WERC

DC Measures

2019 Snapshot in Time

COMPLETE 2019 *DC MEASURES* REPORT AVAILABLE ONLINE AT WERC.ORG

> "If we continue to develop our technology without wisdom or prudence, our servant may prove to be our executioner." *—Omar Bradley (General, US Army Ret.)*

Top Measures for 2019

HIGHLIGHTS OF THE FULL REPORT

As we examine the results of all of the benchmark performance measures, we think about what it means to focus on continuous improvement and how difficult it is to maintain consistent performance over time. Considering changes in performance from year to year, only small gains were made. In terms of performance improvement this year, Median performers, lead the pack again with improved performance on 13 of the 36 measures. Nipping at their heels are Major Opportunity performers, who improved performance on 12 of the measures. Bringing up the rear is Best-in-Class performers, who improved performance on 8 measures **(See Table 1)**.

TABLE 1. 2019 PERFORMANCE INCONSISTENCY			
Performers	Decline	Improved	Maintained
Best-in-Class	17	8	11
Median	14	13	9
Major Opportunity	14	12	10

Performance management thrives on consistency and who's managing performance best is shown by looking at how consistent the different groups were from year to year. This is one area that Best-in-Class leads with performers maintaining performance on 11 of the 36 measures. In most cases for Best-in-Class, it's not possible to move to higher performance without significant investment and risk.

While Best-in-Class leads the group on being consistent, overall, Best-in-Class lost the most ground this year. Performance declined for Best-in-Class on 17 of the measures. Median and Major Opportunity performers shined in this year's study where both groups only saw performance decline on 14 of the measures. Major Opportunity worked really hard making a number of gains in performance compared to 2018.

IT'S QUANTITATIVE

The benchmarking study is most likely relevant to your company regardless of the industry, size, or situation you operate. In the majority of cases, when it comes to DC performance, we don't see statistically significant differences among firms based on any of the demographics. Quantitative performance is quantitative performance. Are there differences? No doubt. These differences are primarily qualitative in nature. This is why we continue to stress using both quantitative and qualitative benchmarking.

WERC Thanks These Study Sponsors: KENCO Logistics   Yale   UKWA

### PERFORMANCE = HIGH PRIORITY OF SENIOR LEADERSHIP

Those who report directly to the "C Suite" and/or the Board of Directors increased once more, up almost 7% from last year to 33.3%.

DIVERSE INDUSTRIES, OPERATIONS AND FIRM SIZES

The total for 2019 was 489 individual responses. Since not every question was answered and to increase the predictive powers of the benchmarks, responses from 2018 were added to this year's data set after validating that there were not significant differences between the two years. The largest group of respondents reported their title as Manager (47.8%), while Director (27.2%) and Senior VP (15.8%) were the second and third largest groups. Executives represent 6.1%.

INDUSTRY TYPE

Wholesale/Distributors moved into the top place for industry, representing 28.6% of the respondents. Manufacturing, at 26.4%, moved down from the top slot, with Retail falling 37% to fourth representing 16.0% of respondents. The third largest industry demographic is Third-party Warehousing at 19.5%. This is quite a change from 2018, where Manufacturing and Retail made up the largest industry demographics, followed by Third-party Warehousing **(See Figure 1)**.
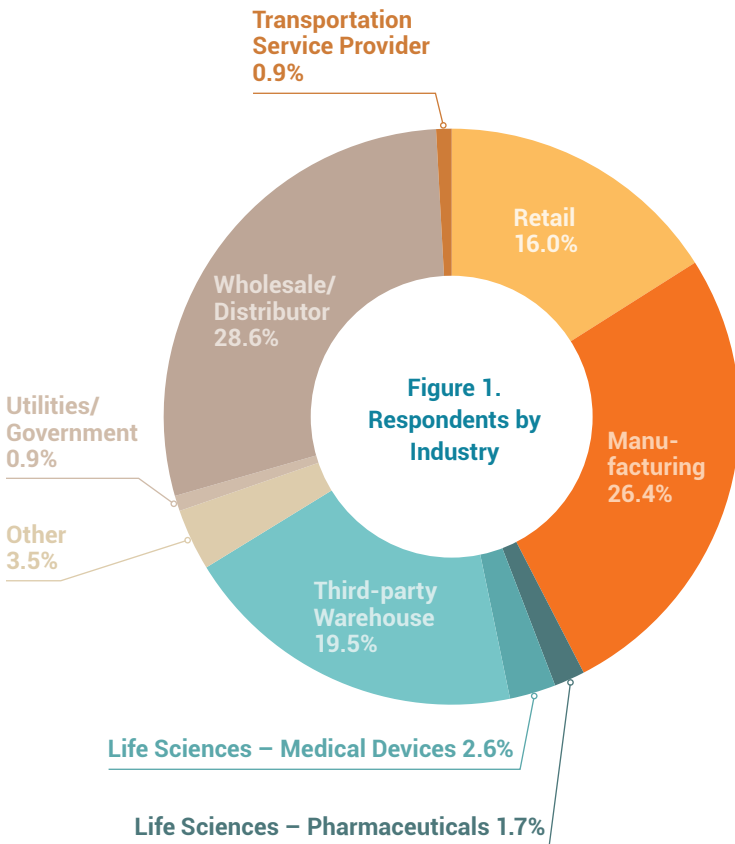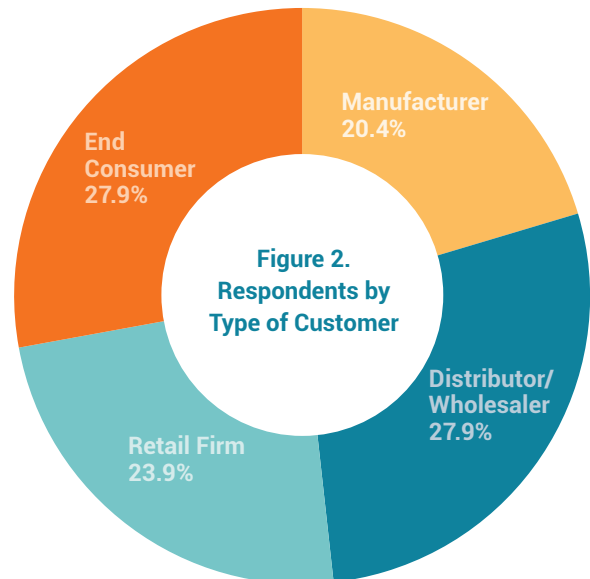
DC OPERATION

The majority of facilities (64.4%) are picking cases rather than pallets. Compared to 2018, respondents primarily held their positions, with slight changes. The loss this year was to case picking—broken case declining 6.9%. The gains, while small, were to full case, partial pallet, and full pallet picking. In calculating percentages for the type of work performed, we only used responses where a majority of the respondent's activity was in one of the four classifications.

CUSTOMER SERVED

This year over 51% of respondents reported their customers were either an End Consumer or a Retail Firm.

Respondents reported an 8.8% increase in Manufacturers as primary customers and those reporting Distributor/Wholesaler as a primary customer increased 7.1% from the 2018 study as well. The responses reporting the End Consumer as their primary customer dropped almost 10% from the 2018 study **(See Figure 2)**.

Figure 2. Respondents by Type of Customer

- Manufacturer 20.4%
- Distributor/Wholesaler 27.9%
- Retail Firm 23.9%
- End Consumer 27.9%

Figure 1. Respondents by Industry

- Transportation Service Provider 0.9%
- Retail 16.0%
- Wholesale/Distributor 28.6%
- Utilities/Government 0.9%
- Other 3.5%
- Manufacturing 26.4%
- Third-party Warehouse 19.5%
- Life Sciences – Medical Devices 2.6%
- Life Sciences – Pharmaceuticals 1.7%

"Performance management thrives on consistency and who's managing performance best is shown by looking at how consistent the different groups were from year to year."

BUSINESS AND OPERATIONAL STRATEGY

To determine the effect business strategy has on performance, we asked respondents to indicate the overall business strategy for their business unit or division with respect to cost leadership, customer service, innovation, or simply "being all things to all people" **(See Figure 3)**.

This year those reporting a Cost Leadership strategy increased another 23% compared to 2018. Product/Market Innovation continues course corrections as it decreases again this year, down slightly from 6.6% to 6.2%.

2016 was an important year for firm strategy for DCs. The most prominent strategy was Customer Service—and that has remained true over the last three years and maintains the title again this year, with 40.9% of respondents. The Mix strategy did regain some ground, up significantly to 37.3%, an increase of 25.5% from last year. These may be short-term changes. As the economy improved in 2018 we believe more respondents reversed course to focus their attention back to "being all things to all people."

Respondents were asked whether the global, domestic, and regional operations were managed internally (62.0%) or by a third party (20.0%) or a mix of both (17.8%).
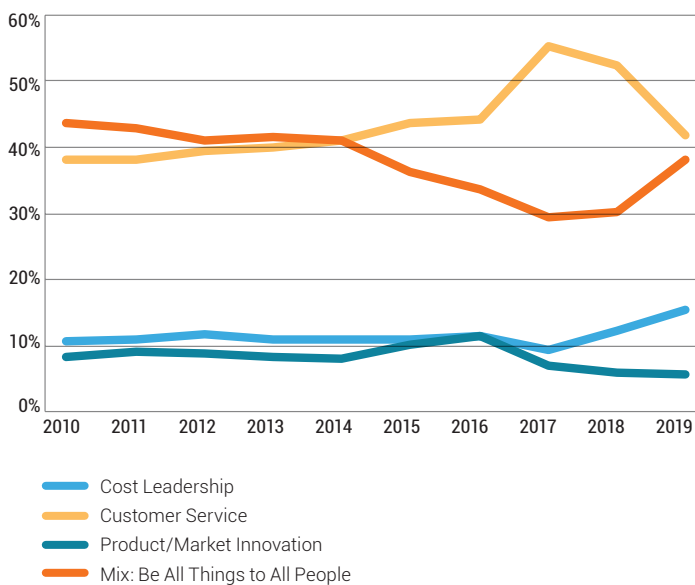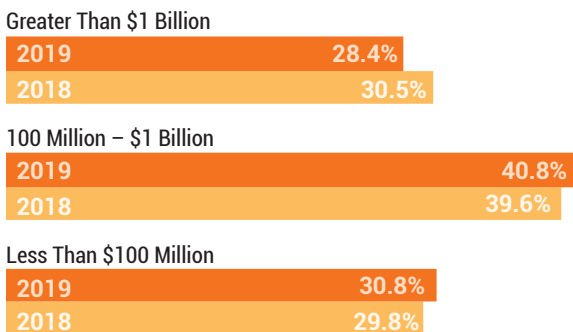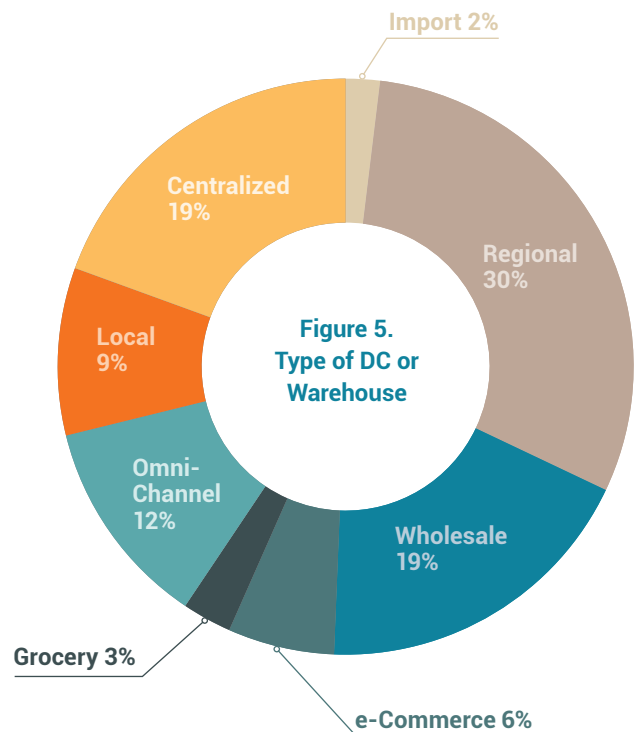
COMPANY SIZE

Each year respondents indicate the relative size of their company by reporting their annual sales. This question helps determine what effect size had on the kinds and number of metrics used, changes in performance, and to creating additional benchmarks based on size **(See Figure 4)**.

Companies with annual sales less than $100 million comprised 30.8% of our total respondents, a slight increase from 2018. Participants having greater than $1 billion in annual sales comprise 28.4% of the respondents. Those companies reporting annual sales between $100 million and $1 billion represent the largest group at 40.8%.

FACILITY TYPE

Regional, Centralized, and Wholesale facility types are the top three types of facilities in the study. This year 87.3% of the respondents reported North America as their location, while the remaining 12.7% of respondents are from countries outside of North America **(See Figure 5)**.

Figure 3. Respondents by Business Strategy

- Cost Leadership
- Customer Service
- Product/Market Innovation
- Mix: Be All Things to All People

> "As the economy improved in 2018 we believe more respondents reversed course to focus their attention back to 'being all things to all people'."

Figure 4. Respondents by Company Size

Greater Than $1 Billion

2019	28.4%
2018	30.5%

100 Million – $1 Billion

2019	40.8%
2018	39.6%

Less Than $100 Million

2019	30.8%
2018	29.8%

Figure 5. Type of DC or Warehouse

- Import 2%
- Centralized 19%
- Regional 30%
- Local 9%
- Omni-Channel 12%
- Wholesale 19%
- Grocery 3%
- e-Commerce 6%

TOP METRICS

Table 2 shows the Top 5 most popular metrics used and how that has changed since the 2018 study. The measures are grouped into five balanced sets – customer, operational, financial, capacity/quality and employee – plus the additional set related to cash-to-cash cycle measurement.

The biggest change is the focus from employees to operations. In 2018, five of the metrics were focused on employees. This year only two employee metrics remain on the list. Two of the operations metrics are new to the list this year, dock to stock cycle time and order fill rate. Dock to stock cycle time hasn't made an appearance in the top 12 since 2016, when it was the fourth most used measure of performance. Order fill rate, one of the harder measures to game on the list, is back jumping seven spots from 14th in 2018. Shifting focus from units or lines filled to orders will only continue to increase as more customers place smaller, more frequent orders.

TABLE 2. TOP 5 METRICS FOR 2019		
Metrics	**2018**	**2017**
1. Order Picking Accuracy (percent by order) – **Quality**	2	2
2. Average Warehouse Capacity Used – **Capacity**	1	1
3. Peak Warehouse Capacity Used – **Capacity**	3	4
4. On-time Shipments – **Customer**	5	3
5. Inventory Count Accuracy by Location – **Quality**	10	10

WHAT'S MISSING?

In terms of having a balanced scorecard, where multiple measures covering different aspects of performance are used to determine success, balance is still missing. The mix of measures being used suggests we're working to fill orders, in the correct quantities, and on time. To enable that performance, we are planning for inventory and safety stock, focusing on our people as well as coordinating with suppliers and vendors to ensure they are responsive to inbound damages. However, we're still missing a financial measure on the Top 5 list.

INTERPRETING THE BENCHMARKING RESULTS

A primary objective for this study is to provide a benchmark of key measures by industry and type of business and to see how these benchmarks are changing (if at all) over time. As in previous benchmark studies, we primarily looked at two benchmarks: median performance and best practice performance. We chose the median as it is not easily swayed by outliers. As in the past, the benchmarking data is reported using a "quintile" format which presents the data on a five-point maturity scale that reflects where the respondents are situated with respect to the journey toward "best practice."

It gives readers an improved tool for judging their own performance and what constitutes best practice. To be considered best practice, the level of performance would have to fall within the top 20% of all respondents **(See Table 3)**.✳

> "On-time shipments, once the darling of the customer service metrics for warehousing and distribution, is crawling back up one spot from fifth place in 2018."

TABLE 3: QUINTILE PERFORMANCE CLASSIFICATION FOR METRICS						
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7
Customer Metrics*	**Major Opportunity**	**Disadvantage**	**Typical**	**Advantage**	**Best-in-Class**	**Median**
On-time Shipments	Less than 93.4%	>= 93.4 and < 97.0%	>= 97.0 and < 99.0%	>= 99.0 and < 99.7%	>= 99.7%	98
Capacity Metrics*	**Major Opportunity**	**Disadvantage**	**Typical**	**Advantage**	**Best-in-class**	**Median**
Average Warehouse Capacity Used	Less than 75.0%	>= 75.0 and < 80.0%	>= 80.0 and < 85.58%	>= 85.58 and < 92.54%	>= 92.54%	85
Peak Warehouse Capacity Used	Less than 85.8%	>= 85.8 and < 92.0%	>= 92.0 and < 95.0%	>= 95.0 and < 100%	>= 100%	95
Quality Metrics	**Major Opportunity**	**Disadvantage**	**Typical**	**Advantage**	**Best-in-class**	**Median**
Inventory Count Accuracy by Location	Less than 90.0%	>= 90.0 and < 97%	>= 97 and < 99.012%	>= 99.012 and < 99.9%	>= 99.9%	98.4
Order Picking Accuracy (Percent by Order)	Less than 98.0%	>= 98.0 and < 99.0%	>= 99.0 and < 99.6%	>= 99.6 and < 99.89%	>= 99.89%	99.4

Legend: > greater than; >= greater than or equal to; < less than

*Note: Average and Peak Warehouse Capacity does not always reflect best practices. Due to the calculations for quintiles, we have continually reported that Best-in-Class is above 90%. A high average warehouse capacity is not beneficial; studies have shown that an average warehouse capacity between 80 and 85% allows the warehouse to respond to shifts in demand.

People, Processes and Technology

This handout provides a summary of most of the data collected for the *DC Measures* study. We urge you to get the full report at werc.org to get all of the explanations and conclusions drawn by our knowledgeable researchers. Below is a glimpse into the full report.

When we conduct the *DC Measures* study, we always anticipate what the data will reveal about how companies are utilizing metrics to drive their **performance initiatives**. We learn what areas of performance are of most concern to our respondents as they work to keep supply chains moving and helping their customers meet demand in dynamic markets around the world. Usually, we expect to see similar measures utilized by our respondents from year to year.

This year was a little different. There was quite a shift in the top 12 metrics, which indicates a shift in the areas that DCs are concerned. While there is still concern in the industry regarding the supply chain talent shortage, the booming economy has created greater concerns in other areas.

We continue our deep dive into the impact of **technology adoption** on our DCs. Last year, we discovered that the impact of technology was not as strong as we hypothesized. So we decided to explore the impact of technology on other areas in the DC, specifically

process efficiency. Theoretically, new technologies should drive efficiency in our processes, thus reducing the number of steps we have at each stage of our operational processes. We hope the results drive internal discussion concerning the approach firms use when considering implementing new technologies, particularly in light of talent development and process improvement.

Lastly, we have been collecting data the past few years on **supply chain agility** and **workforce agility and flexibility**. As warehouse and distribution networks continue to increase in complexity and demand more responsiveness and speed from their supply chain partners, it's important to understand how important the agility and flexibility in our workforce is to remain competitive. Not only does this impact performance, but also the ability for our supply chains to remain agile.

We explore all of this and what it means in terms of the integration of people, processes and technology. It is important to take a balanced approach, with careful consideration of all areas of our organizations as we make investments in talent, process improvement and technology adoption. Finally, we provide all of the measures used in the data for you to use to benchmark your performance and drive continuous improvement in your DC.✹

About the Study

WERC Thanks Its Research Partner: **DC VELOCITY**

2019 marks the 16th year of the *DC Measures* study. The heart of this study is to eradicate bad warehousing practices and every January, the survey is launched via an email invitation to WERC members and *DC Velocity* readers to capture key operational metrics. Survey participants are asked to report their actual levels of performance for 2018. This handout is a high-level review of these key metrics to whet your appetite for the complete report and to help you start on the road to continuous improvement and best practices.

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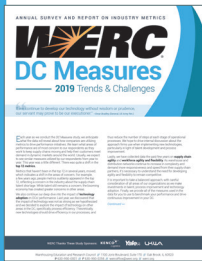**DONNIE F. WILLIAMS, JR., Ph.D.**

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Using *DC Measures* Effectively

2019 *DC Measures*

Begin by identifying the quantitative metrics your operations will focus on and noting how your facility ranks compares to others. Are you tracking the metrics that will produce the best return for your company?

The full study report captures 36 key operational metrics that are most meaningful for distribution professionals. The measures have been grouped into sets – customer, operational, financial, capacity/quality and employee/safety, perfect order, and cash-to-cash cycle measurement. There's a list of definitions for each metric AND how to calculate each. Used from year to year and across your network, these details provide a strong base and consistent approach to reporting performance.

2019 *DC Measures* Comparative Report

This is a customized report for your company based on the most current *DC Measures* data. WERC researchers will work with your team to develop an interactive tool to compare your data to six different demographics from the *DC Measures* Study (Business Strategy, Sales, Industry, Operations, Facility Type, Customer Served). You'll receive a color-coded Excel worksheet for visual impact.

Warehouse Manager's Guide for Benchmarking, 2nd Edition

This publication explains the kinds of benchmarking, why it's important to benchmark, how to choose the right metrics, how to analyze your company's performance, and techniques for communicating to get the results you need. Additionally, you'll find methods for tracking and communicating plans and progress to others. Consider it a road map as you plan for the future.

Warehousing and Fulfillment Process Benchmark & Best Practices Guide, 2nd Edition

Complementing the *DC Measures* report is this 3-ring binder that explains qualitative warehousing best practices. It can be used as a workbook to rank your operations against industry standards in eight specific process areas using a quintile format similar to *DC Measures.* Use it to complete your overall performance improvement program for maximum benefit.

WERC Warehouse Assessment and Certification Program

In full cooperation with your team, the WERC assessor comes to your facility to assess its capabilities and performance on core warehousing functions. The review is based on well-vetted industry standard-grading methodology by independent certified auditors who benchmark your warehouse operations against a 5-point scale. In a presentation scheduled by you, the researcher explains the process, outlines your specific results, holds a workshop with your team that includes suggestions for improvements and leaves your team with a beginning action plan.

Why WERC?

VISIT WERC.ORG FOR ORDERING INFORMATION

WERC exists to lead the warehousing industry, advance warehousing science and develop competitive advantage for both individuals and corporations. In this role, WERC responds to changes in industry and our stakeholders' needs by delivering the practical tools that enable success in today's dynamic market and the market of the future. Like you, we are on a path of continuous improvement, and every year we strive to bring you the data and tools for turning measures into actionable plans.

WERC

Better Everywhere