Lean Six Sigma Tools: Digital QMS Live Webinar

Presented by Isolocity & Lean Six Sigma Specialists

Who We Are

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Today's **Agenda**

- What are Lean Principles?
- Setting the Standard with Lean Principles
  - Motion
  - Transportation
  - Waiting
  - Inventory
  - Overproduction
  - Over-processing
  - Defects
- Key Takeaways
- Thank-you + Q&A

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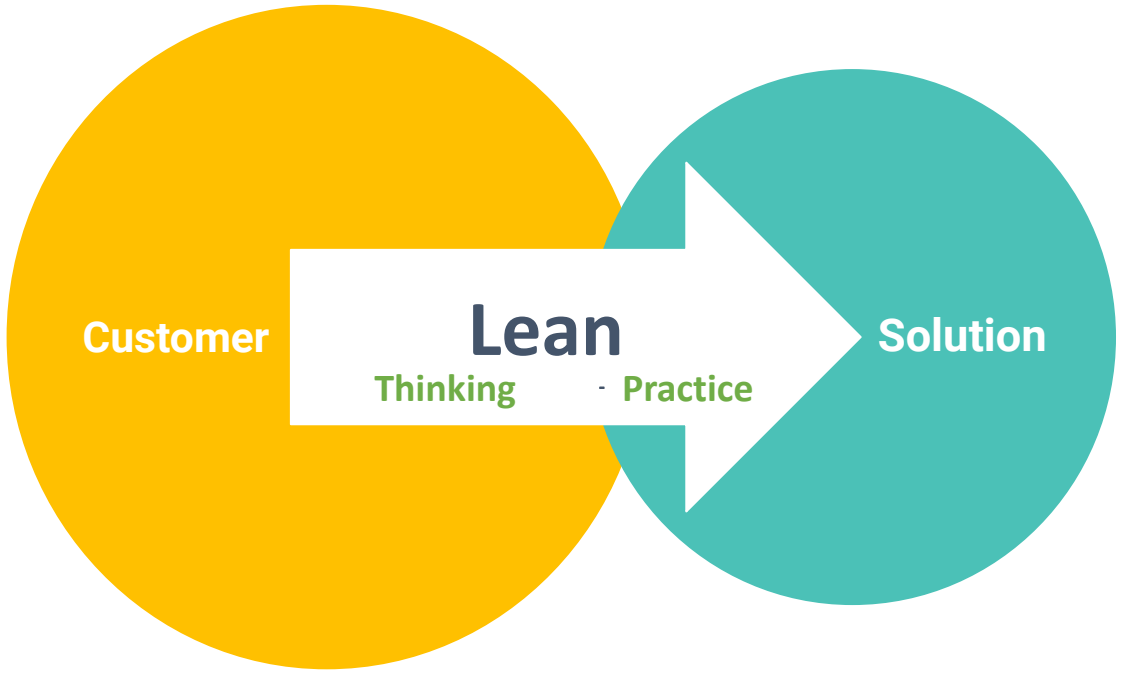
What are **Lean Principles?**

Lean is a <u>way of thinking</u> about creating VALUE-ADDED with fewer resources and less waste.

Lean thinking always starts with the customer. What does the customer value? In other words, **what problem does the customer need to solve?**



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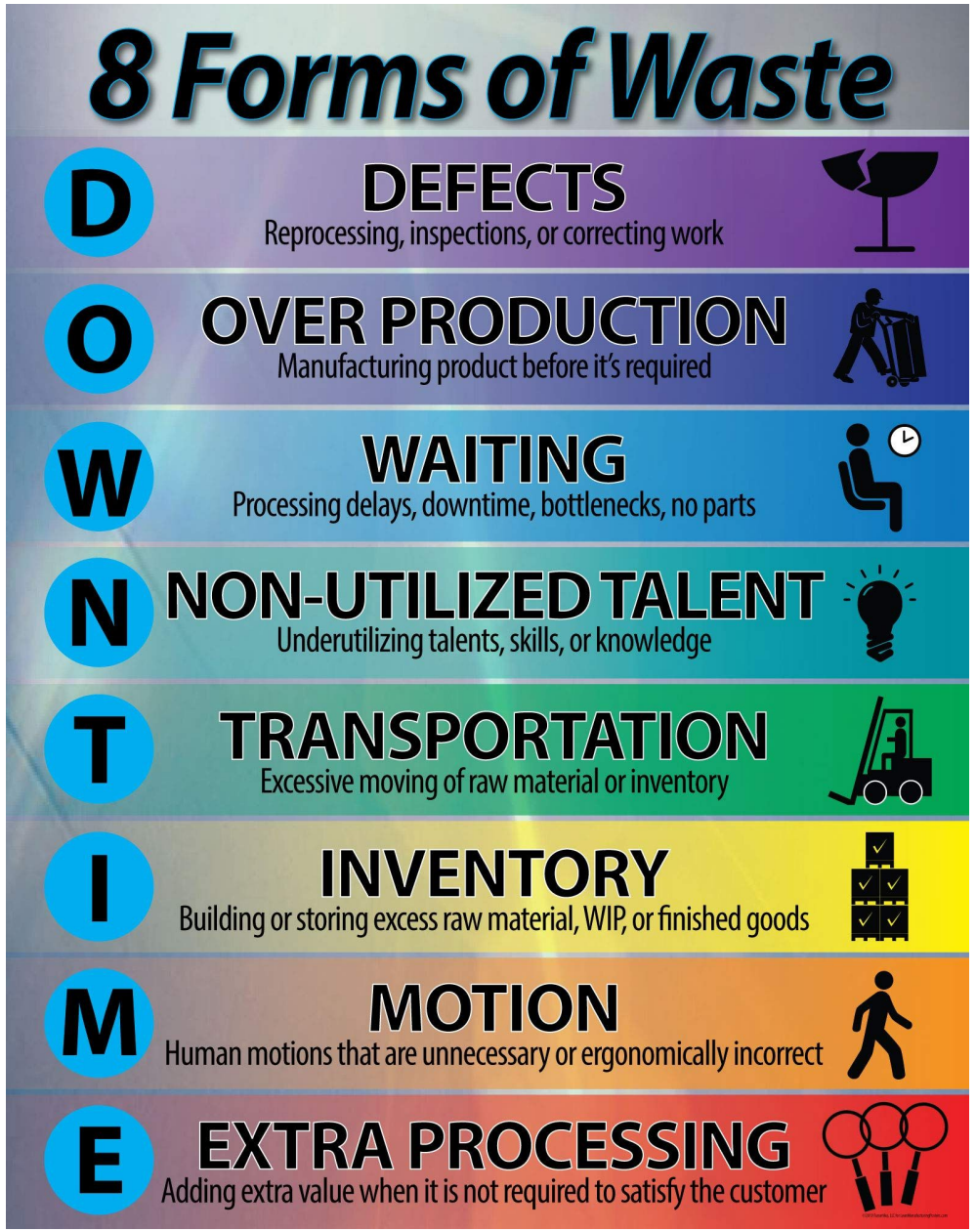
Setting **the Standard**

We all know the 8 “Classic” Forms of Waste

- Highlight opportunities in process which will either save time or reduce costs organization wide.



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PROCESS MUDA, MURA, MURI
CONTRADICT "ADDING-VALUE"

Presented by: Carlos Conejo,
Lean Six Sigma Master Black Belt

INFORMATION WASTE

1. REDUNDANT INPUT AND OUTPUT OF DATA
2.INCOMPLETE INFORMATION SYSTEMS
3.MANUAL CHECKING OF DATA THAT HAS BEEN ENTERED ELECTRONICALLY
4.DATA DEAD-ENDS (IE: DATA THAT IS INPUT BUT NEVER USED)
5. RE-ENTERING DATA
6. CONVERTING FORMATS
7. UNNECESSARY DATA
8. UNAVAILABLE, UNKNOWN, OR MISSING DATA
9. INCORRECT DATA
10. DATA SAFETY ISSUES (LOST OR INCORRECT DATA)
11. UNCLEAR OR INCORRECT DATA DEFINITIONS
12. DATA DISCREPANCIES
13.NON-SPECIFIC DATA, DESCRIBED IN GENERAL TERMS, RATHER THAN AT GRANULAR LEVEL, EXAMPLE: "OTHER"

PROCESS WASTE

1.DEFECTS
2.SCRAP
3.REWORK
4.WORK-AROUNDS
5.INSPECTING, CHECKING, AND DOUBLE-CHECKING
6.NEED FOR APPROVALS
7.VARIABLE FLOW IN A PROCESS
8.TOO MUCH INVENTORY
9.INCOMPLETE WORK
10.OVERPRODUCTION
11.WAITING & DELAYS
12.OVER-PROCESSING

PEOPLE WASTE

1.UNCLEAR ROLE, RESPONSIBILITY, AUTHORITY AND ACCOUNTABILITY
2.LACK OF TRAINING
3.WORK OR TASK INTERRUPTIONS
4.MULTI-TASKING
5.UNDERUTILIZATION OF TALENT
6.RECRUITING ERRORS
7.LACK OF STRATEGIC FOCUS

PHYSICAL ENVIRONMENT WASTE

1.CLUTTER
2. SAFETY
3.MOVEMENT

Muda is WASTE - Mura is UNEVENESS or UNBALANCED - Muri is OVERBURDEN or EXCESSIVE
Check out the different kinds of waste above that can cause the feast or famine cycle

Driving Lean Principles Through **QMS**

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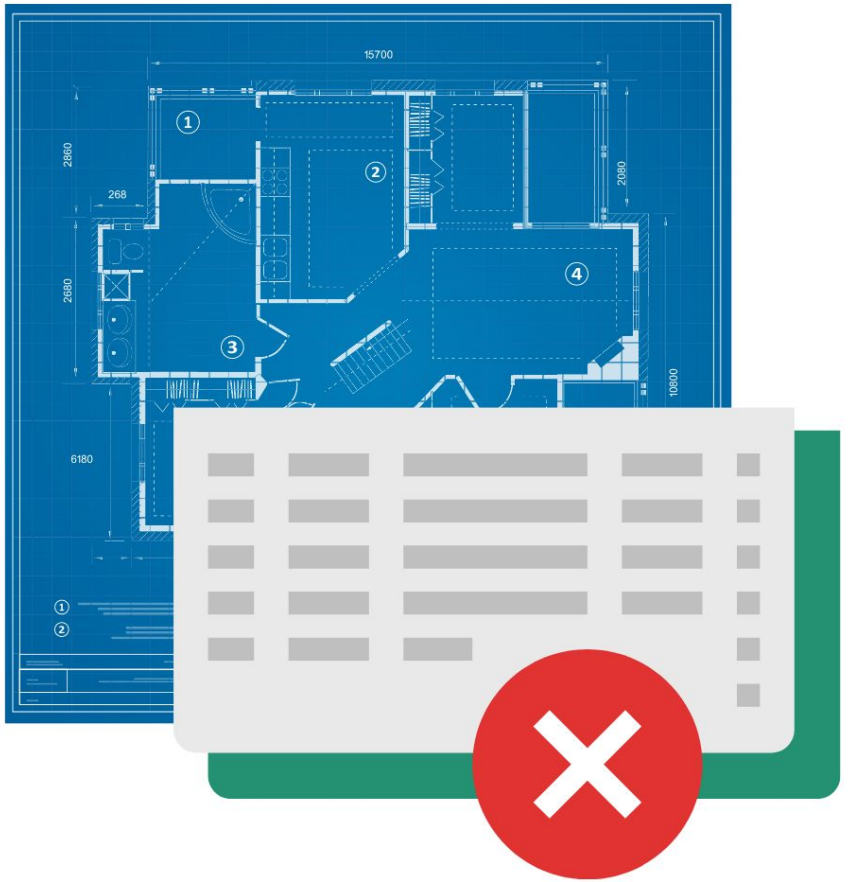
Motion Waste: **Examples**

- Poor layout of facilities.
- Machine terminals only located in office. Which leads to batching of data input.
- Binders full of paperwork.
- Making manual calculations of inventory or percentages consumed in recipes. These numbers can be automatically updated in real-time through IoT devices and other smart applications.



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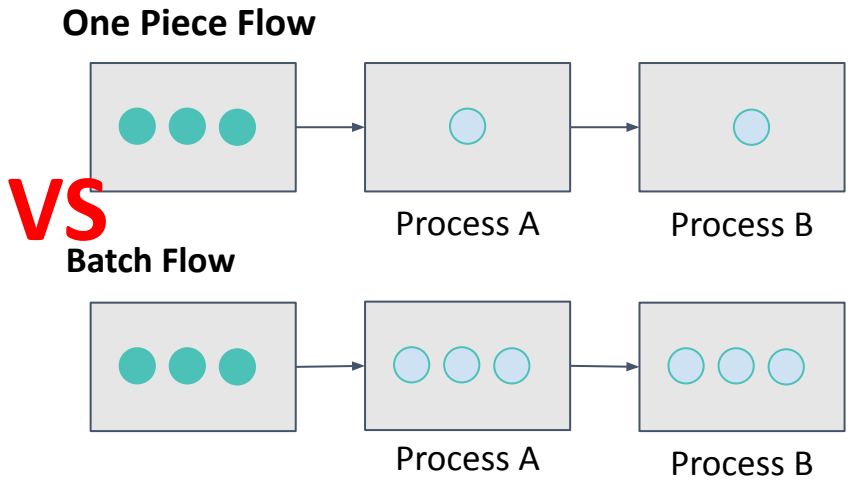
Motion Waste: **Solutions**



- **One piece flow**. Envelope exercise.
- Increasing locations of data entry.
- Utilizing **5S methodology** for document and tool location. - reference link provided end of presentation.
- Utilizing integrations to reduce double handling of data.
- Reduce the amount of systems used.

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What is **Waiting Waste?**

Waiting refers to wasted time because of slowed or halted production in one step of the production chain while a previous step is completed.

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Waiting Waste: **Examples**

- Poor operational design leads to product release and record keeping to take longer than it should.
- Poor system management that create the double handling of data when information can be readily available automatically.
- Waiting on batch record completion prior to product release.

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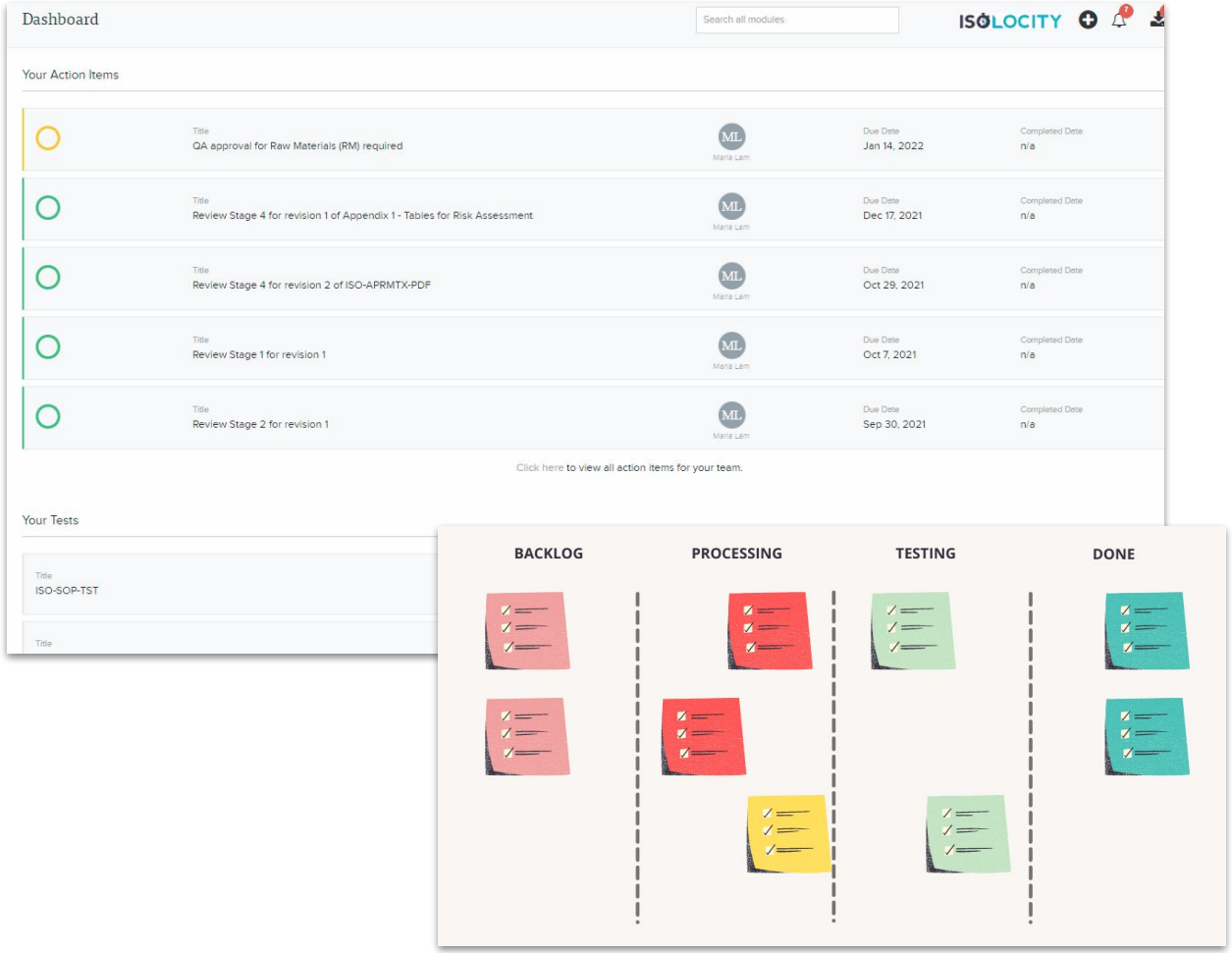
Waiting Waste: **Solutions**



- **Cross Training** – ensures processes are not dependent on one person for input.
- **Visual management** – KPIs, tick charts, WI, and SOPs. These ensure there is no confusion with instructions and allows teams to process data more efficiently. This will increase input quality while decreasing waiting time between stages and escalations of tasks.

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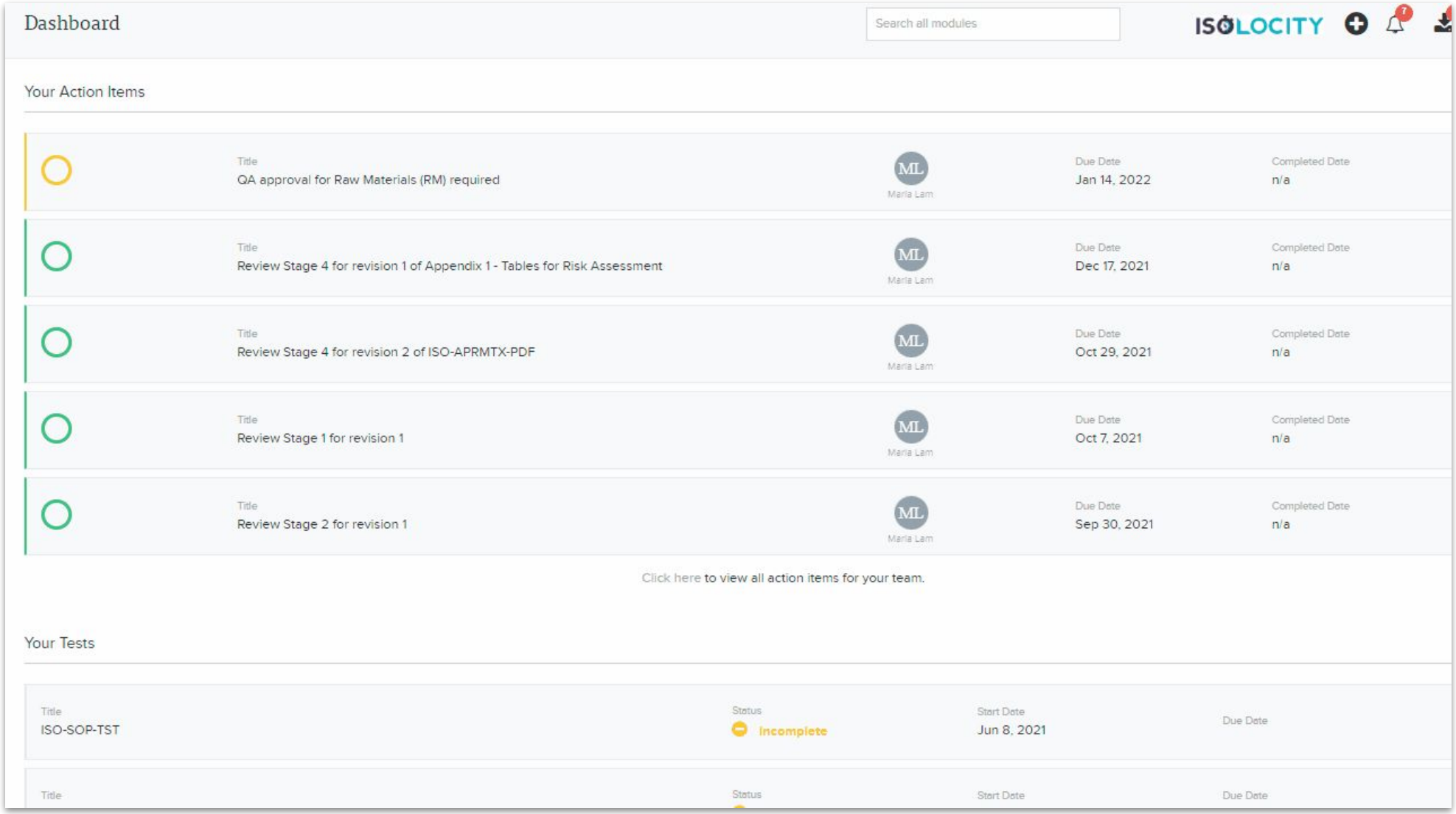
Waiting Waste: **Solutions**



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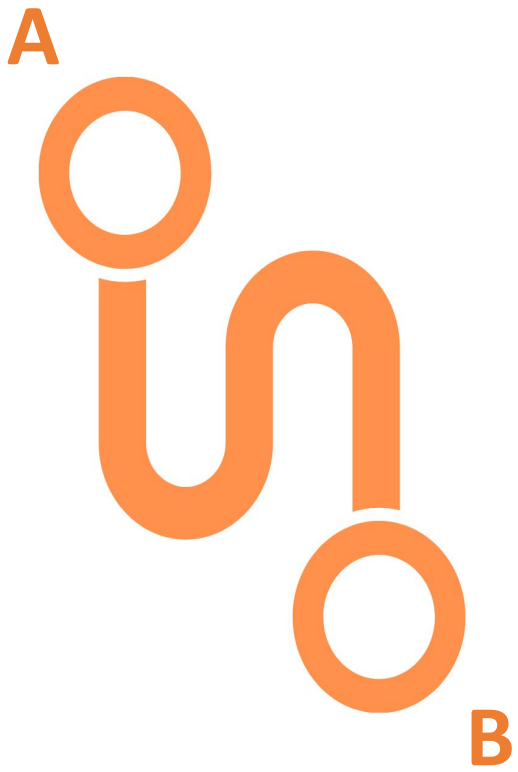
What is **Transportation Waste?**



Transport refers to the movement of materials and records from one position to another.

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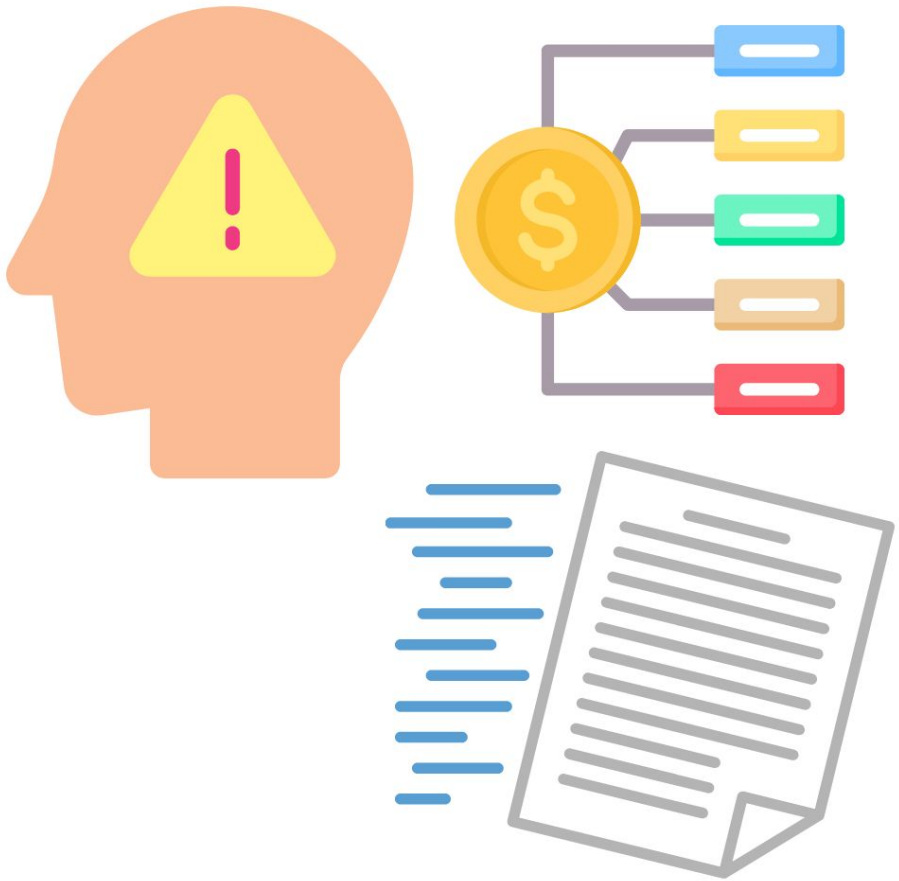
Transportation Waste: **Examples**

- Adding to carbon-footprint by commuting to work location.
- Travelling paper documents such as lab results or batch records.
- Time cost of collecting quantitative and qualitative plant/product data that is unnecessary and prone to human errors.



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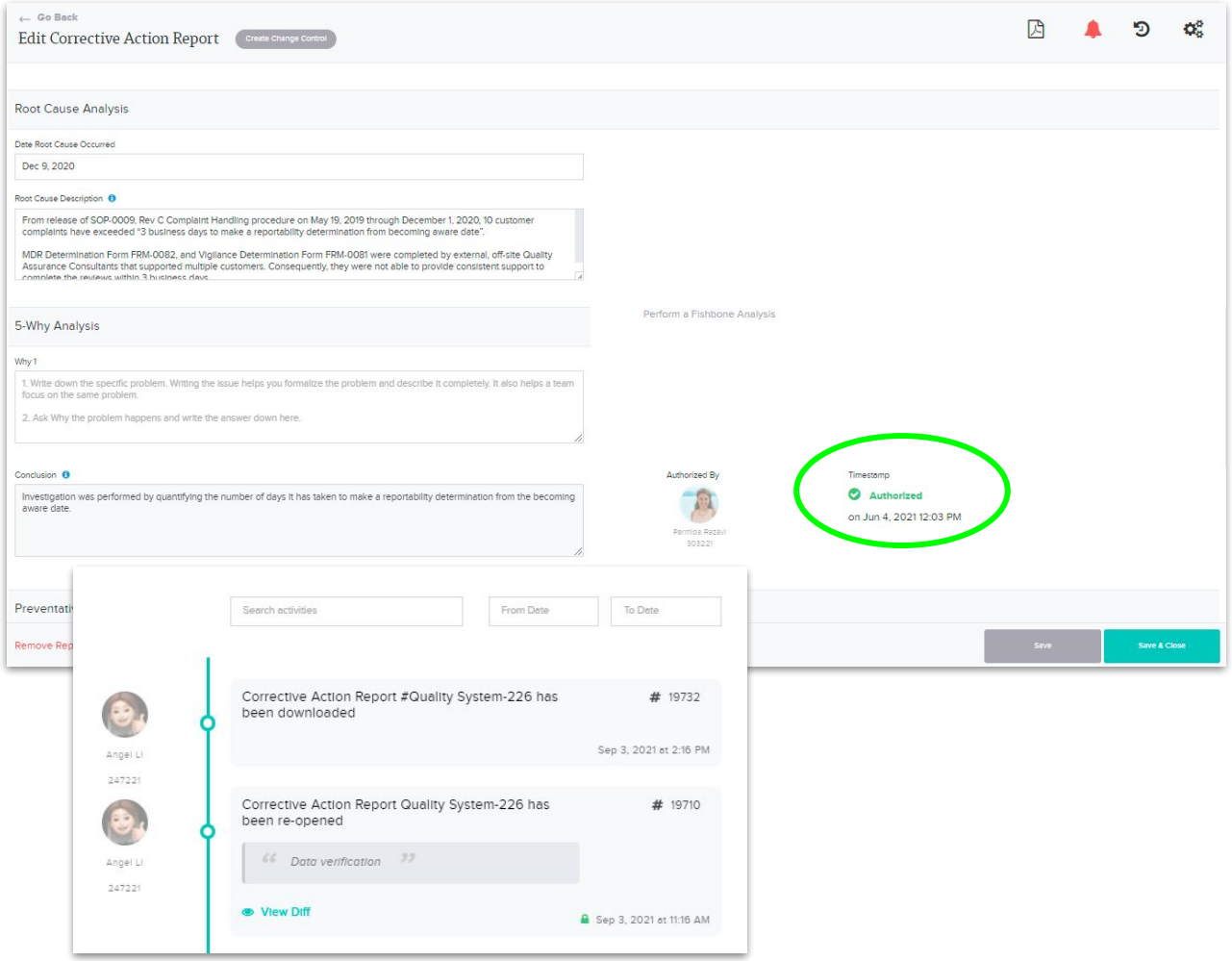
Transportation Waste: **Solutions**



- Automated data inputs with sensors, integrations and IoT devices.
- Use secure electronic system that allows employees to work remotely.
- Implement e-signatures to manage documentation approvals instead of paper.

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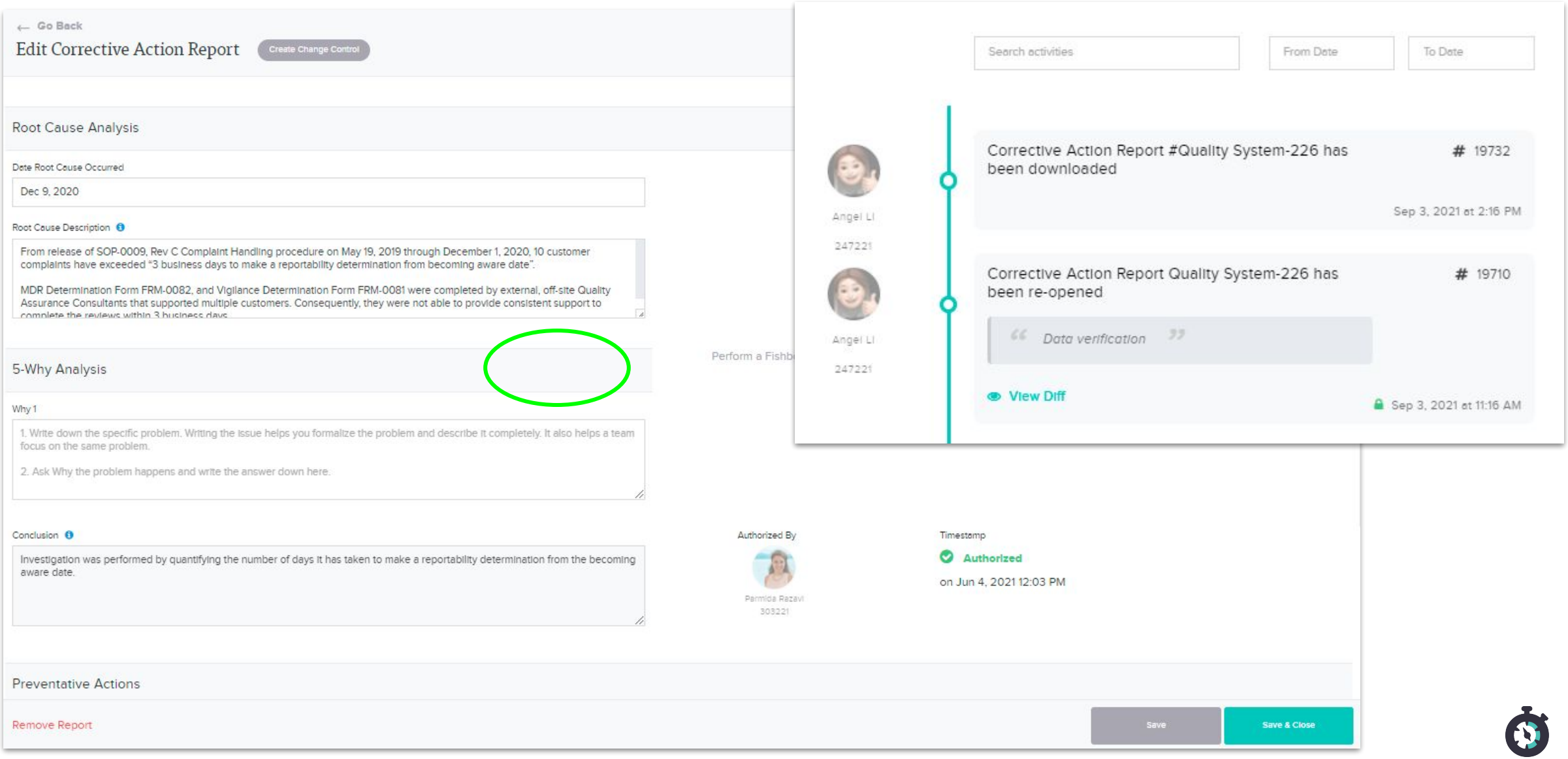
Transportation Waste: **Solutions**



What is **Inventory Waste?**

Inventory waste refers to the waste produced by unprocessed inventory.

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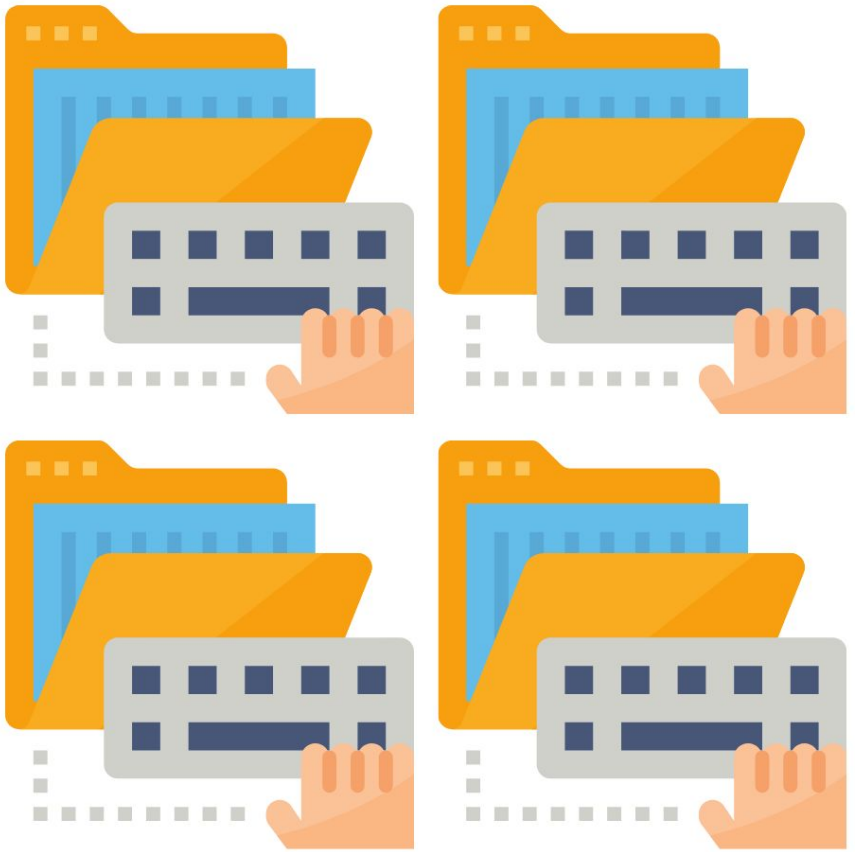
Inventory Waste: **Examples**

- Duplication of records leading to unnecessary errors and a finding exercise to locate information.
- Manual inputs of data or other information which take time to process for digital warehousing. Take up space and time while amplifying security risks.
- Unnecessary emails.



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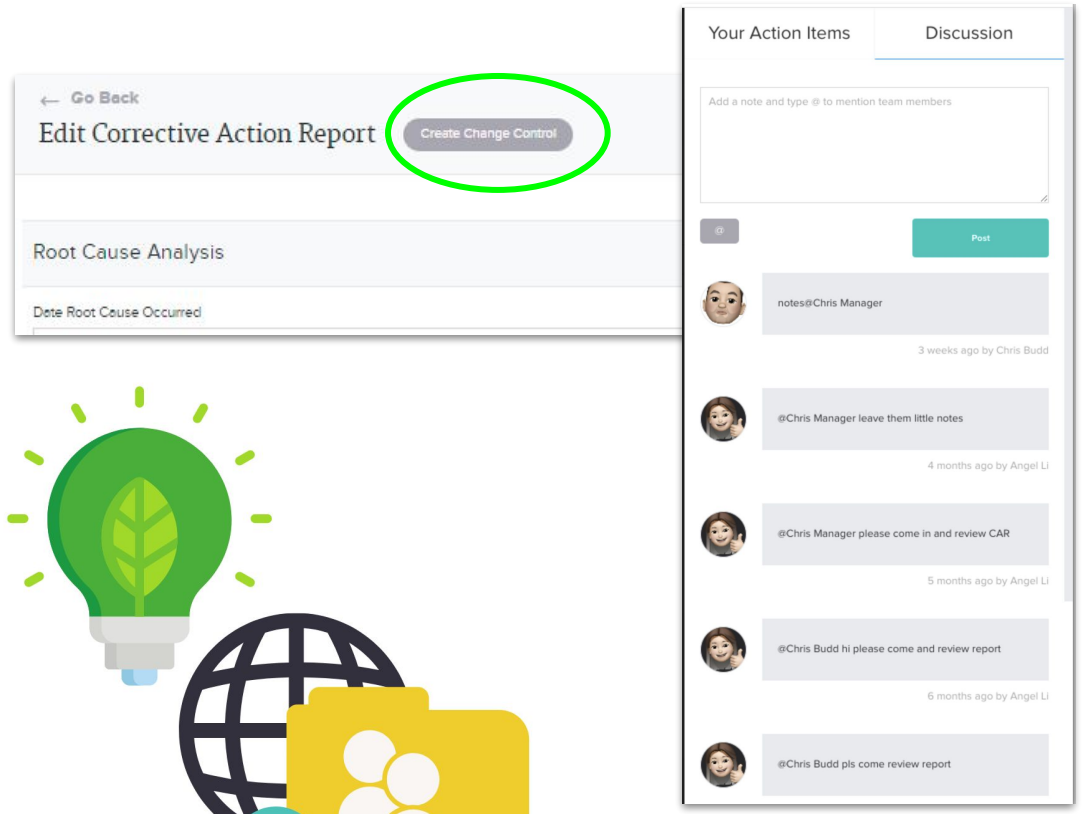
Inventory Waste: **Solutions**



- Prioritize sustainability by using less paper and less materials which reduces costs of data warehousing and reduces the risk of lost data in the long run.
- Standardizing and reducing points of inputs to create a system for one input that feed multiple endpoints. Thus improving automation with record keeping.
- Adopt streamlined communication tools that line up with your record keeping.

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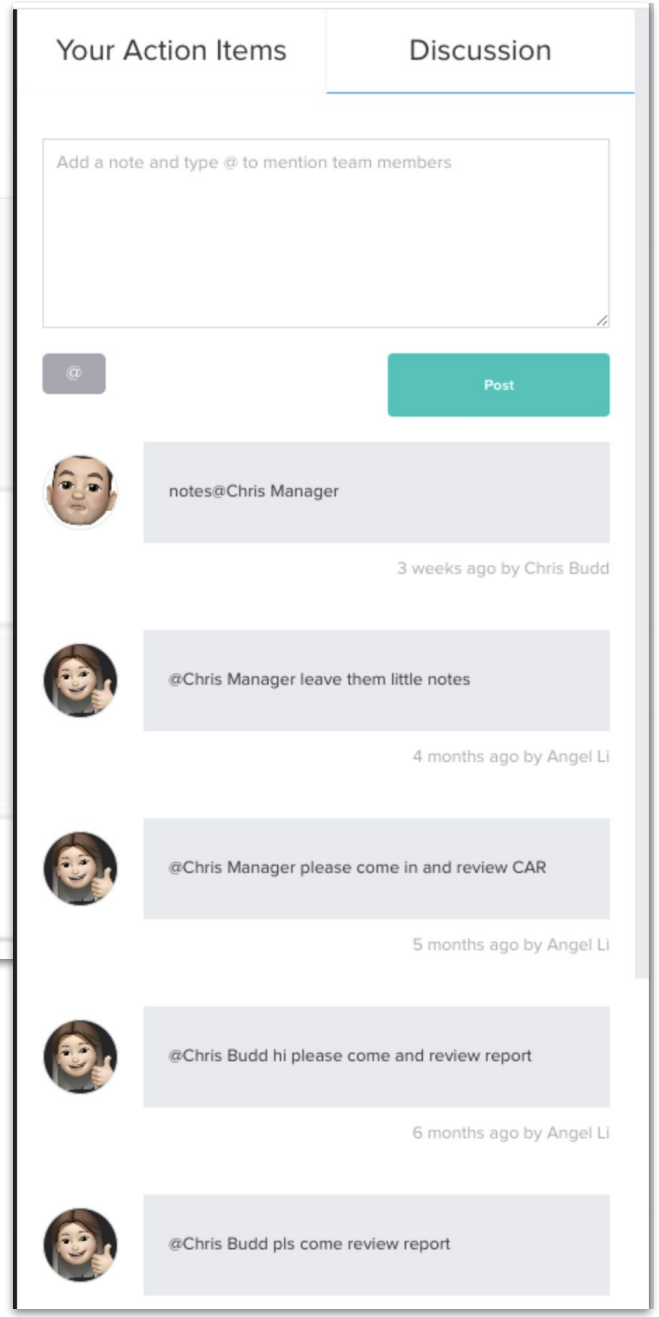
Inventory Waste: **Solutions**



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What is **Overproduction Waste?**

The most serious of the wastes, overproduction can cause all other types of wastes and results in excess inventory and record keeping.

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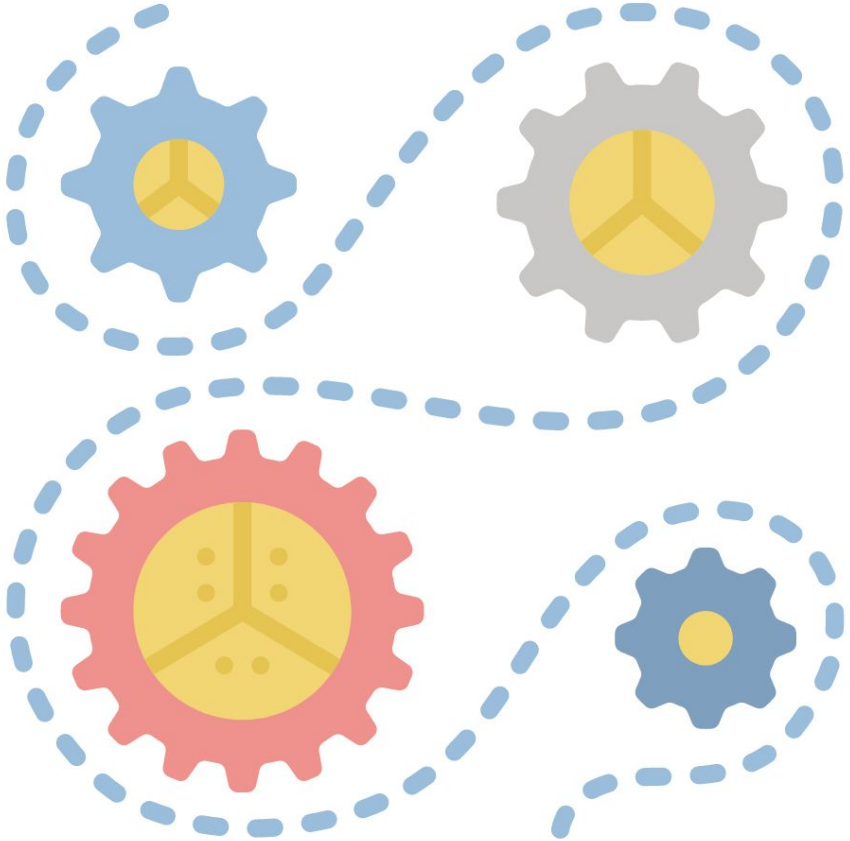
Overproduction Waste: **Example**

- Mistakes in processing raw materials and data due to human error cause an excess of resources to be used up. This limits the production output while driving up costs.
- Producing too much paperwork for one process.



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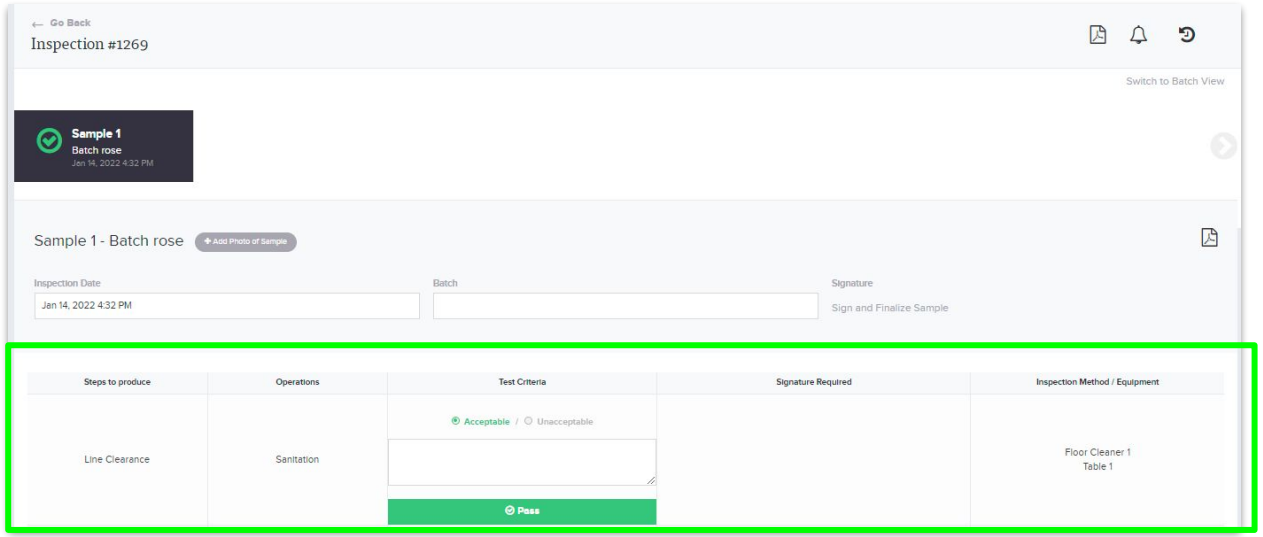
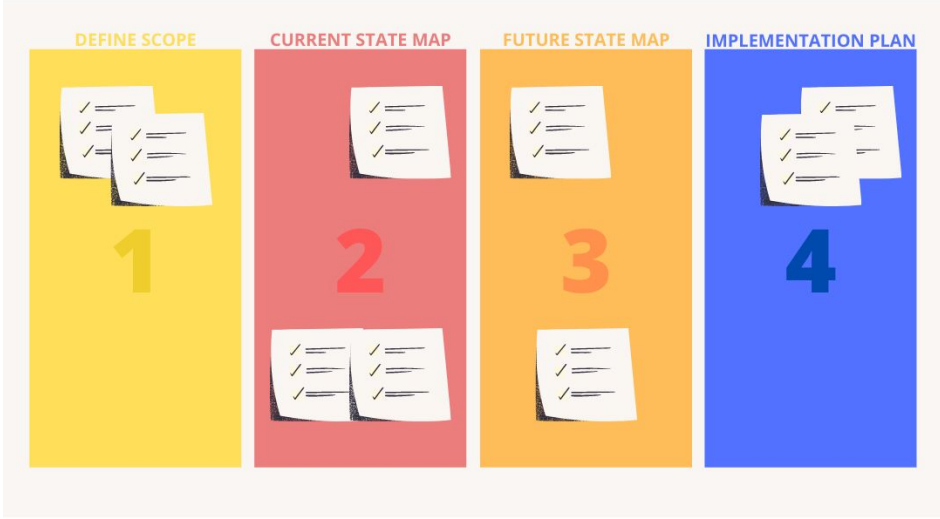
Overproduction Waste: **Solutions**



- Standardization data handling and input requirements.
- Good document practices.
- **Value stream mapping** your data flow. Cut the waste.



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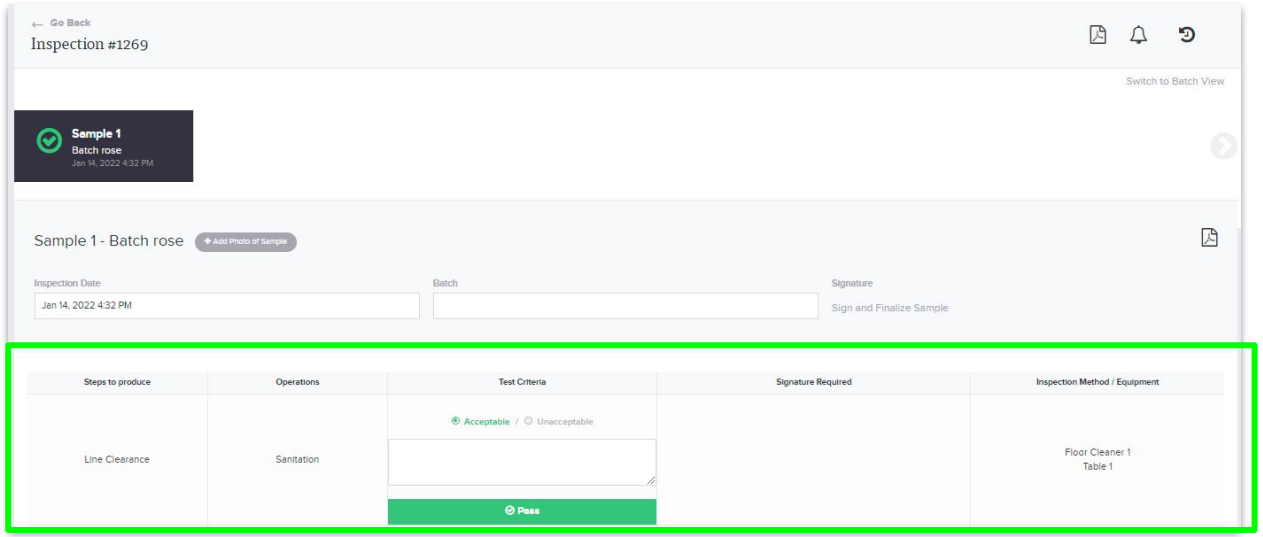
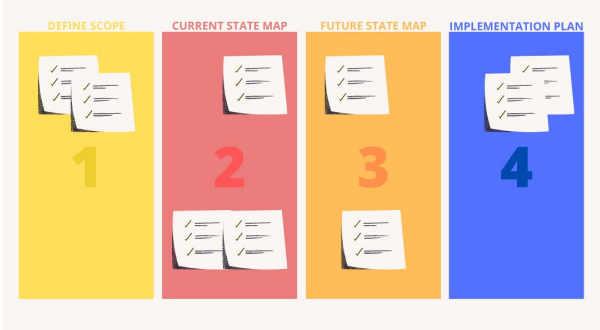
Overproduction Waste: **Solutions**





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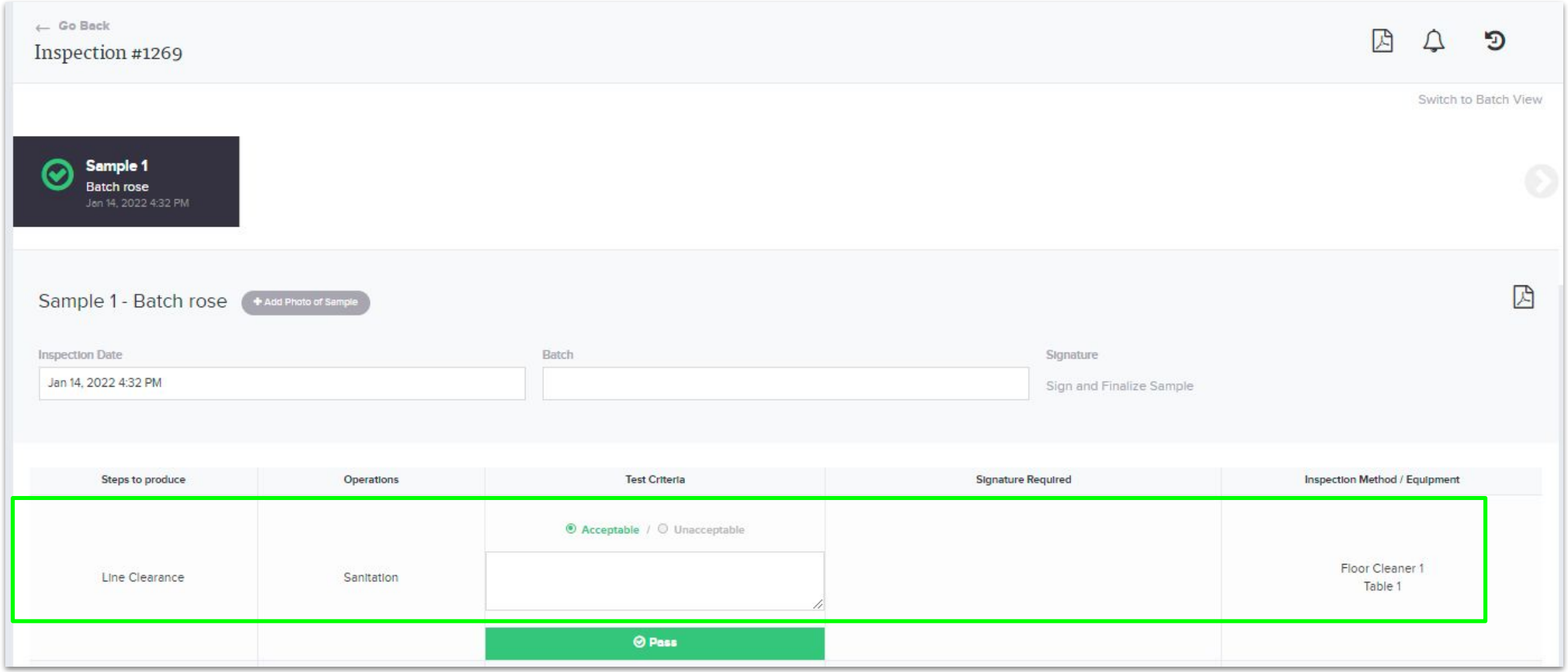
Overproduction Waste: **Solutions**



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What is **Overprocessing Waste?**

Over-processing refers to any component of the process of manufacture that is unnecessary.

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Overprocessing Waste: **Example**

- Multiple prints of the same document in circulation due to fragmented training or onboarding systems.
- Excess paper as a result of duplication in testing, approvals, training and more.
- Increased data handling efforts due to excess raw material, parts and other records being processed.
- Too many steps to complete simple tasks - Employee Training and SOP revisions.

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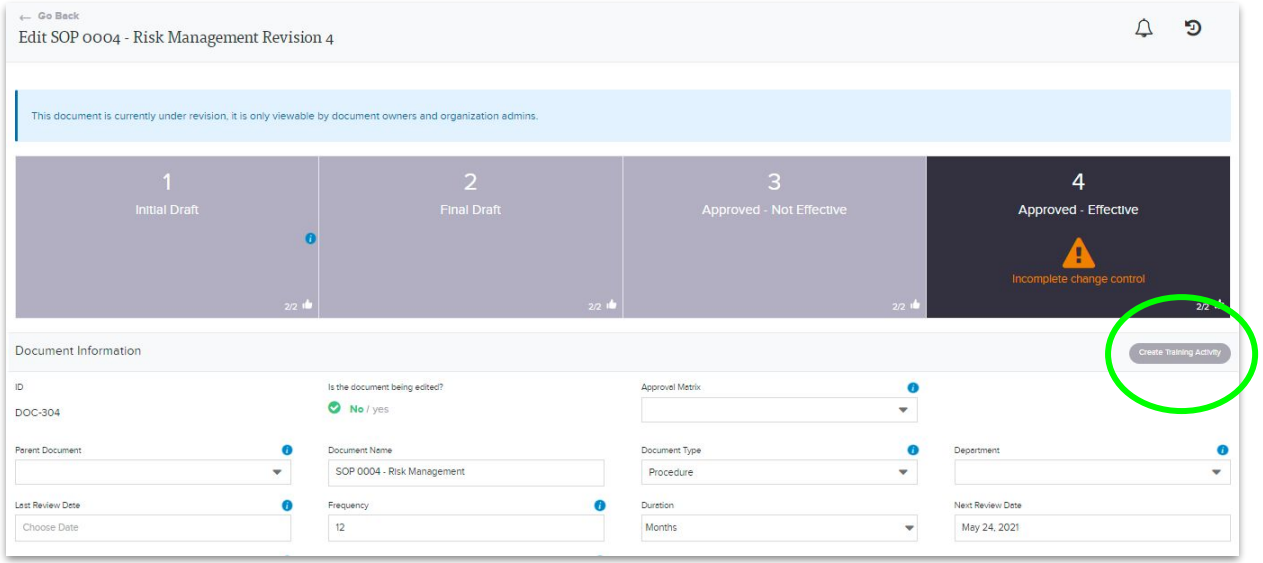
Overprocessing Waste: **Solutions**



- Reducing waste involved with document revisions by standardizing training procedures for employees and onboarding processes.
- Introducing employee training portals or cloud based systems to ensure a single source of truth as new revisions are added and approved for circulation.
- Automating through electronic systems to allow for pre-programmed and systemic responses for each step of document processing.

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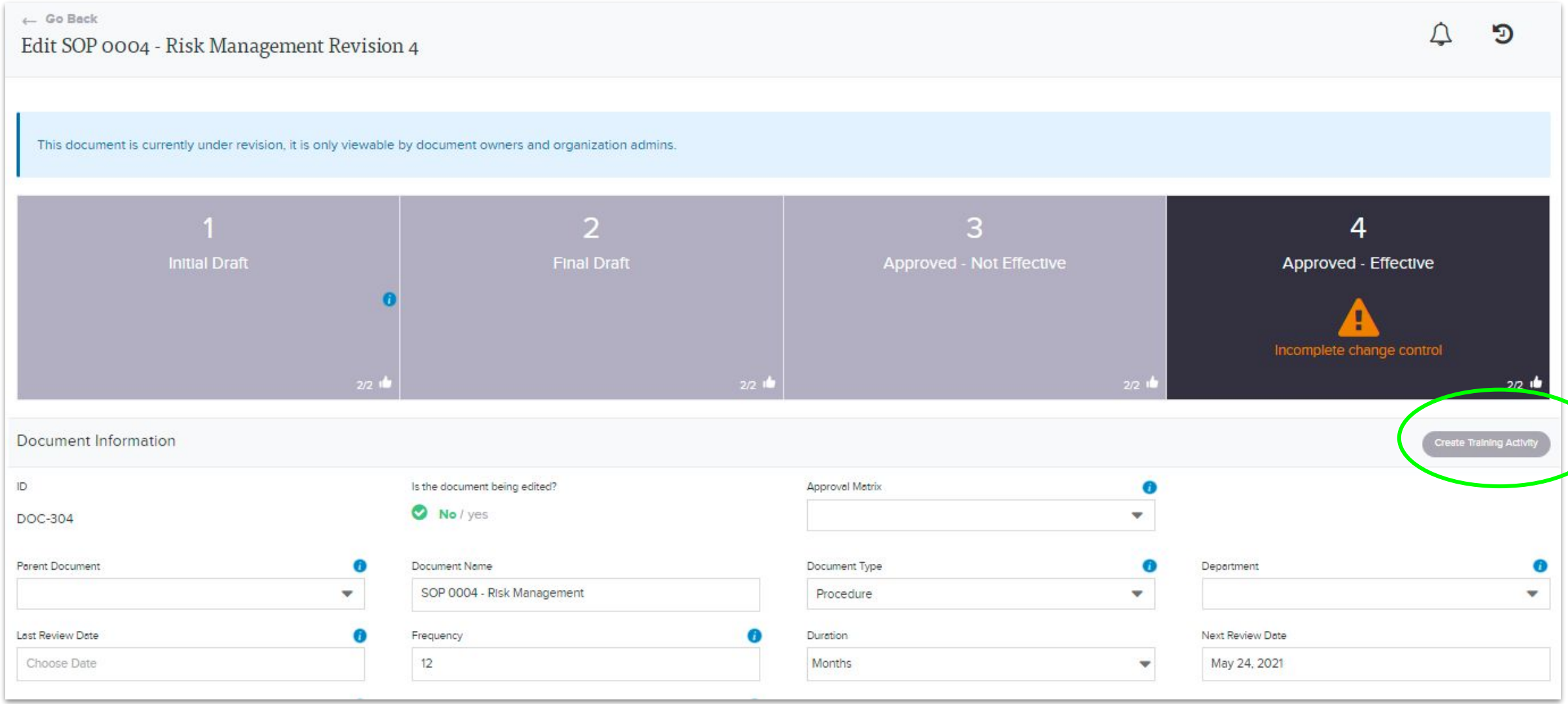
Overprocessing Waste: **Solutions**



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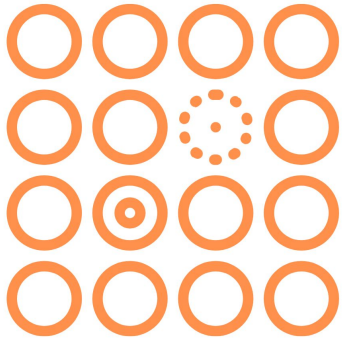
What is **Defect Waste?**



Defects refer to a product or record deviating from the standards of its design or from the customer’s expectation.

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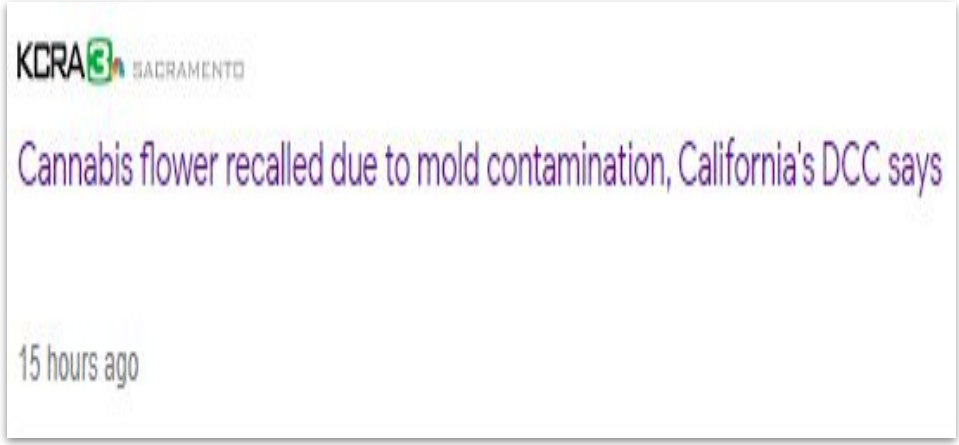
Defects Waste: **Example**

- When certain steps of inspection are missed leading to contaminants entering the supply chain ultimately leading to product waste.
- Poor documentation practices or form design.



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Defects Waste: **Solutions**

Poke Yoke (Error Proof Design)

- Standardizing data input requirements. Good document practices.
- Layout for data inputs in relation to where work is being completed.
- Error proof input requirements through form design.
- Automated inputs – sensors, equipment, and integrations.
- **Poke Yoke** release requirements to ensure no steps have been missed.
- Manage risk through the use of analytics and reporting to drive preventative actions.

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Key **Takeaways**

- One Piece flow data input
- Implement 5S/6S
- Integrations with Technology
- Increase Data input centers
- SaaS or cloud based solutions allowing for remote work
- Excellent documentation practices
- Poke Yoke your process
- Visual Management
- Data integrity
- MORE AUTOMATION!!!

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Thanks + **Q&A**

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Contact Us:

info@isolocity.com or
1-866-611-7134
Carlos Conejo, Lean Six Sigma
Master Black Belt
1-805-405-2569
carlos@leansixsigmaspecialists.com

Upcoming Events

SQF New Orleans. March 11-13

Resources

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