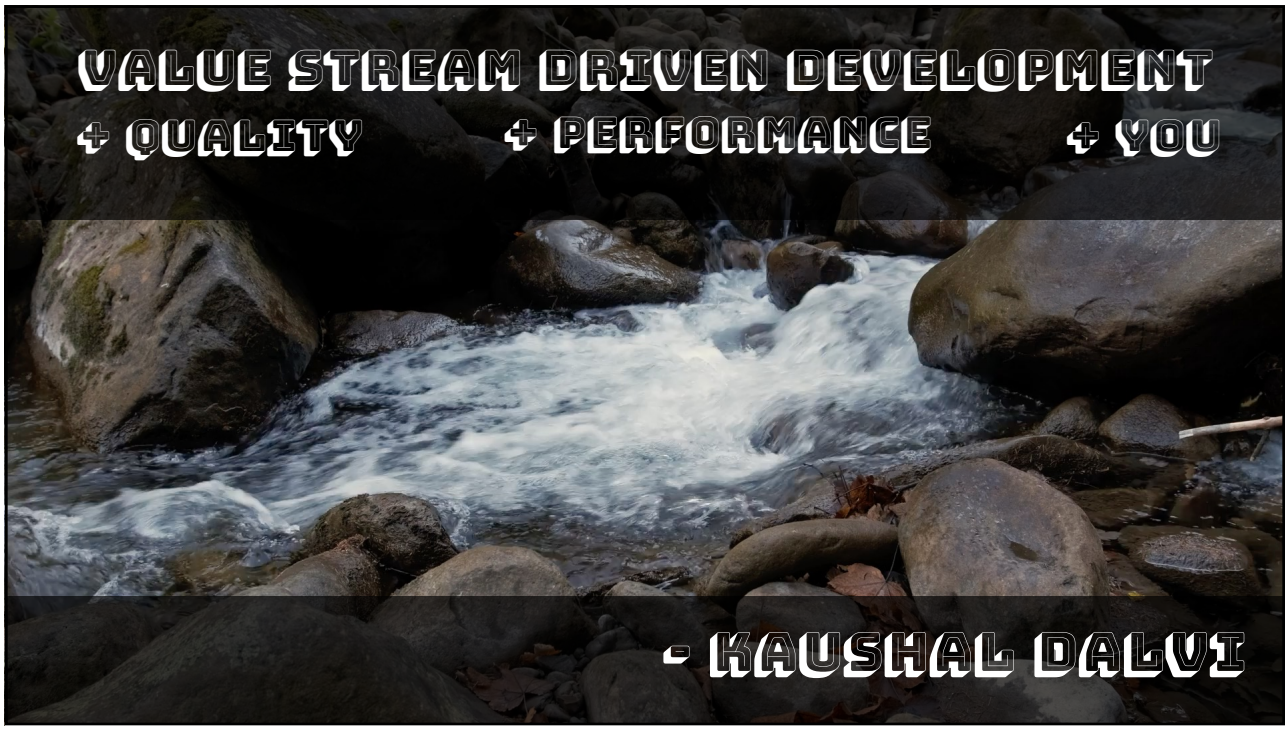
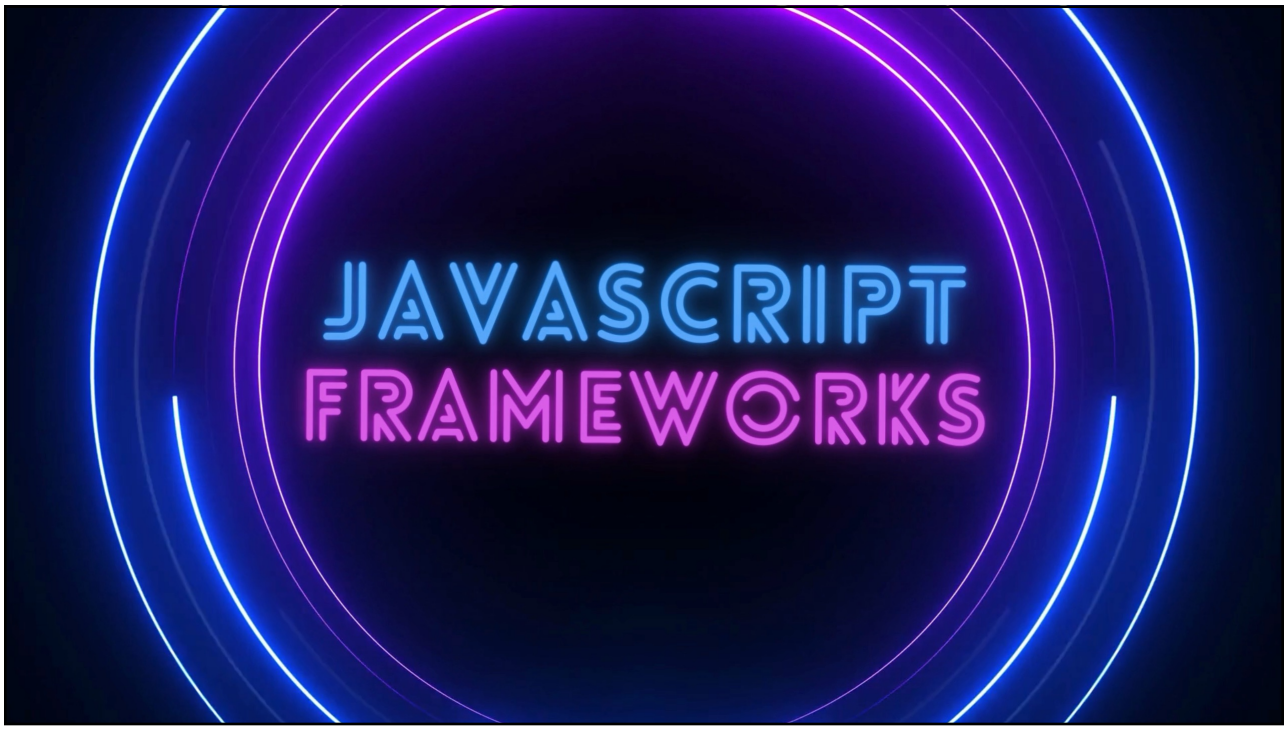

VALUE STREAM DRIVEN DEVELOPMENT
+ QUALITY
+ PERFORMANCE
+ YOU
- KAUSHAL DALVI

1

4800
PER
SECOND

2


JAVASCRIPT
FRAMEWORKS

3

Vue.js
NEXT.JS
Universal
Remix
NUXTJS
astro
qwik

4

Agile
Waterfall
MVP/MLP
FDD
Extreme
JAD
Srumban
Development
METHODOLOGIES
Scrum
Spiral
RAD
Prototype
Dynamic
Lean
Kanban

5

TOYOTA

6

7

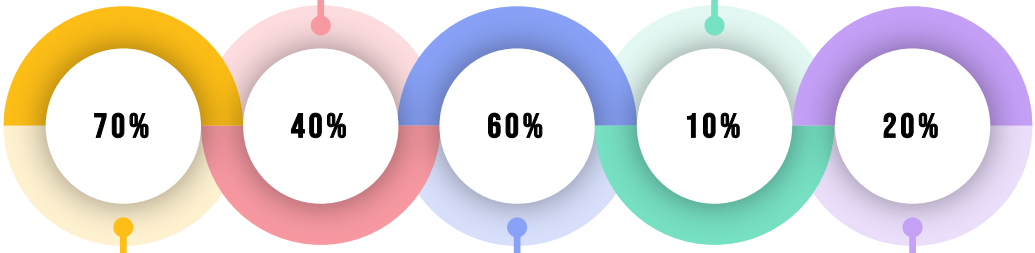
WHY SHOULD WE CARE ABOUT VSDD?

APP DELIVERY

By 2023, the use of value stream delivery platforms to streamline application delivery will grow from 10% to 40%.

AVAILABILITY

By 2025, 60% of I&O leaders will implement chaos engineering to add resilience and velocity improvements to value stream flow, increasing system availability by 10%.



DEVOPS

By 2023, 70% of organizations will use value stream management to improve flow in the DevOps pipeline, leading to faster delivery of customer value.

LEAD TIME

By 2023, 60% of organizations in regulated verticals will have integrated continuous compliance automation into their DevOps toolchains, improving their lead time by at least 20%.

BEYOND SRE

Through 2025, 20% of enterprises will go beyond SRE by adding IT resilience roles to improve resiliency posture between product teams and traditional DR.

Gartner, Predicts 2021: Value Streams Will Define the Future of DevOps, Daniel Betts, Chris Saunderson, Ron Blair, Manjunath Bhat, Jim Scheibmeir, Hassan Ennaciri, October 5, 2020

8

9

RAP/TRANSLATION

- ¿Dónde está la biblioteca?
- Me llamo T-Bone
- La araña discoteca

- Where is the library?
- My name is T-Bone,
- the disco spider.

- Discoteca, muñeca, la biblioteca
- Es en bigote grande, perro, Manteca

- Disco, doll, the library,
- Is in big mustache, dog, lard.

- Manteca, bigote, gigante, pequeño
- Cabeza es nieve Cerveza es bueno

- Lard, mustache, huge, little,
- head is ice-cream, beer is good.

- Buenos días, me gustas papas frías
- Bigote de la cabra
- Es Cameron Díaz

- Good day, I like cold potatoes,
- the goat's mustache
- is Cameron Diaz!

10

HOW TO RIDE THIS ROLLERCOASTER

PHILOSOPHY

Let's make sure we understand what it is that value stream driven practices are trying to optimize for

TACTICAL

Let's take a deeper look at what VSD looks like in both its knowledge and its native non-knowledge work setting

QUALITY

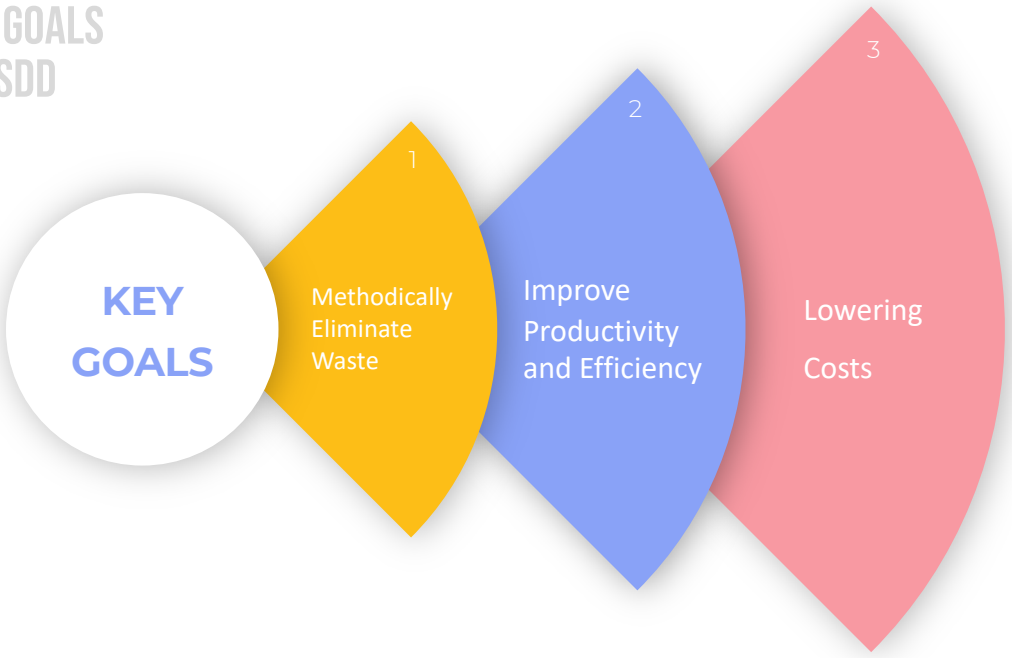
Once we understand what we are dealing with we can keep an eye out to ensure quality does not get forgotten in the implementation

11

WHAT ARE VALUE STREAMS

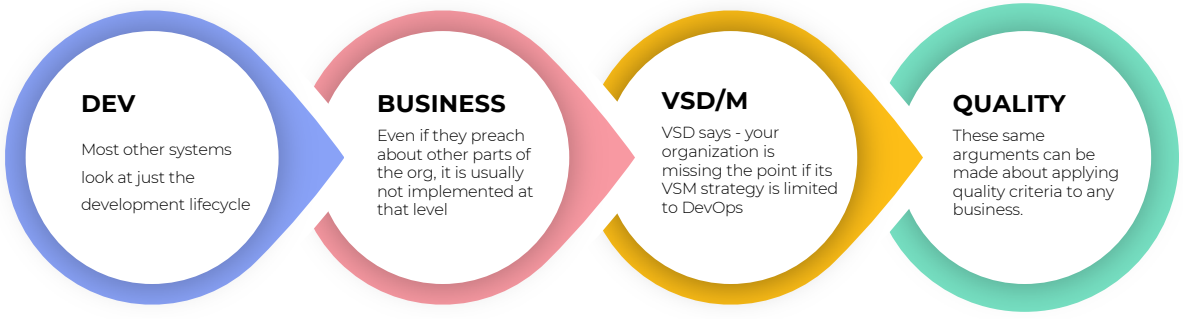
12

KEY GOALS IN VSDD



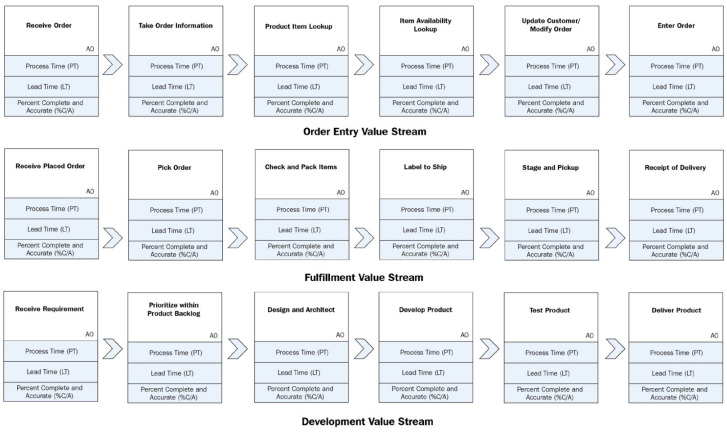
13

THE DIFFERENCE COMPARED TO OTHER METHODOLOGIES



14

Examples of Value Streams



Driving DevOps with Value Stream Management (Cecil 'Gary' Rupp, 2021)

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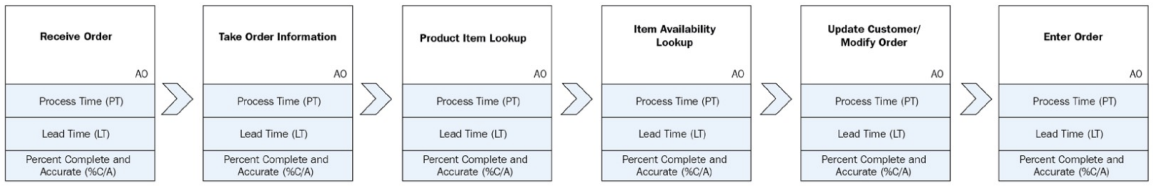
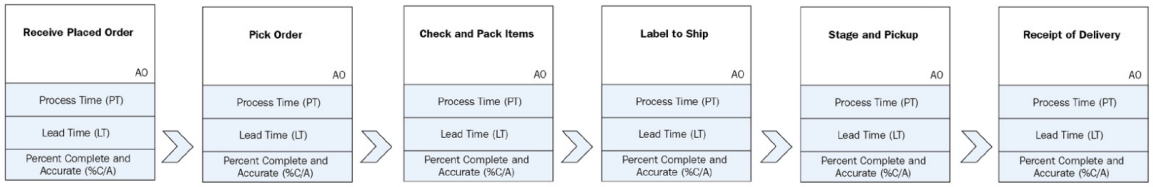
ORDER ENTRY VALUE STREAM



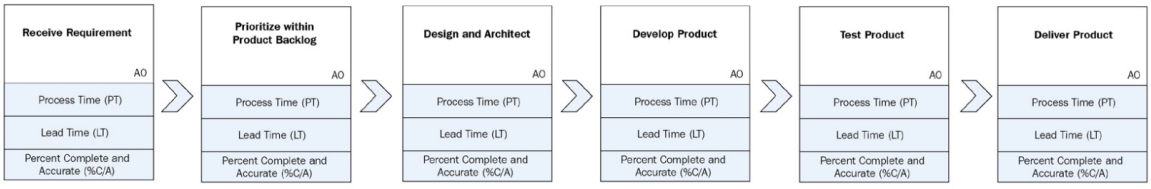
16

FULFILLMENT VALUE STREAM

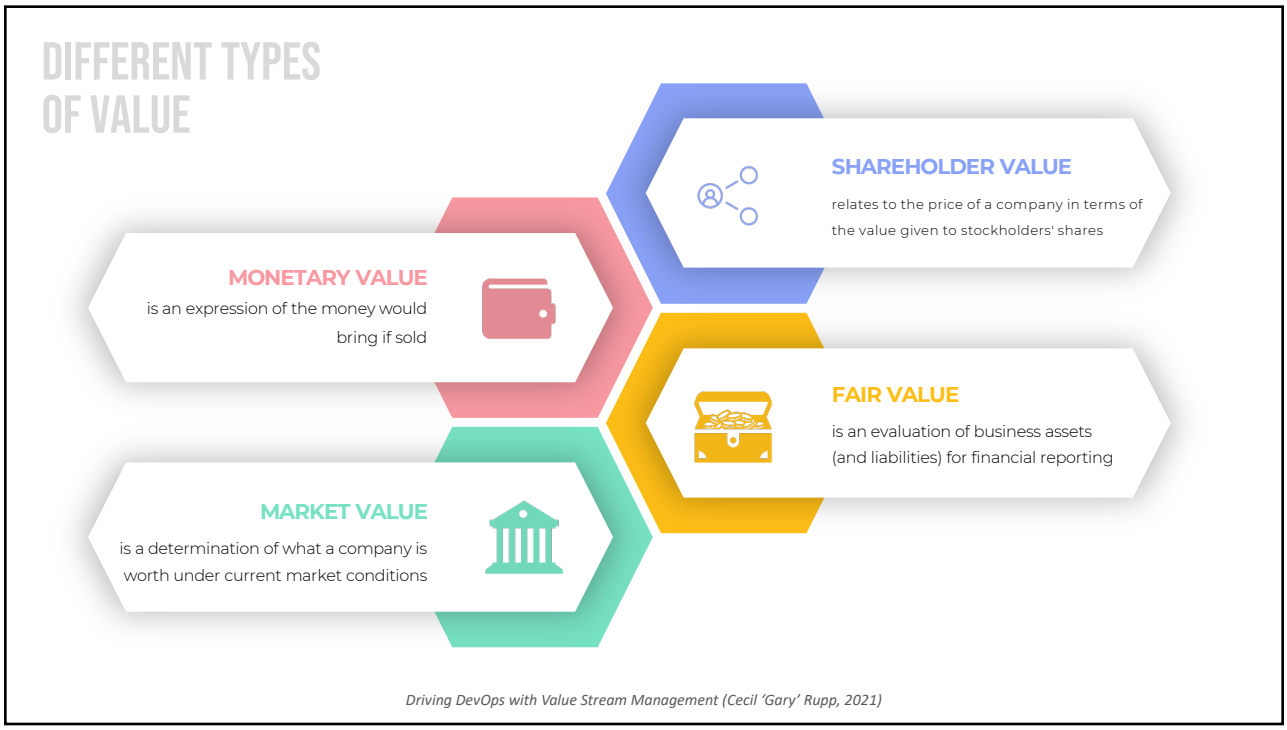


17

DEVELOPMENT VALUE STREAM



18


DIFFERENT TYPES OF VALUE
SHAREHOLDER VALUE
relates to the price of a company in terms of the value given to stockholders' shares
MONETARY VALUE
is an expression of the money would bring if sold
FAIR VALUE
is an evaluation of business assets (and liabilities) for financial reporting
MARKET VALUE
is a determination of what a company is worth under current market conditions
Driving DevOps with Value Stream Management (Cecil 'Gary' Rupp, 2021)

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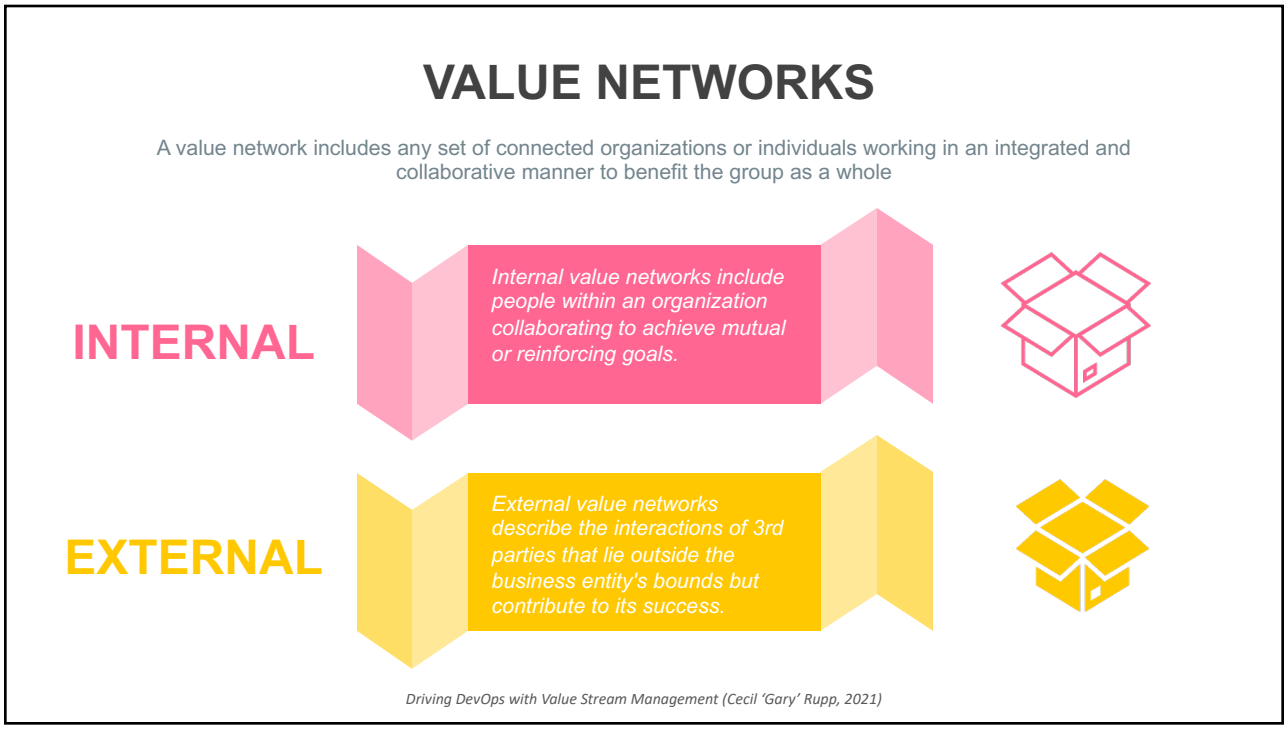
VALUE NETWORKS
A value network includes any set of connected organizations or individuals working in an integrated and collaborative manner to benefit the group as a whole
INTERNAL
Internal value networks include people within an organization collaborating to achieve mutual or reinforcing goals.
EXTERNAL
External value networks describe the interactions of 3rd parties that lie outside the business entity's bounds but contribute to its success.
Driving DevOps with Value Stream Management (Cecil 'Gary' Rupp, 2021)

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WHAT THEN ARE VALUE STREAMS?

"end-to-end collection of activities that create a result for a 'customer', who may be the ultimate customer or an internal "end-user" of the value stream"

The Great Transition: Using the Seven Disciplines of Enterprise Engineering to Align People, Technology, and Strategy (Martin, 1995)

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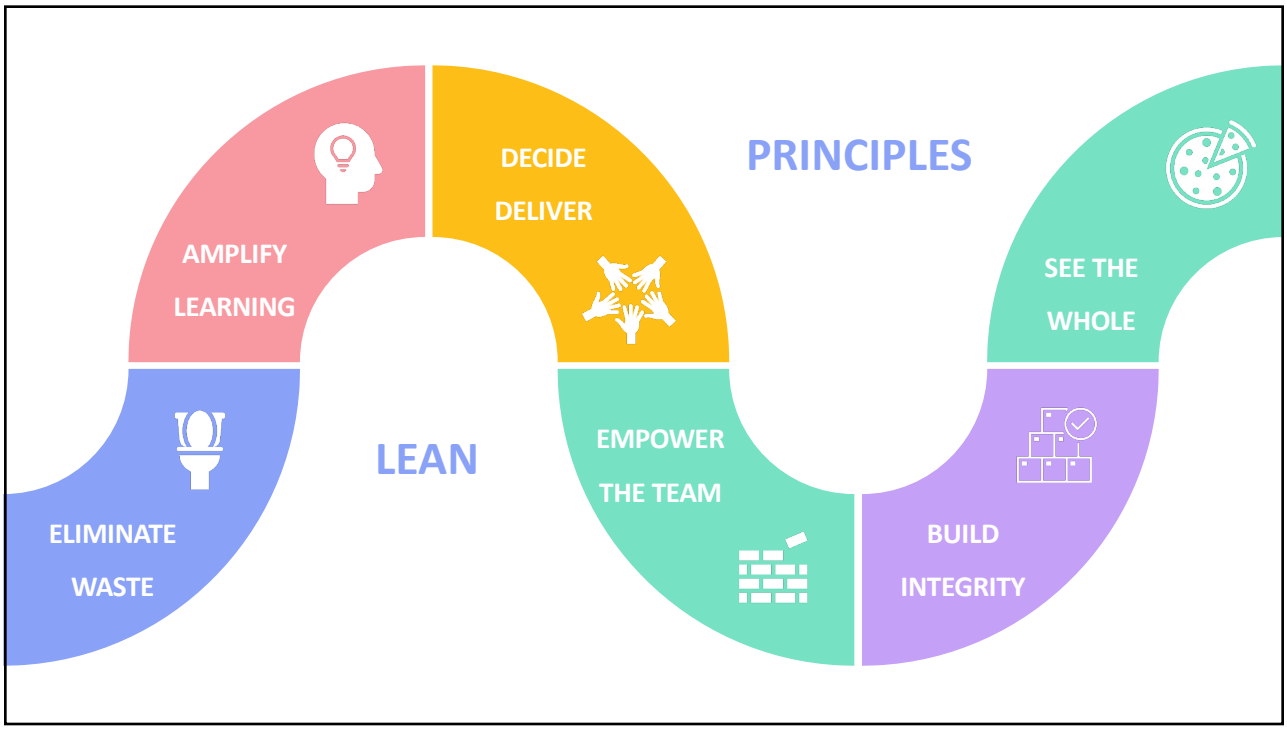
AGILE MANIFESTO

A quick recap

22



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HOW DO WE VSDD/M?

24

STEP 01
COMMIT TO LEAN

25

COMMIT TO LEAN: ROADMAP/CHECKLIST
PLAN
Develop an initial VSM initiative plan outlining goals, objectives, metrics, and resources
TRAINING
Allocate time and resources for training
COMMS
Create a communications plan and maintain diligence in executing and updating the plan
CHARTER
Ensure a VSM charter is developed and approved by executive sponsors
KICK-OFF
Plan and facilitate kick-off meetings
INCENTIVES
Create incentives for VSM team members and employees that support meeting VSM objectives and goals
Driving DevOps with Value Stream Management (Cecil 'Gary' Rupp, 2021)

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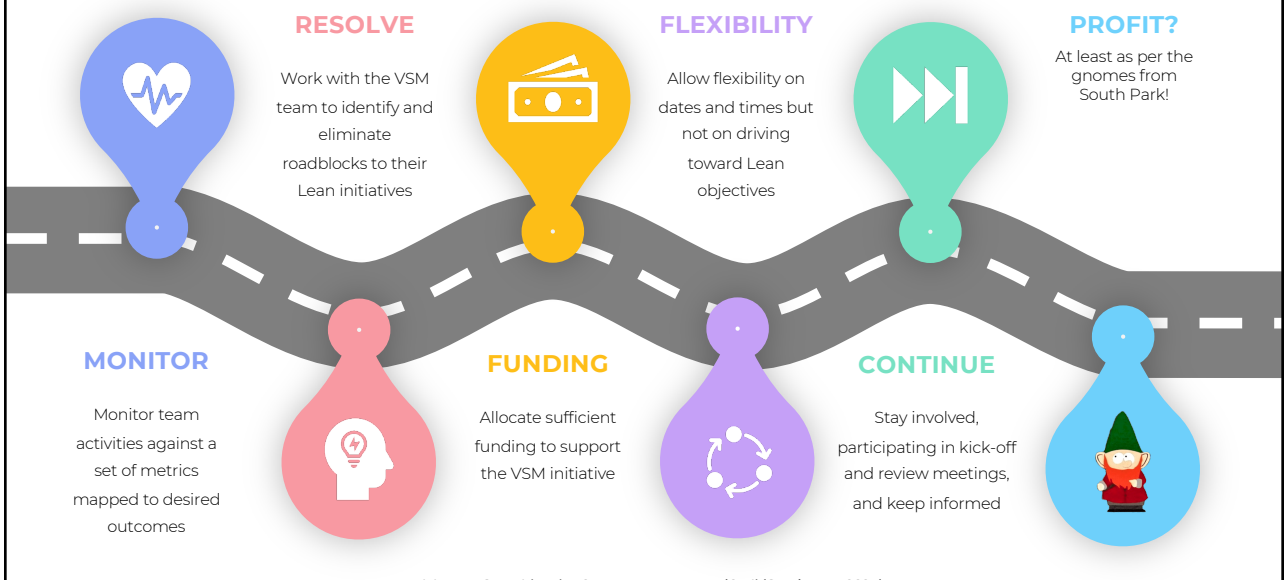
COMMIT TO LEAN: ROADMAP/CHECKLIST



Driving DevOps with Value Stream Management (Cecil 'Gary' Rupp, 2021)

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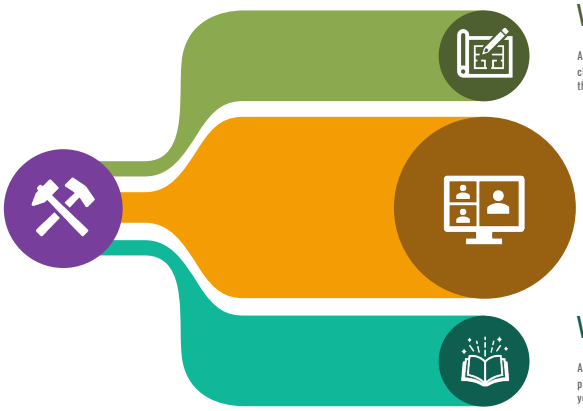
COMMIT TO LEAN: TOOLS



VSM CHARTERS

A VSM charter is an essential tool that helps ensure you have executive commitment. A charter is a formal commitment by both management and the VSM team members on what they hope to achieve.

KICKOFF MEETINGS

A kick-off meeting is an important meeting to ensure that everyone is prepared to start the VSM initiative and knows their roles and responsibilities. The VSM initiative champion should attend this first meeting to explain why the team was assembled and how they were selected. The VSM champion explains to the VSM team why executive management sponsored and funded the VSM initiative.

VSM STORYBOARDS

A VSM storyboard is one of the essential tools. It serves as a guide throughout your VSM project, taking you through the eight-step process of planning, mapping, and improving your selected value stream.

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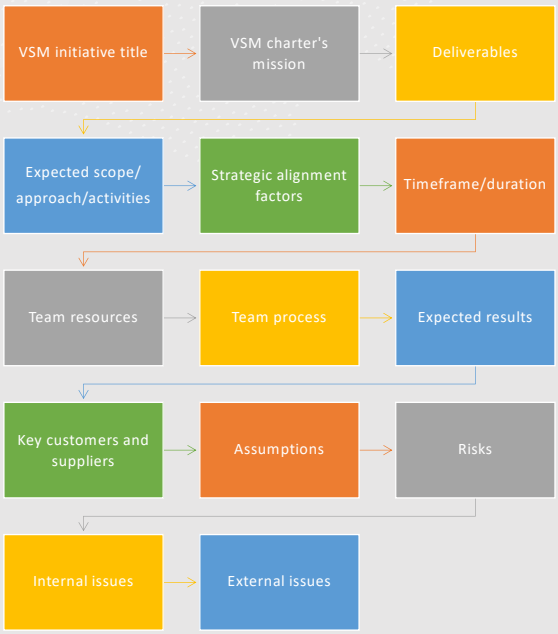
Step 1 - Commit to Lean [Tools - VSM charter]

A **VSM charter** is an essential tool that helps ensure you have executive commitment. A charter is a formal commitment by both management and the VSM team members on what they hope to achieve. A VSM charter should cover the following topics:



Driving DevOps with Value Stream Management (Cecil 'Gary' Rupp, 2021)

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Step 1 - Commit to Lean [VSM StoryBoard]

Date originated	Identified value stream	VSM champion	VSM team members	Problem categories
Primary Lean tools	Current (as-is) state / issues	Future (to-be) state map	Metrics	Kaizen proposal/plans

Driving DevOps with Value Stream Management (Cecil 'Gary' Rupp, 2021)

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VALUE, STREAMS AND VALUE STREAMS

VALUE

The term value implies the delivery of value in the form of a product, service, or result that you are creating for an internal or external customer.

STREAM

Metaphorically, the term stream refers to a sequential flow of activities that create value, therefore VSM improves the flow of value across our organization.

VALUE STREAM

As water in streams and rivers ultimately flows to the oceans, Lean-oriented value flows to our customers.

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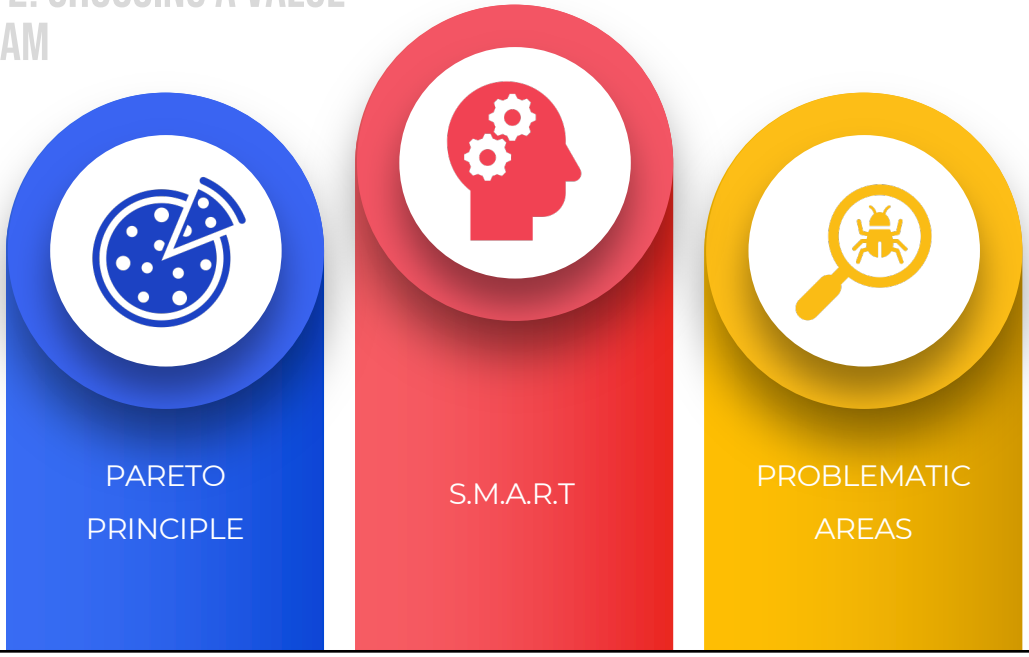
STEP 2: CHOOSING A VALUE STREAM



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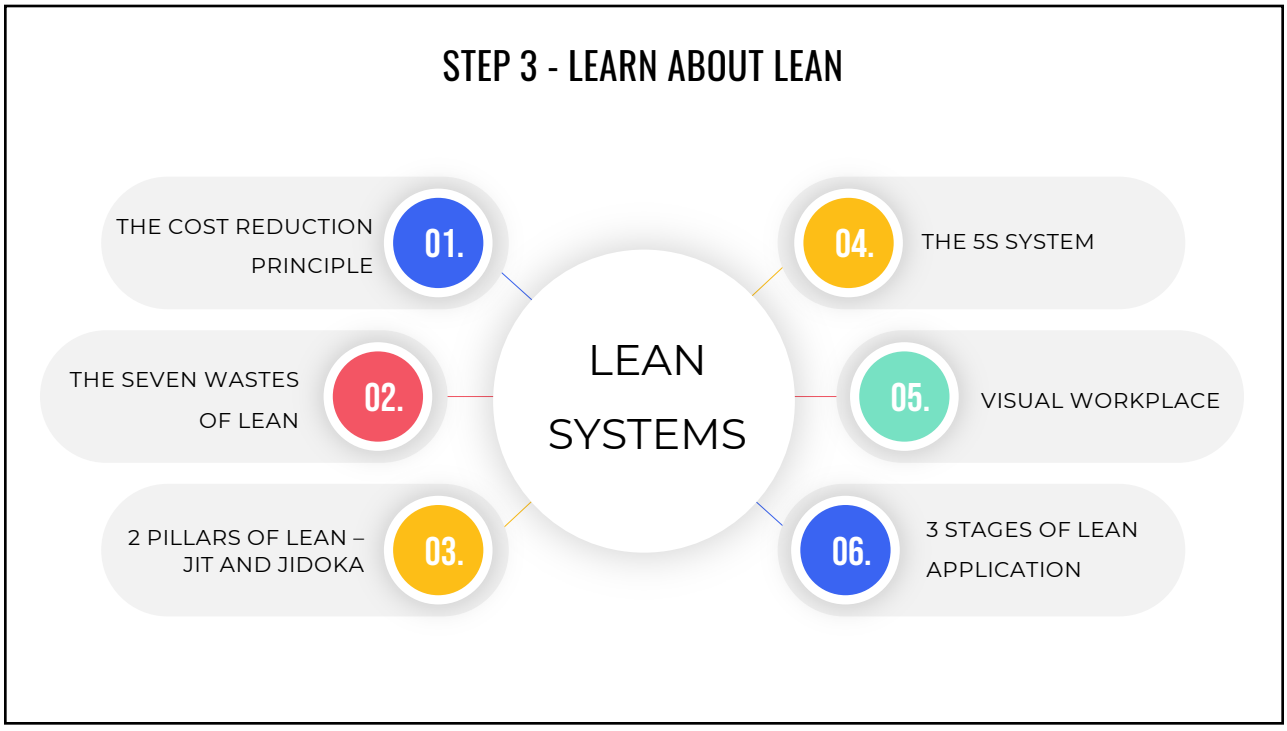
STEP 03
LEARN ABOUT LEAN

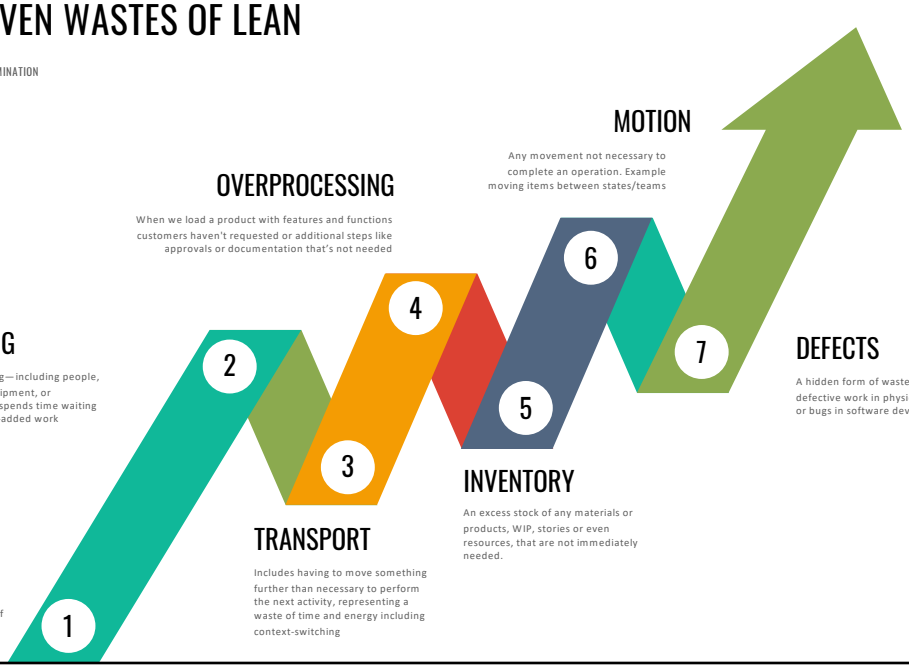
35


STEP 3 - LEARN ABOUT LEAN
LEAN SYSTEMS
01.
THE COST REDUCTION PRINCIPLE
02.
THE SEVEN WASTES OF LEAN
03.
2 PILLARS OF LEAN – JIT AND JIDOKA
04.
THE 5S SYSTEM
05.
VISUAL WORKPLACE
06.
3 STAGES OF LEAN APPLICATION

36

THE SEVEN WASTES OF LEAN

CANDIDATES FOR ELIMINATION



OVERPRODUCING
Whenever we produce too much of something without a customer order or historical demand

WAITING
When anything—including people, materials, equipment, or information—spends time waiting without value-added work performed

TRANSPORT
Includes having to move something further than necessary to perform the next activity, representing a waste of time and energy including context-switching

OVERPROCESSING
When we load a product with features and functions customers haven't requested or additional steps like approvals or documentation that's not needed

INVENTORY
An excess stock of any materials or products, WIP, stories or even resources, that are not immediately needed.

MOTION
Any movement not necessary to complete an operation. Example moving items between states/teams

DEFECTS
A hidden form of waste from defective work in physical products or bugs in software development.

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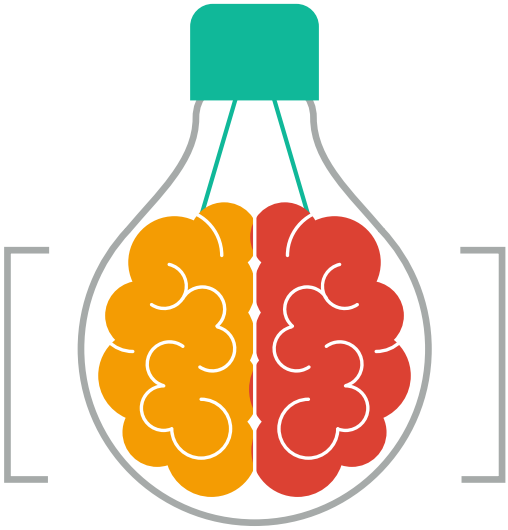
STEP 3 - LEARN ABOUT LEAN – TWO PILLARS OF LEAN—JIT AND JIDOKA



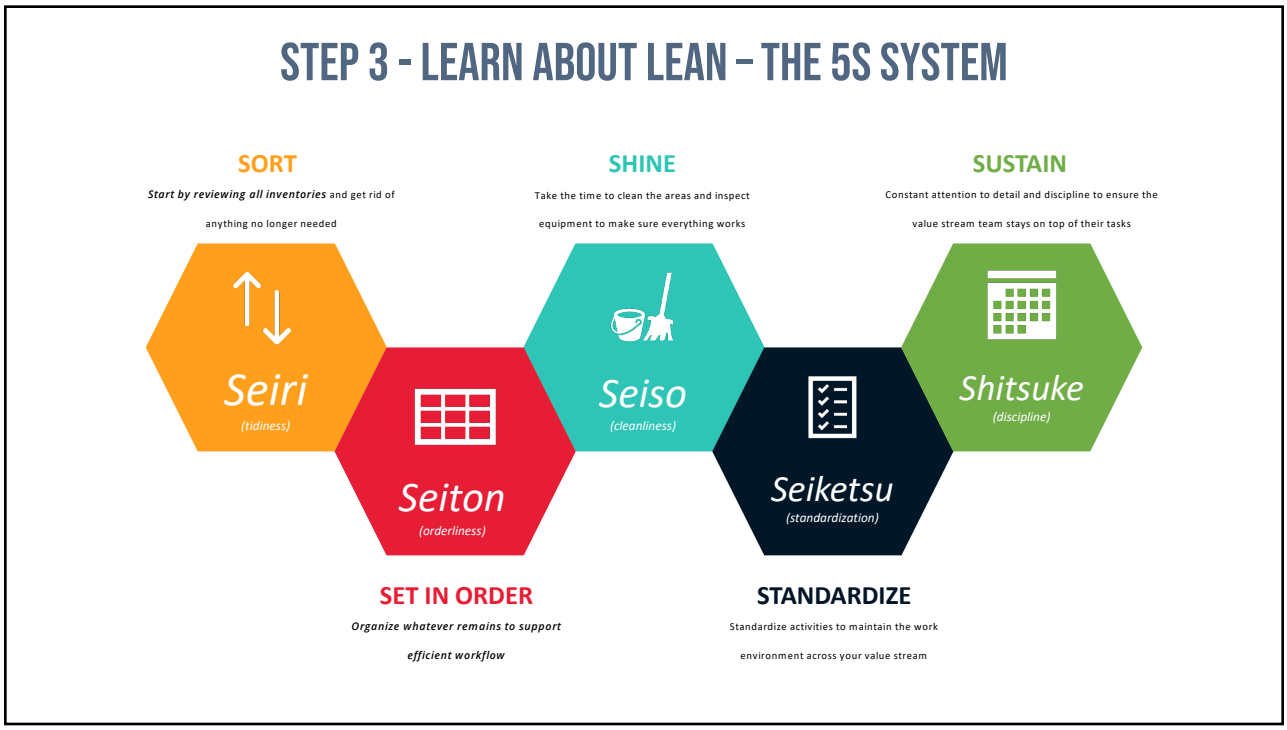
JIT PRODUCTION

This is an ideal state of continuous flow where materials reach their correct point of assembly, in the proper order, and just at the time of need.

JIDOKA

This uses automation to perform repetitive and dangerous tasks. The goal is not to use automation to replace humans. Instead, the autonomation capabilities help free up workers' time to perform multiple tasks within their value streams that require flexibility and thought.

38


STEP 3 - LEARN ABOUT LEAN – THE 5S SYSTEM
SORT
Start by reviewing all inventories and get rid of anything no longer needed
SHINE
Take the time to clean the areas and inspect equipment to make sure everything works
SUSTAIN
Constant attention to detail and discipline to ensure the value stream team stays on top of their tasks
Seiri
(tidiness)
Seiton
(orderliness)
Seiso
(cleanliness)
Seiketsu
(standardization)
Shitsuke
(discipline)
SET IN ORDER
Organize whatever remains to support efficient workflow
STANDARDIZE
Standardize activities to maintain the work environment across your value stream

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STEP 04
MAP CURRENT STATE

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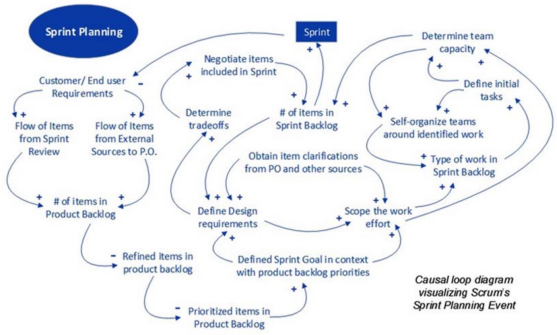
Causal Link Diagrams

A method to visualize the interrelationships of elements (a.k.a. *variables*) within a system as nodes and linkages between nodes (a.k.a. *edges*).



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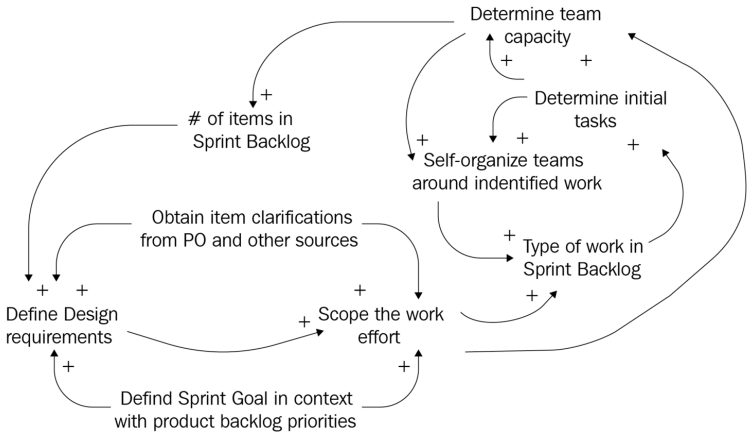
Reading a CLD



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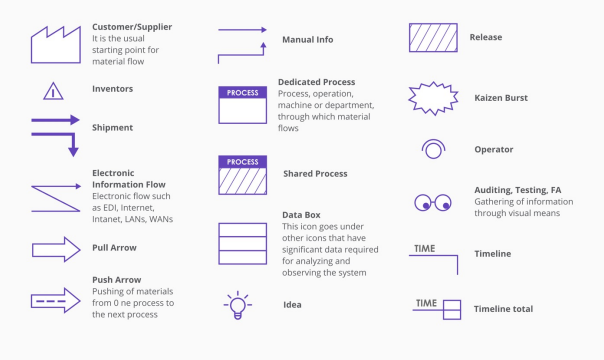
Step 4 - Map current state - Symbols



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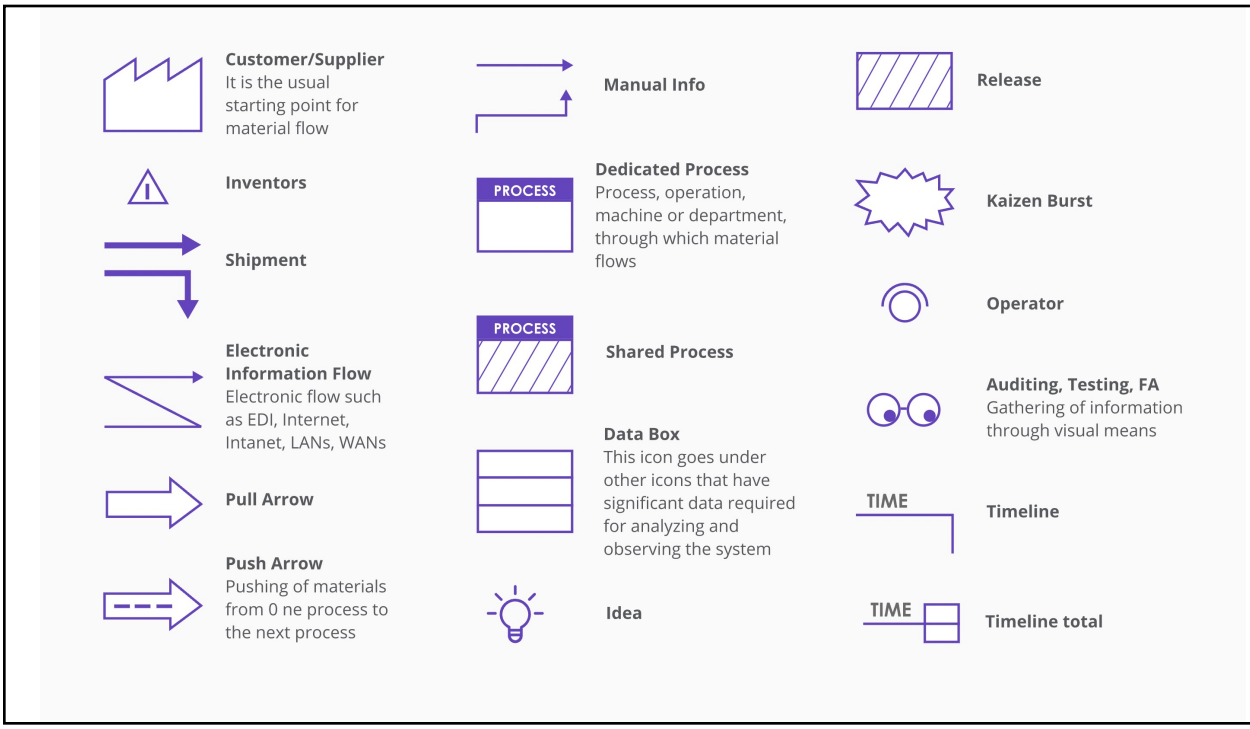

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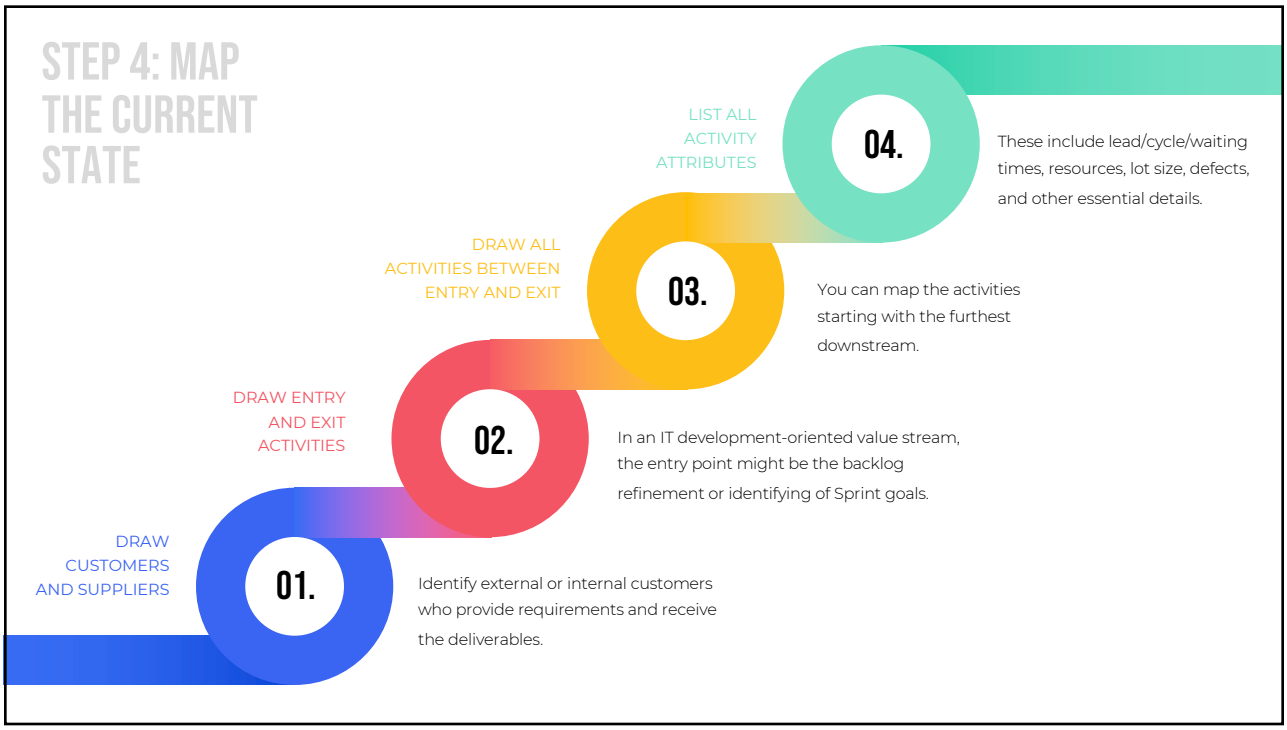
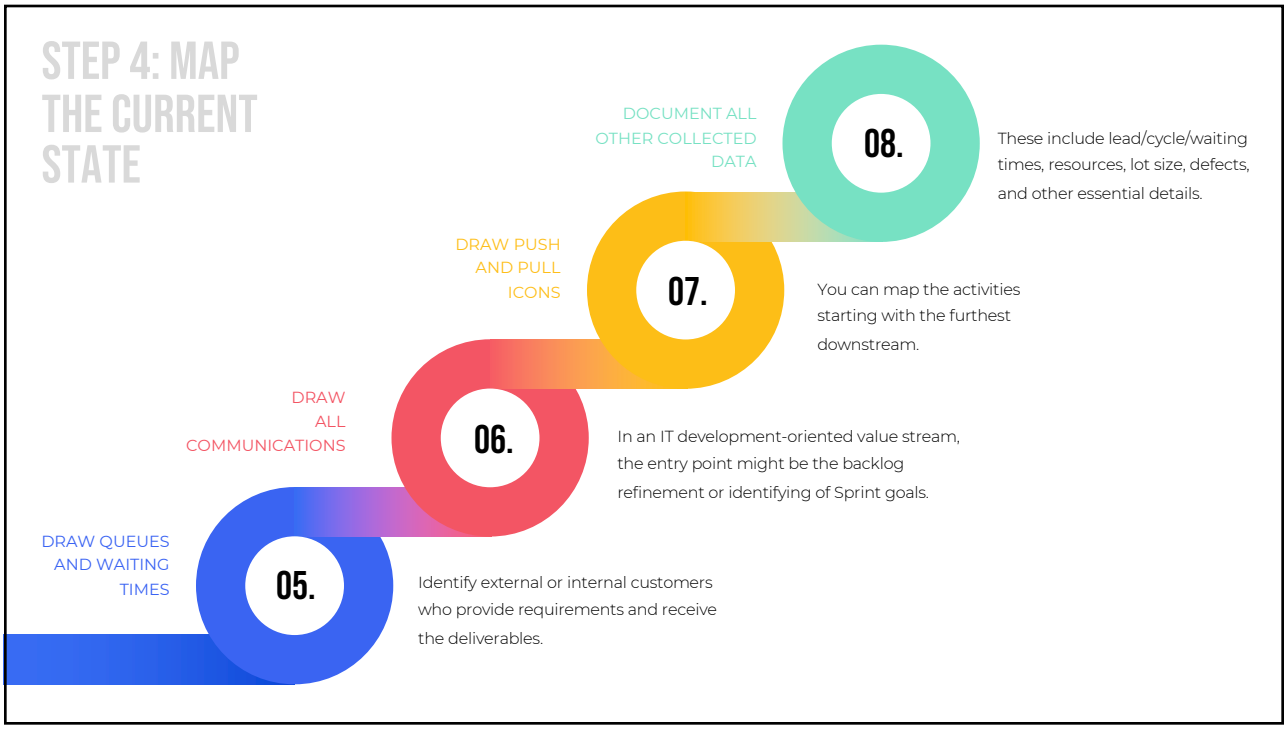

STEP 4: MAP THE CURRENT STATE
LIST ALL ACTIVITY ATTRIBUTES
04.
These include lead/cycle/waiting times, resources, lot size, defects, and other essential details.
DRAW ALL ACTIVITIES BETWEEN ENTRY AND EXIT
03.
You can map the activities starting with the furthest downstream.
DRAW ENTRY AND EXIT ACTIVITIES
02.
In an IT development-oriented value stream, the entry point might be the backlog refinement or identifying of Sprint goals.
DRAW CUSTOMERS AND SUPPLIERS
01.
Identify external or internal customers who provide requirements and receive the deliverables.

45


STEP 4: MAP THE CURRENT STATE
DOCUMENT ALL OTHER COLLECTED DATA
08.
These include lead/cycle/waiting times, resources, lot size, defects, and other essential details.
DRAW PUSH AND PULL ICONS
07.
You can map the activities starting with the furthest downstream.
DRAW ALL COMMUNICATIONS
06.
In an IT development-oriented value stream, the entry point might be the backlog refinement or identifying of Sprint goals.
DRAW QUEUES AND WAITING TIMES
05.
Identify external or internal customers who provide requirements and receive the deliverables.

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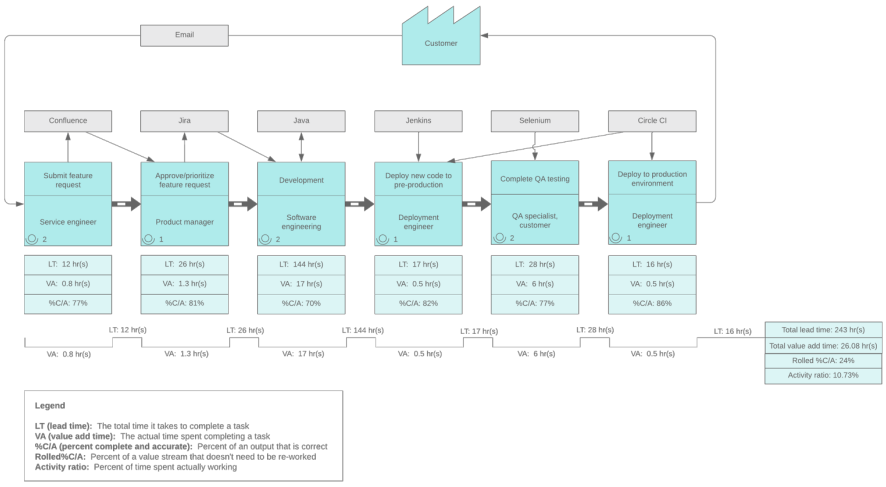
STEP 4 – MAP CURRENT STATE – SAMPLE MAP



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Step 5 - Identify Lean metrics

Technical	Product	Business
Code change size	Lead time	Product cost
Code delivery speed	Cycle time	Product value
Code refactoring rate	Throughput	Return on investment
Code review churn	Work in progress	Product quality
Code quality	Flow efficiency	Net Promoter Score
Technical debt	Work profile	Customer satisfaction

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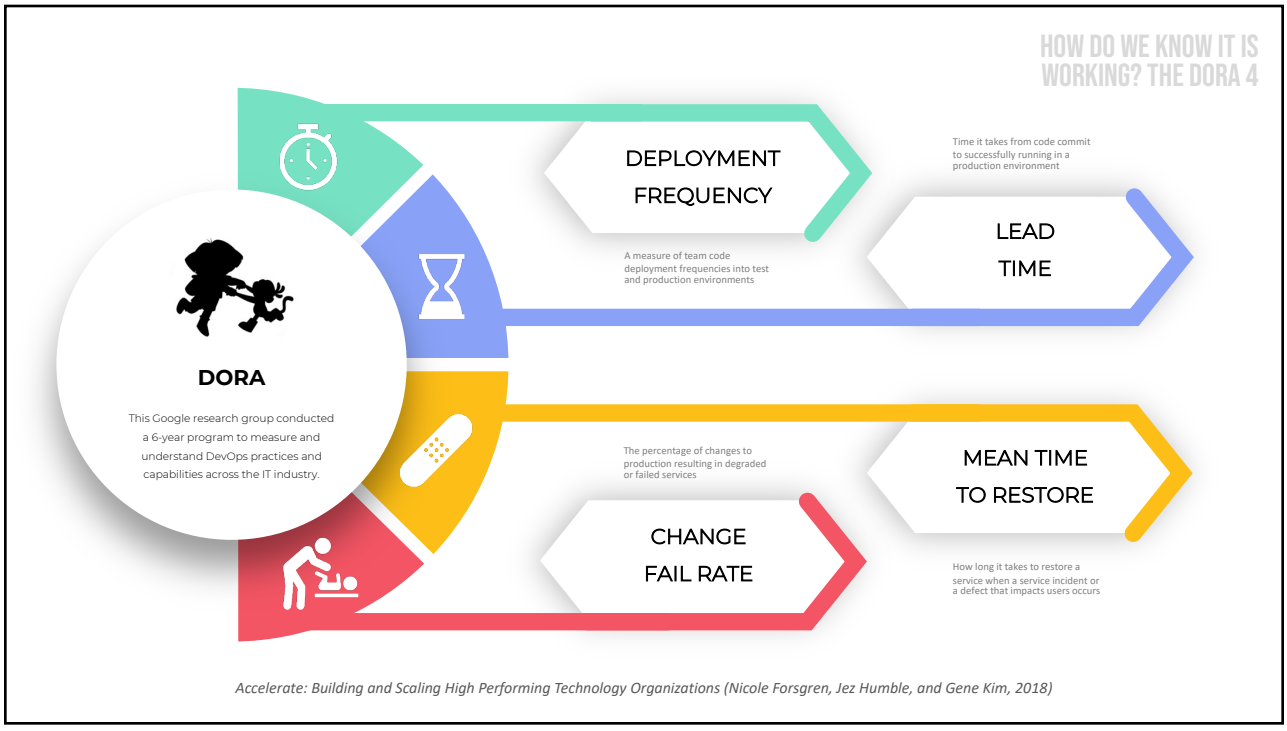

Accelerate: Building and Scaling High Performing Technology Organizations (Nicole Forsgren, Jez Humble, and Gene Kim, 2018)

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DORA METRIC MATURITY

Software delivery performance metric	Low	Medium	High
Deployment frequency For the primary application or service you work on, how often does your organization deploy code to production or release it to end users?	Between once per month and once every 6 months	Between once per week and once per month	On-demand (multiple deploys per day)
Lead time for changes For the primary application or service you work on, what is your lead time for changes (i.e., how long does it take to go from code committed to code successfully running in production)?	Between one month and six months	Between one week and one month	Between one day and one week
Time to restore service For the primary application or service you work on, how long does it generally take to restore service when a service incident or a defect that impacts users occurs (e.g., unplanned outage or service impairment)?	Between one week and one month	Between one day and one week	Less than one day
Change failure rate For the primary application or service you work on, what percentage of changes to production or released to users result in degraded service (e.g., lead to service impairment or service outage) and subsequently require remediation (e.g., require a hotfix, rollback, fix forward, patch)?	46%-60%	16%-30%	0%-15%

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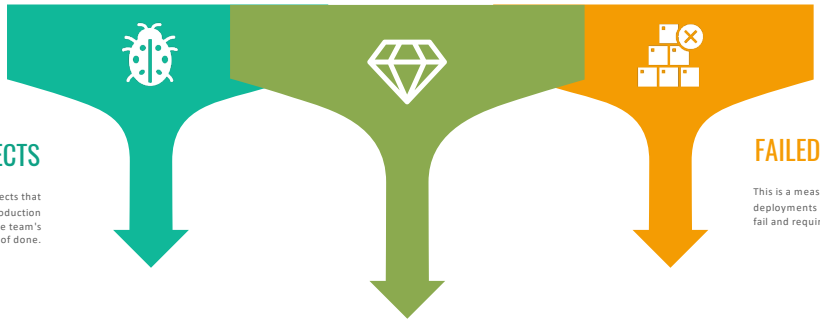
AGILE QUALITY METRICS

SOME COMMONLY USED METRICS IN THE AGILE/LEAN/VSD WORLD



ESCAPED DEFECTS

This is a measure of the defects that have been released into production that previously passed the team's definition of done.

FAILED DEPLOYMENTS

This is a measure of how often software deployments into production environments fail and require a rollback.

RELEASE NET PROMOTER SCORE (NPS)

The release-oriented NPS uses directed questions to measure customer satisfaction on a scale of 1 to 10 on each new or major release.

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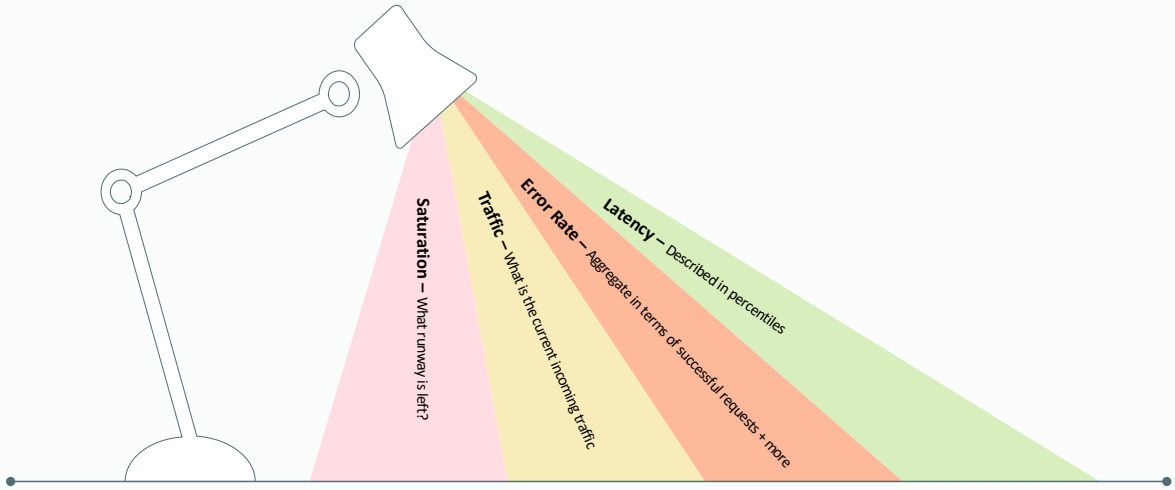
AGILE PRODUCTIVITY METRICS

SOME COMMONLY USED METRICS IN THE AGILE/LEAN/VSD WORLD

53

PERFORMANCE METRICS

WHAT EVERY ORGANISATION SHOULD KNOW ABOUT THEIR PRODUCTION



Shining a light on these four golden signals will provide meaningful insight for the next steps that SRE + Dev Teams need to take in the short term and Dev + Product teams need to take in the medium to long term.

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HEALTH METRICS FOR AGILE TEAMS

SOME COMMONLY FORGOTTEN METRICS IN THE AGILE/LEAN/VSD WORLD

EMPLOYEE HAPPINESS

Happiness is measured through simple employee surveys, asking them to rate how happy they are with the company, what they like best, what they don't like, and what would increase their happiness.

TEAM MORALE

Measures of team-level morale often provide better indicators of job satisfaction. Again, surveys work best, but the questions are not open-ended. Instead, the surveys ask the team members to rate their agreement with the questions on a scale of 1 to 7.

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Step 5 - Identify Lean metrics

We have already seen a few of the agile metrics before, for now let's focus on the ones that bring the focus to FLOW.

Flow Velocity
- How much value did we deliver?

Flow Efficiency
- Where are our bottlenecks?

Flow Time
- How fast can we deliver value?

Flow Load
- Is demand outpacing capacity?

Flow Distribution
- Are we aligned with business priorities?

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Step 5 - Identify Lean metrics

For our example, we can use these -

Legend

LT (lead time): The total time it takes to complete a task
VA (value add time): The actual time spent completing a task
%C/A (percent complete and accurate): Percent of an output that is correct
Rolled%C/A: Percent of a value stream that doesn't need to be re-worked
Activity ratio: Percent of time spent actually working

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Legend

LT (lead time): The total time it takes to complete a task
VA (value add time): The actual time spent completing a task
%C/A (percent complete and accurate): Percent of an output that is correct
Rolled%C/A: Percent of a value stream that doesn't need to be re-worked
Activity ratio: Percent of time spent actually working

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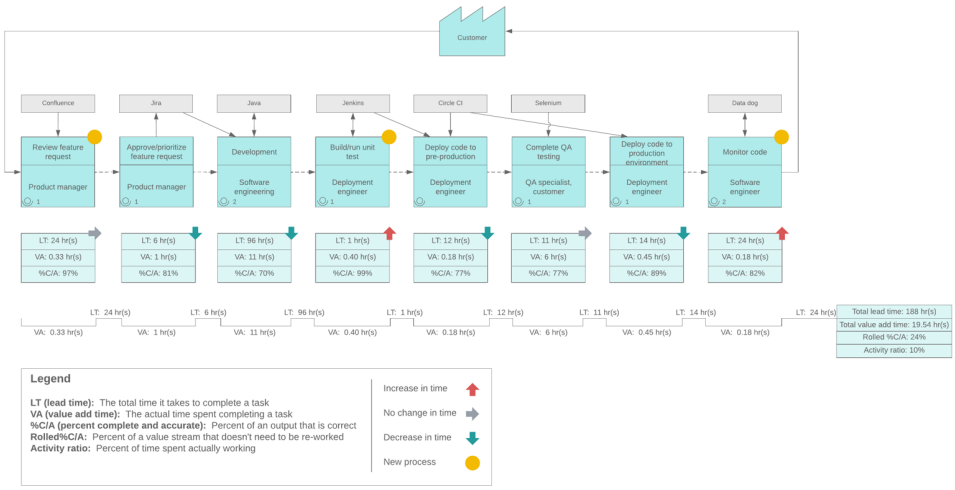
STEP 6 – MAP FUTURE STATE – SAMPLE MAP



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STEP 07
CREATE KAIZEN PLANS

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STEP 7 –
CREATE KAIZEN
PLANS
01.
CONNECTING KAIZEN PLANS TO BUSINESS STRATEGY
02.
PLANNING LEAN IMPROVEMENTS ACROSS PHASES
03.
DEVELOPING THE KAIZEN PLANS (TOOLS)
04.
GETTING BUY IN FOR THE KAIZEN PLANS

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Step 7 - Create Kaizen plans – Monthly Kaizen Schedule Plan

Monthly Kaizen Schedule Plan

Value Stream: Date

Phase	Kaizen Burst	Planed Improvement Change	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Demand														
FLOW														
LEVEL														

Δ = Start Date ➡ = Ongoing Work ▲ = Planned Finish Date

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Step 7 - Create Kaizen plans – Chart of VSM Objectives and Measurables

Date:						
VSM Team Lead:						
VS Manager:						
Change Objectives	Measurable Goals	Baseline Metrics	Target Metrics	State of change	Risks	Issues
☑ - Completed	☐ - Still Open	☒ - Unsuccessful				

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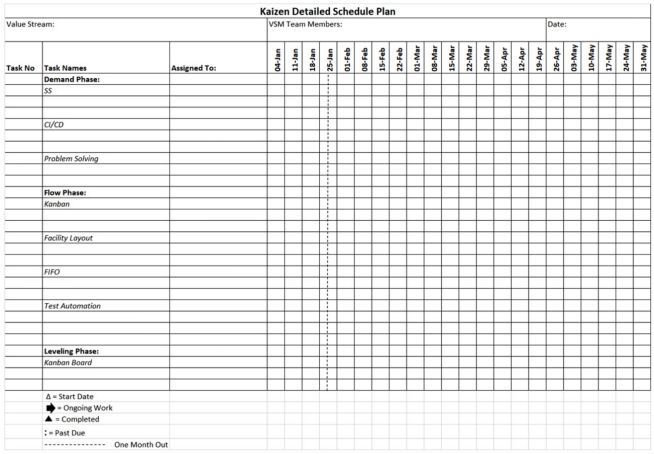
Step 7 - Create Kaizen plans – Kaizen Detailed Schedule Plan



Kaizen Detailed Schedule Plan

Value Stream:			VSM Team Members:																Date:						
Task No	**Task Names**	**Assigned To:**	**04-Jan**	**11-Jan**	**18-Jan**	**25-Jan**	**01-Feb**	**08-Feb**	**15-Feb**	**22-Feb**	**01-Mar**	**08-Mar**	**15-Mar**	**22-Mar**	**29-Mar**	**05-Apr**	**12-Apr**	**19-Apr**	**26-Apr**	**03-May**	**10-May**	**17-May**	**24-May**	**31-May**
	Demand Phase:																							
	SS																							
	CI/CD																							
	Problem Solving																							
	Flow Phase:																							
	Kanban																							
	Facility Layout																							
	FIFO																							
	Test Automation																							
	Leveling Phase:																							
	Kanban Board																							

Δ = Start Date
➡ = Ongoing Work
▲ = Completed
: = Past Due
---------- One Month Out

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Kaizen Detailed Schedule Plan

Value Stream:			VSM Team Members:																Date:						
Task No	**Task Names**	**Assigned To:**	**04-Jan**	**11-Jan**	**18-Jan**	**25-Jan**	**01-Feb**	**08-Feb**	**15-Feb**	**22-Feb**	**01-Mar**	**08-Mar**	**15-Mar**	**22-Mar**	**29-Mar**	**05-Apr**	**12-Apr**	**19-Apr**	**26-Apr**	**03-May**	**10-May**	**17-May**	**24-May**	**31-May**
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	Kanban Board																							

Δ = Start Date
➡ = Ongoing Work
▲ = Completed
: = Past Due
---------- One Month Out

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STEP 08
IMPLEMENT KAIZEN PLANS

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STEP 8 – IMPLEMENT KAIZEN PLANS
ORG WON'T ALIGN OVERNIGHT
NO OCEAN BOILING
ITERATIVE AND INCREMENTAL

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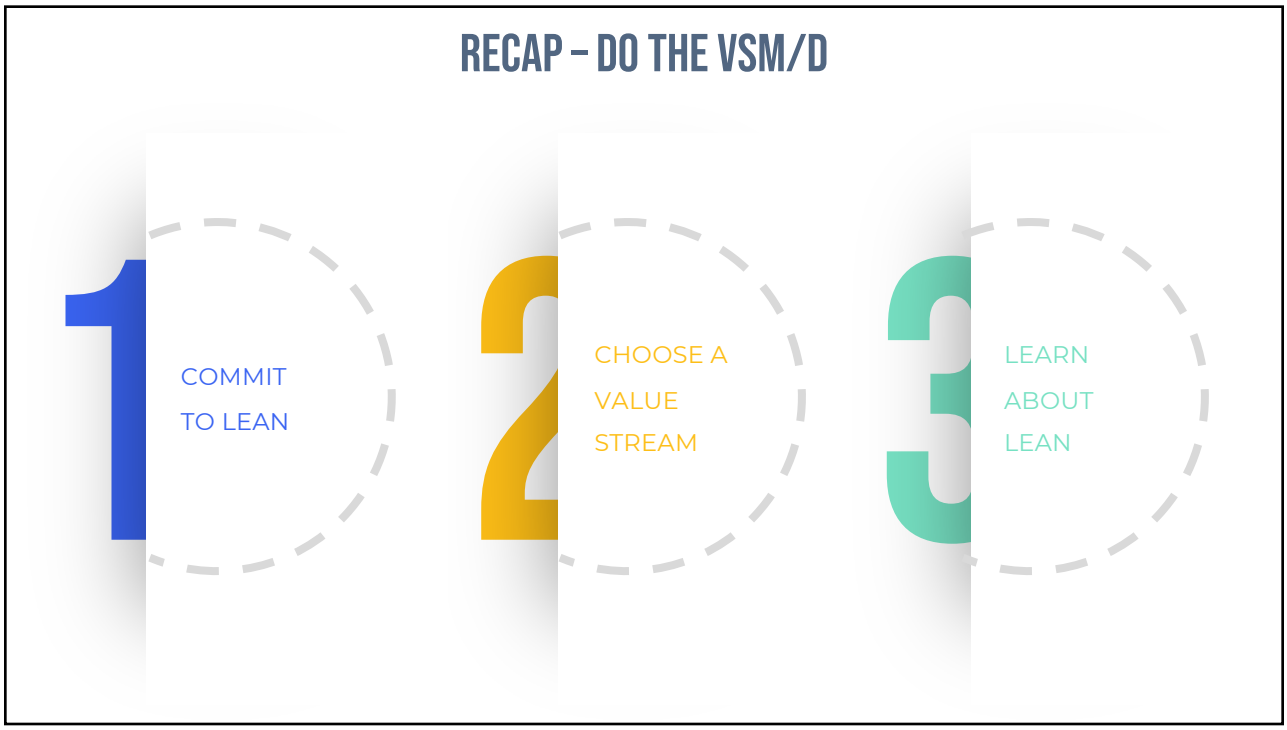
RECAP – DO THE VSM/D



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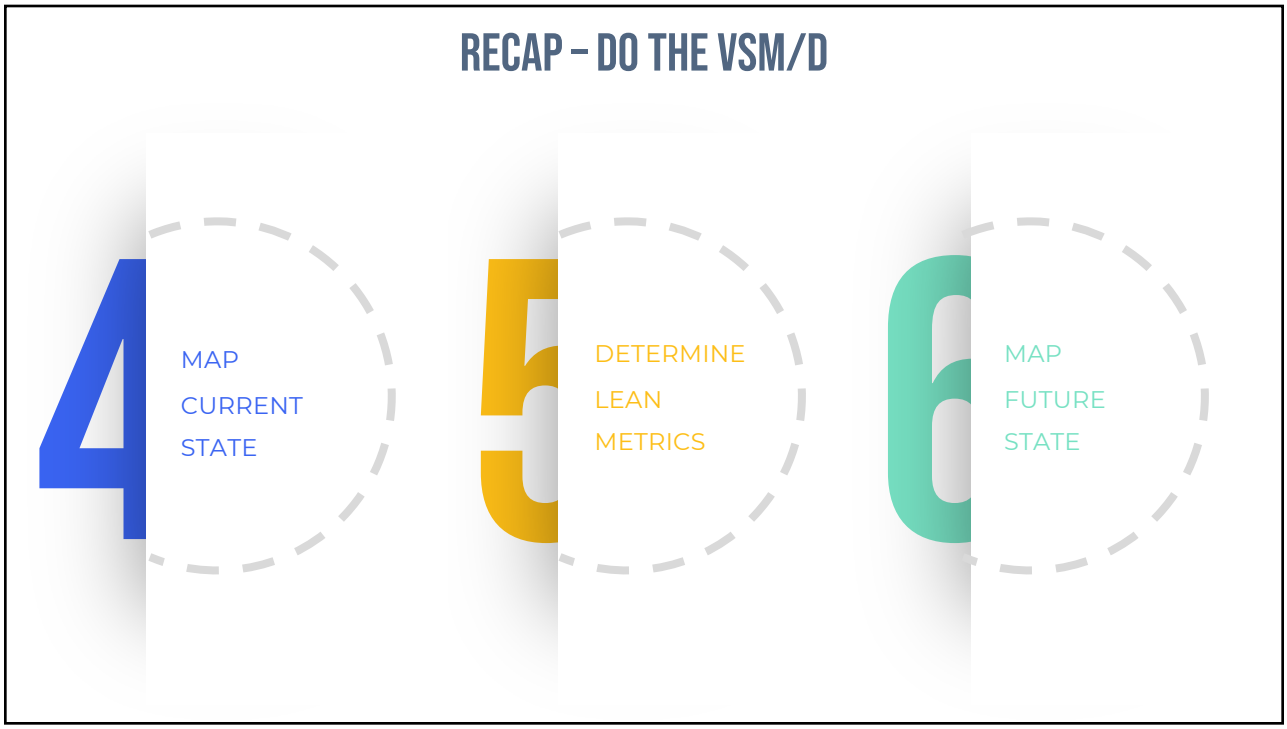
RECAP – DO THE VSM/D



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RECAP – DO THE VSM/D

7 CREATE KAIZEN PLANS

8 IMPLEMENT KAIZEN PLANS

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TAKE AWAYS

AN INTENSE FOCUS ON VALUE

ZEALOUSLY ELIMINATE WASTE

A HOLISTIC VIEW OF QUALITY

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THANK YOU!

SCAN ME

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