

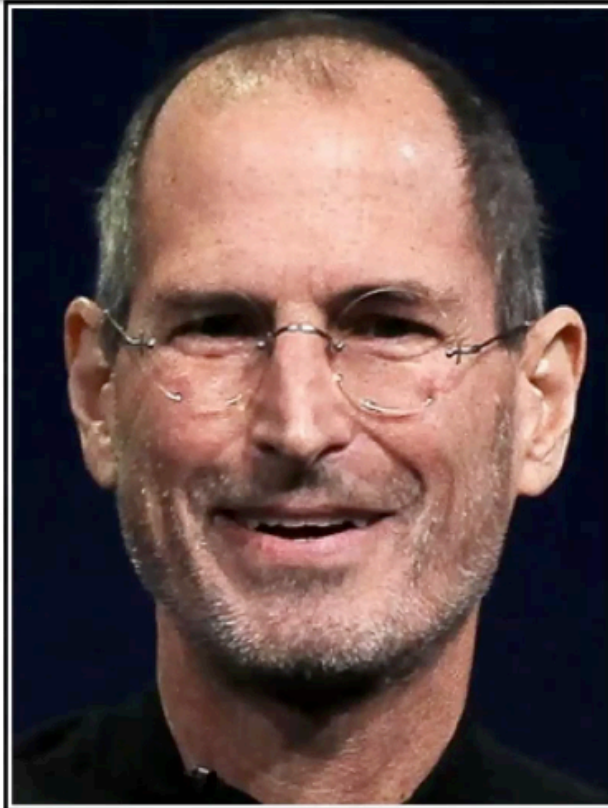


The Research Team

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It's Time To Know Your Customer!



Get closer than ever to your
customers. So close that you tell
them what they need well before
they realize it themselves

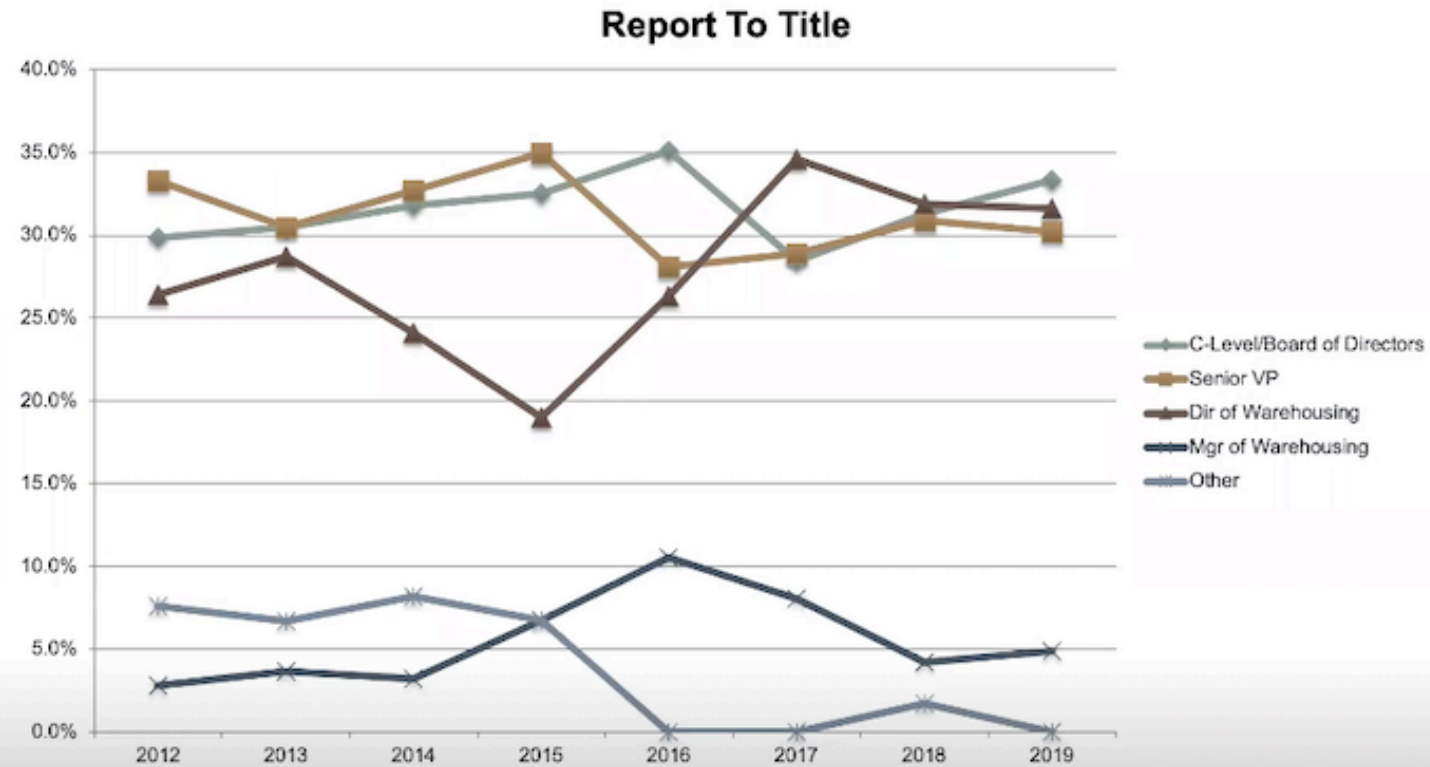
— Steve Jobs —

AZ QUOTES

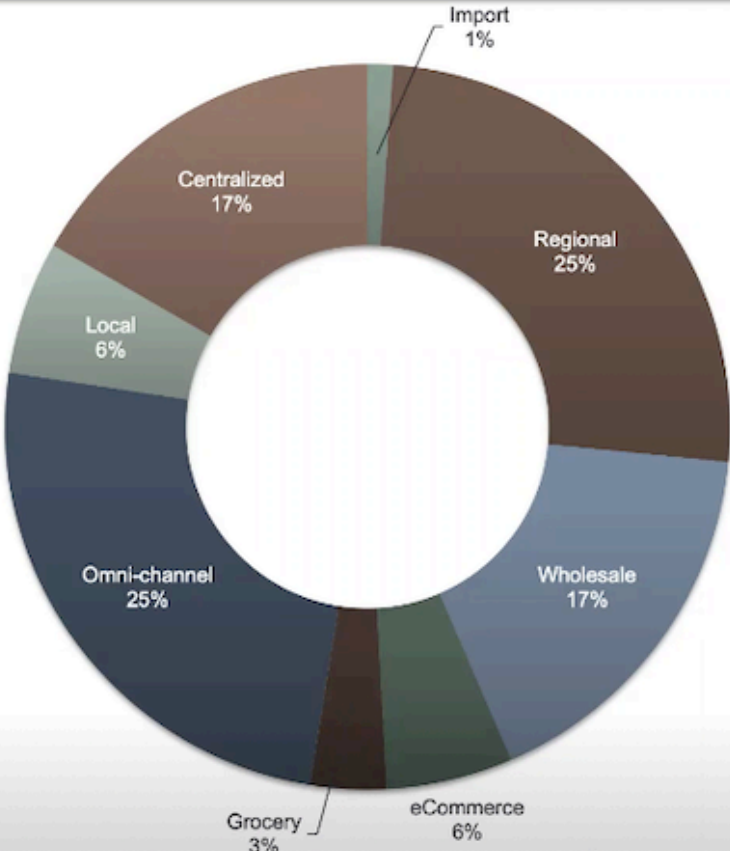
Our Discussion Today

- Profile of our respondents
- In A Customer State of Mind
- Balancing Act
- Omni-channel Acceleration
- Post - Corona

Seniors Want to Know...



What Kind of Facility Are You?



Source: Warehousing Education and Research Council (WERC); Metrics in the DC: Annual Workplace Study.

Making A Case

Majority (70.4%) focus on case picking vs. pallets

Metric	% of Total	% Cases vs Pallet
Broken Case Picking	41.4%	70.4%
Full Case Picking	29.0%	
Partial Pallet Picking	5.0%	29.6%
Full Pallet Picking	24.6%	

Primary Customer Served



Manufacturer

18.4%



**Wholesaler/
Distributor**

31.3%



Retailer

24.6%

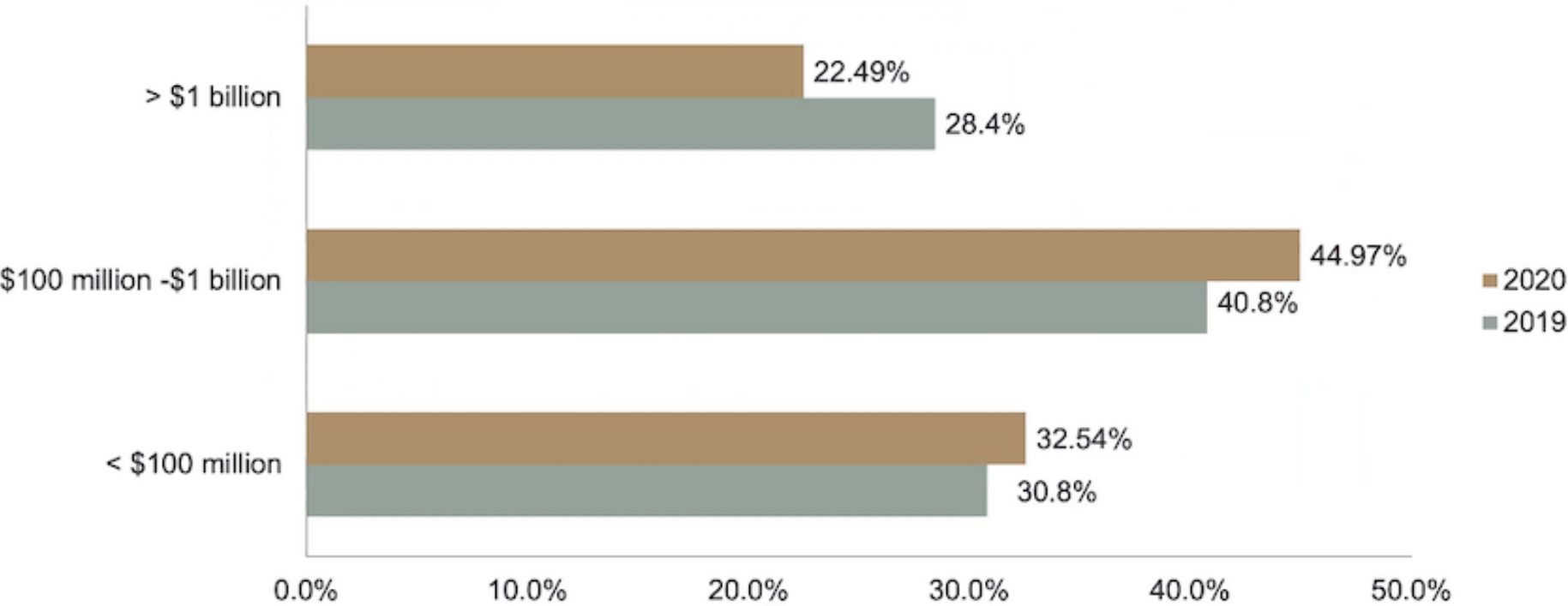


**End User/
Consumer**

25.7%

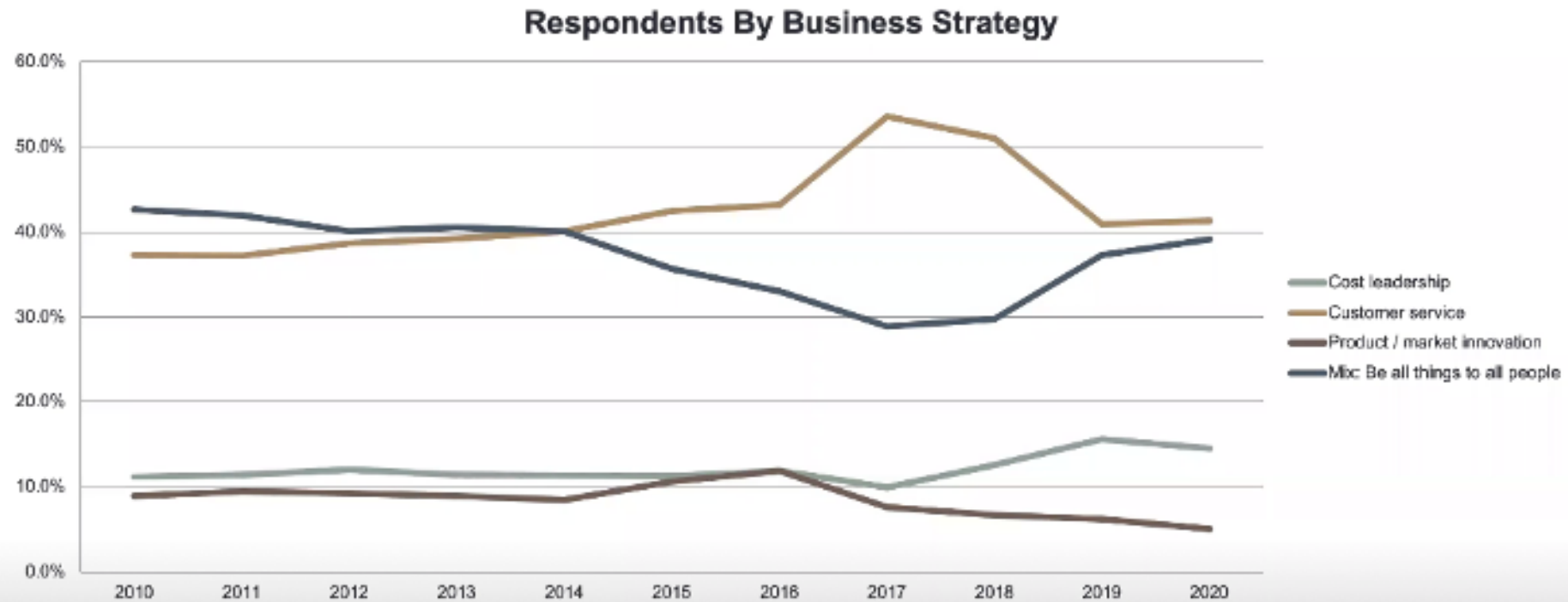
**Respondents serve customers across
the supply chain**

Demographics by Company Size



Source: Warehousing Education and Research Council (WERC); Metrics in the DC: Annual Workplace Study.

What's Your Strategy?



Changing With the Wind...

Top 12 Metrics for 2020		
Metrics	2019	2018
1. Average Warehouse Capacity Used - Capacity	2	1
2. Shipped Complete per Customer Order - POI Component	32	34
3. Order Picking Accuracy (percent by order) - Quality	1	2
4. Percent of Orders with On Time Delivery - POI Component	31	33
5. Peak Warehouse Capacity Used - Capacity	3	3
6. Shipped Damage Free (Outbound) - POI Component	33	35
7. On-time Shipments - Customer	4	5
8. Correct Documentation - POI Component	34	36
9. Inventory Count (Percent by Location) - Capacity	5	10
10. Dock to Stock Cycle Time, in Hours - Inbound Operations	9	16
11. Order Fill Rate - Outbound Operations	7	14
12. Part Time Workforce to Total Workforce - Employee	11	7

Keeping Balance?

Balanced Scorecard (BSC)



Customer Metrics

Customer Metrics*	Major Opportunity	Disadvantage	Typical	Advantage	Best in Class	MEDIAN
On time shipments	Less than 93.38%	≥ 93.38 and $< 97\%$	≥ 97 and $< 98.96\%$	≥ 98.96 and $< 99.7\%$	$\geq 99.7\%$	98.00%
Total order cycle time	Greater than 48 Hours	≥ 24 and < 48	≥ 8 and < 24	≥ 2.92 and < 8	< 2.92 Hours	18
Internal order cycle time	Greater than 40 Hours	≥ 16.4 and < 40	≥ 6 and < 16.4	≥ 2 and < 6	< 2 Hours	8
Backorders as a percent of total lines	Greater than 10%	≥ 4 and $< 10\%$	≥ 1.12 and $< 4\%$	≥ 0.05 and $< 1.12\%$	< 0.05	2.20%

Operations Metrics - Inbound

Operations Metrics	Major Opportunity	Disadvantage	Typical	Advantage	Best in Class	MEDIAN
Inbound Metrics						
Dock to Stock Cycle Time, in Hours	Greater than 24 Hours	≥ 12.24 and < 24	≥ 4 and < 12.24	≥ 2 and < 4	< 2 Hours	8
Lines Received and Put Away per Hour	Less than 6.7 per Hour	≥ 6.7 and < 15	≥ 15 and < 25	≥ 25 and < 60	≥ 60 per Hour	20
Percent of supplier orders received with correct documents	Less than 82.2%	≥ 82.2 and $< 95\%$	≥ 95 and $< 98\%$	≥ 98 and $< 99.1\%$	$\geq 99.1\%$	97.00%
Percent of supplier orders received damage free	Less than 95%	≥ 95 and $< 98\%$	≥ 98 and $< 99\%$	≥ 99 and $< 99.2\%$	$\geq 99.2\%$	98.00%
On time receipts from supplier	Less than 80%	≥ 80 and $< 90\%$	≥ 90 and $< 95\%$	≥ 95 and $< 98.04\%$	$\geq 98.04\%$	95.00%

Operations Metrics - Outbound

Operations Metrics	Major Opportunity	Disadvantage	Typical	Advantage	Best in Class	MEDIAN
Outbound Metrics						
Fill rate - line	Less than 92%	≥ 92 and $< 97\%$	≥ 97 and $< 99\%$	≥ 99 and $< 99.5\%$	$\geq 99.5\%$	98.00%
Order fill rate	Less than 93.2%	≥ 93.2 and $< 97\%$	≥ 97 and $< 99\%$	≥ 99 and $< 99.8\%$	$\geq 99.8\%$	98.35%
Lines picked and shipped per hour	Less than 10 per Hour	≥ 10 and < 18	≥ 18 and < 27.6	≥ 27.6 and < 42	≥ 42 per Hour	20.5
Orders picked and shipped per hour	Less than 3.3 per Hour	≥ 3.3 and < 8.08	≥ 8.08 and < 18.8	≥ 18.8 and < 38.2	≥ 38.2 per Hour	13
On time ready to ship	Less than 94.5%	≥ 94.5 and $< 97.97\%$	≥ 97.97 and $< 99\%$	≥ 99 and $< 99.8\%$	$\geq 99.8\%$	98.4

Financial Metrics

Financial Metrics	Major Opportunity	Disadvantage	Typical	Advantage	Best in Class	MEDIAN
Distribution costs as a percent of sales	Greater than 12.4%	≥ 7 and $< 12.4\%$	≥ 4.3 and $< 7\%$	≥ 2.45 and $< 4.3\%$	$< 2.45\%$	5.15%
Distribution cost per unit shipped	Greater than \$5.68	$\geq \$2.06$ and $< \$5.68$	$\geq \$0.974$ and $< \$2.06$	$\geq \$0.332$ and $< \$0.974$	$< \$0.332$	\$1.45
Distribution costs as percent of COGS	Greater than 32%	≥ 10 and $< 32\%$	≥ 5.97 and $< 10\%$	≥ 3.48 and $< 5.97\%$	$< 3.48\%$	8.50%
Days on hand finished goods inventory	Greater than 90 Days	≥ 60 and < 90	≥ 35 and < 60	≥ 21 and < 35	< 21 Days	46

Capacity/Quality Metrics

Capacity / Quality Metrics	Major Opportunity	Disadvantage	Typical	Advantage	Best in Class	MEDIAN
Average warehouse capacity used	Less than 75%	≥ 75 and $< 80\%$	≥ 80 and $< 85\%$	≥ 85 and $< 90\%$	$\geq 90\%$	85.00%
Peak warehouse capacity used	Less than 85%	≥ 85 and $< 90\%$	≥ 90 and $< 95\%$	≥ 95 and $< 100\%$	$\geq 100\%$	92.00%
Honeycomb percent	Less than 6.4%	≥ 6.4 and $< 20\%$	≥ 20 and $< 50\%$	≥ 50 and $< 77.74\%$	$\geq 77.74\%$	30.00%
Inventory count accuracy by location	Less than 93%	≥ 93 and $< 98\%$	≥ 98 and $< 99.2\%$	≥ 99.2 and $< 99.9\%$	$\geq 99.9\%$	99.00%
Order picking accuracy (percent by order)	Less than 98%	≥ 98 and $< 99.2\%$	≥ 99.2 and $< 99.712\%$	≥ 99.712 and $< 99.9\%$	$\geq 99.9\%$	99.50%

Employee Metrics

Employee Metrics	Major Opportunity	Disadvantage	Typical	Advantage	Best in Class	MEDIAN
Annual work force turnover	Greater than 40%	≥ 22 and $< 40\%$	≥ 11.8 and $< 22\%$	≥ 4.7 and $< 11.8\%$	$< 4.7\%$	15.50%
Overtime hours to total hours	Greater than 12%	≥ 8 and $< 12\%$	≥ 5 and $< 8\%$	≥ 3 and $< 5\%$	$< 3\%$	6.85%
Part-time workforce to total Workforce	Greater than 10%	≥ 2 and $< 10\%$	≥ 0 and $< 2\%$	≥ 0 and $< 0\%$	$< 0\%$	0.25%
Contract employees to total workforce	Greater than 30%	≥ 12 and $< 30\%$	≥ 5 and $< 12\%$	≥ 0 and $< 5\%$	$< 0\%$	6.00%
Unplanned absence percentage	Greater than 10%	≥ 6 and $< 10\%$	≥ 5 and $< 6\%$	≥ 2 and $< 5\%$	$< 2\%$	5.00%
Cross trained percentage	Less than 30%	≥ 30 and $< 64.86\%$	≥ 64.86 and $< 80\%$	≥ 80 and $< 93\%$	$\geq 93\%$	75.00%

Perfect Order Index Metrics

Perfect Order Index Metrics	Major Opportunity	Disadvantage	Typical	Advantage	Best in Class	MEDIAN
Percent of orders with on time delivery	Less than 92.68%	≥ 92.68 and $< 96.24\%$	≥ 96.24 and $< 98.8\%$	≥ 98.8 and $< 99.48\%$	$\geq 99.48\%$	98.10%
Shipped Complete per Customer Order	Less than 93.04%	≥ 93.04 and $< 97.1\%$	≥ 97.1 and $< 99\%$	≥ 99 and $< 99.56\%$	$\geq 99.56\%$	98.05%
Shipped Damage Free (Outbound)	Less than 95.46%	≥ 95.46 and $< 98.6\%$	≥ 98.6 and $< 99.2\%$	≥ 99.2 and $< 99.7\%$	$\geq 99.7\%$	99.00%
Correct Documentation	Less than 93.76%	≥ 93.76 and $< 98.16\%$	≥ 98.16 and $< 99.08\%$	≥ 99.08 and $< 99.8\%$	$\geq 99.8\%$	99.00%

Cash to Cash Metrics

Cash to Cash Metrics	Major Opportunity	Disadvantage	Typical	Advantage	Best in Class	MEDIAN
Inventory days of supply	Greater than 94 Days	≥ 60.9 and < 94	≥ 45 and < 60.9	≥ 30 and < 45	< 30 Days	56
Average days payable	Greater than 60 Days	≥ 45 and < 60	≥ 30 and < 45	≥ 25 and < 30	< 25 Days	35.5
Average days of sales outstanding	Greater than 58.16 Days	≥ 36.2 and < 58.16	≥ 26.12 and < 36.2	≥ 3.4 and < 26.12	< 3.4 Days	30

Keeping Up Is Hard To Do!

Quintile Ranking	Decline in Performance	Improved Performance	Maintained Performance
Best in Class	14	11	11
Median	13	12	11
Major Opportunity	11	15	10

Distribution Channels Are Changing!

E-commerce/Omnichannel Top 12 Metrics for 2020	
1. Average Warehouse Capacity Used - Capacity	
*1. Shipped Complete per Customer Order - Customer	
3. Peak Warehouse Capacity Used - Capacity	
*3. Correct Documentation – Customer	
5. On-time Shipments – Customer	
*5. Order Picking Accuracy (percent by order) - Quality	
*5. Cross Trained Percentage - Employee	
8. Percent of Orders with On Time Delivery - Customer	
*8. Shipped Damage Free (Outbound) - Customer	
10. Part Time Workforce to Total Workforce - Employee	
11. Overtime Hours to Total Hours - Employee	
12. Dock to Stock Cycle Time, in Hours - Inbound Operations	
*12. Inventory Count (Percent by Location) - Quality	
*12. Annual Workforce Turnover - Employee	
*Indicates tie in number utilized	

Omni-channel – What's the Difference!

- More metrics utilized
- People carry the load
- Higher medians
 - Cross-training
 - Overtime hours
 - Annual workforce turnover
- Slower operations
 - Dock to stock Cycle time
- Capacity focus





It's Time to Think Strategically!!

DC Measures Wrap-up

- The Pre-Corona world.....
 - Robotics
 - Tariffs
 - Flexible hours for warehouse workers
 - Freight rate volatility
 - Uncertainty is certain.....

The Victors Over The Virus

- The short - term Post-Corona world
 - People
 - Process
 - Technology
- The long - term Post-Corona world
 - Regression toward the mean
 - How we adapt is contingent on forces well beyond our control

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