

# Deciding by the Numbers

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In a contract manufacturing environment, thousands of decisions are made daily. Decisions that have consequences on the end product are made by workers, middle managers and senior managers. These decisions are made on the line, in support areas, and in conference rooms. They are made months in advance and in minutes, as the product moves throughout the production area. Organizations that succeed in the short and long term create a culture where data is always used for decision making.

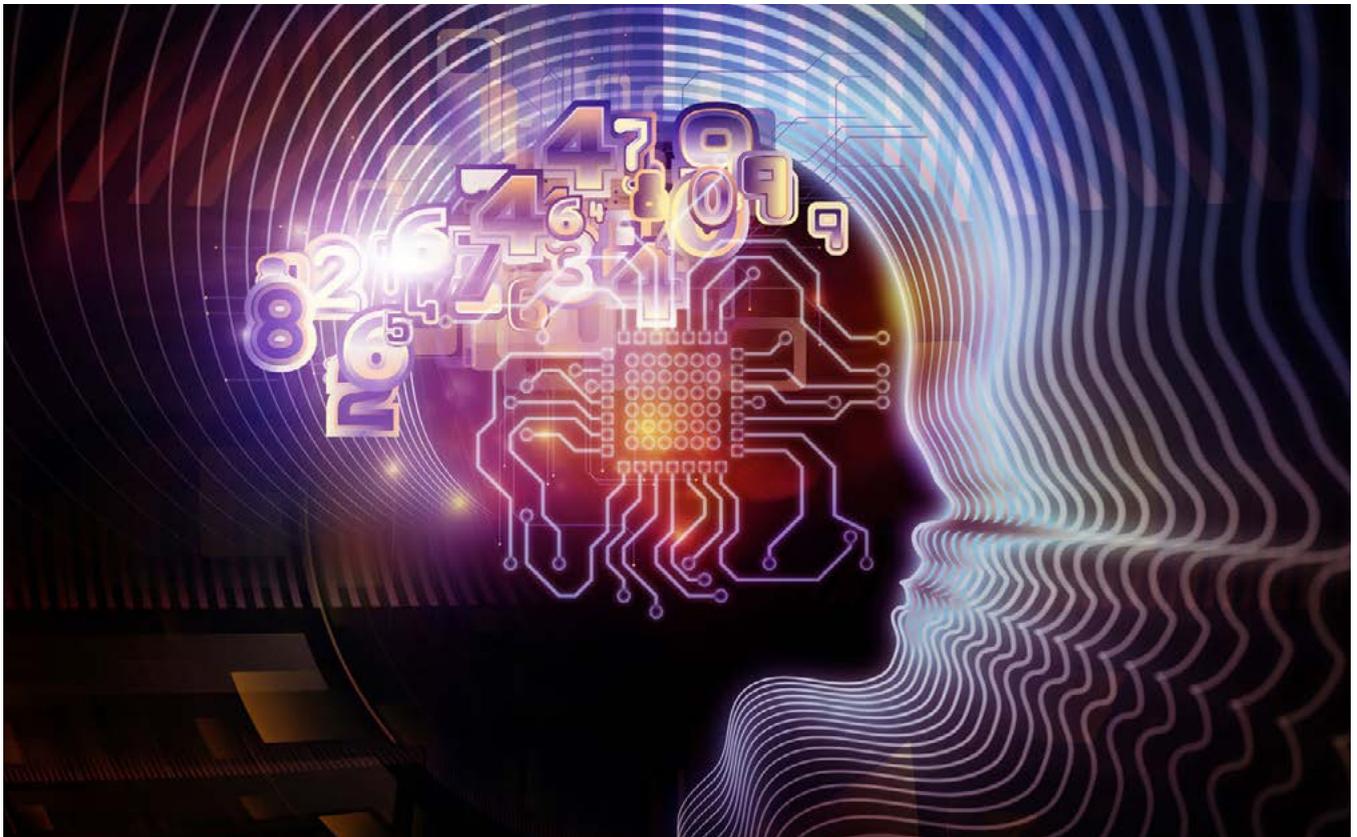
## Value of Data Based Decisions

Making decisions using data and metrics is one of the most important activities a manufacturer can take on. Collecting the data is critical to understanding the operational performance. Each company will want to choose which spe-

cific data is value added and then establish methods of collection. Training employees on the methods of collection and the reasons for collection is also important. And of course, using the data collected will speak volumes to the employees and increase their motivation to continue collection. When the data is collected and not used the consequences can be costly to morale and profits.

Whether your plant has two employees, 200 or 2,000, each individual choice or decision made by an employee creates a result. And these results become an input in the next process step. This has a direct impact on the final products produced in your plant.

Most manufacturing plants will have processes and process controls that limit the number of decisions required by the employee. As-



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suming employees follow these processes and documented procedures, the impact of poor decisions can be mitigated. The reality is that most manufacturing processes are complex and documenting every scenario is next to impossible.

Throughout a typical eight-hour shift, an employee may make multiple decisions. For example, if each employee makes even 10 decisions, a simple math calculation shows that this equates to 20-20,000 decisions made in a plant in just one shift.

The goal of manufacturing leadership is to reduce variability in an effort to achieve strategic objectives that include providing quality products on time and at the best cost. This many decisions made in just one shift can create much variability. This variability is significantly reduced when a culture of metric or data based decision making is created.

**Creating the Right Culture**

With intention, senior management can create and cultivate a culture of using the data for decisions. It starts with defining expectations and casting vision for what the culture will look like. Keeping it simple and easy to duplicate is the way to go.

Once the expectations are communicated to the company, everyone will be on high alert to see if behavior matches what was stated by senior management. Acknowledging progress and not perfection will go far to creating a sustainable culture.

Managers can set the example by asking questions that require data, by asking for evidence to support decisions, by acknowledging all data-based decisions, and by avoiding any appearance of “flying by the seat of their pants.”

Middle managers and employees will emulate what they are shown by their leaders. Leaders working with teams to solve problems can

ask specific questions that require use of data that has been collected. For example, an inspector who states that there is a “problem with a line producing defective products all the time” may be asked “in how many of the last eight weeks was the quality below the company target?” and “how far below the target was the quality each of the eight weeks?” This requires the inspector to have the required data rather than solely an opinion or feeling that the results are unsatisfactory.

Area leaders also want their teams to emulate their behavior by providing evidential data to support pending and prior decisions. A production supervisor who authorizes overtime should be able to show data that the cost of overtime for completion of a project is a better decision than adding new team, rather than simply responding to an emergency situation and using overtime to cover other issues.

Or imagine your joy when a materials lead provides data showing the root cause of a late shipment, along with a new procedure correcting this issue. Simply acknowledging teams for using accurate data (and for not using inaccurate data) will go far in cultivating a culture of accountability through metric-based decisions. This is not about praise or correction. By acknowledging with a simple statement of fact, the leader lets the team know they are noticed and reinforces expectations for data use. Acknowledgment is highly motivating and increases the vitality of employees.

Leaders who repeatedly make hurried or random decisions are not cultivating a culture of data-based decisions. But neither are leaders who sit on data and never make a decision. Finding the right balance of analysis and action is extremely important. In most instances, cultivation of the right culture trumps the specific decisions and related consequences. It is worth

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taking the time to ask a few key questions to get the data and avoid a “fly by the seat of your pants” culture.

When the data is collected and used consistently and continually and when major decisions are made with the data, a culture of accountability is created. In this type of culture, there is an effect on minor decisions too. Employees at all levels of the company realize the impact of their decisions and activity. This recognition of their impact increases their morale, the quality of their decisions, and therefore the results.

### Data Collection Methods

There are many methods of data collection. Typically, the best approach for deciding which method to use is to start with the end in mind. What problem will the data be used to solve? What questions need to be answered? With this information you will have more of an idea of the best method to use.

Another important consideration is the length of time the data collection will cover. If the situation is temporary then the data collection method will be less formal or systematic. If the situation is more ongoing then the method of data collection may start less formally and ultimately become automated. Automation is great but not always required. Benefits of automation must be weighed against the costs.

Manual tracking, spreadsheet tracking, and database tracking are common methods for collecting data. Extensive data tracking systems have also been developed in house or proprietary systems purchased. These systems have an initially high cost. However, the savings achieved with fewer production issues often outweigh the initial costs.

Including the end user and the data collection team in these discussions is beneficial as they can each provide insight that will

make the data collection method selected more effective.

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### Course Corrections

For each data collection topic, you will undoubtedly have a specific target or goal you are trying to reach. As your team moves toward the desired result, the data will help to assess performance and to take corrective action as needed. This only works if you are looking at the data often enough to make course corrections. The frequency of review will depend on the data, method of collection, and result being tracked.

Data review and course correction responsibility can be defined so that the appropriate actions can be taken in a timely fashion. Having a culture of acceptance of course correction is vital also. Course correction is not necessarily in response to a problem.

Using data-based decision making in manufacturing is like an airplane journey. From Brian Tracy's book [Flight Plan—The Real Secret of Success](#), all airplanes are off course 99% of the time. He explains that the pilot and avionics are continually bringing the plane back on course.

Your purpose as a leader and as an employee is to move your organization to its strategic destination. Wherever you find yourself culturally and operationally as an organization, take steps today to move toward by the numbers and reap the rewards you have sown. **SMT**



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