



PROMAT®

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promatshow.com

Order Fulfillment Automation “Low Cost Options”

Sponsored by:



Presented by:

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“The only way to make sense out of change is to plunge into it, move with it, and join the dance”



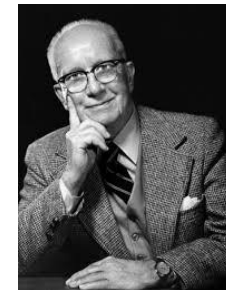
Allan Watts

British & US Philosopher, Writer, Speaker (1915-1973)

“You never change things by fighting the existing reality. To change something, build a new model that makes the existing model obsolete.”

Buckminster Fuller

US Designer, Author, Inventor (1895-1983)



Why Automation In North America is a Must



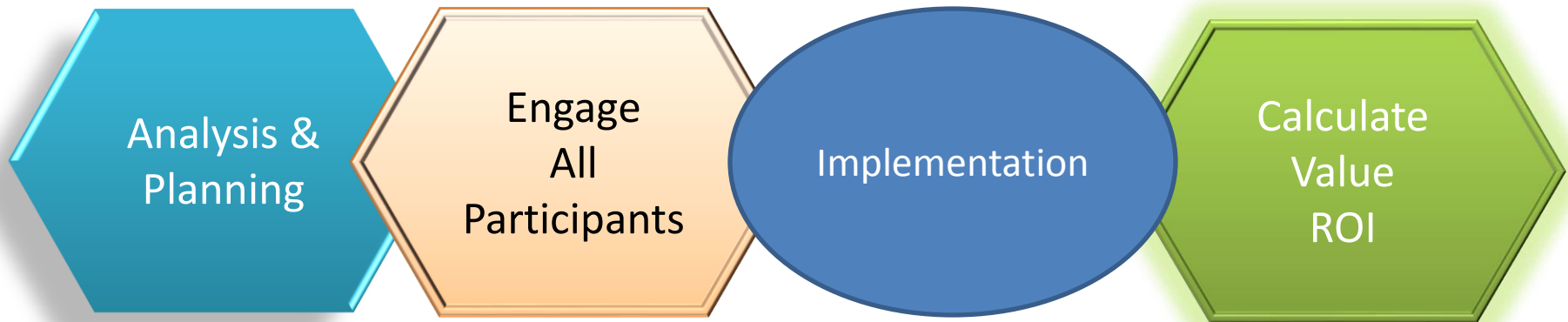
- Increased Consumer Demand
 - e-Commerce
 - Quick delivery
 - Increase no. SKU's
 - Smaller orders more often
 - Better customer service
- US Manufacturing Re-Shoring
 - Higher Overseas Costs
 - Smaller Quantities
 - More Flexibility & Customization
 - Quicker Delivery



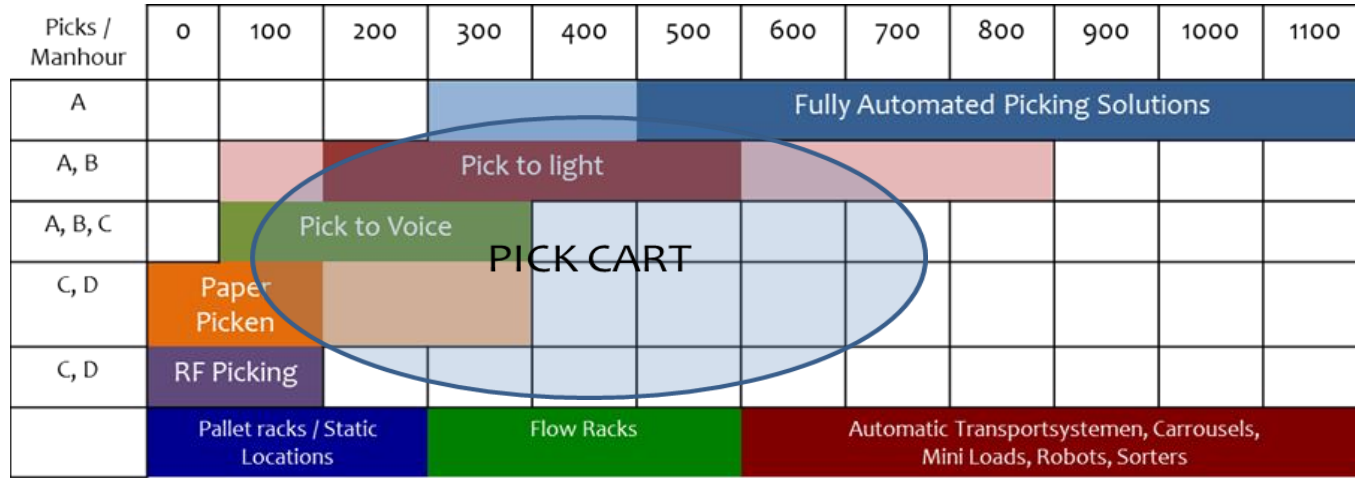


Steps For Automation Implementation

Success will depend on these actions



What to Consider



- * Order Volume
- * Order Priority
- * Inventory
- * Travel Time
- * MHE Status
- * Labor Availability
- * Picking Activities
- * Packing Requirements
- * Shipping Procedures

FIND WHAT'S NEXT.

Some Available Options



Pick-to-Light



Horizontal Carrousel



RF Picking



AS/RS



Put-to-Light



PickCart



Vertical Lift Modules



Mini AS/RS



Voice Picking



How To Get Started

- Gather and analyze order profile data & patterns
- Account for business variations
 - Increase/decrease sales, no. of SKU's, seasonability, product dimensions, labor, customer base, etc...
- Order fulfillment picking travel times
- Current Material Handling & Storage Equipment
- WMS, ERP or WCS capabilities
- Product flow
- Facility layout



Companies With a Good Plan Achieve Best Results

- Know what to expect about results
 - Set realistic expectations
- Develop a value perception among top management
- Involve more people in planning and achievement of results
- Accurately identify changes that will improve results
- Create a plan to measure and quantify results



Selecting and Implementing a System

1. Evaluate SKU volume
2. Consider current staff
3. Survey facility for the best fit
4. Consider new layout(s) to maximize impact
5. Set performance goals
6. Analyze existing process to calculate ROI
7. Evaluate existing WMS, ERP or WCS capabilities
8. Consider speed and accuracy levels
9. Do your homework
10. Select a system that can grow with your business

Lower Cost Systems Comparison

Assessing Pick Technologies: The More Stars, The Better the Fit				
	RF Scanning	Voice Technology	Pick/Put to Light	Mobile Pick Cart
Productivity, Speed	★ ★	★ ★ ★ ★	★ ★ ★ ★ ★	★ ★ ★ ★
Accuracy	★ ★ ★	★ ★ ★ ★	★ ★ ★ ★	★ ★ ★ ★ ★
Data Capture Capability	★ ★ ★ ★ ★	★	★	★ ★ ★ ★
Flexible Multifunctional Capability	★ ★ ★ ★ ★	★ ★	★ ★ ★	★ ★ ★ ★
Hands Free	★	★ ★ ★ ★ ★	★ ★ ★ ★ ★	★ ★
Learning Curve	★ ★ ★	★ ★	★ ★ ★ ★ ★	★ ★ ★ ★
Maintenance	★ ★	★	★ ★ ★ ★ ★	★ ★ ★
IT Ease of Integration	★ ★ ★	★ ★	★ ★ ★ ★ ★	★ ★ ★ ★
System Cost	★ ★ ★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★

Source: MWPVL International & PcdData BV

Capital Expense Example

	Hardware	System Integration	Professional Services	TOTALS	Calculation Basis
RF Scanning	\$75,000	\$25,000	\$45,000	\$ 145,000.00	100,000 Sqft, 2,500 SKU's, 25 Operators
Voice Technology	\$165,000	\$45,000	\$40,000	\$ 250,000.00	100,000 Sqft, 2,500 SKU's, 25 Operators
Pick/Put to Light	\$260,000	\$15,000	\$20,000	\$ 295,000.00	100,000 Sqft, 2,500 SKU's, 25 Operators **
Mobile Pick Carts	\$160,000	\$10,000	\$25,000	\$ 195,000.00	100,000 Sqft, 2,500 SKU's, 25 Operators, 14 orders/cart

Note:

**** - Typically you use the 80/20 rule and have less than 2,500 SKU's on a Pick/Put to Light
No Material Handling Equipment is included in the calculations**

Return On Investment (ROI) Calculations EXAMPLE

Pick to Light Calculation Model - Productivity

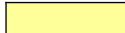



Environment Variables - Volume

Total # of orders	400	per day
Total # of order lines	2,000	per day
Total # of units	10,000	per day
Total # of SKUs	350	total

Environment Variables - Equipment

Total # of layers in rack	3.00	layers
Distance per location	0.50	mtr
Length of the system	58.33	mtr
Total # of zones	6	zones

	Mandatory fields
	Optional fields


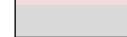
Productivity Parameters PTL

Orderpick speed	5.00	sec/line
Walking speed	0.80	m/sec
Order Start	10.00	sec/order
Order Finish	20.00	sec/order

Environment Variables Current -

Personnel

Time Available	8.00	hrs
Actual current FTE		FTE
Current lines per man hour		lines
Calc current FTE	3.98	FTE
Workdays	220	per year

	Pcdata recommended values
	Calculated fields

Start-up Time (hrs)	Walking Time (hrs)	Picking Time (hrs)	Order Finish Time (hrs)		Total Time (hrs)		Total Order Pick FTE
1.11	16.20	2.78	2.22		22.31		2.79

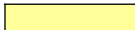
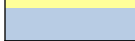
Return On Investment (ROI) Calculations EXAMPLE

Pick to Light Calculation Model - Savings



<u>Personnel Cost</u>		
Hourly rate	20.00	EUR

<u>Quality Cost</u>		
Cost per Error	5.00	EUR
Current error percentage	0.50	%
PTL error percentage	0.10	%

	Mandatory fields
	Optional fields

<u>Required Hardware Quantities</u>		
Total # of pick displays	350	displays
Total # of zone displays	6	displays
Total # of controls	2	PDM10
Total length of power rail	60	mtr
Total length of profile	175	mtr
Total length of bus cable	210	mtr

	Pcdata recommended values
	Calculated fields

Yearly Savings	Personnel Cost (EUR)	Error Cost (EUR)	Total Cost (EUR)
Current (PAPER)	140,264.55	11,000.00	151,264.55
New (PTL)	98,185.19	2,200.00	100,385.19
Savings per year	42,079.37	8,800.00	50,879.37

Return On Investment (ROI) Calculations EXAMPLE



Pick to Light Calculation Model - Cost

<u>Service & Maintenance Cost</u>		
Warranty	1	year
Service Level Agreement	2,450	EUR/yr
Repair / Maintenance	2.50	%

Mandatory fields
Optional fields

<u>Miscellaneous</u>		
Interest Rate	5.00	%
Depreciation	5	years
Customer Project Cost	10,000	EUR

Pcdata recommended values
Calculated fields

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Investment	-44,970	-	-	-	-	-
Customer Cost	-10,000	-	-	-	-	-
Cost of Ownership						
SLA	-	-2,450	-2,450	-2,450	-2,450	-2,450
Repair	-	-	-475	-475	-475	-475
Savings	-	50,879	50,879	50,879	50,879	50,879
Cashflow	-54,970	48,429	47,954	47,954	47,954	47,954
Net Present Value	-54,970	46,123	43,496	41,425	39,452	37,573



Often Missed Items for ROI Calculation

- Mis-Picking Errors hidden costs
 - Freight out – return – out again
 - Customer service support (avg = 1 ½ hrs)
 - Claim processing, data entry, inventory adjustment, processing new order, etc...
 - Re-pick, Re-stock, packaging
 - Lost sales and/or customer
 - Charge backs

FIND WHAT'S
NEXT.

NEW Lower Cost Technologies

Augmented
Reality (AR)



Put to Light
SMARTGLASS



Pick to Light
with Sensor



Wireless Pick
to Light



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THANK YOU FOR ATTENDING

Questions & Answers