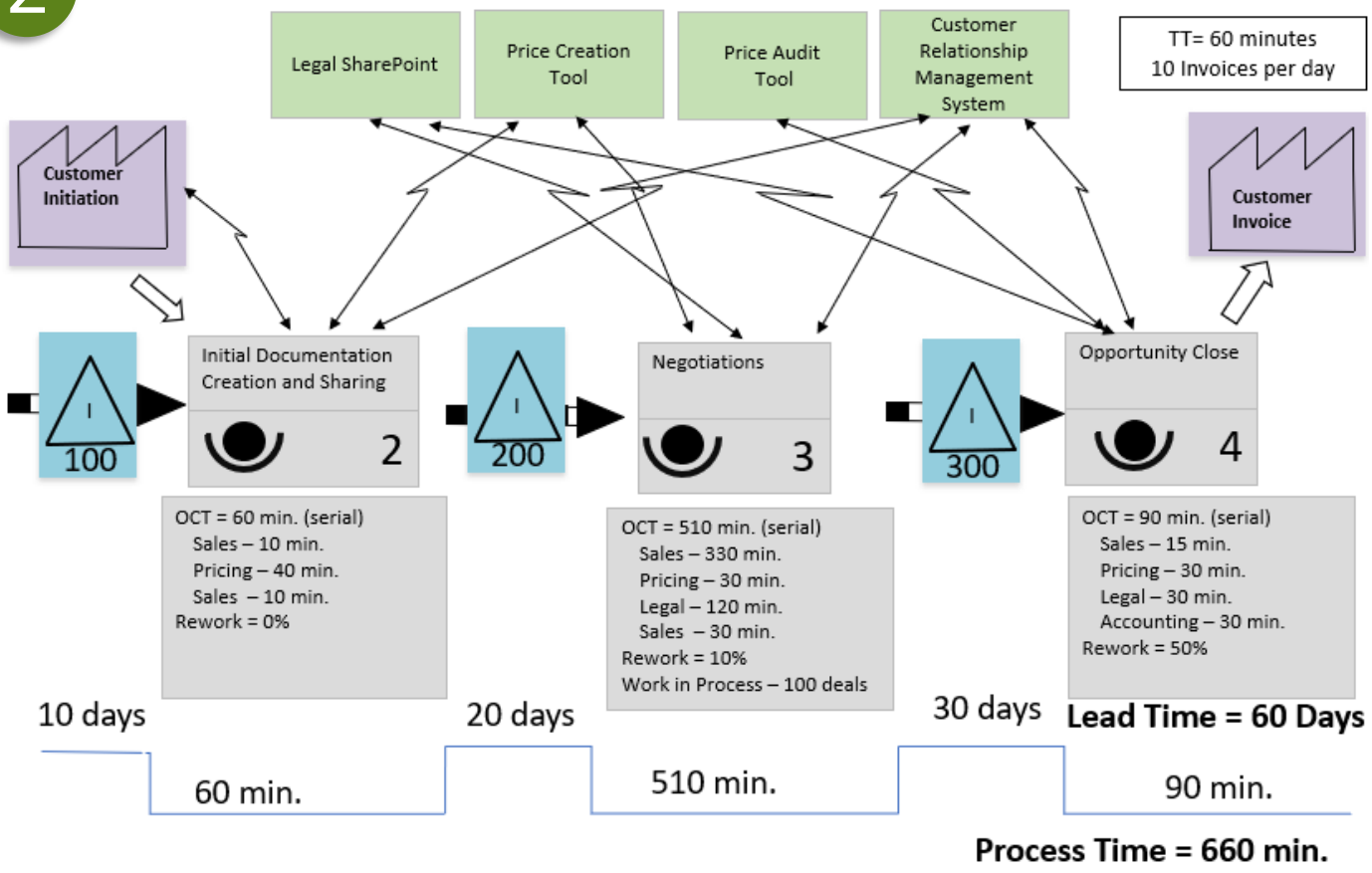
Action Step / Kaizen Events	Owner	Start	Finish	Status	Planned Impact	Realized Impact	Status	May	Jun	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb
Break Up Action Plans by Major Headings or Categories to Make it Easier to Follow																	
Charter Kaizen Team	PM	23-May	23-Jun	Complete	0	0	complete	x	x								
Project Plan kickoff daily	PM	9-Jul	16-Jul	Complete	20 days	20 days	Effective!			x							
Pre-Configured Configuration Templates	SD	9-Jul	9-Jul	Complete	40 days	35 days	Effective			x							
Resource Scheduling Simplification	PM	23-Jul	23-Aug	In process	15 days	0	too early										
Standard Work for Sales to Project hand off	SA	23-Aug	23-Sep	not started	4 days	0	not started										
Be sure to Include Negative Events that may Impact your TTI. For example Known Life Time Buy Inventory will offset planned Inventory Reductions																	

Challenge Answer Key

1

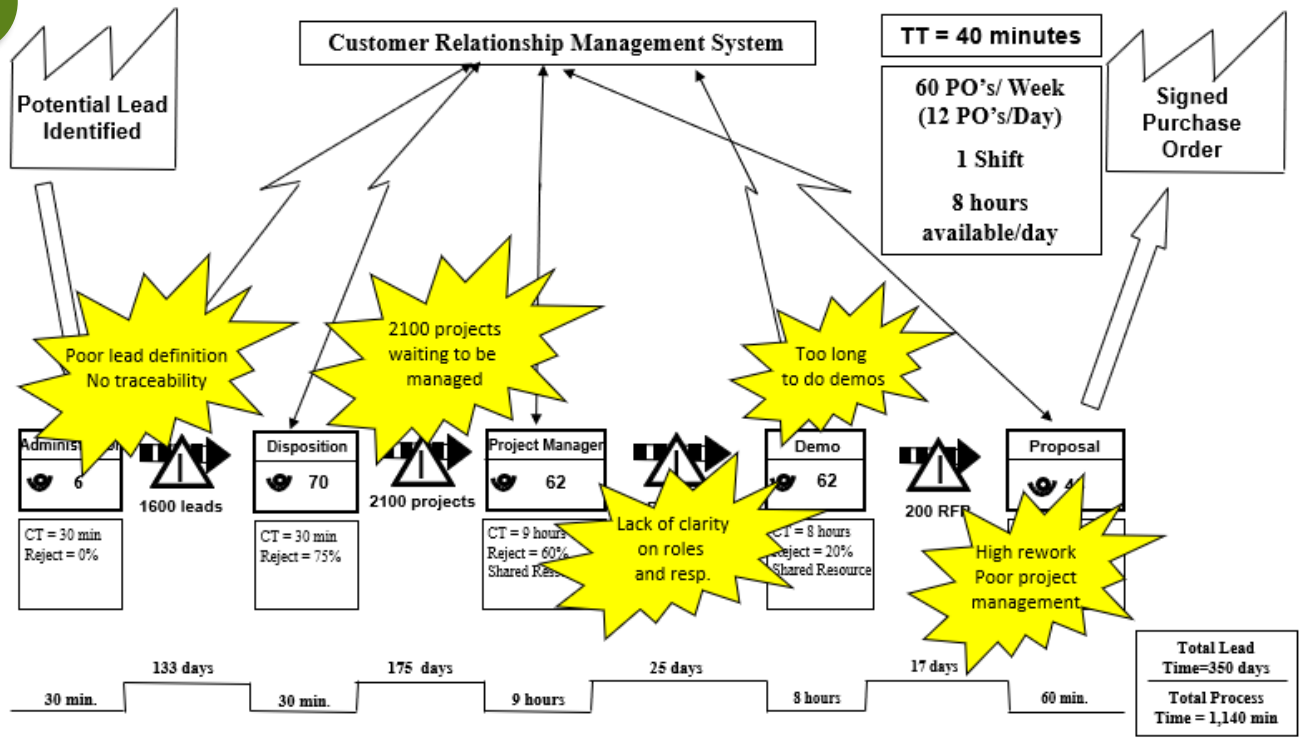
Calculated in Hours	Calculated in Minutes
1. 5 working days x 8 hours per day = 40 hours/week 2. 40 (hours/week) divided by 60 (proposals/week) = **.67 hours**	1. 5 working days x 8 hours per day = 40 hours/week 2. 40 x 60 (minutes in an hour) = 2400 minutes 3. 2400 divided by 60 (proposals/week) = **40 minutes**

2



Challenge Answer Key

3



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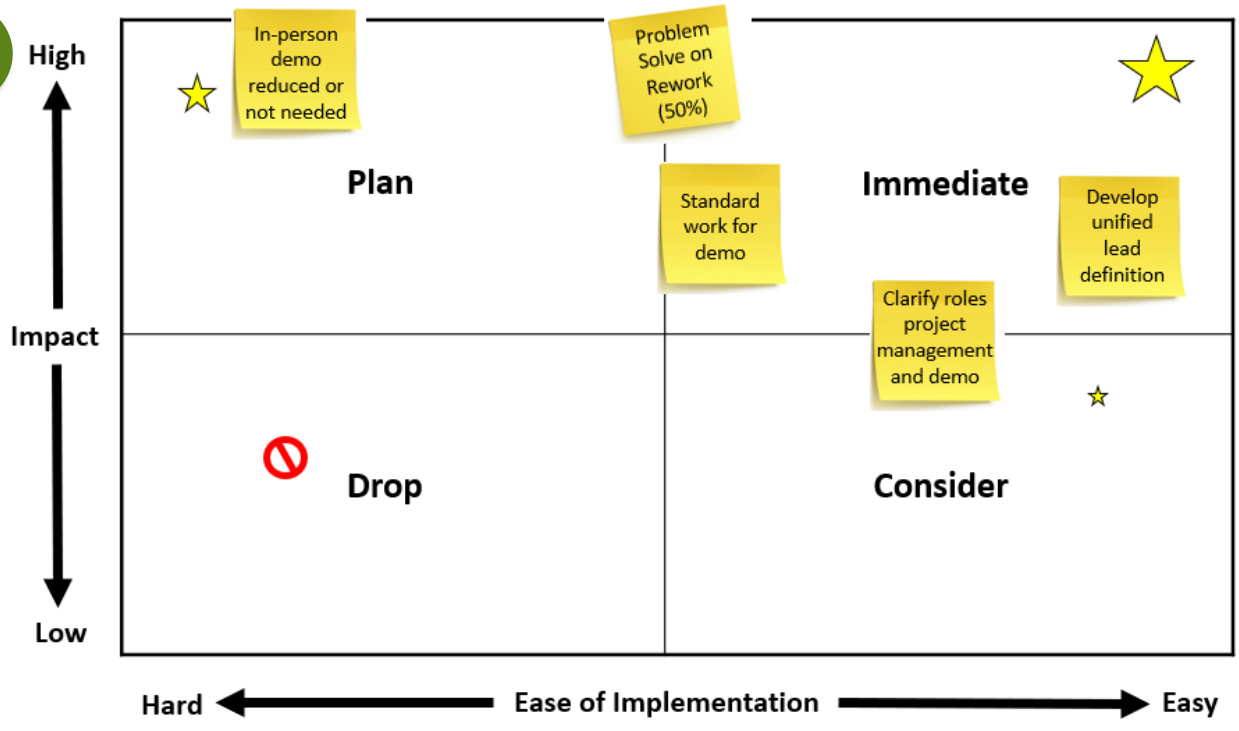

Challenge Answer Key

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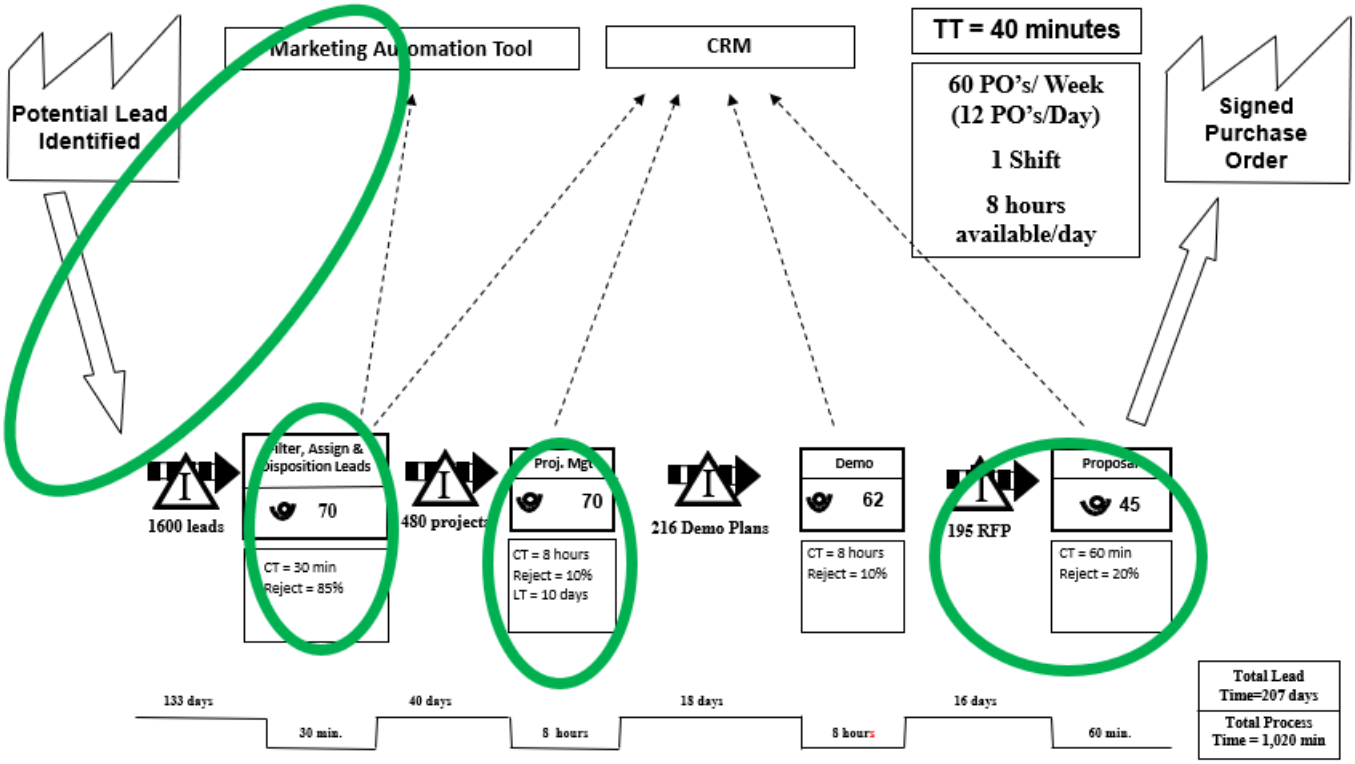


NOTE – WHAT IS DIFFERENT? ELIMINATED STEP, NEW TIME

6

Action Plan

Improvement Priority or Process to be Improved: Lead to Proposal Process	**Revision Date:** Updated Today
Action Plan Owner: Project Manager	**Action Plan & PSP Gemba:** Project management and marketing area
Management Owner: Sales Leader	**Meeting Cadence & Specific Time:** Fridays 8-9am
Action Plan Team: Sales Manager (SM), Marketing Manager (MM), Lead Administrator (LA), Application Expert (AE), Proposal Preparer (PP)	
Metric to be Improved: Reduction in time from Lead to Proposal from 350 days to 250 days	**Planned Dates** / **Target to Improve**

Current High Level Situation Summary:

Marketing Gurus' provides their customers with marketing solutions that fit their needs. Marketing Gurus' revenue is falling behind the market benchmarks. Discussions with customers and employees points to the Lead to Proposal process being too long and competitors are doing a much better job. The local management decides that they need to do something to improve the process and decide to see where the major problems are by doing a Value Stream Map.

Timeline: = PLAN x = COMPLETE — 20??

Action Step / Kaizen Events	Owner	Start	Finish	Status	Planned Impact	Realized Impact	Status	May	Jun	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb
Break Up Action Plans by Major Headings or Categories to Make it Easier to Follow																	
Charter Kaizen Team	SM	23-May	23-Jun	Complete	0	0	complete	x	x								
Variation Reduction for Rework at Proposal	SM	9-Jul	16-Jul	Complete	20 days	20 days	Effective!			x							
Unified Lead Definition	MM	9-Jul	9-Jul	Complete	15 days	15 days	Effective			x							
Standard Work for Demo	AE	23-Jul	23-Aug	In process	45 days	0	too early										
Project Management and Demo RACI	PM	23-Aug	23-Sep	not started	20 days	0	not started										
Be sure to include Negative Events that may Impact your TTI. For example Known Life Time Buy Inventory will off set planned Inventory Reductions																	

WeMakeStuff

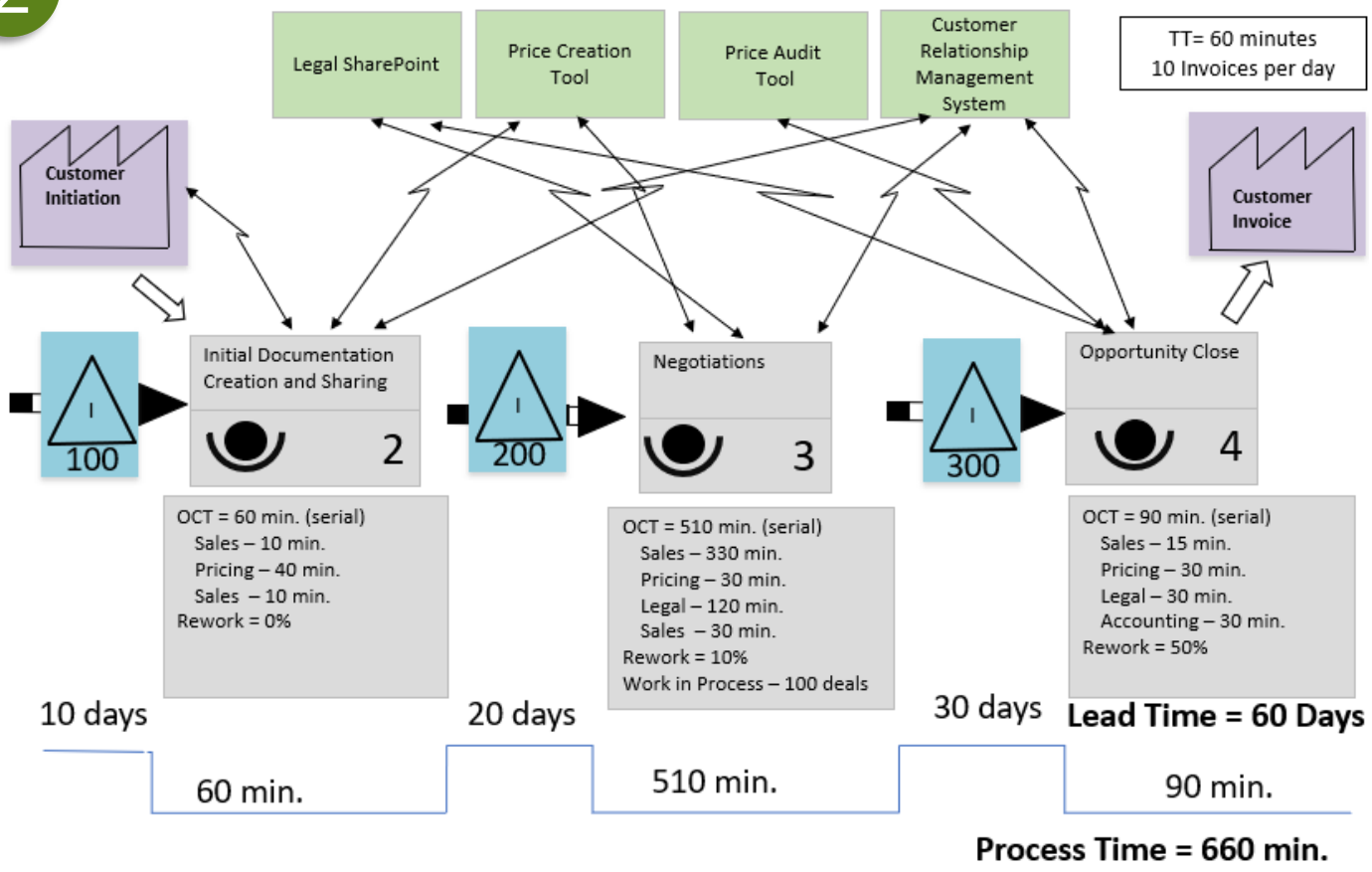
Challenge Answer Key

1

Calculated in Seconds

1. 1. 18,400 parts requested by the customer per month (12,400 + 6,000)
2. 930 parts requested by the customer per day (18,400/20 days in the month)
3. 57,600 seconds of Available plant time per day (2 shifts times 8 hours (9 hours minus 30 minute lunch, 30 minutes of breaks) times 3600 seconds/hour)
4. **62 Second Takt Time** (57,600 seconds per day/930 parts per day)

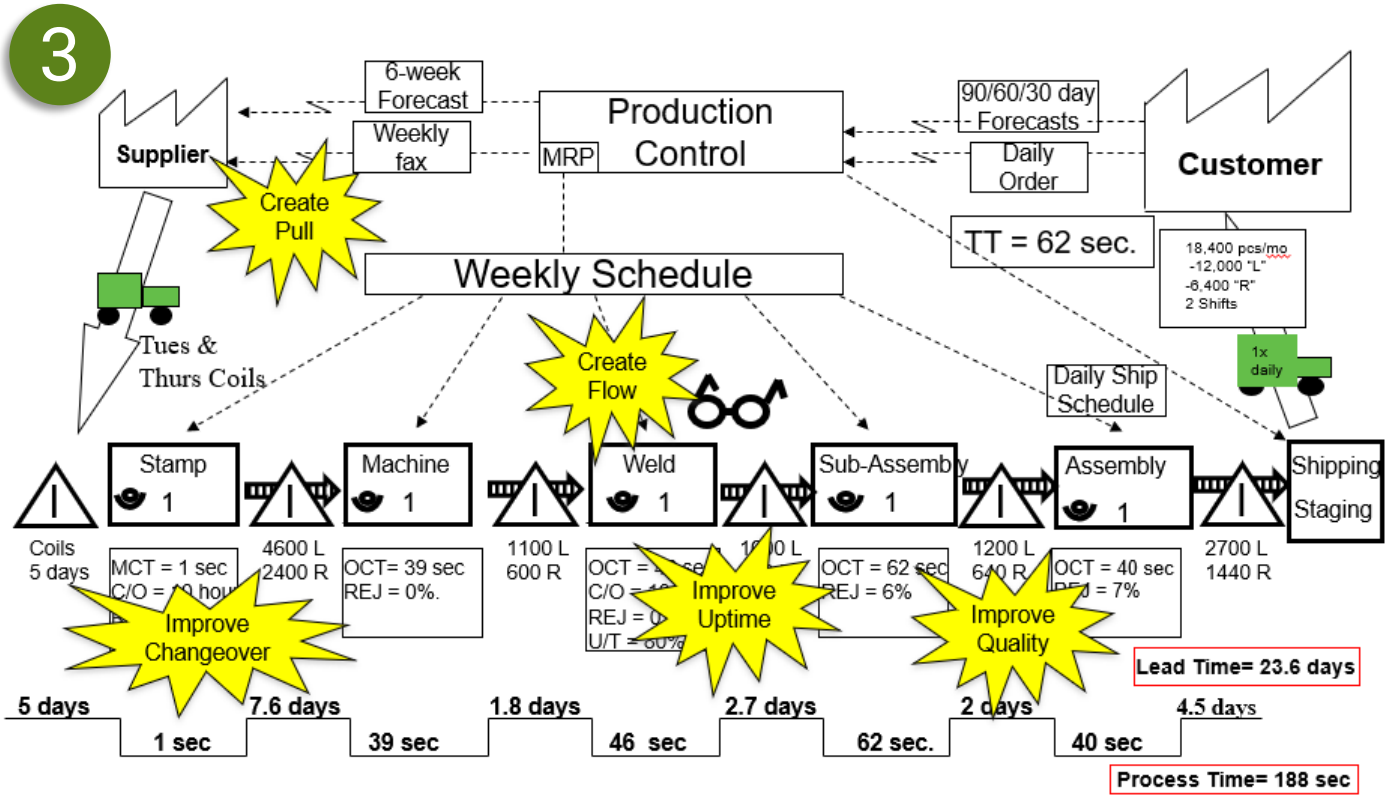
2



WeMakeStuff

Challenge Answer Key

3



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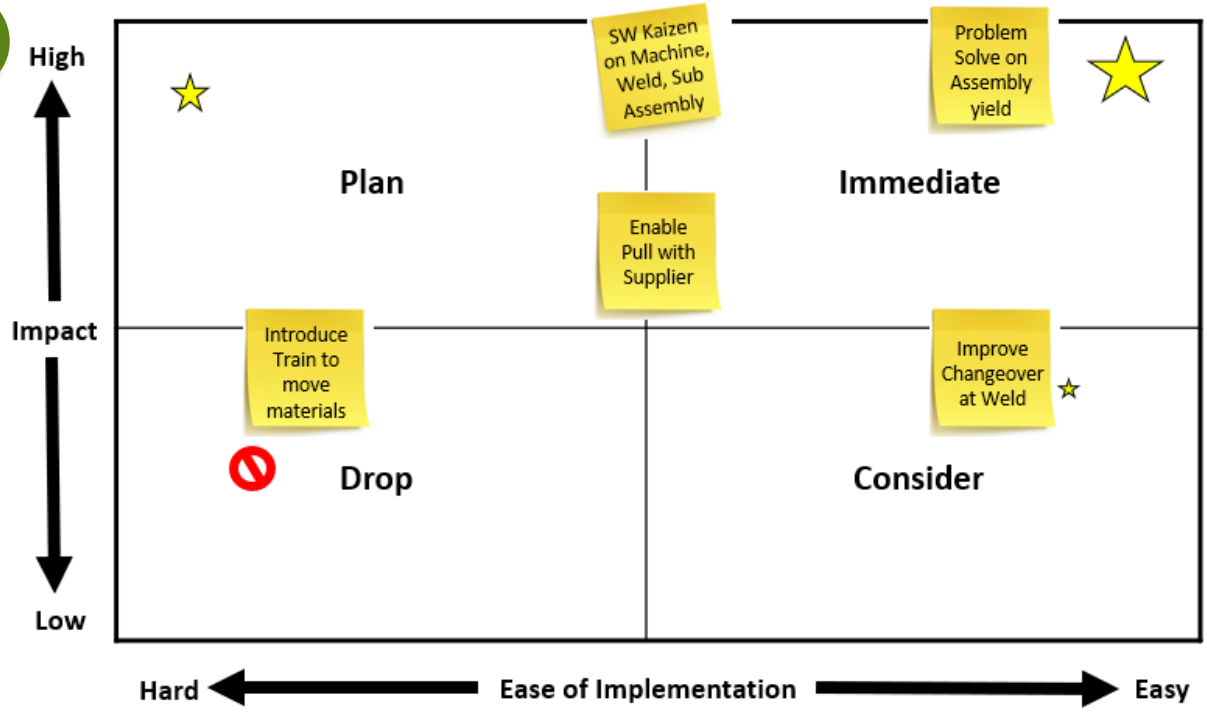
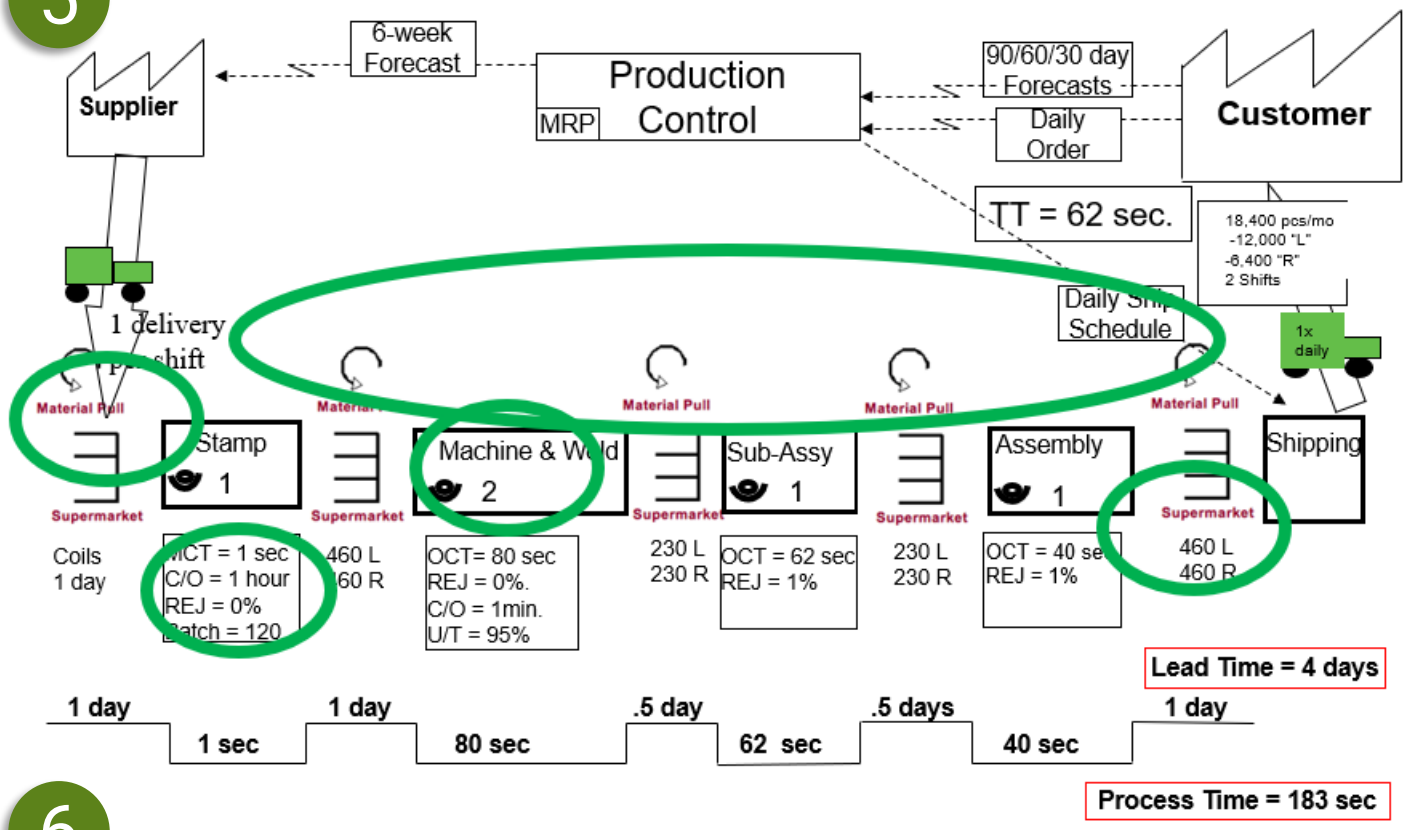


WeMakeStuff

Challenge Answer Key

5



6

Action Plan

Improvement Priority or Process to be Improved: Stamping to Assembly process

Revision Date: Updated Today

Action Plan Owner: Value Stream Manager

Action Plan & PSP Gemba: Operations Floor

Management Owner: Plant Manager

Meeting Cadence & Specific Time: Fridays 8-9am

Action Plan Team: Value Stream Manager (VM), Manufacturing Engineer (ME), Quality Engineer (QE), Planner (P), Buyer (B), 5 Operators (O)

Metric to be Improved: Reduction in time from stamping to assembly from 25 days to 5 days

Current High Level Situation Summary:

WeMakeStuff stamps, machines, and assembles products that their customers incorporate into full machine builds. WeMakeStuff has received feedback from their customers that the lead time from placing an order to receiving product is much too long and the cost of the product is too high. This matches internal feedback and frustration in the operating plant and the increasing presence of competition. The local management decides that they need to do something to improve the process and decide to see where the major problems are by doing a Value Stream Map.

		Planned Dates			Target to Improve			Timeline (= PLAN, x = COMPLETE) 20??									
Action Step / Kaizen Events	Owner	Start	Finish	Status	Planned Impact	Realized Impact	Status	May	Jun	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb
Break Up Action Plans by Major Headings or Categories to Make It Easier to Follow																	
Charter Kaizen Team	VM	23-May	23-Jun	Complete	0	0	complete	x	x								
Improve Weld Changeover	ME	9-Jul	16-Jul	Complete	5 days	5 days	Effective!			x							
Standard Work Event - Weld/Machine	VM	16-Jul	23-Jul	Complete	5 days	5 days	Effective!			x							
Variation Reduction - Assembly Yield	QE	23-Jul	23-Aug	In process	1 day	0	too early										
Enable Pull with Supplier	B	23-Aug	23-Sep	not started	4 days	0	not started										
Be sure to Include Negative Events that may Impact your TTL For example Known Life Time Buy Inventory will off set planned Inventory Reductions																	

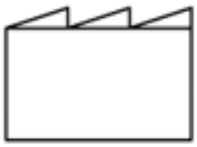
Quick Reference Guide for VSM Icons

Information Flow

Manual Info: General flow of information from memos, reports, conversations. Frequency and other notes may be relevant.

Electronic Info: Data via the internet, or networks. May indicate type of media used, fax/phone, and type of data exchanged

Process Flow



Customer/Supplier: In the upper left, generally refers to the supplier where flow begins. In the upper right, refers to the customer (where flow ends).

Process box: processes through which materials flow. Multiple boxes are used to represent multiple processes in a system.

Data Box: Goes under process box and contains data relevant to that process step.

Work Cell: Multiple processes integrated in a manufacturing work cell (family of products, batches moved from step to step, etc.).

Inventory: Inventory between 2 processes – can represent raw materials or finished goods.

Shipments: Movement of raw materials or product from suppliers or finished good to customers.

Push Arrow: Pushing materials from one process to the next process regardless of needs of downstream processes.

Supermarket: Inventory available for one or more customers to pick out materials needed downstream.

Material Pull: Indicate physical removal from inventory (like removing stock from the supermarket.

FIFO Lane: First-in First-out processes that limit input – like a conveyor belt with maximum possible inventory.

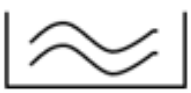
Safety Stock: Temporary storage of additional stock to protect against problems, failures, shortages, etc.

Shipments: Shipments from suppliers to customers using external transport.

Go See: Gathering of information through observation

Kaizen Burst: Highlight improvement areas for planned Kaizens. Critical to achieving Future State.

Operator: Represents the number of operators to run the processes at that workstation.



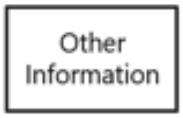
In-box: Where incoming information may be stored (email inbox, file cabinet, tray, etc.).

Quick Reference Guide for VSM Icons

Process Flow Continued ...

Production Control: A central production scheduling or control department, person, or operation.

Weekly Schedule: A weekly schedule or work plan.



Other: Additional useful or potentially useful information for the VSM.

MRP/ERP: Scheduling using MRP/ERP or other centralized systems.

Production Kanban: Triggers the production of a predefined number of parts.

Transport Kanban: A card or device triggering the transfer of parts from a supermarket to the receiving process.

Signal Kanban: Detect drops in inventory that reaches a minimum number.

Kanban Post: The location where Kanban signals reside for pick-up.

Sequenced Pull: Pull system to sub-assembly processes to produce a pre-determined type and quantity of product.

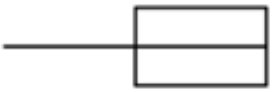
Load Leveling: Batch Kanban's to level production volume and mix over a period of time.

Water Spider: Transport material from one process to another.

Heijunka: Production volume and mix leveled over a period of time.

Timeline

Timeline Segment: Displays highest lead time for each process on the top and highest process time on the bottom.



Timeline Total: Shows the Process Time summary on top and the Lead Time summary on the bottom of the box.

Resource Guide

This is where we'll include links and Important References

After we run pilots – we'll populate this section with quick references and links to the things people want most.

FORTIVE

Find an FBS tool on InsideFortive