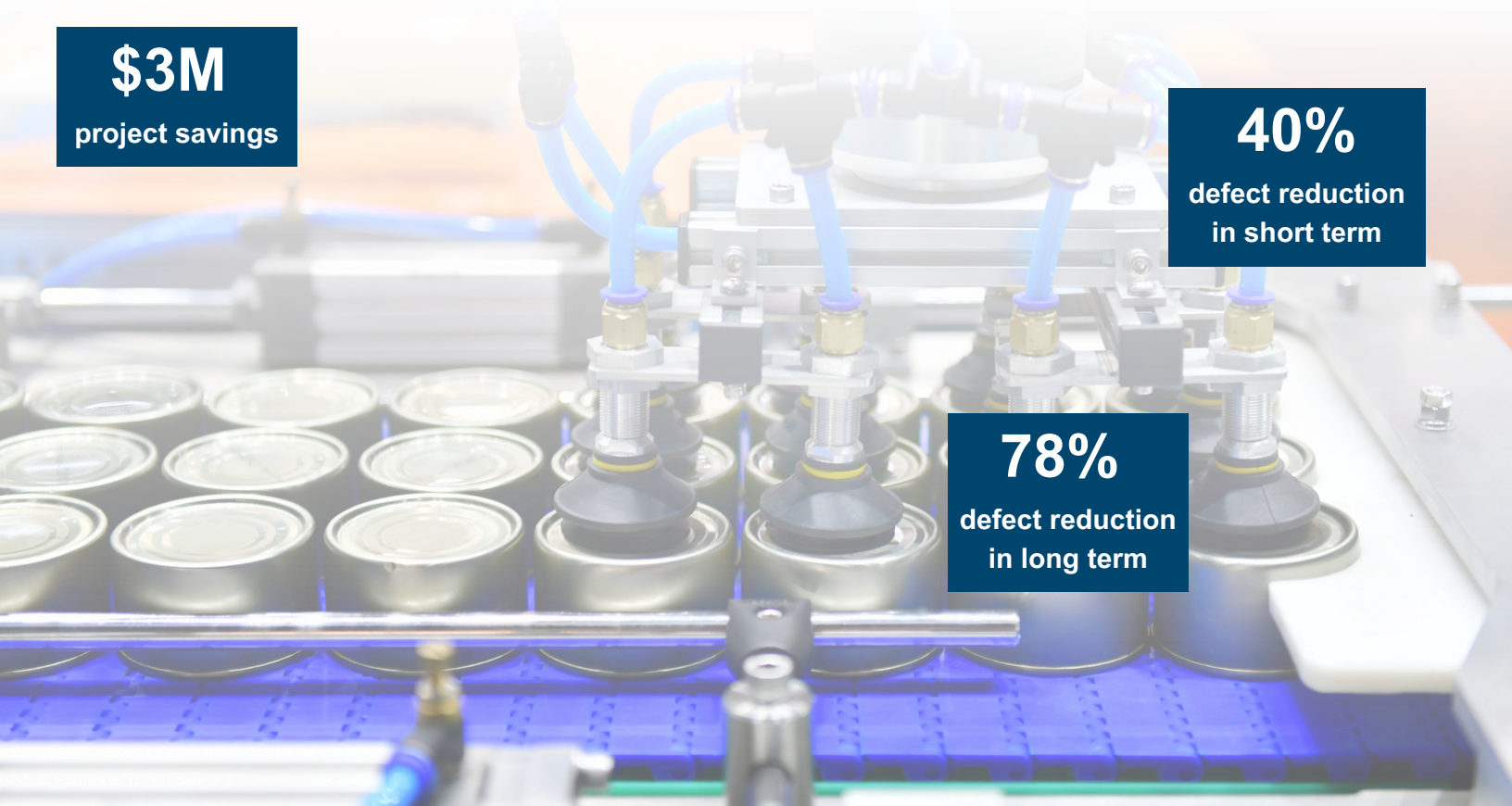


IX[®] Case Study
DMAIC Project in Operations



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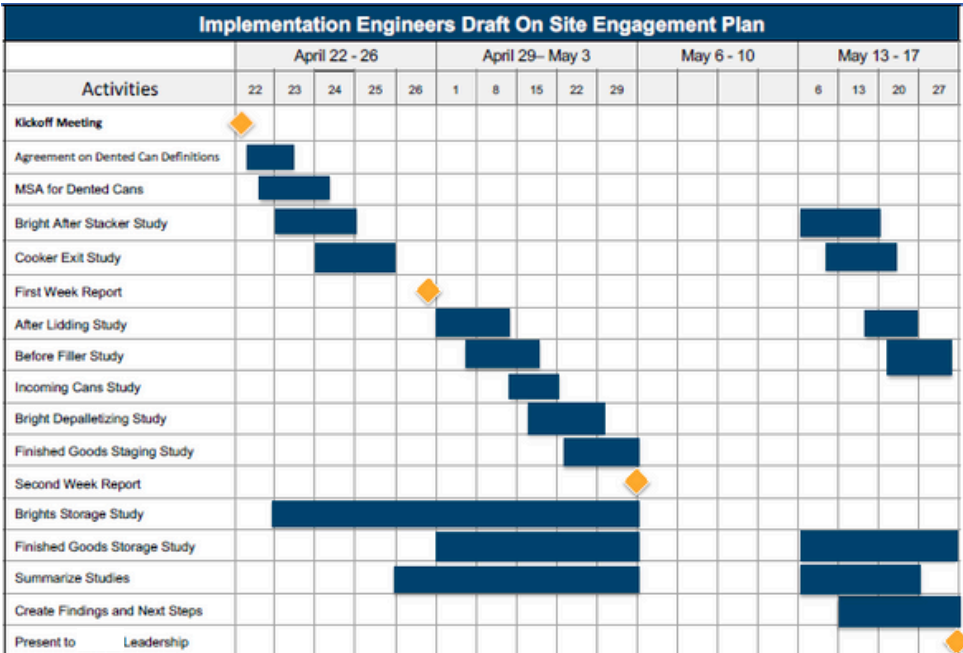
IX® in Action



Implementation Engineers addressed a pressing challenge faced by our food manufacturing client, who was contending with a substantial annual loss resulting from dented cans within their operations. Recognizing the urgency and impact of this issue on their bottom line, the client engaged our expertise to lead a DMAIC project. The primary objective of this project was to identify the root causes of dented cans across the value stream and implement effective corrective and preventative actions to mitigate this issue. Through a structured and data-driven approach, we worked closely with our client to drive tangible improvements and mitigate the incidence of dented cans, ultimately optimizing their production processes.

Define

- Defined the objectives and scope of the project
- Created a detailed plan to achieve validated results for in-scope areas
- Jointly approved the study plan and approach
- Estimated the potential project impact at completion

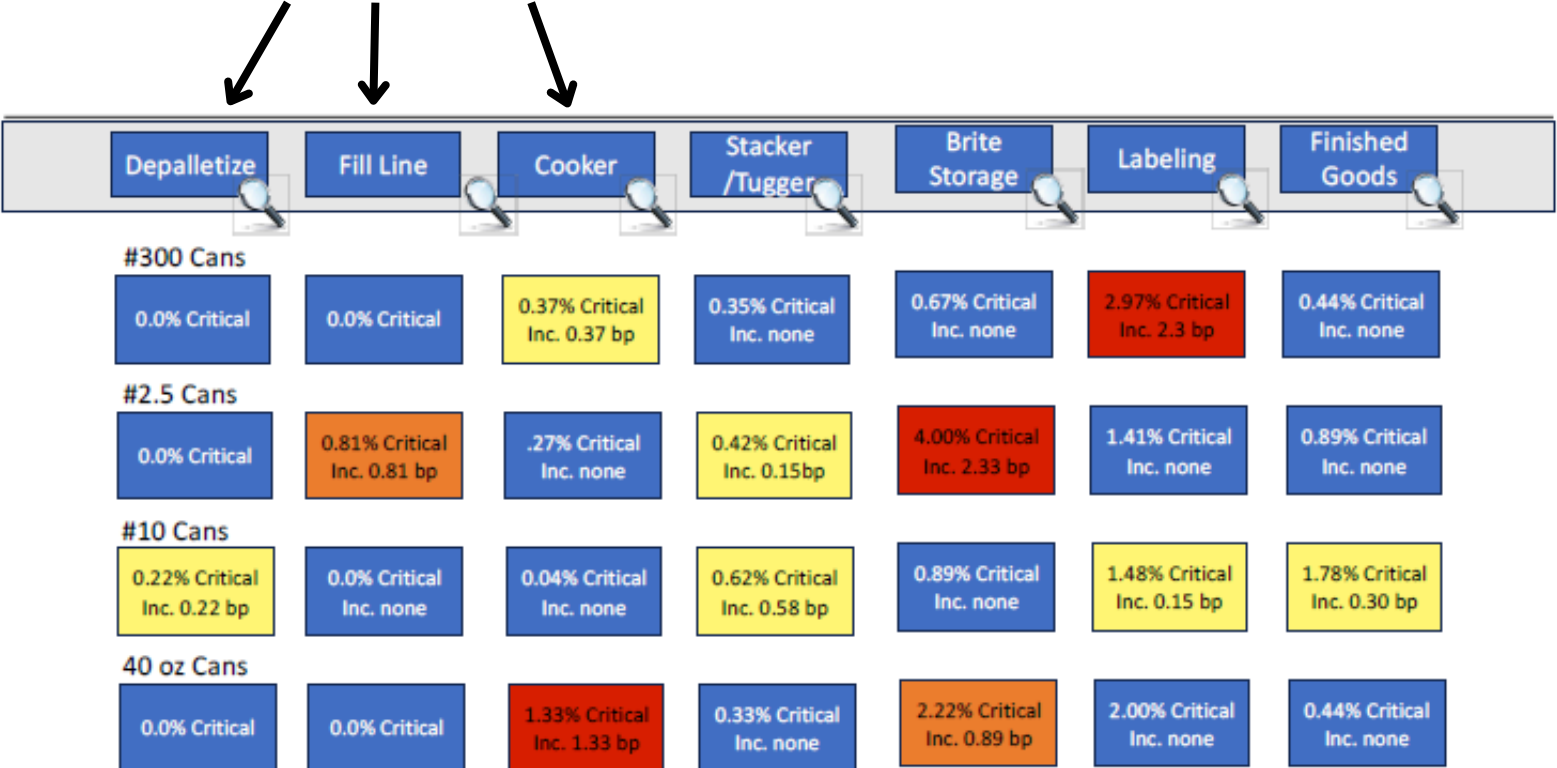


Measure

- Developed a detailed process flow map outlining the journey of cans from receipt to staging for customer delivery
- Gathered data at specified checkpoints within the process to analyze the existing state and establish a baseline for enhancement
- Identified the assets/areas responsible for the most significant occurrences of dents, focusing on all major contributors

Findings

- Accumulation of Minor Dents: Minor dents and dings accumulate during the canning processes, primarily attributed to impacts along the can-track and interactions between cans.
- Equipment Malfunction and Impacts: Some major dents are observed to occur within the processes themselves, often linked to equipment malfunction and impacts.



- The stacking process itself contributed to dents and deformities, leaving cans vulnerable to further damage if not adequately protected
- There was a significant opportunity to address handling damage between the stacking process and tugging, influenced by pallet condition and stacking alignment, as well as throughout various material handling stages
- Material handling damage occurred at various stages, including pre-tug staging, tugging, brite storage, internal logistics, and finished goods staging processes
- The depalletizing and feeding of brite cans into the labeling lines were identified as causes of damage. This process also presented an opportunity to identify and remove dented cans from the production line
- The labeling process effectively concealed major dents by placing a label over them, making the damage challenging or impossible to detect

IX® in Action (continued)

Analyze

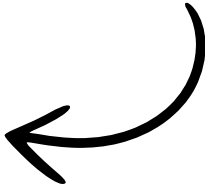
- Analyzed the dent data to determine the current baselines for major and minor dents by area and can size
- Identified focus areas for improvement by asset and process areas
- Investigated potential causes for dents in the focus areas
- Proposed potential next steps to drive improvement in targeted areas to meet project objectives

	Total Cans Evaluated	Major Dents Observed	Proportion of Major Dents	Major Dents per Sample (150 pcs) Min	Major Dents per Sample (150 pcs) Max
Depal	1,800	1	0.06%	0.0%	0.7%
Line	4,050	11	0.27%	0.0%	4.0%
Cooker	11,550	41	0.35%	0.0%	6.0%
Stacker	9,900	28	0.28%	0.0%	3.3%

	Cans Evaluated	Major Dents Observed	Proportion of Major Dents	Major Dent Sample Min	Major Dent Sample Max
Label Line Staging					
Can Size 10	1,272	11	0.86%	0.0%	5.0%
Can Size 2.5	4,800	24	0.50%	0.0%	1.0%
Can Size 300	7,200	10	0.14%	0.0%	0.6%
Tugger (just arriving at bright storage)					
Can Size 300	5,115	10	0.20%	0.0%	0.8%

Finding	Consequence	Potential Cause	Potential Solution	Approach
Major dents after cooking	Proliferating can damage	Transition zones, entrance, and exit at cookers	Improve can flow process especially entrance and exits	RCCA or FMEA workshop
Misaligned Pallet Stacks	Proliferating can damage	Imprecise stacking at downhill stackers	Improve pallet location and alignment at stacker	Quick-win: actions and follow-up
Major dents in pallet stacks	Proliferating can damage	Damage during stacking	Improve stacking process (pressure, movement)	RCCA or FMEA workshop
Tilting cans in pallet stacks	Proliferating can damage	Cans slipping into space between stringers	Use stiff sheet under first layer	Quick-win: actions and follow-up
Major can damage on top row	Proliferating can damage and inability to stack	Top row of cans slipping out of position	Use stiff sheet on top row of cans	RCCA or FMEA workshop
Dents introduced into labelling lines	Further can damage and potential quality escapes	Damage during de-palletization	Improve de-palletization process	RCCA or FMEA workshop
New dents caused in labelling lines	Further can damage and potential quality escapes	Collisions on labeling line can track	Improve smoothness of can flow	RCCA or FMEA workshop
Forklift damage to cans on bottom rows	Proliferating can damage within the pallet stacks	Damage to the top front stringer on the pallet	Pallet or forklift design modifications, training, etc.	RCCA and potential designed experiment
Forklift damage	Proliferating can damage within the pallet stacks	Damage due to multiple pallet movements	Forklift operator training, flow or layout improvements, etc.	RCCA or FMEA workshop

Through application of the DMAIC methodology, Implementation Engineers successfully identified key areas for improvement within the client's operations



We developed a tailored implementation strategy aimed at reducing defect rates, enhancing operational efficiency, and ultimately driving sustainable value for our client.

Next Steps

- Schedule a meeting with our team to discuss how Implementation Execution (IX®) can help your organization achieve its goals. Submit an IX® request on our website at www.implementation.com
- Visit www.implementation.com to read more about IX® and how we have helped our clients create sustainable results
- Follow us on LinkedIn to stay up to date with the latest industry insights and updates. Join our network to access exclusive content and stay connected with our team of experts

Learn More: www.implementation.com



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