

Soil Department Automation Opportunities



Presented by:

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Presentation Agenda

- Benefits of automation
- Review soil automation opportunities
- Advantages and disadvantages
- Hands-on exercise
- Conclusion
- Q&A

Why should you automate?

Primary Benefits:

- Reduce costs
- Increase capacity
- Improve quality



Just the tip of the iceberg



Why should you automate?

Secondary Benefits:

- Work is easier to do
- Work is easier to learn
- Reduce employee injuries
- Improve employee morale
- Improve employee retention
- Reduce insurance claims
- Reduce insurance costs
- Reduce WIP inventory
- Reduce inventory costs
- Balance production flow
- Improve accuracy
- Decrease plant space

Why should you automate?

#1 Reason = Simplify the production process

- Eliminate exceptions
- Improve standardization
- Increase rate of repeatability
- Maximize results



Processes must be simple & repeatable.

Soil Department **Customer Bag System**



How it works:

- Customer bags are unloaded from delivery vehicles and stored using an overhead rail system.
- Bags are scanned at loading point and automatically stored by customer classification.
- Bags are automatically delivered to stations for soil counting.



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Customer Bag System



Advantages:

- Increases usable floor space
- Decreases cart traffic
- Eliminates decision making
- Improves ergonomics

Disadvantages:

- Provides limited labor savings

Soil Department **Vacuum Count System**



How it works:

- Discharge customer bag contents onto table.
- Select customer and product categories.
- Place individual soil items into vacuum tubes.
- Capture accurate soil count data instantly.
- Soil items are automatically delivered to soil sorting.



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Vacuum Count System



Advantages:

- Increases speed
- Improves accuracy
- Provides accountability
- Instant data collection

Disadvantages:

- Requires overhead space
- Increases electrical usage

Soil Department Unloading/Sorting System



How it works:

- Sort soil items into chutes by product classification.
- When product chutes reach predetermined weights, they automatically discharge into slings.
- Soil slings are delivered to monorail storage.



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Unloading/Sorting System



Advantages:

- Increases unloading speed
- Reduces labor
- Organizes the process
- Accurate sorting
- Accurate weighing
- Improves ergonomics

Disadvantages:

- Takes up floor space
- Permanent location

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Automatic Monorail Storage



How it works:

- Slings are stored by product classification.
- System automatically selects products to be washed based on a predetermined production schedule.
- Slings are delivered to the washroom and discharged into the washers.



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Automatic Monorail Storage



Advantages:

- Increases throughput
- Improves scheduling
- Improves accuracy
- Eliminates decision making
- Provides balanced production flow

Disadvantages:

- Provides limited labor savings
- Requires production management planning

Soil Department **Automated Cart Wash**



How it works:

- Empty soil carts are delivered (manually or automatically) to the cart wash entrance.
- Carts are conveyed through a wash tunnel where they are washed, sanitized and dried automatically.
- Clean carts exit the cart wash ready to be loaded.



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Automated Cart Wash



Advantages:

- Maximizes throughput
- Increases repeatability
- Organizes the process
- Reduces labor
- Eliminates potential bottleneck

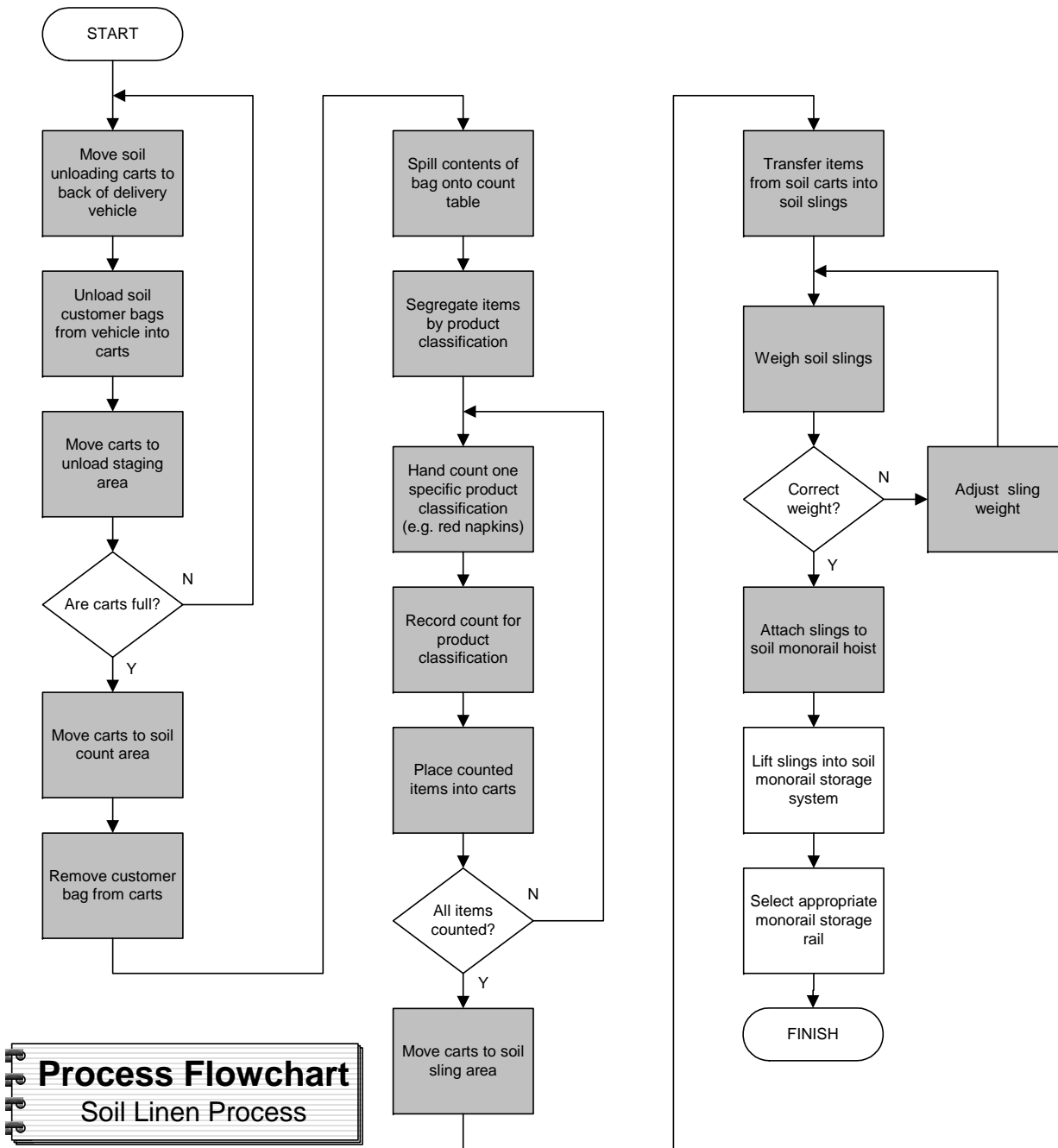
Disadvantages:

- Relatively expensive
- Requires high volume

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Hands-on Exercise



Process Flowchart
Soil Linen Process

Exercise:

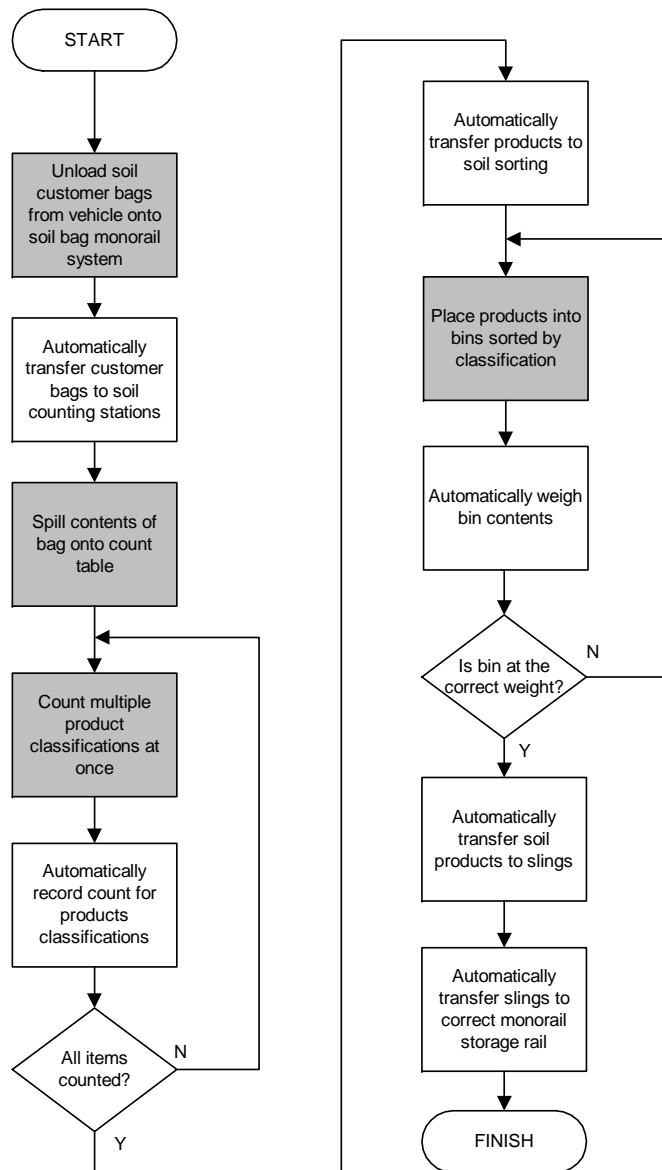
Improve the current process using the automated systems previously discussed.

Goal:

Simplify the process by eliminating steps and reducing touches.

Note:

All steps highlighted in gray are considered touches.



Results

The process was improved by installing:

- Customer bag system
- Vacuum count system
- Automated soil monorail system

Process steps: **20 ⇨ 12**

of Touches: **15 ⇨ 4**

Improved Process Flowchart
Soil Linen Process

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Hands-on Exercise :

- Cost of project: \$500,000
- Labor Savings: \$150,000/year
- Other Savings: \$250,000 (bldg addition, carts, etc.)
- ROI: 1.67 years
- Value Adds: Decrease vehicle unloading time, improve count accuracy, accurate washer loads, reduce employee injuries, balance production flow

Conclusion

Why you should automate the soil process:

- Soil sets the pace for the entire plant
- Soil scheduling is the key to clean delivery
- Working in the soil department is not fun
- Do more with less floor space
- Accurate and timely inventory control
- Improve quality

Company Background



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Who we are

Engineering services company with expertise in engineering, architecture, construction & operations.

What we do

Provide facility planning and process improvement services for the laundry industry.

Why we are different

Utilize multi-disciplined experience to provide the best solution for improving your plant operations.