UHY LLP
Certified Public Accountants

MANUFACTURING INSIDER

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'Big Data' Drives Big Decisions

What kind of decisions can "big data" help you make? You can figure out if you need a new machine, more employees, a new building or if you can make more efficient use of the resources you currently have. You only need to use the information you already have in a way that helps you make better decisions.

You don't need to have a team of mathematicians, scientists or even custom-designed complex algorithms to make big data work for you. How do you do this? You first need to understand what data will drive better decisions for you. Once you have that in mind, you can begin to organize and analyze the information in a way that is meaningful and tangible to your people and your company. This will also help determine a starting point so you are not overwhelmed with the huge amount of information.

Big data refers to the huge amount of information companies collect that, when utilized correctly, can help make better and more informed decisions. Keep in mind that big data is controlled and measured both internally and externally, and each can affect your organization as well as the direction of your decisions. Before you begin analyzing all of your information, it helps to understand the different types of data and the impact each one can have on your company and the decision-making process. There are three primary types of data that can impact the decisions of manufacturing companies:

1) Internally controlled and internally measured (i.e. shop floor performance, lead-time to fulfill a customer order, number of sales contacts made, etc.)
2) Externally controlled and internally measured (i.e. customer order volume, product mix such as color, trim level, supplier on-time delivery performance, etc.)
3) Externally measured and externally controlled (i.e. gross domestic product, vehicles sales, commodity pricing, etc.)

We will examine each type of data to help you understand how analyzing and organizing big data can drive the decision making process.

Internally Controlled and Internally Measured

When an organization utilizes internally controlled and internally measured data, it has total control. Companies use this information to measure and drive change internally. The art and skill is in

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recognizing opportunities and exercising control. You might already capture some information within your existing processes; however, you can track additional information by establishing new processes and diligently capturing it on a regular basis. You will benefit from this type of data by identifying meaningful metrics that are tangible to the people being measured (i.e. not the company's stock price).

By using visual reports to graphically show individual or group performance in black and white – or in this case red and green – you can drive decisions that will affect behavioral routines. You can also improve productivity, downtime, quality and schedule adherence by analyzing your shop floor operations data. In terms of order entry and customer service, you can reduce lead-time and overdue orders while increasing on-time delivery. This will decrease cost, increase capacity, improve inventory and increase customer satisfaction.

UHY LLP (UHY) helped Alpha USA eliminate analysis paralysis that stemmed from being overwhelmed with too much available data and not knowing where to start. UHY implemented its Optimal Performance Management System (OPMS™), which combines customized metrics, corresponding performance goals, visual reports and behavioral routines. This helped the client to leverage information they already had to drive timely corrective action. UHY also helped the client determine what additional information to collect by understanding their upcoming decisions.

A series of daily accountability meetings to review metrics, goals and performance (a key component of UHY's OPMS™) provided Alpha USA with the structures required to focus on areas requiring attention. Since its implementation, Alpha USA has continued to hold these meetings, which drive timely decisions, ranging from prioritizing daily activities to substantiating capital requests to their board.

Externally Controlled and Internally Measured

This type of data is typically controlled by customers and suppliers (i.e. order volume, product mix, supplier delivery performance, etc.), but measured internally to the organization. You have limited to no influence on this information; however, you can analyze and leverage it to make tactical and strategic decisions.

Data can drive significant decisions, but first you need to figure out what decision you want to make and what information you require to make an informed decision. This provides a potential financial impact by affecting direct costs, inventories and premium direct costs (i.e. overtime, expedited freight, etc.). For example, if you statistically analyze your customers' order patterns or volatility in your product mix, you can decide to fulfill a demand peak through safety stock/ reserve capacity, or whether to forgo sales above a certain threshold. With the appropriate data, you are likely to deploy a combination of these strategies. Without the data and subsequent analysis, you might be unprepared for some demand scenarios.

A Tier 2 Injection Molding Operation company delivering to multiple domestic- and foreign-owned OEMs had been struggling with variability in demand, forming a perception that demand was not predictable. As part of a Planning and Scheduling Optimization project, UHY analyzed the client's big data to quantify the variability in demand, reconcile trim-level mix and end-item vehicle production volumes with customer demand, and identify the appropriate forecasting mechanism in the ERP system. This allowed the customer to plan with increased certainty, add stability to shop floor schedules and optimize inventory levels.

Externally Measured and Externally Controlled

Externally measured and externally controlled parameters can have a significant impact on your business. This data includes information on gross domestic product, overall vehicle sales, commodity pricing, etc. Most companies in any given industry are too small to influence any of these parameters. However, this data can be used by most to identify correlations and causality, identify leading indicators to anticipate decisions, use coincident indicators to measure and track market share, and make more informed decisions. You can also establish causality between the external indicators you choose and your internal metrics, as well as validate your assumptions by analyzing historical information.

UHY developed an aggregate forecast for a national distributor of building supplies, which enabled the client to approximate volume sold to new construction and replacement demand for key products by analyzing sales to those different markets. The analysis used order quantities to distinguish between new construction (large volumes) and replacement demand (single piece orders). By deriving this information from the data, the client was able to increase product availability and customer satisfaction while optimizing inventory levels and returning product to vendors, immediately freeing up cash-flow.

Big Decisions Are a Big Deal

While cutting-edge and advanced data processing capabilities can be helpful to leverage additional detail and increase the speed in handling large amounts of information, it is not necessary. You can make informed decisions by understanding the different types of data already available and following a few guidelines. Big data doesn't have to be intimidating; you just have to know where to start. You can make big data both meaningful and manageable by following these guidelines:

- Enable better decisions in less time by clustering and creating families of data (i.e. aggregate by products, markets, demographics, etc.) instead of sifting through thousands of data points.
- Don't try to analyze everything; follow the 80/20 rule and analyze only the information that will impact your decision.
- Remove outliers by identifying and removing special cause events (i.e. competitor discount, act of God, etc.).
- Graphically plot data (visual reports), which will help measure variability and identify trends as well as further correlate outliers to special cause events.
- Use the data to develop a risk threshold and contingency plan to prepare for unplanned events (i.e. safety stock, extra capacity through overtime, secondary source, etc.).
- Collaborate with clients to understand future demand for upcoming orders to control variability whenever possible.
- Use information available from external sources to expand demand data beyond actual customer orders. For example, LMC Automotive (formerly JD Powers Data) can provide projected car assembly volumes by location with varying levels of detail (i.e. body style, trim level, etc.) for a price.

Understanding the different types of big data available as well as making it manageable and meaningful can help you make better and more informed big decisions.

Article written by Juergen Meyer,
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What Happens When Your Vendors Are Too Close To Your Company?

Companies typically have thousands of vendors and all of them are trying to figure out a strategy to sell your company more and more of their goods or services. Often times, and especially common in many facets of the manufacturing industry, a vendor starts to push the envelope in terms of gifts and entertainment, bid rigging or vendor kickbacks that are the result of that vendor exploiting a relationship with someone at your company to obtain an unfair advantage over other vendors. Of course, even though we all hope that we don't have employees that are looking for ways to obtain "extras" from vendors in exchange for directing work their way, employees can also be guilty of exploiting the vendor relationship. Unfortunately, in either case, few companies have robust processes and internal controls to detect and prevent such activities, which are mostly "off the books".

Companies usually become aware of company personnel and vendors that are engaged in inappropriate relationships through a fraud hotline or employee tip. Other times, the company's internal audit department may identify a potential issue through inquiries with personnel during routine operations or financial internal audits. In either case, the company must expend time and resources to properly investigate such allegations. Many companies have some of the skill sets in house to address the allegation, but many times, they don't have dedicated resources that can drop everything to fully investigate and remediate. Depending on how the allegation was reported, a company can have very little information to start with and when it involves a vendor and transactions that are potentially on the vendor's books and not your company books, it can feel like searching for a needle in a haystack.

Our firm is experienced in helping companies to detect, investigate and remediate situations like these. We call it Guardian Services, and we combine the skill sets of some of our most seasoned fraud and digital forensics professionals and our internal controls and process specialists to assist clients with a fully integrated solution.

In the case of an allegation involving a vendor, we combine our investigative and internal controls resources and launch an investigation and vendor audit simultaneously. Our investigators and internal auditors work together to gather information, conduct an audit of the vendor, and gain an understanding of the vendor's culture, to help determine if the allegations have merit. Vendors will almost always cooperate, regardless of contractual obligations to do so, because they want to retain your business and do not want to give the impression that they are uncooperative. We have found that sometimes vendors are unaware of the activities of a particular salesman or sales team, especially when the allegations involve a satellite or location other than corporate.

One of the key aspects of our approach is that we obtain the evidence to support the allegation, whether it comes from our digital forensic analysis, data analysis using a tool such as IDEA, or from the vendor's credit card statements, bank accounts and expense reports. Obtaining this evidence is key and provides our clients with the ability to make informed decisions about their employees involved in the scheme and their continued relationships with the vendors. Often, we will discover that these are major vendors for a company and we want our clients to know who was involved and how much the vendor knew about the activities that were occurring. As a result of the vendor audits, we will also identify inaccurate billings, overcharges and pricing errors that our clients can recover from the vendors. These recoveries can often offset the charges spent to investigate the allegations.

Through our investigation and audit procedures, we work to detect the root cause (i.e., internal control gaps and breakdowns) that allowed the scheme to occur. We then assist in the design of new procedures and controls to prevent future incidents. We often work collaboratively with resources from our client to ensure the new controls and procedures align with the company's existing control structure and will be monitored by the appropriate internal teams (i.e. Internal Audit).

Responding to an allegation is never a happy time for our clients but being able to help them find the root cause of the problem, identify the perpetrators, and prevent it from happening again is a rewarding experience.

> "Companies typically have thousands of vendors and all of them are trying to figure out a strategy to sell your company more and more of their goods or services."

Article written by Dawn Williford, Principal Internal Audit, Risk & Compliance Services (Houston, TX)

Section 199 Guidance On Contract Manufacturing

A directive has been issued by the Large Business & International Division (LB&I) simplifying the approach in determining who bears the benefits and burdens of ownership in a contract manufacturing arrangement to claim a deduction under section 199 (DPAD).

The taxpayer that has the benefits and burdens of ownership of the property in a contract manufacturing arrangement is entitled to the DPAD deduction. Examiners were previously instructed in a prior directive to evaluate as many as nine factors in a three-part test to determine who had the benefits and burdens of ownership.

According to the recent guidance from LB&I, examiners should not challenge a taxpayer claiming DPAD as long as the taxpayer provides three statements:

1. Basis for determining that it had the benefits and burdens of ownership
2. Certification signed by the taxpayer
3. Certification signed by the other party to the contract manufacturing arrangement

Determining who bears the benefits and burdens of ownership is factually intensive and the recent guidance is an effort to reduce some of the controversy faced by taxpayers. The issued directive is effectively permitting the contracting corporation and the contractor to agree as to which of them will take the deduction granted the allocation is properly certified.

Article written by Fatmah Ettaher,
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MANUFACTURING INDUSTRY INSIGHT

UHY LLP recognizes that manufacturing companies require their auditors, tax specialists and business advisors to add value to financial reporting activities. That is why we combine the strength of business and financial expertise with a hands-on, "shop floor" approach to solving complex business decisions in these key segments:

- Aerospace & Defense
- Distribution
- Automotive Suppliers
- Industrial Manufacturing
- Consumer Products

Our professionals are leaders in the industry and take the steps necessary to ensure our client's future success by identifying and addressing new trends, accounting requirements and regulations.

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