



PROMAT 2015

McCormick Place South | Chicago
March 23-26, 2015
promatshow.com

Distribution Principles for Direct to Consumer Order Fulfillment

Sponsored by:



Siggins

Presented by:

Jeff Basch / Project Analyst

Dennis Hensen / VP Integrated Systems

Steve Wilson, MBA / Project Analyst

powered by



www.ProMatShow.com

© 2015 MHI®
Copyright claimed for audiovisual works and
sound recordings of seminar sessions. All rights reserved.

FIND WHAT'S
NEXT.

It's All About Cubic Space Utilization!





Topics of Discussion



FIND WHAT'S
NEXT.

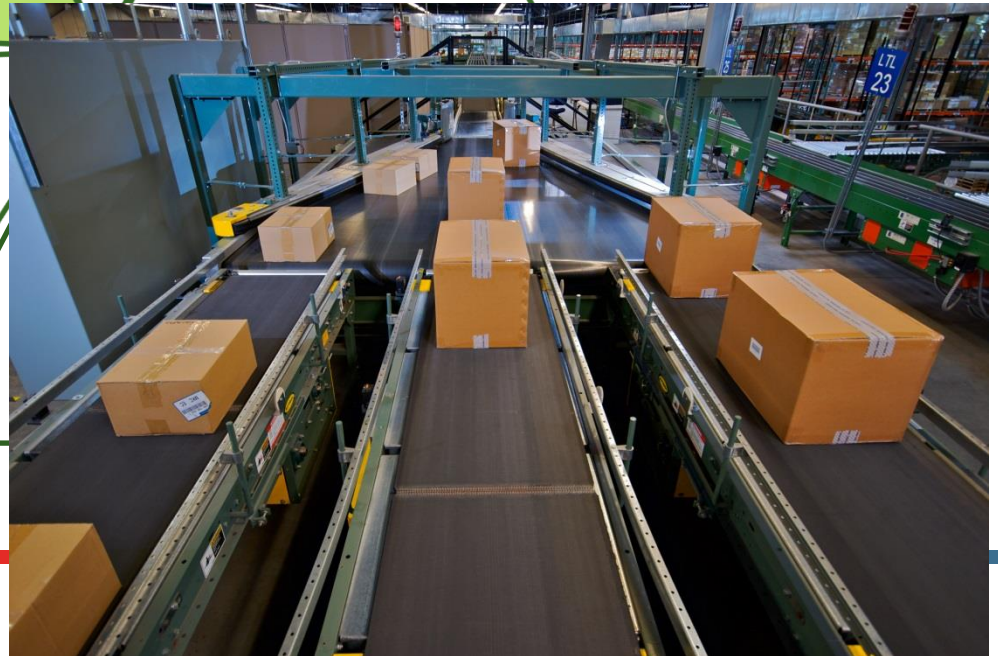


PROMAT 2015

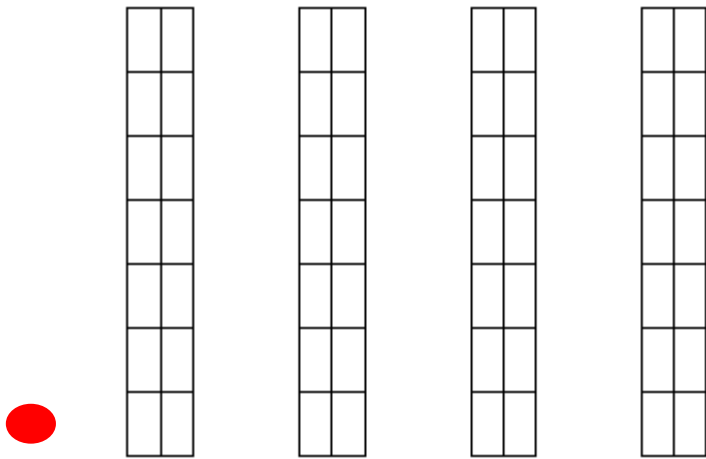
McCormick Place South | Chicago
March 23-26, 2015
promatshow.com

powered by  MHI

Topic 1 - Mechanization



Serpentine Pick to Cart System



OVERHEAD PLAN VIEW





Storage Media



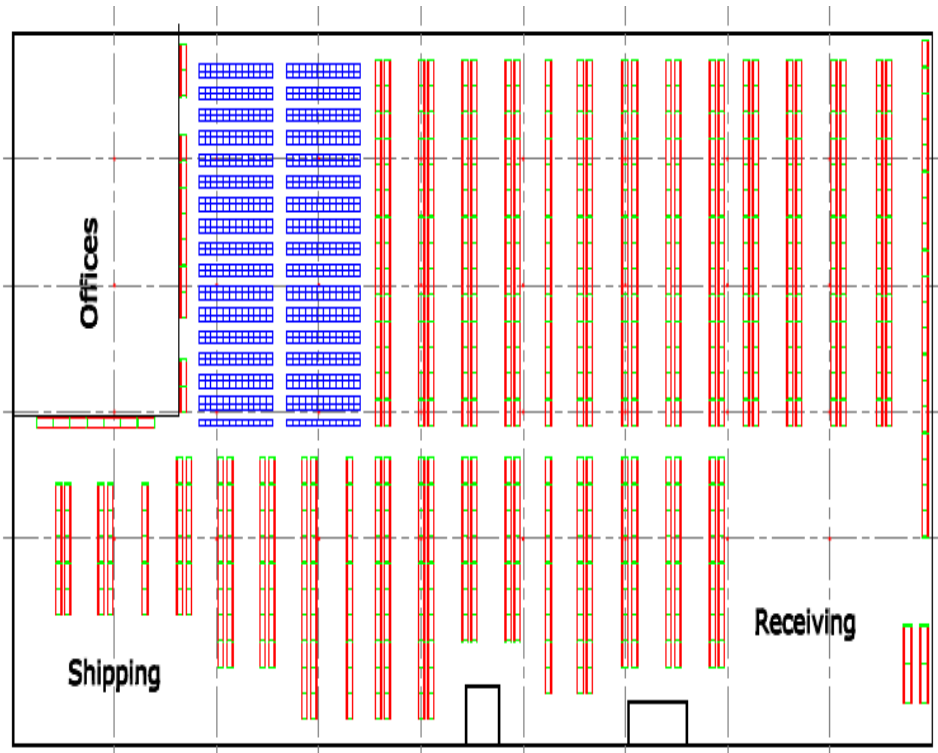
Industrial Shelving



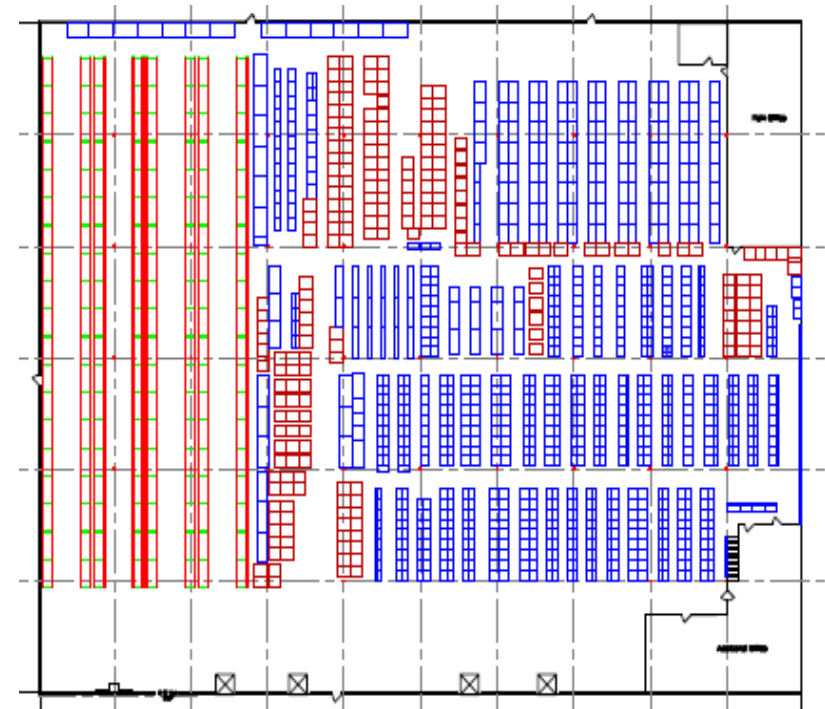
Shelf-pick Racking



Non-Mechanized Facilities



160,000sf Manual Operation



50,000sf Manual Operation



Mechanized Pick Module System

- Conveyables
- Non-Conveyables



FIND WHAT'S
NEXT.

160,000 sq. ft. Mechanized System



**FIND WHAT'S
NEXT.**

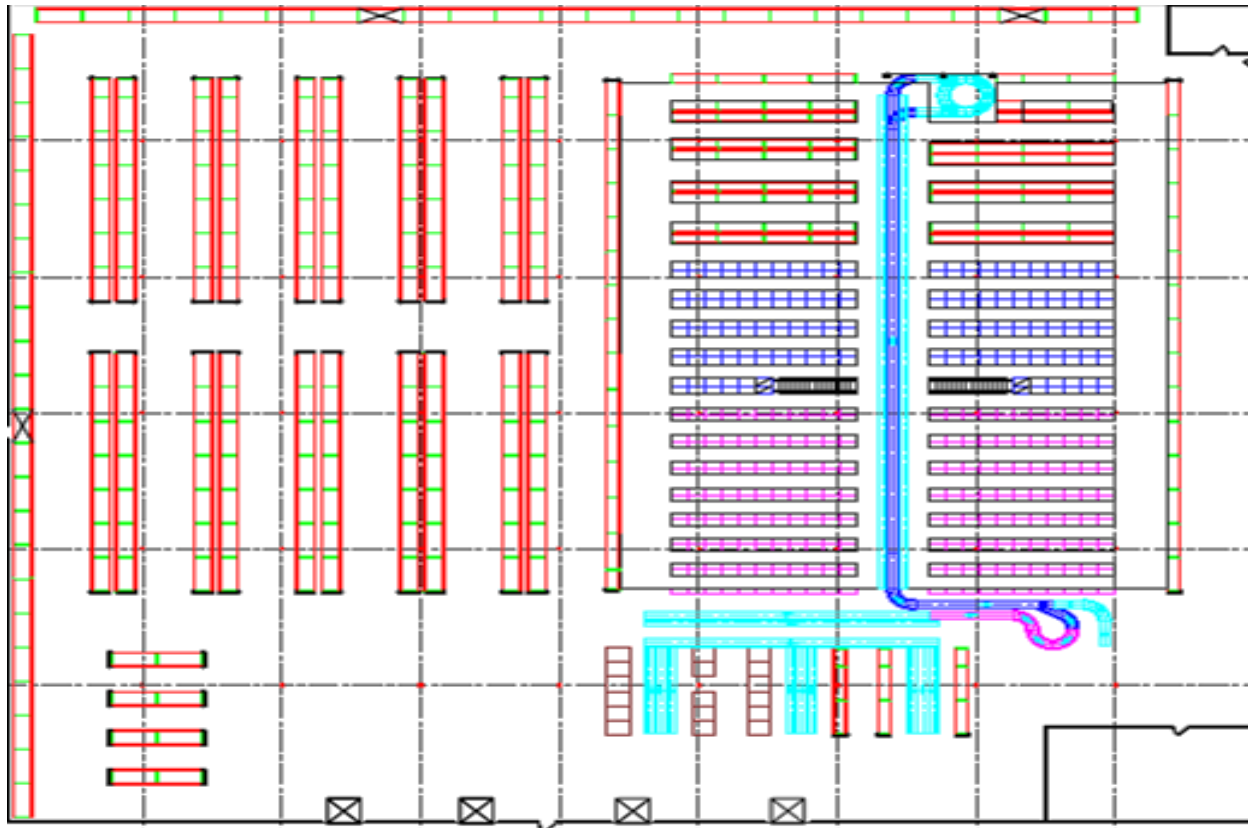


PROMAT 2015

McCormick Place South | Chicago
March 23-26, 2015
promatshow.com

powered by MHI

50,000 sq. ft. Mechanized System (Benefits are Scalable)



FIND WHAT'S
NEXT.



PROMAT 2015

McCormick Place South | Chicago
March 23-26, 2015
promatshow.com

powered by MHI

Topic 2 – Inventory Analysis



Product Cube and Media Application (Conveyables)



Industrial Shelving



Shelf-Pick Racking



Picking to Conveyor



Industrial Shelving



Shelf-Pick Racking



Product Cube and Media Application



Large Parts Storage



Long Parts Storage



SKU Velocity and Media Application

- Carton Flow
- Pallet Pick/Flow
- Very-Narrow-Aisle



SKU Data Manipulation



Pallet Pick

versus



Carton Flow





Carton Flow Methodology





SKU Data Manipulation (Pallet Pick)

DESCRIPTION	Suggested Placement	Y-T-D DEMAND	PREV 12 MO DEMAND	# Times sold by selling increment	Selling increment per month	Selling increment per week
10GA 12FT 250 AMP BOOSTER CABL	Pallet Pick	6033	6159	6159	513	118
8GA 12' 400 AMP CABLE	Pallet Pick	5401	5239	5239	437	101
4GA 20FT 500 AMP BOOSTER CABLE	Pallet Pick	2674	2933	2933	244	56
4GA 12FT 400 AMP BOOSTER CABLE	Pallet Pick	2795	2583	2583	215	50
INCAND UTILITY LIGHT 25 FT 16/	Pallet Pick	2210	2382	2382	199	46
05327 25'UTILITY LIGHT	Pallet Pick	2014	2055	2055	171	40
6GA 16FT 400 AMP BOOSTER CABLE	Pallet Pick	1560	1845	1845	154	35
HUB ASSEMBLY	Pallet Pick	17135	14767	14767	1231	284
HUB ASSEMBLY	Pallet Pick	19652	14636	14636	1220	281
HUB ASSEMBLY	Pallet Pick	17604	12717	12717	1060	245
HUB ASSEMBLY	Pallet Pick	12274	12508	12508	1042	241
HUB ASSEMBLY	Pallet Pick	10784	9870	9870	823	190
HUB ASSEMBLY	Pallet Pick	10499	9388	9388	782	181
HUB ASSEMBLY	Pallet Pick	5935	6248	6248	521	120
HUB ASSEMBLY	Pallet Pick	4966	5742	5742	479	110
HUB ASSEMBLY	Pallet Pick	6894	5002	5002	417	96
HUB ASSEMBLY	Pallet Pick	4510	4545	4545	379	87
2 HD MUFLER CL	Pallet Pick	52100	58950	1179	98	23
2 1/4 HD MUFLER CLAMP	Pallet Pick	51850	57650	1153	96	22
2 1/2 HD MUFLER CLAMP	Pallet Pick	49200	50750	1015	85	20
CONVENTIONAL WIPER BLADE	Pallet Pick	102770	113110	11311	943	218
CONVENTIONAL WIPER BLADE	Pallet Pick	80770	86460	8646	721	166
CONVENTIONAL WIPER BLADE	Pallet Pick	82480	85070	8507	709	164



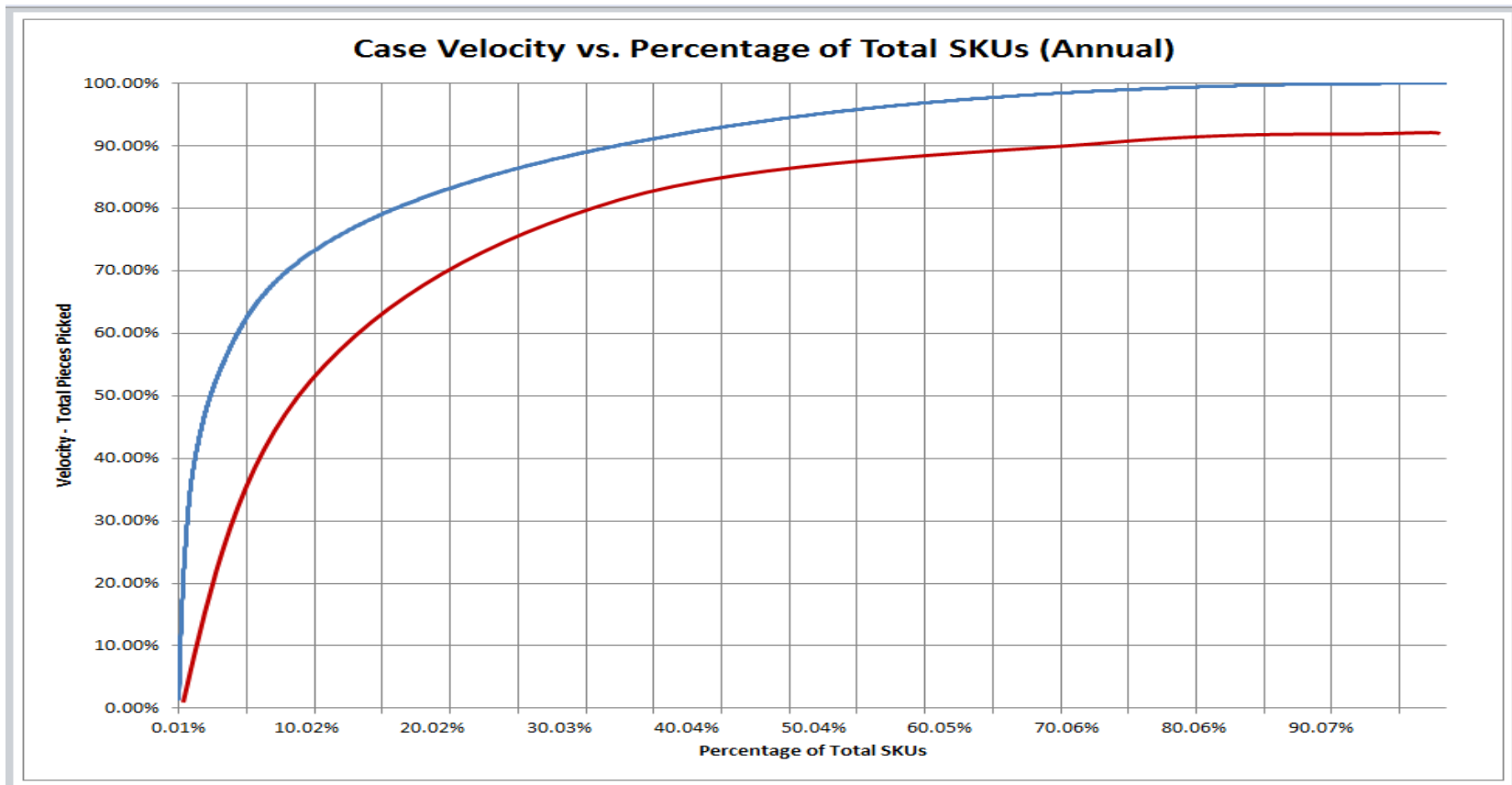
SKU Data Manipulation (Carton Flow)

DESCRIPTION	Suggested Placement	Y-T-D DEMAND	PREV 12 MO DEMAND	# times sold by selling increment	Selling increment per month	Selling increment per week
ABRASIVES	Carton-Flow	5702	5606	5606	467	108
ABRASIVES	Carton-Flow	4956	5352	5352	446	103
ABRASIVES	Carton-Flow	5086	4679	4679	390	90
ABRASIVES	Carton-Flow	4579	4497	4497	375	86
ABRASIVES	Carton-Flow	4561	4423	4423	369	85
ABRASIVES	Carton-Flow	4315	4054	4054	338	78
ABRASIVES	Carton-Flow	3553	3492	3492	291	67
GASOLINE FUEL INJECTOR	Carton-Flow	2188	2135	2135	178	41
GASOLINE FUEL INJECTOR	Carton-Flow	1605	1717	1717	143	33
GASOLINE FUEL INJECTOR	Carton-Flow	952	1125	1125	94	22
GASOLINE FUEL INJECTOR	Carton-Flow	505	1046	1046	87	20
FUEL INJECTOR SEAL KIT	Carton-Flow	2113	959	959	80	18
FUEL INJECTOR SEAL KIT	Carton-Flow	2061	936	936	78	18
FAN CLUTCH/KIT	Carton-Flow	5530	5031	5031	419	97
FAN CLUTCH/KIT	Carton-Flow	3104	3091	3091	258	59
OIL COOLER	Carton-Flow	1962	1848	1848	154	36
OIL COOLER	Carton-Flow	1905	1781	1781	148	34
JB KWIK WELD/KIT	Carton-Flow	49962	43812	7302	609	140
JB WELD /KIT	Carton-Flow	25836	28830	4805	400	92
WATERWELD 2OZ	Carton-Flow	4206	4314	719	60	14
JB STIK 2OZ	Carton-Flow	3324	3054	509	42	10
TIE-DOWN 10' RATCHET 900 LBS	Carton-Flow	2088	2044	2044	170	39
OIL AND GREASE SEAL	Carton-Flow	16470	14569	14569	1214	280
BEARING	Carton-Flow	6357	6583	6583	549	127
BEARING	Carton-Flow	7093	6514	6514	543	125



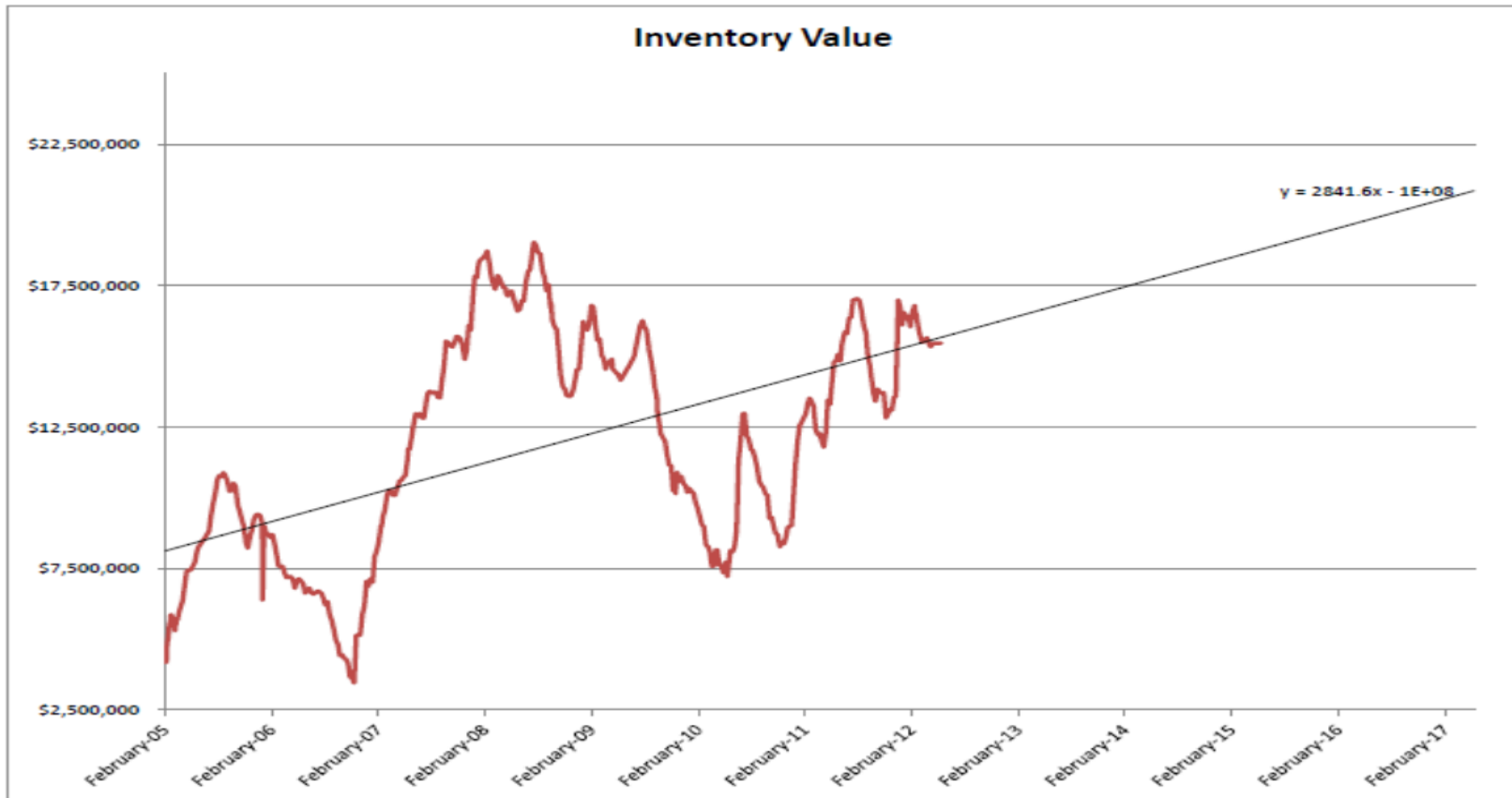


Typical Inventory SKU Velocity Curve





Inventory Value



FIND WHAT'S
NEXT.



PROMAT 2015

McCormick Place South | Chicago
March 23-26, 2015
promatshow.com

powered by  MHI

Topic 3 – Picking Technologies





Application of Directed Picking Technologies:



- *Pick to Paper*



- *“RF” Pick Using Radio Frequency Guns*



- *Pick-to-Light*



- *Voice Pick*





Philosophy of Distribution

- Predictable business process
- KISS
- Investment protection
- Easy to teach (even with turnover)
- Keep good employees when you find them



Paper Pick

- Pick ticket management
- Order setup & tracking
- No real-time feedback
- Requires reading
- Exception management
- Multi-part form expensive
- Slow process



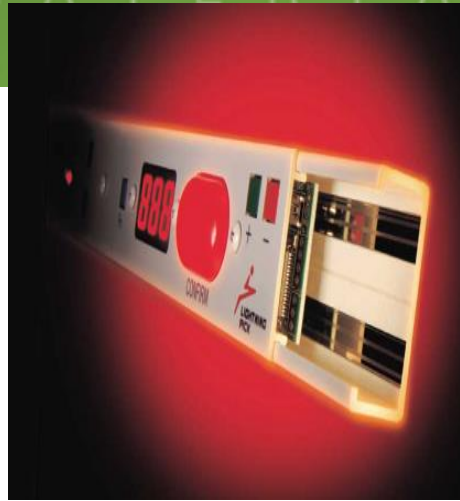
RF Pick



- Electronic
- Most accurate
- Immediate feed-back
- Multiple screens complicated
- Can be used in multiple areas of DC
- About the same speed as paper

Pick to Light

- High initial cost
- Easy to learn
- High speed
- Excellent pick quality
- Dynamic zoning
- Best for fast-pick media
- Immediate feedback
- Combines well with other technologies



Lightning Pick Light Bars



Voice Pick

- Similar to RF – 15% faster
- More technical variables
 - Voice training
 - Voice libraries
- Can be used in many areas
 - Receiving
 - Put away
 - Cycle count





Productivity Comparisons

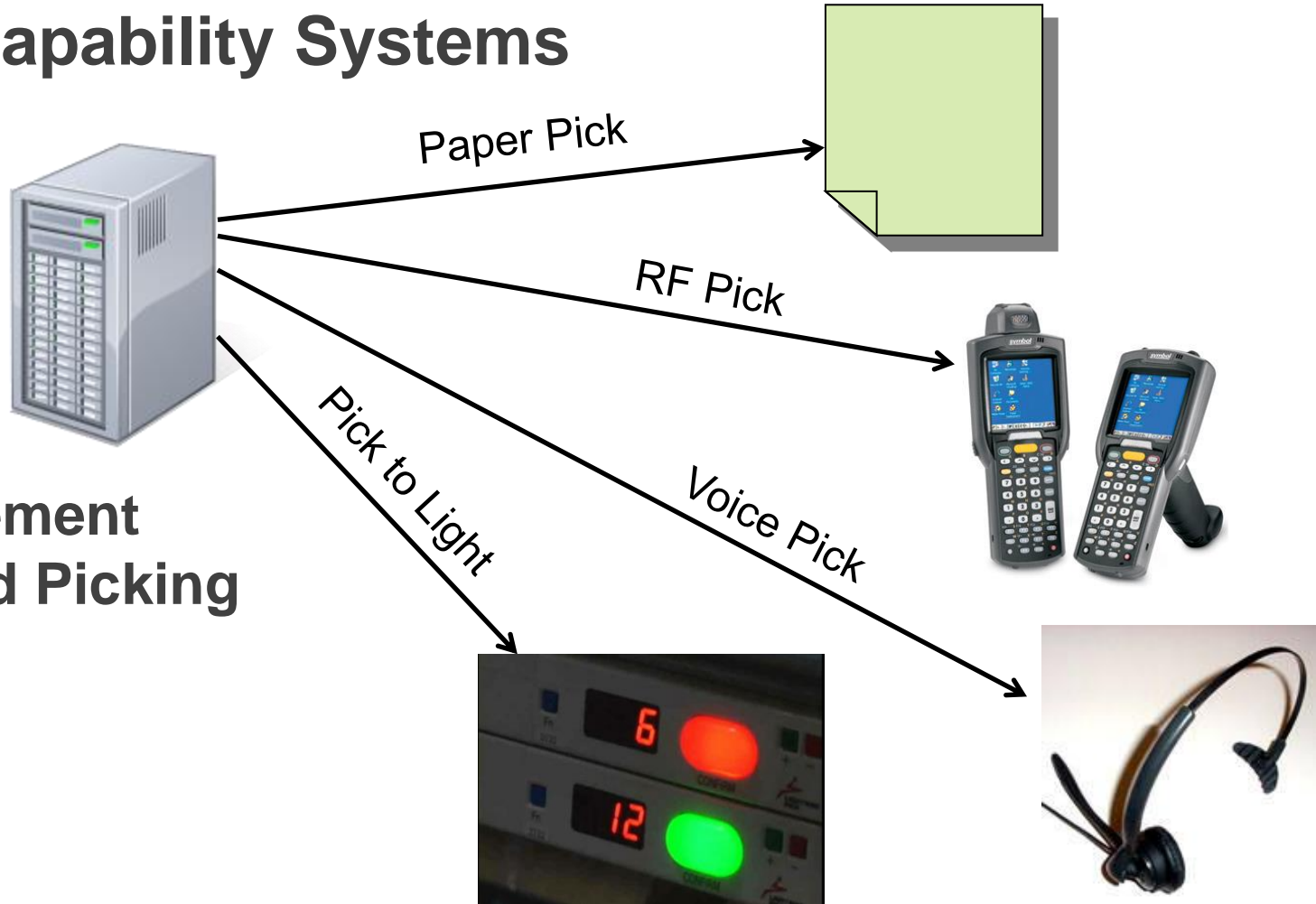
Velocity in lines per person per hour

		0	100	200	300	400	500	600	700	800	900	1000	1100	1200	
Movement category	A												Dispensers		
	A&B			Light directed picking											
	A&B		Case pick label												
	B&C		Carousels & AS/RS												
	B&C		Voice												
	C&D		RF carts												
	C&D	RF picking													
	C&D	Paper													
			0	100	200	300	400	500	600	700	800	900	1000	1100	1200
		Rack and shelving				Carton flow and pallet flow									



Multi-Capability Systems

Order Management Directed Picking System





Topic 4 – Routing & Sortation



FIND WHAT'S
NEXT.



PROMAT 2015

McCormick Place South | Chicago
March 23-26, 2015
promatshow.com

powered by  MHI

Urethane Belt Transfer



**FIND WHAT'S
NEXT.**



PROMAT 2015

McCormick Place South | Chicago
March 23-26, 2015
promatshow.com

powered by  MHI

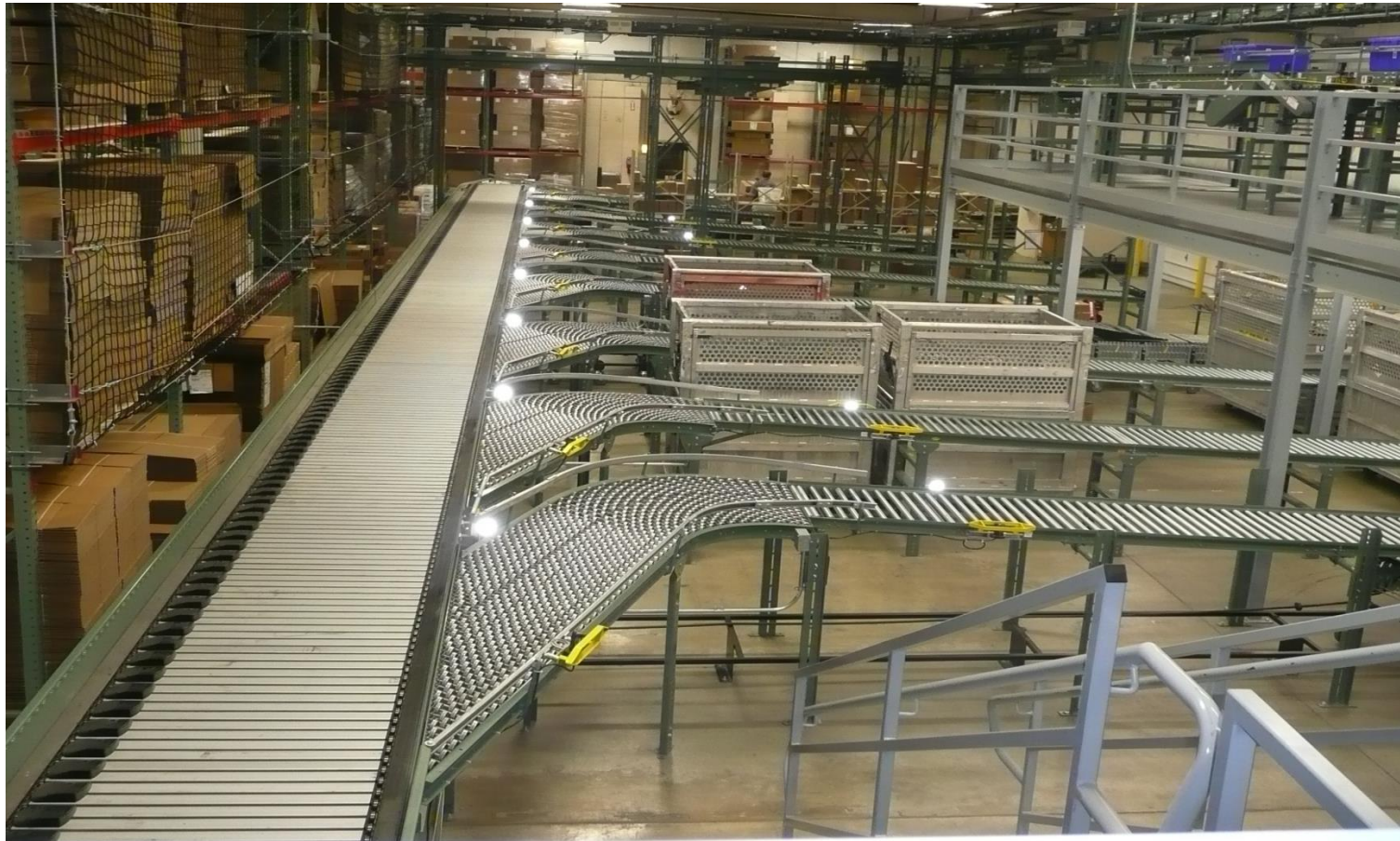
Wallaby Transfer



Narrow Belt Sorter



Sliding Shoe Sorter

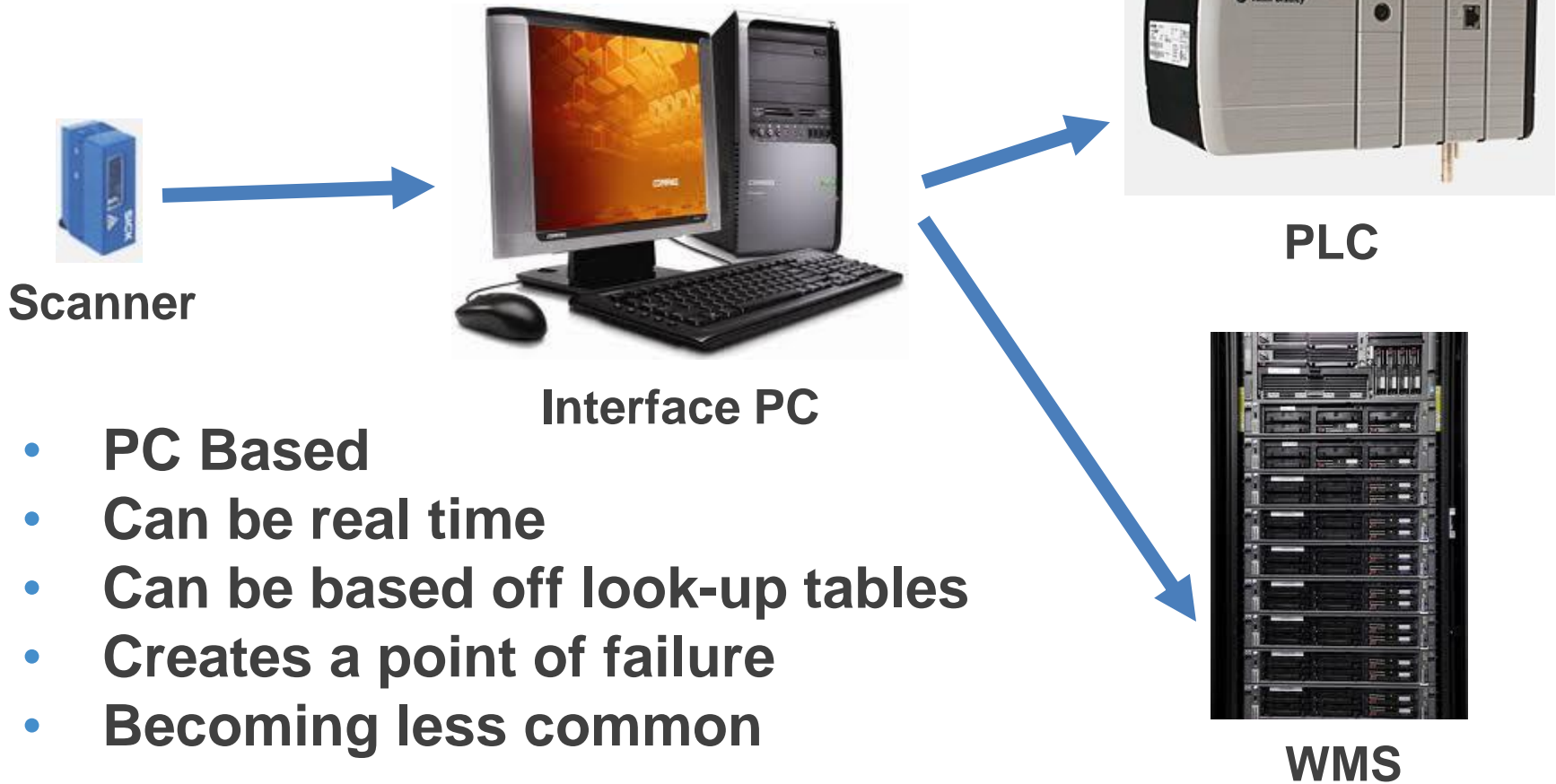




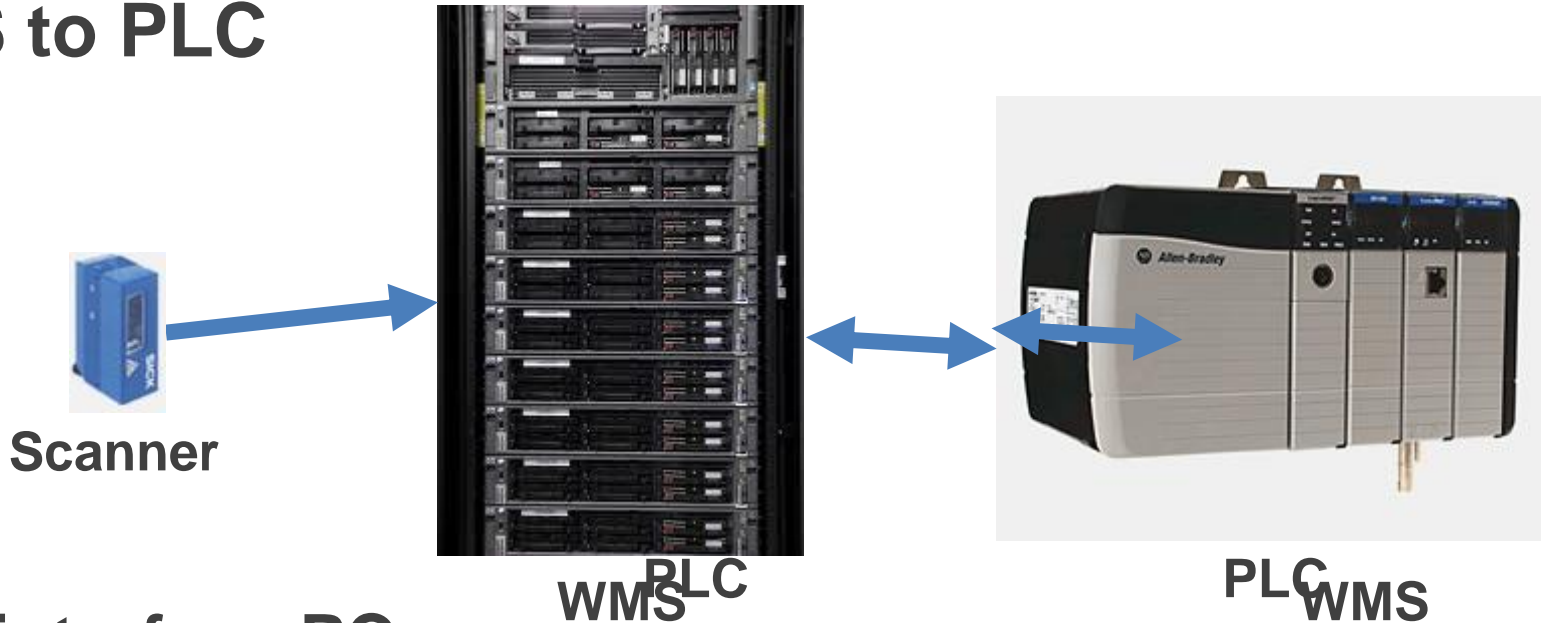
Topic 5 – WCS & WMS Integration



PC Based Middleware



WMS to PLC



- No interface PC
- Single database on server
- On the fly updates
- ~~Usually requires software package~~

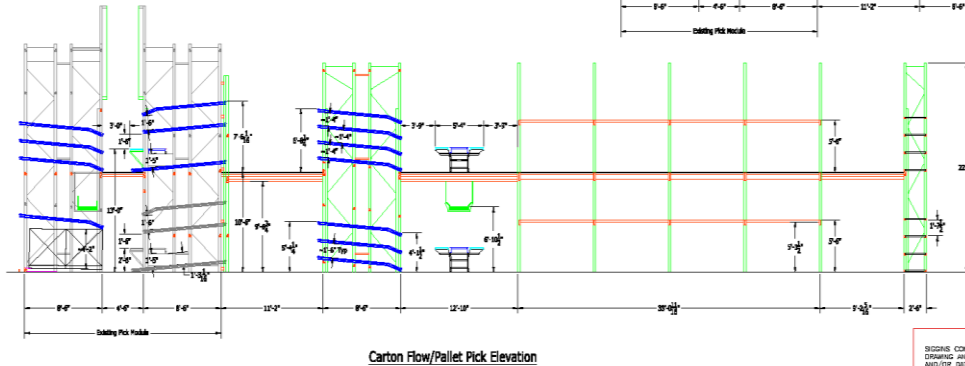
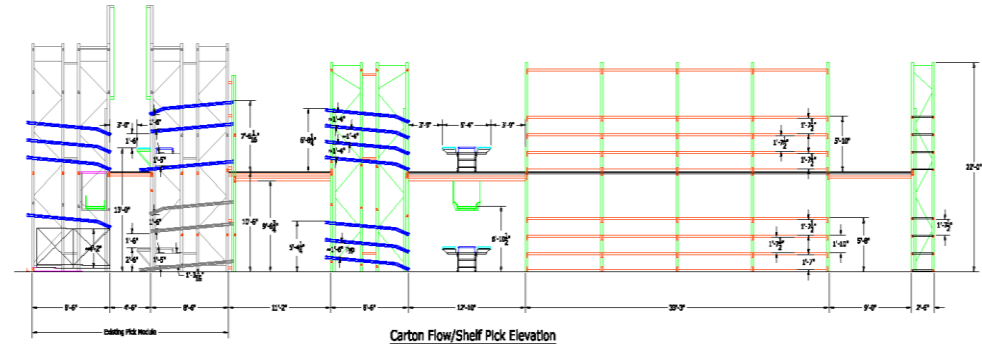
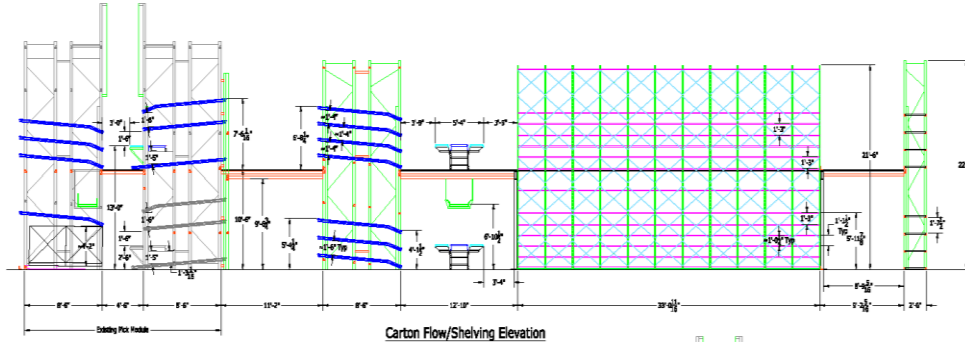




Topic 6 – System Simulation



FIND WHAT'S NEXT. Pure Fishing Elevation



0	Initial	Revised	Chk	12/28
AW	DESIGNER	BY	DATE	
Pure Fishing Kansas City, MO				
Warehouse Layout				
Approval Drawing				
DATE	BY	DATE		
12/28/12		3/18/11		
24755-200				

SIGGINS COMPANY - RESERVES PROPRIETARY RIGHTS TO THIS DRAWING AND THE DATA SHOWN THEREON. SAID DRAWING AND/OR DATA ARE CONFIDENTIAL AND ARE NOT TO BE USED OR REPRODUCED FOR ANY PURPOSE WITHOUT THE WRITTEN CONSENT OF THE SIGGINS COMPANY.



512 East 12th Avenue
 North Kansas City, Mo. 64116

Phone: 816-421-7670
 Toll Free: 800-383-3218
 Fax: 816-421-2162
 Web Address: www.siggins.net



FIND WHAT'S NEXT. Pure Fishing Plan View

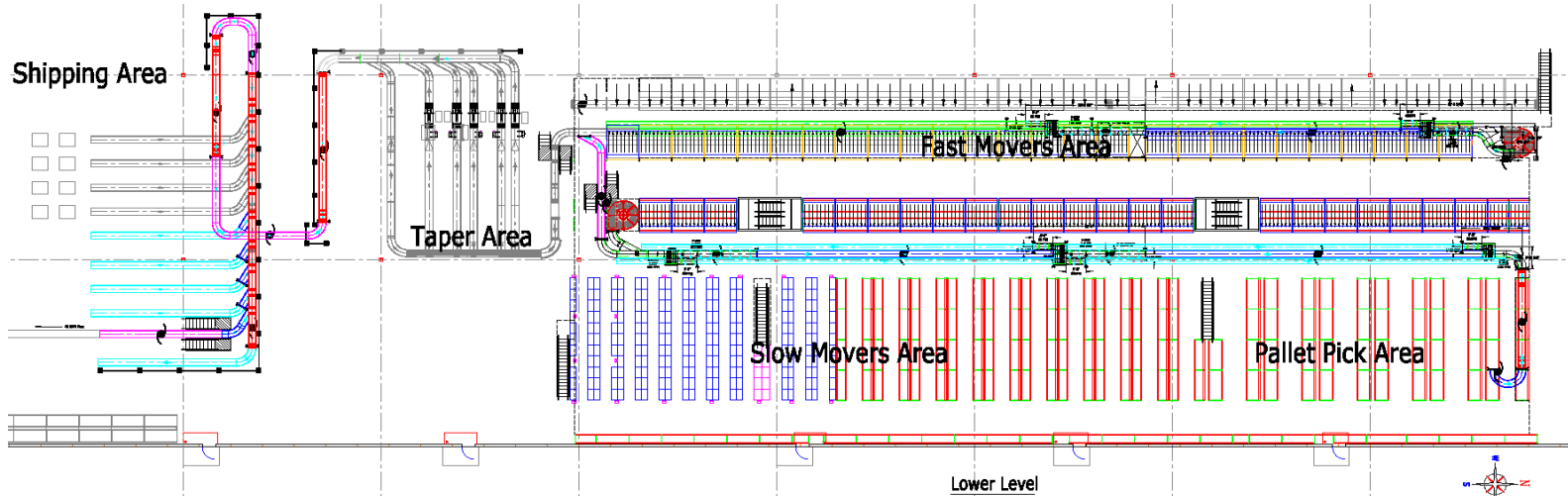
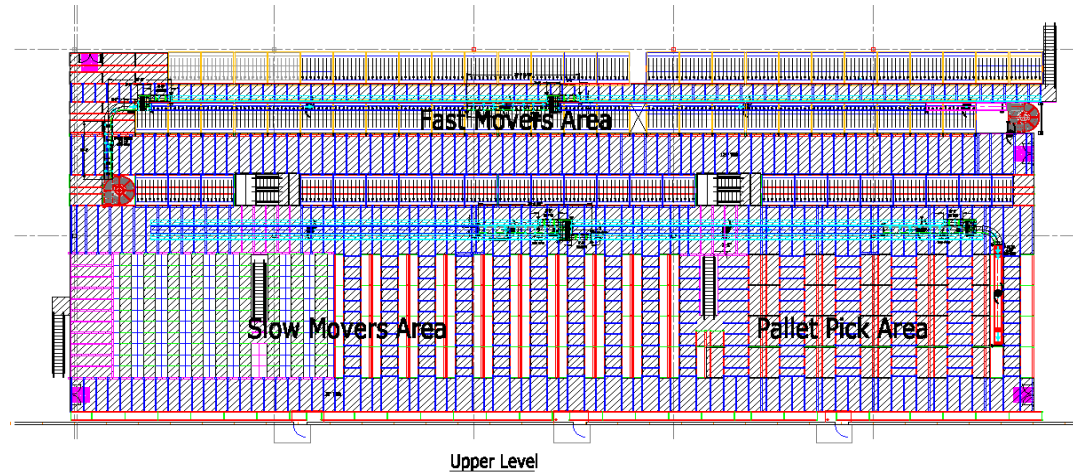
CONSTRUCTION TYPE:
TYPE II B, NON COMBUSTIBLE, UNPROTECTED, FULLY SPRINKLED (802.2)

GROSS AREA:
WAREHOUSE - 395,342 SQ. FT.
OFFICE - 5,808 SQ. FT.
TOTAL - 401,150 SQ. FT.

OCCUPANCY:
PRIMARY USE GROUP: S-1, MODERATE HAZARD STORAGE (311.2)
SECONDARY USE GROUP: B, BUSINESS (304.1)

APPLICABLE BUILDING CODE:
2012 (IBC) INTERNATIONAL BUILDING CODE

APPLICABLE ELECTRICAL CODE:
2011 (NEC) NATIONAL ELECTRICAL CODE



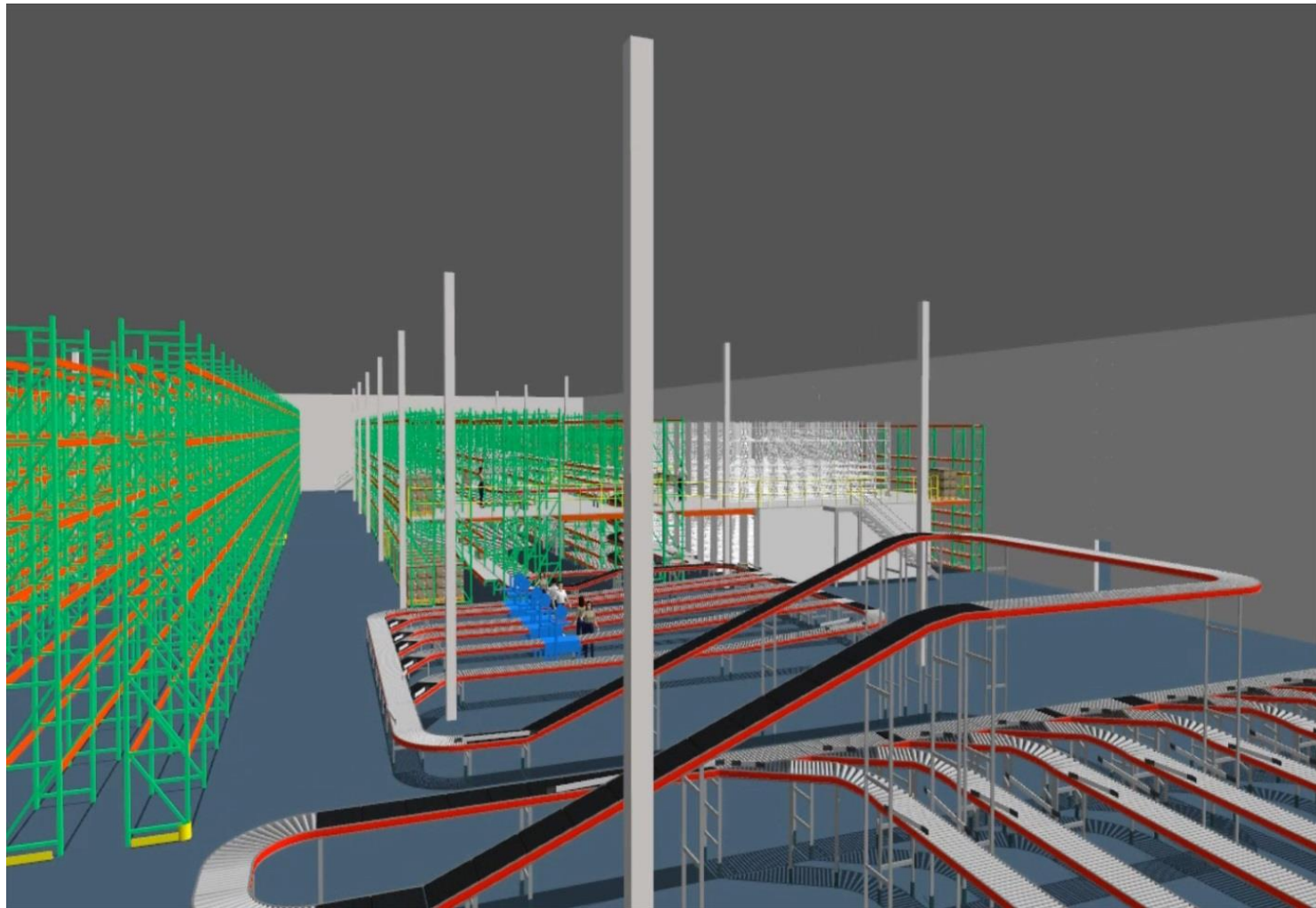
FIND WHAT'S NEXT. Pure Fishing Simulation



PROMAT 2015

McCormick Place South | Chicago
March 23-26, 2015
promatshow.com

powered by  MHI





For More Information:

Jeff Basch, email: jbasch@siggins.com

Dennis Hensen, email: dhensen@siggins.com

Steve Wilson, email: swilson@siggins.com

Website: www.siggins.com

Or visit ProMat 2015 Booth # 4557