CVS Health

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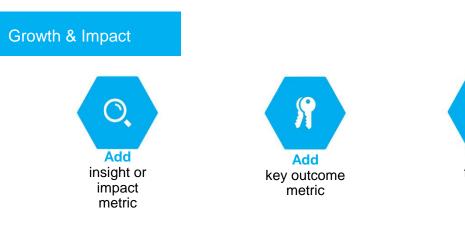
As independent supply chain engineers and advisors we uncover the best solutions and systems tailored to the unique business and logistics objectives for each client we serve.

Stronger market positions, enhanced ROI with maximized profitability and efficiency end-toend are the strategy and implementation goals of each St. Onge project.

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CVS Health





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Project Overview:

- CVS Health, Logistics Supply Chain Systems (LSCS) group, identified over 30 targeted use cases (opportunities for automation and robotics) that spanned multiple functions of the DC (e.g., AMR movement, picking robotics, automated tote palletization, automated mail order consolidation, return tote detrash automation, and automated inventory reconciliation via drones or other automation).
- St. Onge assisted use case pilot prioritization process.

Use Case Assessment. St. Onge reviewed specific use case processes applicable to CVS facilities then provided recommendations of which technologies/methodologies were applicable to each facility.

Use Case Justification. St. Onge included labor staffing, space footprint, and equipment capital required for each specified use case area. This information was used to generate a comparative return on investment and fiscal justification compared to existing processes.

Use Case Information. St. Onge provided a list of applicable vendors who were able to supply and integrate the technology. This information lead to use case pilot implementation/validation.

Step 1	Step 2	Step 3	Step 4	Step 5	Step 6	Step 7	Step 8
Step 1:	Step 2:	Step 3:	Step 4:	Step 5:	Step 6:	Step 7:	Step 8:
Use Case Data	Site Visits &	Technology	Alternative	Formative	Recommended	Functional Design	Implementation
Collection and	Base Case –	Overview and	Design and Risk	Capital, Labor	Design, Budget	Specification,	Planning,
Design Criteria	"Current State"	Brainstorming	Assessment /	and ROI	and Vendor	Vendor RFP &	Execution and
Development	Design Overview	Session	Sensitivity	Justification	Contacts	Contract Award	Acceptance

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Technology Evaluted	Robotic Palletizer - Uniform Case	Layer Palletizer - Uniform Case	Gantry Palletizer - Uniform Case	Robotic Layer Pallizer - Mixed Case	Robotic Palletizer - Mixed Case	Mobile Robotic Palletizer Mixed Case
Description	An articulated robitc arm on a floor mounted base can obtain one to four totes at a time and place to a pallet similar to operators today	A conventional conveyor fed system that utilizes row forming and layer forming conditioner to deposited on the top of the prior layer.	A gantry robotic arm on frame mounted system, a type of system applicable when many to or from locations need access.	An articulated robotic arm on a floor mounted based with the ability to obtain and place items of random varied dimension.	A conveyor fed system that can place many cases to a pallet at the sametime with a high overall rate but limited application.	An articulated robotic arm is attached to an autonomous mobile robot - this technology may one day replace human operators
Example Vendors	Columbia Okura, CCS, PASCO	Columbia, Intelligrated, Qimarox	Cimcorp, Skilled Group, Macron Dynamics	RSW, Swisslog, Witron	Boston Dynamics, Pickle, Dorabot	Otto, Kuka, Dematic
Vendor Support Risk	No Risk, Many Installs	No Risk, Many Installs	Minor Risk, Few Vendors	Minor Risk, Few Vendors	Major Risk, VC Funding	Major Risk, VC Funding
Commonality - Installs	Many Installs, Proven	Many Installs, Proven	Many Installs, Limited	Few installs, Grocery	Few installs, Pilots	No installs, Pilots
General Cost	•	•	•			•
General Rate		•	٠	•		٠
Technology Maturity	options	•	•		•	٠
Complexity - Preinstall	•		٠		•	•
Random Cases	options	•	•	•	٠	😑 future
Flexibility - PostInstal	Software can be upgraded for mixed case capabilities	Can change tote size, can not do mixed case	Not ideal for mixed case applications due top apply	Requires sequencing for mixed case but possible	Ideal setup, may require second pallet to buffer	Same benefits of a robotic palletizer on a mobile base

Detailed Evaluations

