WAREHOUSING EDUCATION AND RESEARCH COUNCIL

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THE ASSOCIATION FOR LOGISTICS PROFESSIONALS

Complete 2017 DC Measures Report Available Online at www.werc.org

Top Metrics From DC Measures 2017

Highlights of the full report, which provides 30 metrics complete with quintile results, definitions and calculations.

2017 marks the 14th year of the DC Measures Study. Every January, the survey is launched via an email invitation to WERC members and DC Velocity readers. Survey participants are asked to report their actual levels of performance for 2016. The study captures 30 key operational metrics. The measures have been grouped into 5 balanced sets – customer, operational, financial, capacity/quality and employee – plus the additional set related to cash-to-cash cycle measurement.

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

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

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WERC

Times Are A-Changing: Invest in Your People!

Each year we conduct the DC Measures study, our hope is to provide clarity to organizations who are looking for trends in operational performance and how they can use the study to help improve their own performance. This year, our results surprised us more than ever.

Senior Management Interest in Performance Measures

The board of directors and executives set the vision for the organization (Figure 1). Senior management's role is to set a course to achieve the vision. The execution of that vision is left for the operational folks. One notable difference this year is the large increase in director-level interest. Almost 32% of respondents said they report to a director in their organization. Those who report directly to the "C Suite" and/or the Board of Directors decreased 19% from last year. This change may be related to driving accountability down the chain of command to where the work gets done.

Respondents

The total number of responses for 2017 was 527 individual responses. The largest group of respondents reported their title as Manager (50.5%), while Director (25.5%) and Senior VP (15.1%) were the second and third largest groups. Executives represent 5.7%.

Industry Type

The Retail industry segment is the largest demographic base for the study in 2017. This is a notable change as in prior years it has been Manufacturing, which is third in this year's study. The second largest industry demographic is 3rd Party Warehousing (Figure 2).

DC Operation

Respondents were asked how goods moved through their DC. The majority of facilities (68.0%) are picking cases rather than pallets. Partial pallet operations continue to slide—decreasing over 17% from last year's study. The gains, while small, were to broken case, full case, and full pallet picking.

Primary Customer Served

As seen in previous studies, the majority of respondents reported that they were either at or near the end of the supply chain. This year is no exception in that over 60% of respondents reporting their customers were either an end-consumer or a retail firm.

Those reporting Distributor/Wholesaler decreased slightly from the 2016 study, even though they continue to hold an ample number of respondents. Note that as an industry segment manufacturing has declined; however, more respondents in this year's study identified Manufacturers as a primary customer, up 45% from 2016. This increase may be partly attributed to the increase in the number of respondents to this year's study (Figure 3).

Business & Operational Strategy

We asked respondents to indicate the overall business strategy for their business unit or division with respect to cost leadership, customer service, innovation or being all things to all people (Figure 4).

The movement among strategies over the years is interesting to watch. Cost leadership has maintained a steady pace over the years, whereas Product/market innovation continues course corrections as it decreases this year from 11.9% in 2016 to 7.6% in 2017, a decline of 36%.

FIGURE 1. REPORT TO TITLE

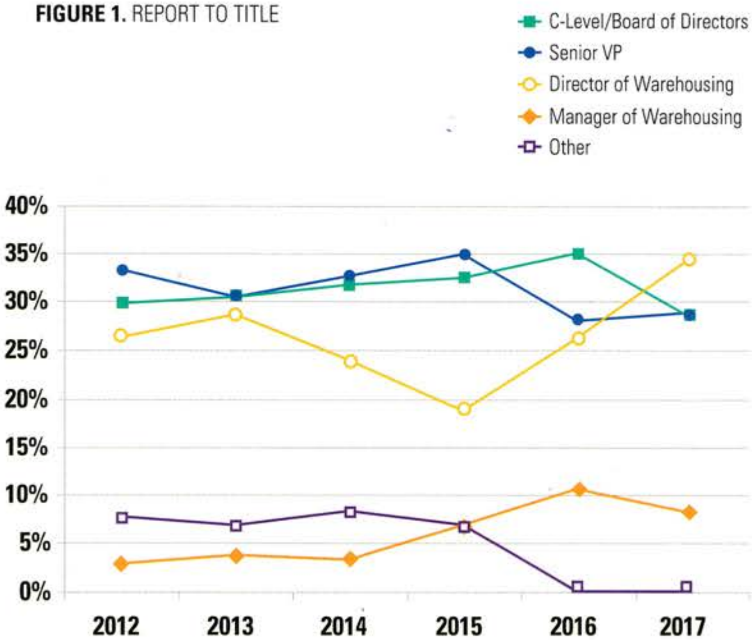
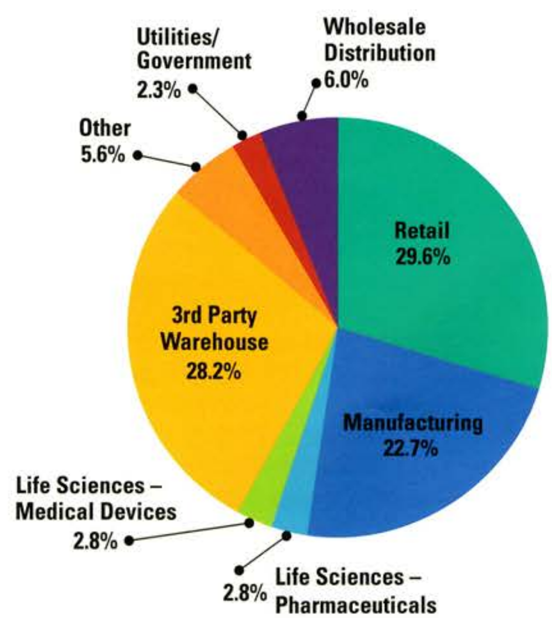


FIGURE 2. RESPONDENTS BY INDUSTRY



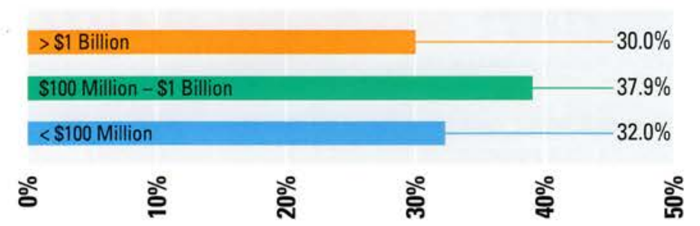
The declared winner of best strategy in 2016 was Customer Service, with 53.6% of respondents, quickly outpacing the loser – Mix: Be All Things to All People. The Mix strategy lost another 12% from last year. These may be short-term changes and only time will tell if this losing streak for Be All Things to All People 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 about their operational management strategy with respect to outsourcing—whether their global, domestic, and regional operations were managed internally (62.4%) or by a third party (22.7%) or a mix of 3PL and internal results (14.9%).

Company Size

Each year respondents indicate the relative size of their company by reporting their annual sales. The purpose of this question is to help determine what effect size had on the kinds and number of metrics used, changes in performance, and to creating additional benchmarks based on size (Figure 5).

FIGURE 5. RESPONDENTS BY COMPANY SIZE



Companies with annual sales less than $100 million comprised 32.0% of our total respondents, increasing 12% from 2016. Participants having greater than $1 billion in annual sales comprise only 30.0% of the respondents. Those companies reporting annual sales between $100 million and $1 billion represent the largest group at 37.9% of the respondents. As in previous studies, we continue to have a good representation of the industry.

Location, Location, Location

This year 91.6% of the respondents reported North America as their location, while the remaining 8.4% of respondents are from countries outside of North America.

Change is in the Air

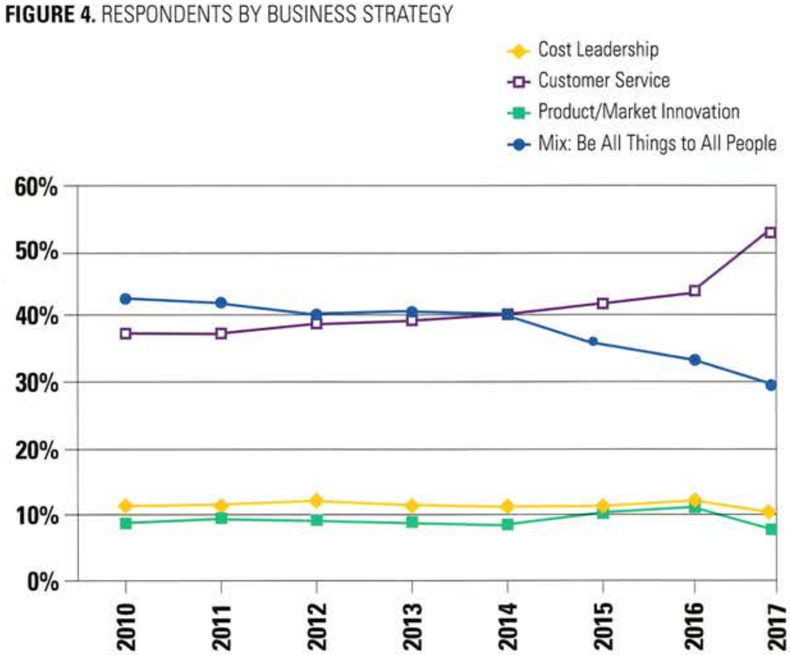
Table 1† shows the Top 5 most popular metrics used and how that has changed in the last two years. This year's most frequently employed metrics were average warehouse capacity, order-picking accuracy, and on-time shipments, suggesting that customer service continues to be a top concern for warehouses and DCs.

TABLE 1: TOP 5 MOST POPULAR MEASURES USED

Top 5 Metrics – 2017	2016 Rank	2015 Rank
1. Average Warehouse Capacity Used – **Capacity**	2	6
2. Order-picking Accuracy (percent by order) – **Quality**	3	5
3. On-time Shipments – **Customer**	1	1
4. Peak Warehouse Capacity Used – **Capacity**	7	7
5. Part-time Workforce to Total Workforce –**Employee**	–	–

FIGURE 3. RESPONDENTS BY TYPE OF CUSTOMER

FIGURE 4. RESPONDENTS BY BUSINESS STRATEGY



Since the beginning of this study, on-time shipments has held the top spot for #1 metric with one exception, in 2009 on-time shipments was #2. Well, the mighty have fallen from grace, as on-time shipments is the third most used metric this year.

The biggest change is average warehouse capacity used is #1 and order-picking accuracy is #2. In addition, five new measures made the list this year—part-time workforce to total workforce, overtime hours to total hours, contract employees to total workforce, and inventory count accuracy by location. Considering the changing demographics of the study, a shift from manufacturers representing the largest industry to retail, these changes should not come as a surprise.

†The full report names the Top 12 most popular measures

We Believe There are a Few Forces Driving This Change

1. Retailers are often struggling with maintaining sufficient inventory levels to meet consumer demand. As the Panama Canal begins to operate, larger Post Panamax container ships are able to move at a slower speed due to the amount of cargo each ship carries. In addition, few ports on the East Coast of the United States are able to fully accommodate the larger vessels, yet. Essentially, transit times from manufacturers in China to retailers in the U.S. will be *increased* thus requiring the need to better use space within the DC/warehouse and possibly increasing inventory being held closer to use.
2. Seasonality is starting to change as well. Consider that over the past several years, Black Friday has moved from right after Thanksgiving Day, to November 1st in 2016. With the longer promotional period ramping up for the traditional holiday period, many retailers need more space to hold inventory for longer periods of time.
3. Order-picking accuracy makes sense as being more important than on-time when end-consumers are the final link in the chain. 34.9 percent of respondents serve the end-consumer. Facilities will work hard towards a daily goal to ship all orders received by a predetermined cut off time. To ship on-time has a different meaning for retailers, especially when free shipping is more important for consumers than having it tomorrow. And while the shipment may not necessarily arrive on an exact day, if the order is missing anything you'll be sure to hear about it.

Where multiple measures covering different aspects of performance are used to determine success, balance is slowly returning. 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 12 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. As in the past, the benchmarking data is reported using a "quintile" format which presents a five-point maturity scale that reflects where the respondents are situated with respect to the journey toward "best practice." To be considered best practice, performance has to fall within the top 20% of all respondents (Table 2).

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%
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%
Peak Warehouse Capacity Used**	Less than 87.88%	>= 87.88 and < 93%	>= 93 and < 96.16%	>= 96.16 and < 100%	>= 100%	95.00%
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%
Employee Metrics	**Major Opportunity**	**Disadvantage**	**Typical**	**Advantage**	**Best-in-class**	**Median**
Part-time Workforce to Total Workforce	Greater than 14.16%	>= 5 and < 14.16%	>= 0 and < 5%	>= 0 and < 0%	< 0%	0.60%

***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.

It's All About the People!

Over the past few years, we have focused on understanding operational metrics and how they support the overall organizational strategy. And we have noticed the disconnect between companies stating that employees are critical, but utilizing very few employee metrics to manage those employees. We also discovered that when companies start having problems, one of the primary metrics executives ask for after looking at costs is annual workforce turnover. This makes sense, as a large turnover ratio can have damaging repercussions in regards to reliability, efficiency and profitability. Last year, we began asking questions regarding human resource strategies for obtaining, training and retaining talent; the utilization of workforce management technology, and if companies were focusing more on people, processes, or technology. Here, we highlight some of our most interesting findings.

1. There is a reason why people are first!

We asked respondents to rank what was the primary importance for their facility: people, process or technology. Sixty-two percent of the respondents ranked people as primary importance. Our research suggests that these respondents are reaping the benefits. For instance, we found statistically significant relationships between DCs who focus on people in three primary areas: workforce agility, full-time employees, and strategic human resource practices.

In an ever-increasing dynamic supply chain, workforce agility is critical to the success of DCs. Our data suggests that firms that focus on people are more likely to have an agile workforce and can respond more quickly to changing market conditions, can rapidly acquire new skills to handle process changes, work more effectively cross-functionally and have an easier time transitioning among projects.

We also found that companies that focus on people invest more time into their employees and employ a higher percentage of full-time employees. However, we must understand the trade-offs associated with this investment. Firms that focus on people report that firm profitability is lower.

Companies that focus on people tend to think more strategically about their workforce. They are more interested in the future potential of their candidates than they are the short-term gains. These companies build strong connections with their employees, which translates into greater loyalty.

2. Happy, creative employees drive results!

For over 20 years straight, SAS, a leading data analytics company, has made the Fortune list of "Best Companies to Work For" mainly because of the investments SAS makes in providing a strong, empowering, collaborative culture for their employees. CEO Jim Goodnight characterized the strategy in simple terms (Kaplan, David, 2010). The SAS philosophy is that happy, creative employees drive results.

Our results support this trend in workforce management. Table 3 lists the top 3 of the 12 measures in the full report, where firms that focus on people perform significantly better than firms that do not.

Our results show that when a firm lists processes or technology as the most important aspect of their organization, they don't experience a significant advantageous relationship in ***any performance metric*** with the exception of Honeycomb %.

What we find is that any process or technological advance will only be as good as the people designing or using it. At the end of the day, people still drive innovation and production.

TABLE 3: PEOPLE FOCUSED ADVANTAGES
On-time Shipments*
Internal Order Cycle Time
Backorders as a Percentage of Total Lines

*Indicates measure in Top 12 of study.

3. When managing your workforce, technology is your friend!

We were a little surprised to find that 57% of the respondents do not use workforce technology to manage their workforce. However, we found significant advantages for companies who do utilize workforce technology. Specifically, these firms are quicker to implement innovative management techniques, provide more training for their current employees (this is not onboarding new employees), have more comprehensive training policies and programs, and empower employee decision-making at a higher rate. We also found that companies who utilize workforce management software have a lower percentage of part-time workers.

One counter-intuitive result was that companies employing workforce management technology actually have a higher annual workforce turnover rate. Why? We aren't sure. There is much to be explored as we continue to dig deeper in our discussions with professionals.

So what do all of these findings tell us? Simply, people are still our most important asset. Where the supply of available supply chain talent is limited, it is imperative for companies to obtain talent with potential to become leaders, employ comprehensive policies to develop and train those leaders and then provide value and loyalty through growth opportunities to retain the talent.