



2016 DC
Measures
Report Available
for Purchase
Online



Top Metrics From DC Measures 2016

What You Need to Know

Each year in January, the DC Measures survey is launched via an email invitation to WERC members and DC Velocity readers. Participants are asked to report their actual levels of performance for 2015. The study captures 50 key operational metrics that are close to the heart of most distribution center professionals. The measures have been grouped into 5 balanced sets – customer, operational, financial, capacity/quality and employee/safety – plus the additional sets related to perfect order and cash-to-cash cycle measurement.

Our researchers are among the best in the business, and we are proud to partner with them.

Joseph Tillman, CTL is an enthusiastic and dedicated professional, who offers supply chain education and research through his company TSquared Logistics. Joe has a keen interest in all things supply chain and uses his high-energy approach to life to author articles for industry publications, blog on young professionals for *DC Velocity* magazine and speak to supply chain groups. Joe is certified in transportation and logistics (CTL) by AST&L and SCOR-Professional certified by the Supply Chain Council.

Karl Manrodt, PhD, is a Professor of Logistics at Georgia College & State University and the Director of the Master of Logistics and Supply Chain Management online program. He has served on the Board of Directors for the CSCMP as well as leadership roles with WERC. Dr. Manrodt contributes to numerous academic and practitioner journals, is the co-author of six books and has given over 150 presentations worldwide.

Donnie Williams, PhD, is an Assistant Professor of Logistics/ Supply Chain Management in the J. Whitney Bunting College of Business at Georgia College & State University. He focuses on using applied research to bring greater depth and understanding of the industry to graduate and undergraduate students in logistics and supply chain management.

WERC thanks the sponsoring companies who helped make this report possible.



Resources for Using DC Measures Effectively

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WHEN IT COMES TO TIPS AND TOOLS FOR BENCHMARKING, THINK WERC



2016 DC Measures

The complete report is where you 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 50 key operational metrics that are most meaningful for distribution professionals. The measures have been grouped into five sets – customer, operational, financial, capacity/quality and employee/safety – plus additional sets related to perfect order and cash-to-cash cycle measurement. There's a list of definitions for each metric in the study 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.



2016 DC Measures Comparative Report

To support your metrics study, our researchers have developed an Excel spreadsheet for you to use in analyzing your data. You'll be able to produce your own customized report using measures from the most current DC Measures.



Warehouse Manager's Guide for Benchmarking

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 roadmap as you plan for the future.



Warehousing and Fulfillment Process Benchmark & Best Practices Guide

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

Another opportunity to work with WERC researchers. In full cooperation with

your team, the researcher 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, including suggestions for improvement, and leaves your team with the beginning of an action plan.

Metric Partner

TECSYS®

A Market-Leading Provider of Warehouse, Distribution and Delivery Management Software

TECSYS provides industry-expert services to high-volume distribution industries, enabling customers to significantly streamline logistics operations, reduce cost and improve customer service. TECSYS has exclusively embedded in their Warehouse Management System (WMS) the metrics of high performers in WERC's DC Measure's annual industry study. With TECSYS' WMS, you will have the unique capability to compare, side-by-side, your internal warehouse performance results to the highest performers in your industry. You will also be able to execute, on an ongoing basis, an action plan to correct, improve and sustain superior supply chain performance and truly claim "best-in-class" status!

WAREHOUSING EDUCATION AND RESEARCH COUNCIL



THE ASSOCIATION FOR LOGISTICS PROFESSIONALS

Why WERC?

As the recognized leader in education and research for the warehouse and logistics management field and its role in the supply chain, WERC focuses on advancing the art and science of warehousing/distribution and helping drive the warehouse profession to new levels.

In this role, WERC is committed to spreading the word about the hard work and dedicated people who keep the distribution system running smoothly, efficiently and economically. 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.

2016 DC Measures

Purpose: to help practitioners gain a better understanding of key distribution metrics and how operational performance is changing over time.

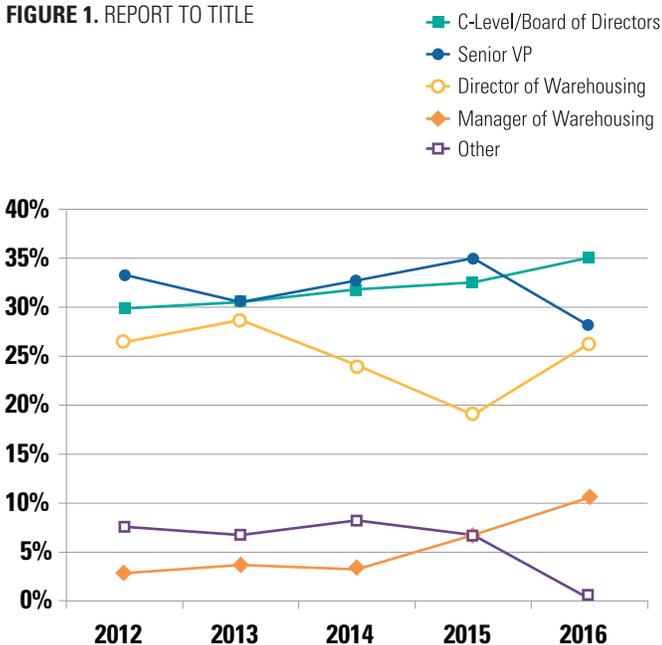
Senior Management Interest in Performance Measures

The board of directors and executives set the vision for the organization. Senior management's role is to set a course to achieve the vision. The execution of that vision is left for the operational folks – directors, managers, supervisors, and shop floor employees. No doubt senior management is very interested in how well the vision is being executed. This year is no different as we see in [Figure 1](#), senior management's interest in the metrics study remaining quite high (the number of respondents who report directly to the "C Suite" and/or the Board of Directors has increased each year since 2012). Over 35% of respondents said they report directly to the "C Suite" and/or the Board of Directors compared to just 29.9% of respondents in 2012.

Respondents Represent Diverse Industries, Operations and Firm Sizes

There were 315 individual responses for 2016. Since not every question was answered and to increase the predictive powers of the benchmarks, responses from 2015 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 (44.3%), while Director (25.2%) and Senior VP (18.3%) were the second and third largest groups. Executives represent 5.2% and Other is at 7.0%.

FIGURE 1. REPORT TO TITLE



Industry Types

[Figure 2](#) provides a breakdown of the various business segments that participated in the study. There is a small change from prior years as both manufacturing and retail industry segments are the largest demographic base for the study in 2016.

DC Operation

Respondents were asked how goods moved through their DC. The majority of facilities (66.5%) are picking cases rather than pallets. (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.)

This year's respondents moved away from full case picking (28.5%), which is represented by shifts to broken case (38.0%) and full pallet picking (20.2%) operations. Partial pallet picking came in at 13.3%. Total percentages for 2015 case picking was 66.5% and 33.5% for total pallet picking.

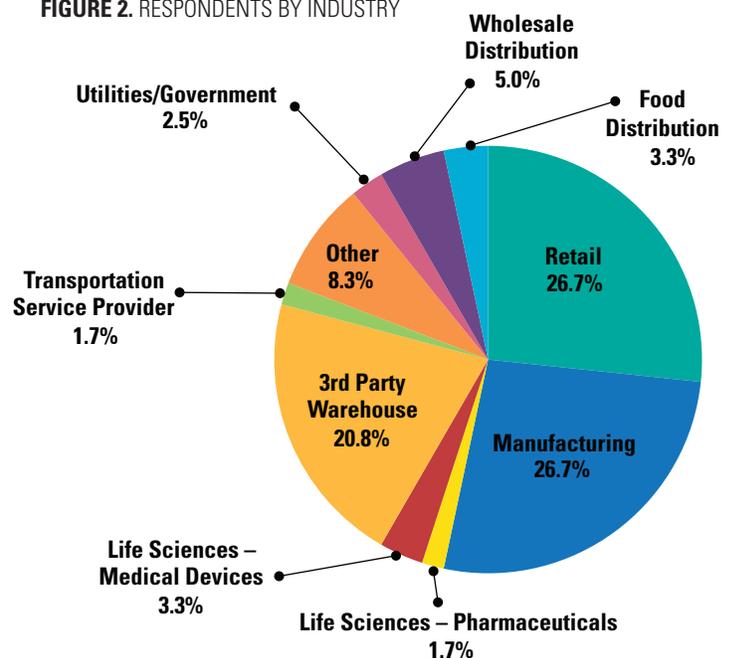
Customer Served

Another important consideration is the location of the company within the supply chain. Respondents were asked to classify who their primary customers were in the supply chain. [Figure 3](#) is a summary of responses received.

This year follows the trend seen in previous studies in that over 63% of respondents reported their customers as either an end consumer or a retail firm.

Those reporting Distributor/Wholesaler decreased even further from the 2015 study, though they continue to hold an ample number of respondents. The decrease is over 30% from 2014.

FIGURE 2. RESPONDENTS BY INDUSTRY



Manufacturers as a primary customer continue their slow decline in the study, having decreased over 33% since last year. What increased? End Consumer as a primary customer is up 34%, from 2015.

Business Strategy

The fourth demographic area is one that some suggest could impact measures in this year's survey. Do different strategies place a higher emphasis on some measures and not on others? And at what level in the organization can these differences be seen or noticed?

So 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 (Figure 4).

Business strategy allows us a glimpse into the minds of executives and boards about how large of a net they are trying to cast. Cost leadership has maintained a steady pace over the years and Product/market innovation continues to grow, increasing another 12% in this year's study.

This year we have a discernible winner in the title of best strategy. Customer service continues its steady rise, while Be All Things to All People lost over 7% from last year. These may be short-term changes and only time will tell if the losing streak for Be All...To All will become more pronounced. We believe once the economy stabilizes and begins to improve more respondents will revert course and focus their attention back to being all things to all people.

Respondents were also asked whether their global, domestic, and regional operations were managed internally (68.6%), by a third party (18.9%) or by a mix of the two (12.5%).

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 (Figure 5).

Once again, companies of all sizes are participating in the study. Companies with annual sales less than \$100 million comprised 28.4% of our total respondents, increasing almost 19% from 2015. Participants having greater than \$1 billion in annual sales comprise only 31.0% of the respondents. Those companies reporting annual sales between \$100 million and \$1 billion represent the largest group at 40.5% of the respondents.

Location, Location, Location

This year 88.0% of the respondents reported North America as their location, while the remaining 12% of respondents are from countries outside of North America. This is the largest showing since we first asked about location in the 2012 study.



This year follows the trend seen in previous studies in that over 63% of respondents reported their customers as either an end consumer or a retail firm.

FIGURE 3. RESPONDENTS BY TYPE OF CUSTOMER

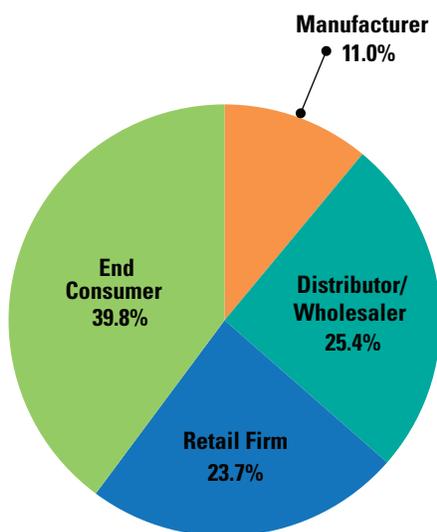


FIGURE 4. RESPONDENTS BY BUSINESS STRATEGY

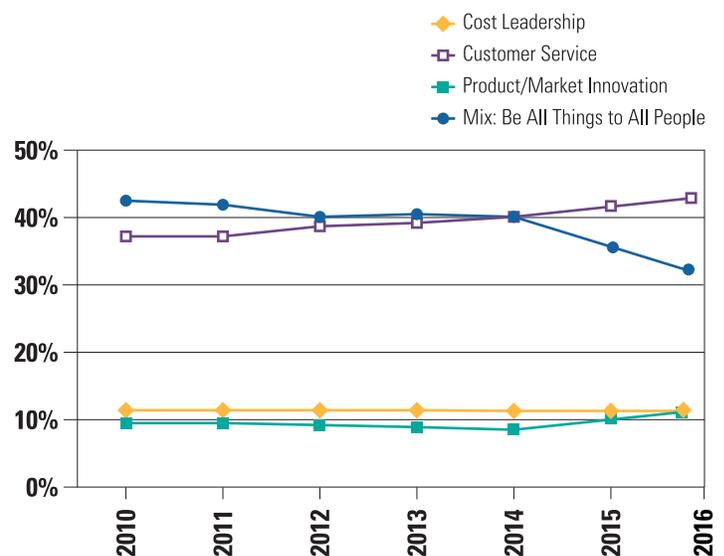


FIGURE 5. RESPONDENTS BY COMPANY SIZE

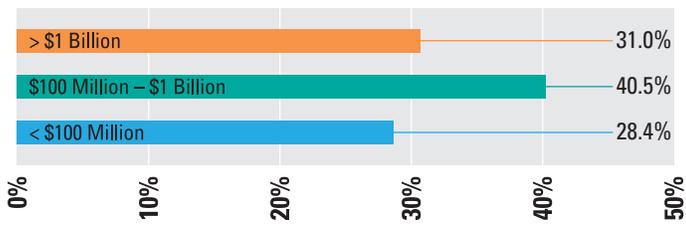


TABLE 1. TOP 5 MOST POPULAR METRICS		
Top 5 Metrics – 2016	2015 Rank	2014 Rank
1. On-time Shipments – Customer	1	1
2. Average Warehouse Capacity Used – Capacity	6	8
3. Order Picking Accuracy (percent by order) – Quality	5	5
4. Dock-to-Stock Cycle Time, in Hours – Inbound Operations	3	4
5. Internal Order Cycle Time, in Hours – Customer	2	2

Which Metrics Really Matter?

Each year we identify the Top 5 most popular measures based on the number of respondents to report results for each metric. Essentially, survey participants still favor the basic metrics they’ve been using since the beginning of the study. Table 1 shows the Top 5 most popular metrics used and how that has changed since the 2014 study.

In previous studies we’ve pointed out that the gap in performance (the difference in best-in-class and major opportunity performers) continues to narrow. Unfortunately, the pace at which the gaps are narrowing continues to slow. This year’s best-in class performers outpaced the major opportunity performers, who failed to maintain the improvements gained in last year’s study. Major opportunity performers maintained their performance on only 16 of the 44[†] metrics compared to 24 of the 44 for best-in-class performers. However, this does not mean that 2015 was an especially great year for performance, as all three groups registered a decline in performance. When performance is lost, best performers are able to minimize their overall losses better than major opportunity performers, which further validate this theory.

[†]Based on performance of those metrics we provided quintile performance benchmarks for the 2013 study. Does not include the three new safety metrics and five new employee metrics.



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TABLE 2. 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 95%	>= 95 and < 98%	>= 98 and < 99%	>= 99 and < 99.8%	>= 99.8%	98.3%
Internal Order Cycle Time	Greater than 26.6 Hours	>= 15.8 and < 26.6	>= 7.88 and < 15.8	>= 3.1 and < 7.88	< 3.1 Hours	11.4
Operations Metrics	Major Opportunity	Disadvantage	Typical	Advantage	Best-in-class	Median
INBOUND METRICS						
Dock-to-Stock Cycle Time, in Hours	Greater than 21.5 Hours	>= 8 and < 21.5	>= 4 and < 8	>= 2 and < 4	< 2 Hours	6
Capacity/Quality Metrics	Major Opportunity	Disadvantage	Typical	Advantage	Best-in-class	Median
Average Warehouse Capacity Used*	Less than 75%	>= 75 and < 80%	>= 80 and < 85.56%	>= 85.56 and < 94.4%	>= 94.4%	84.25%
Order Picking Accuracy (Percent by Order)	Less than 97%	>= 97 and < 99%	>= 99 and < 99.588%	>= 99.59 and < 99.8%	>= 99.8%	99.30%

*Note: Average and Peak Warehouse Capacity does not always reflect best practices. 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.

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

Back to Basics: The State of the Study

For the most part, this all started in 1999 when we wrote *Keeping Score: Measuring the Business Value of Logistics in the Supply Chain*, a study for then CLM, now CSCMP. It was well received, and piqued our interest in metrics that has endured for over 15 years.

The first survey started with listing over 100 metrics to see which ones mattered the most for practitioners. This list was narrowed down and in 2003 we worked on helping firms align their metrics to their strategy. Later we gathered in the actual level of performance for each measure, and reported out benchmarks by size of firm, strategy, location in the supply chain, and operational characteristics.

Our goal has never changed. It is to help practitioners gain a better understanding of key distribution metrics and how performance has changed over time. We've highlighted the most important metrics to WERC members and DC Velocity readers, underscoring the importance of aligning metrics to strategy and reporting any significant changes in the measures.

As in any business or endeavor, past performance does not guarantee future success. What worked 10 years ago is different than today. The world has changed and we have experienced this shift. Due to higher demands placed on everyone's time, response rates have fallen. In 2006 over 900 WERC members and DC Velocity readers completed some or all of the survey. In 2016 this number has dropped to 315 respondents, a drop of 65%.

It is time to adapt. To hit our goal of providing research that matters to the practitioner community, we think it is important to focus on three primary areas:

Listen. Perhaps the survey, the data, and the reports and presentations that follow are of little value to the practitioner community. Perhaps our efforts to serve the industry would be better utilized if we focused on different parts of the supply chain. Or, perhaps there are other topics, means of communicating with the audience, etc. that would be more valued.

To that end, we need your input.

Learn. To better serve WERC members and DC Velocity readers, we want to learn what is important to those that hire our students. Learning what is of interest to you keeps us engaged.

Lead. All too often we wait too long to make a decision. Leading from behind is not a forward-thinking strategy. So, let's lead by giving you something to respond to. Let's propose some changes, and listen to your comments.

We intend to make changes to the study. Currently, we are thinking of reducing the number of metrics to the top 15 or 20, and refocusing our efforts to ask a few short questions about talent management at the operational level. The demographic questions would remain the same, but be streamlined.

For those of you willing to provide additional feedback on specific metrics, we are thinking of adding in an optional section with the other metrics – easily skipped – if not of interest.

Are these the right solutions? We don't know. We do know when companies experience growing pains or need to change to adjust to a new environment, most successful companies step back, simplify their processes and refocus on the core fundamentals of their business. In essence, they go back to the basics. We think it is that time for this study. And we are ready to listen.

Now, it's up to you.



What would it all look like? To preview the changes, we'd encourage you to check out the new format. You can either take the survey or view a mock up and respond to a few short questions by visiting the WERC website at www.werc.org/dcmeasures. Then, give us your thoughts. What's missing? What could we do differently?
