Normalizing Data Across Your Network

Compare operational cost and performance across all of your facilities

Comparing Apples to Oranges

A common challenge when comparing operational performance is normalizing the data between those operations. There are several factors that create this challenge. First, few operations are identical. Frequently, multi facility networks are composed of acquisitions and have dissimilar data sources. These systems will usually have different nomenclature used when describing processes and metrics. Second, the operations may have very different product mixes and workflows. Third, there may also be different technology stacks across the facilities. Some may have voice pick or automation technologies whereas others just RF Scan. Finally, facilities may be designed and laid out differently. One could be an older building with uneven floors and others brand new facilities designed for optimum workflow.

Business Analysts and Process Engineers get tasked with unifying the data across these operations and standardizing the heuristics so management has an easier way to compare all of their operations. Because of the complexity of this challenge, most companies just compare macro level key performance indicators and do not reap the benefits of the deeper analysis that comes from normalizing their data.

Turning Apples into Oranges

There is far more commonality in operations than most think. There are several levels where the data must be normalized. They are:

1. **Facility Level -** product and facility type
2. **Process Level -** nomenclature and workflow
3. **Metrics -** nomenclature
4. **Employee -** type (FTE, Temp) and wage standardization

Benefits of Network-wide Analytics

1. 

Clearly see where the biggest process improvement opportunities and potential cost savings are

2. 

Know objectively which technologies are generating strong returns, and which operations would benefit from these technologies, and how quickly they could be implemented

3. 

Create powerful dashboards across your network for objective cost and performance comparisons

4. 

Understand the true cost of both Temporary and Full Time Employees, and learn how to optimize your staffing allocation model

5. 

Be able to objectively process improvement changes

Facility Type

Distribution centers are incredibly varied, even within homogenized operations. Some facilities will have different product mix requirements due to regional demographics and others may focus more on e-commerce due to proximity to large markets. When normalizing at this level, it is recommended that you create facility classifications that address the following:

1. Work type - E-commerce, cross dock, stow and flow, manufacturing DC, retail DC, 3PL, wholesale, direct to retail, bulk ship, etc.
2. Product type - auto parts, electronics, clothing, shoes, etc.
3. Region

Process Comparison

Processes can also be highly variable between operations. The old school mentality that a box is a box is just not accurate. There are a multitude of factors that impact process cost and performance. When normalizing your process data, the following should be added to your data model.

1. **Process category -** This allows you to name the process at each facility but still give you the ability to compare processes across your network. As part of this exercise, you should itemize all processes across all operations and then group them by process category. This is also very important for organizations with operations that are dispersed across multiple languages.

2. **Process Technologies -** Companies will usually have different technologies between facilities. One may have voice pick, another pick to light and another RF scan. These technologies create variances in cost and performance so it is critical to incorporate the various technologies used in every process for accurate comparative analysis.

Metrics Comparison

Similar to process categories, companies will often have different metric names in their facilities. Cases vs cartons vs boxes. For each metric, you should have a corresponding metric category to enable proper comparative cost analysis. The same language challenge also exists so creating metric categories is critical.

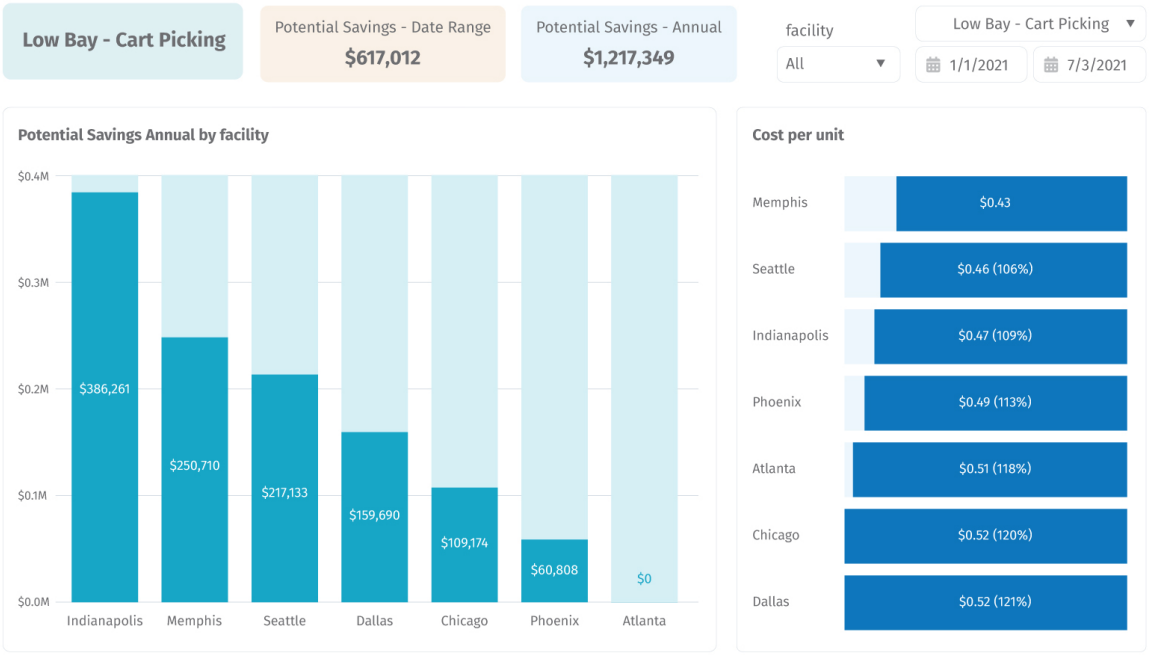
Employees

There are also employee variations that need to be taken into account. Temporary workers tend to be less productive due to the learning curve than full time employees. As well there are regional differences in labor cost and quality due to various supply demand issues across markets. Categorizing employees by employee type is very important. The data will need to be normalized to take into account wage variations. The easiest way to do this is to calculate time per cost unit (ie line, order, case, etc), and use that as the comparison point versus using pure cost to serve.

Benefits if you do it this way

Once you have created the requisite facility, process, metric and employee categories and incorporated them into your data model, you then have the ability to perform detailed comparative analysis across your entire network of facilities. Each facility will still maintain its uniqueness and nomenclature familiar to the employees that work there, but your data analysts will now have the ability to leverage the normalized data to identify where the highest ROI opportunities are at each facility.

One thing to note is that there will be certain processes at your various facilities that will be unique to those facilities and a comparative analysis will not be available. However, the majority of the workflow will be able to be compared and insights drawn from the analysis to improve processes and drive efficiencies. You now have turned your apples into oranges for easy comparison.



Process	Facility	Units	Hours	Facility UPH	Top Facility UPH	Potential Hours Saved	Burdened Rate	Potential Savings	Potential Savings Annual
Low Bay - Cart Picking	Indianapolis	2,627,477	60,462	43	52	9,476	$20.66	$195,776	$386,261
Low Bay - Cart Picking	Memphis	2,539,735	55,710	46	52	6,427	$19.77	$127,072	$250,710
Low Bay - Cart Picking	Seattle	2,425,908	52,527	46	52	5,453	$20.18	$110,054	$217,133
Low Bay - Cart Picking	Dallas	2,277,609	47,679	48	52	3,483	$23.24	$80,939	$159,690
Low Bay - Cart Picking	Chicago	1,672,798	34,877	48	52	2,417	$22.89	$55,335	$109,174
Low Bay - Cart Picking	Phoenix	1,182,665	24,363	49	52	1,414	$21.80	$30,820	$60,808
Low Bay - Cart Picking	Atlanta	1,673,787	32,479	52	52	0	$24.05	$0	$0

About Easy Metrics

Easy Metrics fuels operational excellence in distribution operations.

Operations and finance leaders use Easy Metrics' API integration platform and machine learning to analyze, plan, and forecast their labor spend so they can drive operational speed and efficiency, price their products and services profitably, and drive employee engagement.

With Easy Metrics, they translate raw operations data from multiple data sources into their costs by: activity, process, facility, people, and equipment. They use actionable reports across their network, to optimize labor spend, cut waste, plan facility investments, and drive labor strategies that ultimately fuel the growth of their business.

Learn how to normalize and consolidate your operations data
at **www.easymetrics.com**