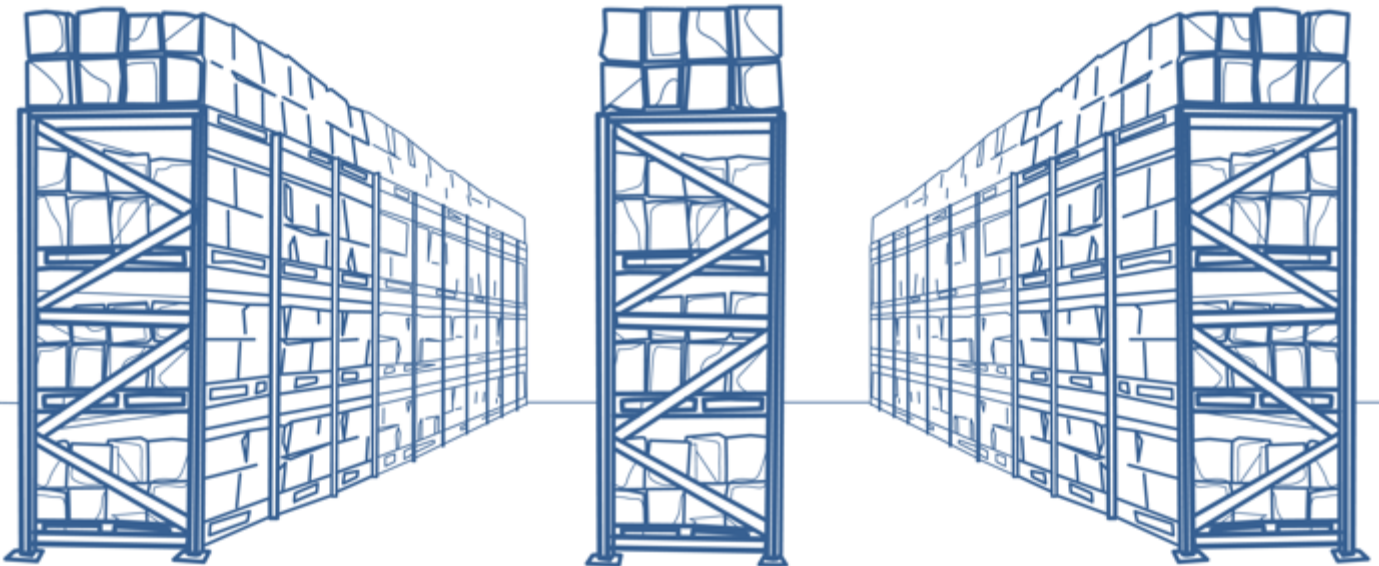




# Automation For Workflow & Warehouse Density Optimization: Insights From A Promotional Garments Distributor

September 2018





# About Kelmic

**Kelmic Consulting helps organizations capture opportunities and dramatically improve their operations.**

Helping our clients improve their operations since 2002

We partner with our clients to drive bottom-line impact by addressing and dramatically improving efficiencies in People, Processes, and Property. Our exceptional people draw upon more than 100 years of combined experience to bring you the right perspectives and expertise to help you tackle complex challenges and realize your strategic ambitions.



# Background

## About the Client

- Market leader in distribution of promotional clothing
- Multiple locations in US and Canada
- 1 B.C. facility - 75,000 sq ft full with an overstock warehouse of 95,000 sq ft also full
- Purchased existing building of 65,000 sq ft
- Desire to consolidate and accommodate 100% growth in SKUs over 10 years

***“The client had approached several racking vendors and equipment suppliers for solutions to the density requirements. None had been able to accommodate more than 60% of the base requirements...”***

A sizable promotional garment distributor with facilities around North America had recently acquired an existing building of 65,000 sq ft and wanted to consolidate their exiting operations into this building.

Existing facilities were stretched to capacity. Picking was undertaken manually with carts hence stack height was limited except for overstock items. A 95,000 sq ft overstock warehouse was also full, and a lack of racking was creating operational challenges.

The new facility floor had experienced some significant differential settlement with level variances in excess of 4” in 30’. The floor was also cracked and had rebar exposed in several places

Lighting was old and dim.

The client projected a need to handle over 10,000 high-volume SKUs, each to be individually piece-picked. Calculations showed that over 70,000 boxes needed to be accommodated immediately, between fast movers, slow movers and overstock pallets.

Growth considerations were also considered critical with 60% to 100% growth projected over 10 years in both volume and SKU counts.

New racking and equipment was required, and no salvageable racking was available in the exiting facilities.

Initial budget was limited as the move was considered a major cost.

The client had approached several racking vendors and equipment suppliers for solutions to the density requirements. None had been able to accommodate more than 60% of the base requirements (SKUs, pick faces, boxes).

# Implemented Solution

A need for an innovative method to increase density while retaining pick faces led to a very-narrow aisle design. Man-up order pickers operating in 60" aisles were selected, capable of self-navigating via in-floor sensors to precise pick locations both horizontally and vertically.

Use of this equipment allowed a design of three zones: Fast movers are picked from one aisle and replenished from the rear of carton-flow rack. This allowed for over 14,000 pick faces, with each SKU capable of 4 boxes per lane.

Slower movers were accommodated on a static rack two deep and overstock items on pallet rack capable of storing over 2,800 pallets or over 56,000 boxes.

Floor level issues required a topping screed to be placed over the existing floor. This was designed and installed in 5 weeks.

Increased efficiencies from the automated pick and consolidate system drove operational savings in excess of \$1 million annually over and above repaying the cost of the installation with a head count reduction of over 22 staff.

The entire project was fast tracked with concept-to-occupation completed in 7 months. This included concept and design, budget preparation and approval, equipment demo in Europe, replacement of all warehouse lighting, floor remediation, racking procurement and installation, rail guidance installation and installation of the auto navigation system and an order consolidation zone with conveyor system.

Minimum annual operating costs savings realized

**\$1  
million**



# Key Results Achieved

- Designed a First-in-Canada automated man-up order picking system with carton flow racking to support:
  - 14,300+ pick face
  - 25,000+ SKUs
  - 128,000+ boxes (57,000 fast movers & 56,000 overstock on 2,800 skids)
- Self navigating trucks auto locate pick locations through integration with WMS
- Allowed for consolidation of facilities and 7 years of project growth into facility
- Operational savings over \$1.0 million per annum after repayment of capital cost

## ROI



3:1

**Automated**  
First-in-Canada

Order picking system

**\$1**  
million

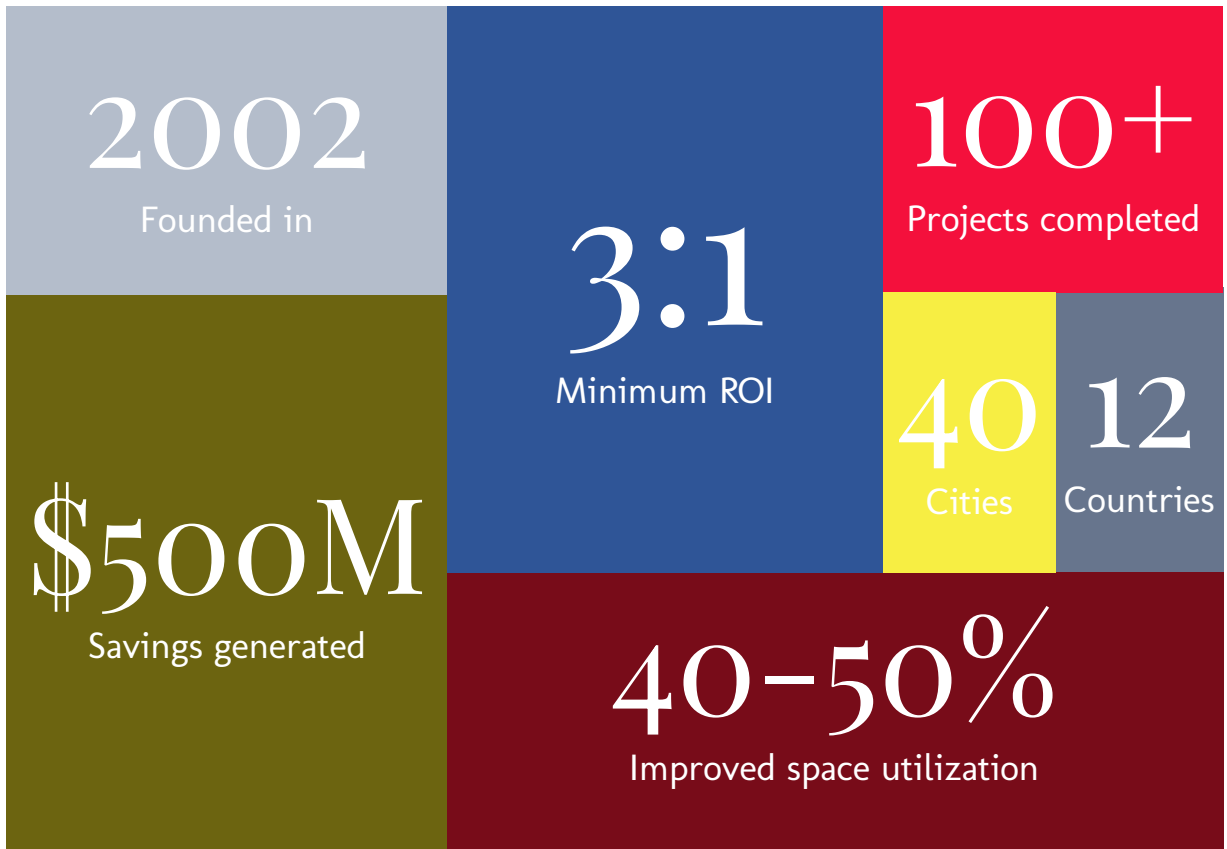
Reduced operating costs

**25,000**  
SKUs

In 65,000 sq ft



# Kelmic at a Glance





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