Growing Already Lean Operations Without Additional Labor

Sponsored by:

kardexremstar

Presented by:

Tim Archer

Sales Training Manager

PROMAT 2013
AN MHIA INTERNATIONAL EXPO
McCORMICK PLACE   CHICAGO   JAN 21-24
www.ProMatShow.com

The Dilemma: Erratic Demand For Goods; Hiring Constraints

- The Ebb And Flow Of Business Creates A Difficult Climate For Turning A Profit

- Hiring More Workers Would Be Nice, But . . .

- Traditional Methods Of Justification May Not Apply

- We Are Challenged With Keeping Up With Increased Order Demand With A Small Work Force
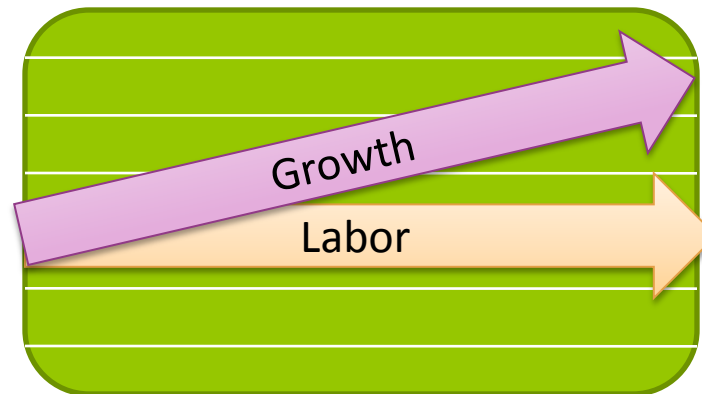
A Slow Growth Scenario Example – Distribution

- Outdoor Power Equipment Distribution
  - Repair Parts, Supplies & Accessories

- Moving from Wholesale Distributor Network to Direct Distribution to Retail Resellers
  - A Few Large Orders Becomes Large Number of Small Orders
  - Immediate Order Response (Same Day Shipping) Now Required

- Manage Change in Existing Facility with Existing Labor Force
  - Apply Automated Storage Technologies and Supply Chain Software
  - Parcel Shipments – Pick, Pack, Manifest VS LTL Shipments

kardexremstar

A Slow Growth Scenario Example – Manufacturing

- 3 Manufacturing Facilities In Ohio & 2 Manufacturing Facilities In Mexico
  – Assembly Parts Stored In Opposite End Of Facility From Work Area

- Lean Project: Moved The Parts Storage Into The Work Area

- Dual Access VLM with Inventory Management Software
  – Receiving Stores Parts Using Back Access
  – Production Pulls Parts Required Using Front Access

- Decreased Manufacturing Time

- Reduced The Manpower Used To Retriever Parts & Cut Overall Lead Time

Poll Question

- What Is Your Biggest Supply Chain Constraint?

  A.   **No Room For Inventory – We're Out of Space**

  B.   **Not Enough People To Process Orders**

  C.   **Too Many Orders - Can't Fill Orders Fast Enough**

  D.   **Other**

kardexremstar

Cost Avoidance vs. Cost Savings . . . Understanding The Difference

- Traditional Cost Savings Comes In Reducing Labor & Reducing Space

- As Business Grows We Want To Add Labor – Not Reduce It

- Also, The Physical Plant Requires More Space As Business Grows

- Cost Avoidance Is Difficult To Quantify And Is Intangible

kardexremstar

Space , Labor & Throughput

- Automated Storage & Retrieval Systems Address Space, Labor & Throughput
  – Reduce Labor Through Automation
  – Increase Order Picking Throughput
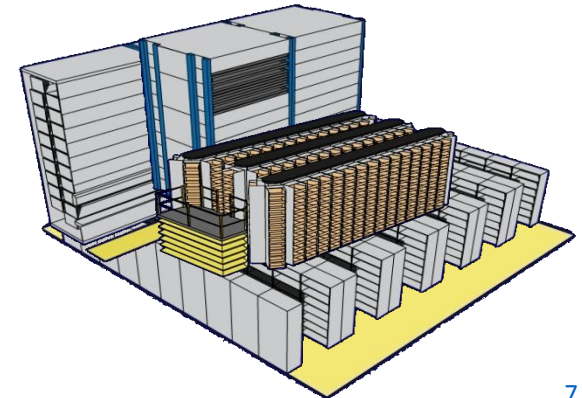 – Smaller Foot Print By Eliminating Shelving & Cabinets

Reduce Labor by 2/3

Increase Order Throughput

Recover Up To 85% Floor Space

Improving Processes

- Calculate Your Return On Investment By Identifying Areas For Cost Avoidance— Rather Than Cost Savings— In An Already Lean Facility

- Cost Avoidance Is Increasing Opportunity To Reduce Future Costs

kardexremstar

Poll Question

- How Do You Classify Your Stock Keeping Units (SKUs)?

   A. **SKU Size (L x W x H) – Small, Medium, Large, etc.**

   B. **SKU Activity (# Picks) – Fast, Medium, Slow (A, B, C, etc.)**

   C. **SKU Volume (Cube) Stored and Moved**

   D. **Combination of 1, 2 & 3**

   E. **Don't Have Good Process in Place for SKU Classifications**

kardexremstar

Analyze Your Inventory

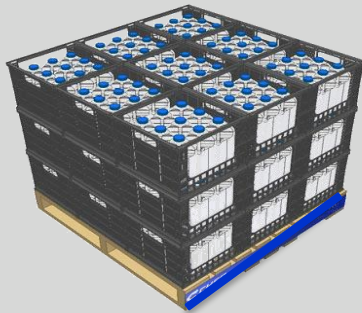- Classify Your SKUs By:
  - Size Category
  - Pick Activity
  - Pick Volume
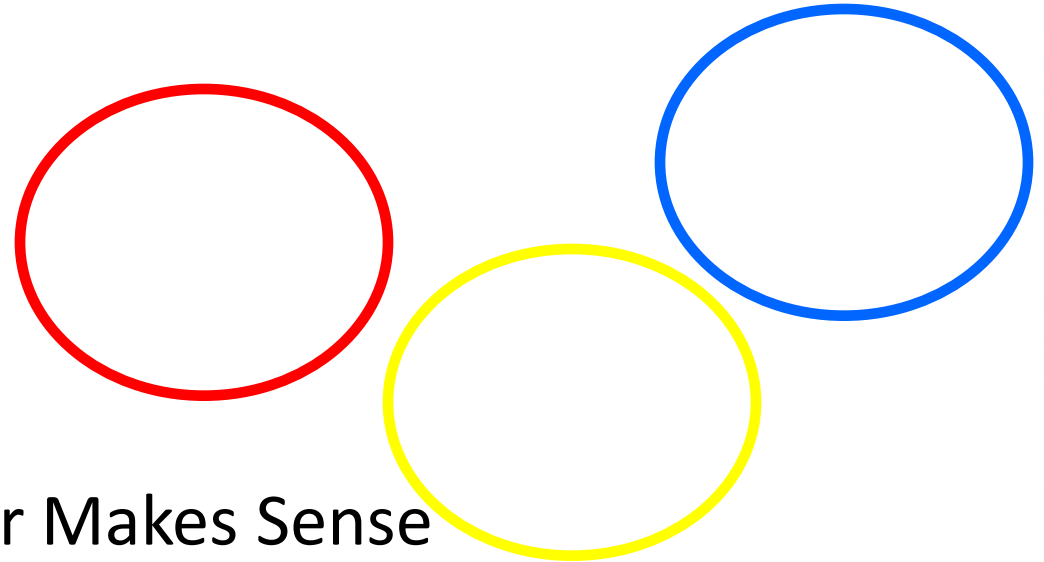
Whatever Makes Sense
For Your Operation!

kardexremstar

Matching SKU Classifications To Storage Technologies
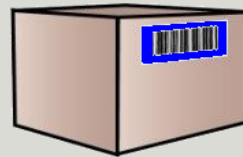
Pallet Picking

- Pallet Rack
- Bulk Storage

Case Picking

- Racks
- Shelving
- Flow Rack

Broken Case Picking

- Flow Rack
- Horizontal & Vertical Carousels
- Vertical Lift Modules
- Rack & Shelving

kardexremstar

Analyze Inventory Categories

- Companies Focus Their Attention On Fast Movers (A) – Top 10% - 20%

- Opportunity with Medium (B) and Slow (C) Movers
  - The Largest Categories Of SKUs – Number of Items
  - More Than 50% of Storage Cube
  - Exhibits Poor Space and Process Management
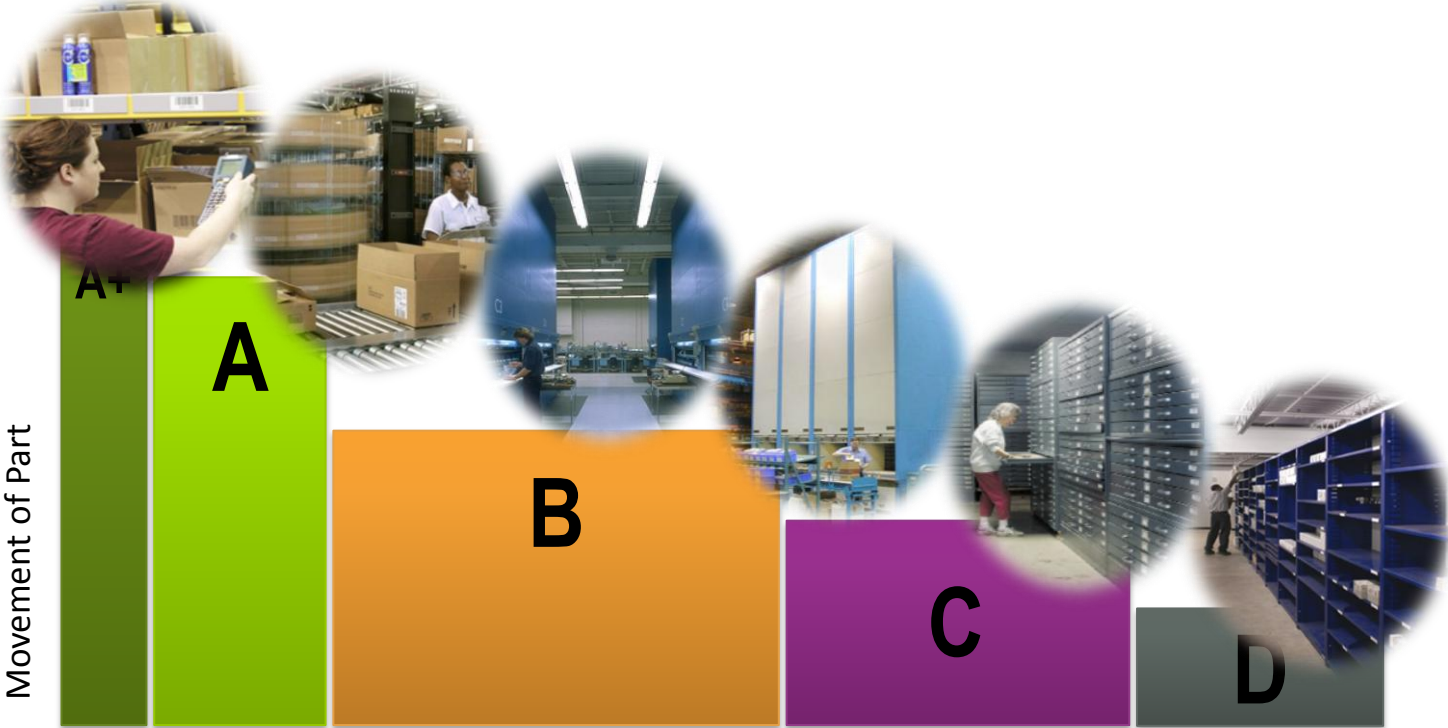
kardexremstar
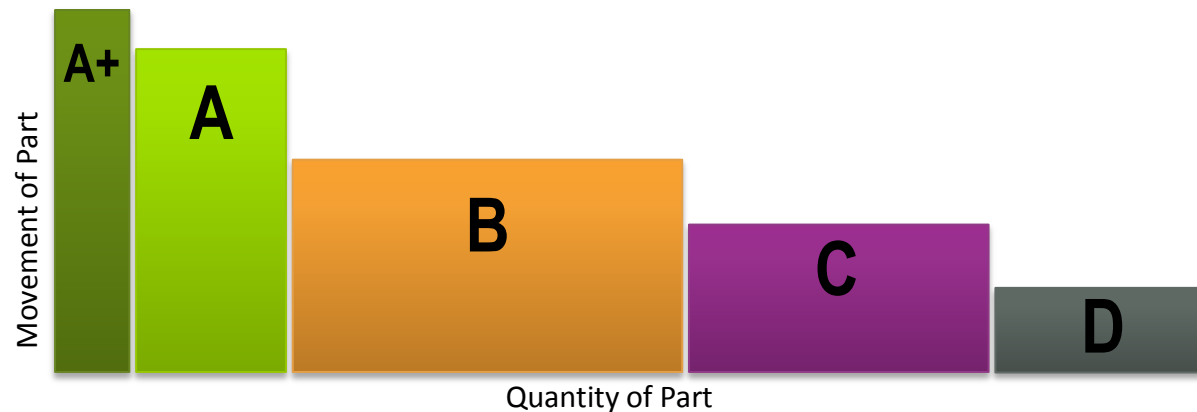
Medium & Slow Moving Inventory

- Look Closer At Slow & Medium Movers
  - How Much Floor Space Do They Require?
  - How Much Labor Do They Require?

- How Can You Make Your Largest Quantity of Inventory More Efficient?
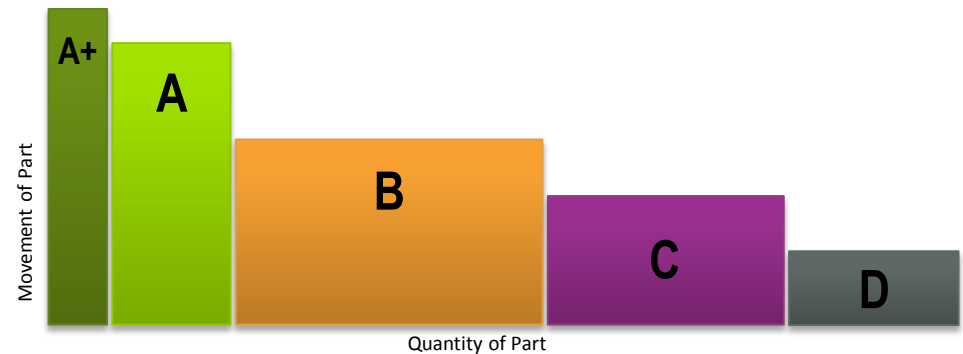
Inventory Categories Require Different Storage Methods

Movement of Part

A+

A

B

C

D

Quantity of Part

kardexremstar

Balance Work Flow

- Map Inventory & Activity Flows

- Slot Inventory To Assure Optimum Work Flow

- Eliminate Imbalances and Bottle Necks

- Minimize Impact of Very Slow Movers

The Right SKU, The Right Zone,
The Right Storage Technology

kardexremstar
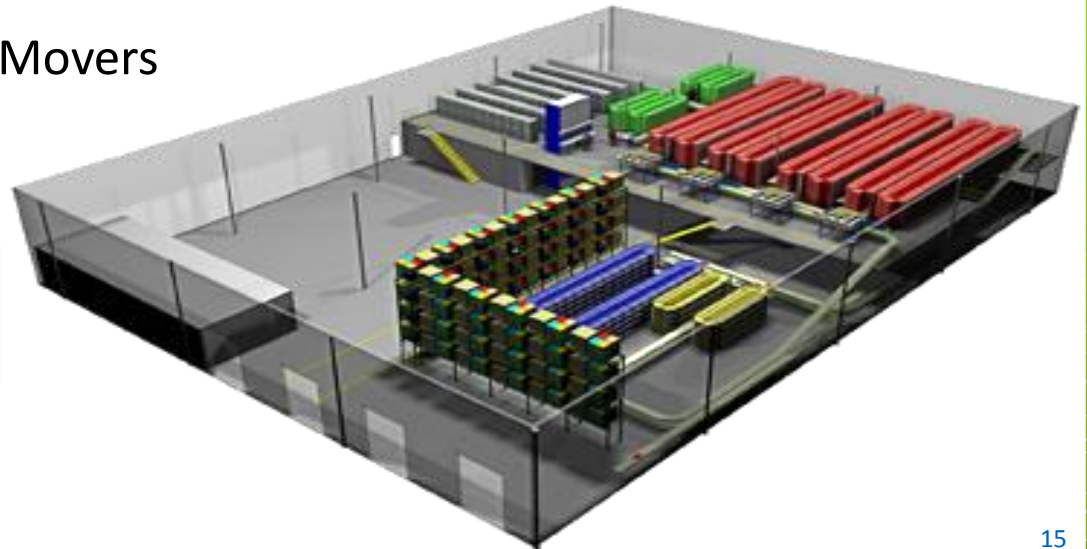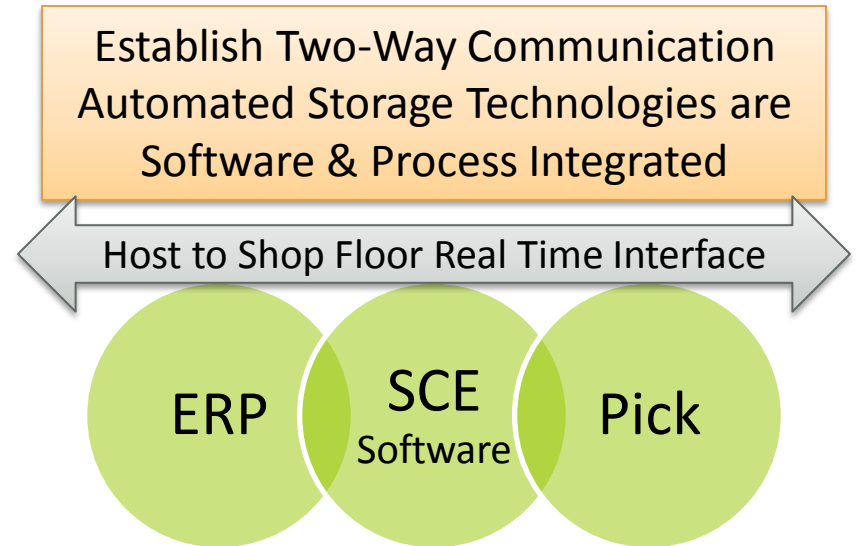
Bring Work to Worker

- Find & Identify Areas/SKUs in The Facility Where The Worker Must Frequently Travel Long Distances To The Work

- These Are Areas That Can Be Improved With Slotting & Zone Designs

- Proper Slotting Manages SKUs and Storage Space Efficiently

- Travel Time Greatly Reduced

The Right SKU, The Right Zone, The Right Storage Technology

kardexremstar
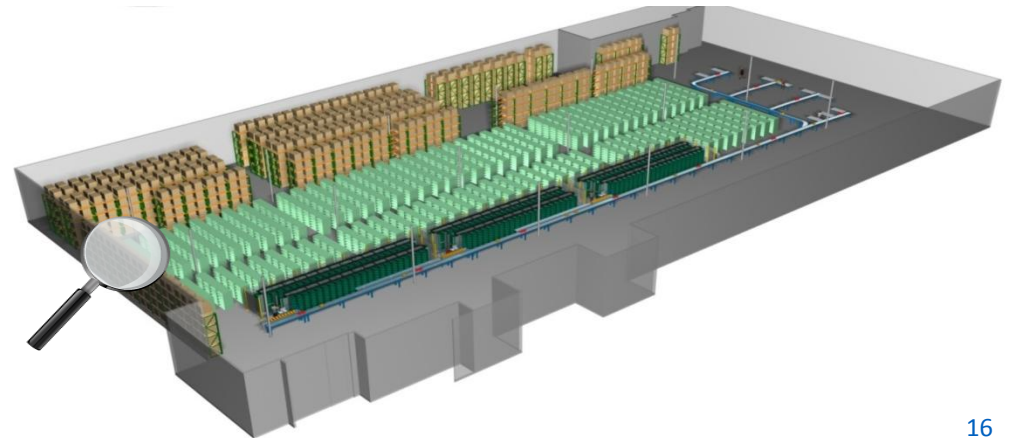
Integrating The Information Stream

- Apply Supply Chain Execution Software (SCE) to Enable Integrated Processing
  - Eliminate the Paper – Avoid the Cost!

ERP   Pick

Host Prints Paper Pick Tickets

Establish Two-Way Communication Automated Storage Technologies are Software & Process Integrated

Host to Shop Floor Real Time Interface

ERP   SCE Software   Pick

17

kardexremstar
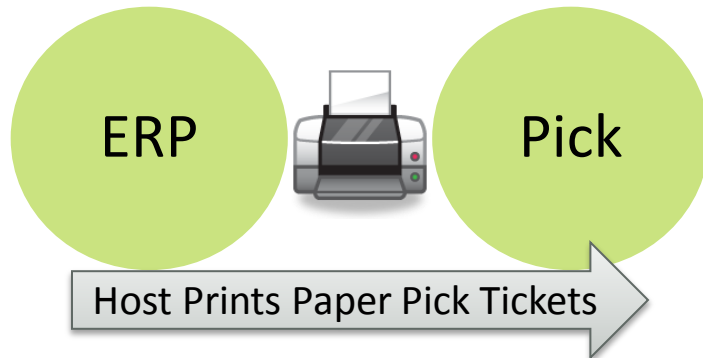
Improve Current Situation

- Look At Ways To Improve Current Processes & Storage Practices
  - Selectively Apply Automated Storage Technologies
  - Integrate the Information Flows and Eliminate Paper

- Other Potential Areas Of Cost Avoidance
  - Reduced Inventory Levels
  - Reduced Floor Space Requirements
  - Increased Accuracy Levels
  - Improve Worker Ergonomics & Safety
  - Process Improvements
  - Increased Production Uptime

ProMat 2013
AN MHIA INTERNATIONAL EXPO

kardexremstar

Cost Avoidance

- Net Present Value (NPV)
  - Takes Into Account The Economic Return After The Initial Automation Investment Is Made
  - Offers An Assessment Of The Equipment's Potential Long-term Profitability In Current Dollar Value
  - The NPV Is The Cumulative Sum Of Anticipated Cash Flows In A Given Set Time Period, Discounted To Allow For Time Value Of Money
    - **This Is What The Investment Is Worth TODAY, in Today's Dollars as a RETURN**

kardexremstar

NPV Calculation

- NPV Calculation

$$NPV = \left[\frac{FCF_1}{(1 + r)^1} + \frac{FCF_2}{(1 + r)^2} + \frac{FCF_3}{(1 + r)^3} + \frac{FCF_4}{(1 + r)^4} + \frac{FCF_5}{(1 + r)^5} \right] - \text{Initial Project Cost}$$

- FCF = Future Cash Flow

- r = Cost of Capital

Cost Avoidance

- Internal Rate Of Return (IRR)
  - IRR Estimates A Potential Investment's Percentage Return Based On The Company's Cost Of Capital
  - The IRR Makes The Sum Of The Future Cash Flows Calculated In The NPV Equal To The Investment's Current Market Value
    - What Return % Forces The Investment Cost to Zero?
  - Helps Determine If A Project Will Be Beneficial Based On The Company's Cost Of Capital
    - A 'Good' Project Shows a Rate of Return Higher Than Cost of Capital
    - The Project With The Higher Rate of Return Should Be Funded!

kardexremstar

IRR Calculation

- IRR Calculation

$$NPV = \left[\frac{FCF_1}{(1 + IRR)^1} + \frac{FCF_2}{(1 + IRR)^2} + \frac{FCF_3}{(1 + IRR)^3} + \frac{FCF_4}{(1 + IRR)^4} + \frac{FCF_5}{(1 + IRR)^5} \right] - \text{Initial Project Cost} = 0$$

- FCF = Future Cash Flow

- IRR = Internal Rate of Return

kardexremstar

Supply Chain Example

- $100M Distribution Company, 1% Return on Sales, 2% Annual Growth

- Physical Plant at Capacity for Labor and Space. Order Volumes Growing.

- New Business Means Adding Two Full Time Workers ($15/Hr + 35% Burden) and Building 5,000 SF of New Space ($75/SF Construction Cost). An Additional Worker is Projected Needed in Year 3 to Maintain Growth

- Proposed Automation Investment is Horizontal Carousels, Conveyors, Software, Services. Provides Necessary Productivity Gains and Space Savings. Business Operates with Same Labor in Same Space.

Supply Chain Example Results

Supply Chain Company -- Automation Investment						
Year	0	1	2	3	4	5
Automation Investment	($750,000)	$0	$0	$0	$0	$0
Cost Savings		$0	$0	$0	$0	$0
Cost Avoidance - Labor		$84,240	$84,240	$126,360	$126,360	$126,360
Cost Avoidance - Space		$375,000	$0	$0	$0	$0
Additional Net Income		$20,200	$40,400	$61,208	$82,432	$104,080
Total Cash Flows	($750,000)	$479,441	$124,642	$187,571	$208,796	$230,445

- Cost of Capital: 10%

- Net Present Value: $199,895

- Internal Rate of Return: 23%

Supply Chain Example #2

- Manufacturing Stockroom – At Capacity for Labor and Space.

- Concern is Growing, Additional Work Orders and Materials.

- Growth Requires Adding One Worker ($18/Hr + 35% Burden) and 2,000 SF of Area.

- Estimated Contribution of Stockroom is $10,000 Net Income with 2% Growth Annually.

- Automation Solution of Three (3) Vertical Lift Modules, Software and Services at $ 330,000 Net.

Supply Chain Example #2 Results

Manufacturing Stockroom -- Automation Investment						
Year	0	1	2	3	4	5
Automation Investment	($330,000)	$0	$0	$0	$0	$0
Cost Savings		$0	$0	$0	$0	$0
Cost Avoidance - Labor		$50,544	$50,544	$50,544	$50,544	$50,544
Cost Avoidance - Space		$150,000	$0	$0	$0	$0
Additional Net Income		$10,000	$10,200	$10,404	$10,612	$10,824
Total Cash Flows	**($330,000)**	**$210,545**	**$60,746**	**$60,951**	**$61,160**	**$61,373**

- Cost of Capital: 10%

- Net Present Value: $33,893

- Internal Rate of Return: 16%

Calculating Your Net Present Value and Internal Rate of Return

- Determine Your Investment and The Costs That Can Be Avoided

- Set Up a Table Showing the Investment Cost and Annual Cash Flows

- Determine Cost of Capital (10% is Conservative)

- Utilize Financial Formulas (Formula Tab, Financial Dropdown)
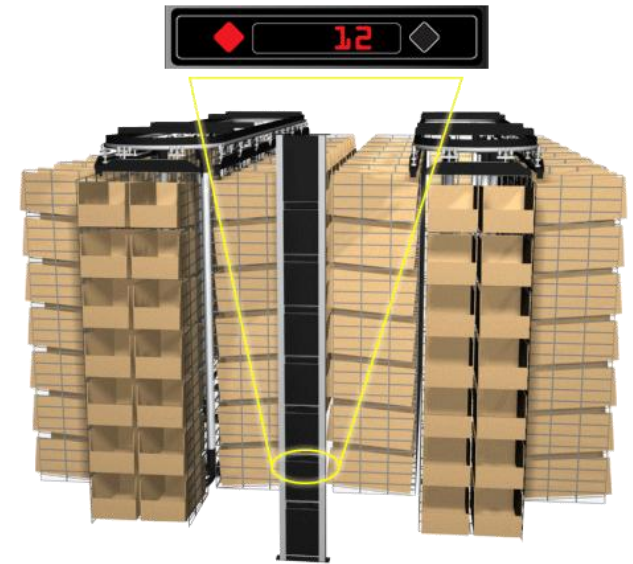
How Much Can You Save Your Company?

Dynamic Storage Solutions

Vertical Lift Module   Vertical Carousel   Horizontal Carousel

For More Information:

Tim Archer

Email: allan.archer@kardexremstar.com

www.kardexremstar.com

Visit Us At Booth #3623