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Big Data Decision Making

Is There Room for Intuition in the Era of Big Data?

By Mark Mallinger, PhD

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The process we use to gather information in making decisions can be as important as the decisions themselves. Do you rely more on sophisticated analytics or intuition? Using a self-report exercise, this article assists the reader in recognizing their decision-making style and offers a framework to enhance the process.



One of the key roles of a leader is decision-making. Staff issues, moving forward with initiatives, managing costs, expanding revenues, and hiring are a few of the challenges associated with management and all require effective decision-making. Intangibles such as stewardship, empathy, and strategic insight play a role as well. Clearly, the process of gathering information becomes critical to achieving quality outcomes. What evidence convinces leaders that they have accurate and sufficient data to make the right call?

The purpose of this article is to assist readers in recognizing their decision framework: how they gather information during the decision process and ways in which they can enhance quality decisions. In other words, they will consider which data sources they are likely to rely on—facts, intuition, statistics, or a combination of these three factors as well as others in finding solutions.

Before continuing, however, we believe readers can take greater advantage of this article by doing the following exercise. In reviewing the items below, it would be helpful to jot down or mark responses, rather than relying on recall. The opportunity to review these initial insights will integrate effectively with the recommendations expressed at the conclusion of the article.

A Thought-Provoking Exercise

The benefit of this exercise is to create an active rather than passive experience. Consider a recent substantive workplace decision you needed to make. Think about the information-gathering process you engaged to reach your decision. Please respond to the following questions:

- Describe the situation leading up to the decision.
- What process did you use to gather the information that was used in making the decision?
- When did you recognize that you had sufficient information to make the decision?
- To what extent did you rely on information from records, reports, etc.?
- Did you seek advice from colleagues before making the decision?
- Were you pleased with the outcome that resulted from the decision?
-

Okay, now put aside your notes and continue reading the article. At the conclusion, you will be asked to return to these comments and incorporate the knowledge presented in the following pages.

The Value of Data-Driven Decision-Making

In 2007, Ian Ayers, the author of *Super Crunchers*, described the value technology presents to improve decision-making through the availability of unlimited information. “We are living in an age when dispersed discretion is on the wane.”[i] The movement to highly sophisticated quantitative models suggests the role of intuition will become as anachronistic as hi-fi sound systems. Most Fortune 500 companies, such as eBay, Amazon, Walmart, and Facebook, rely on advanced analytics in predicting customers’ buying preferences, managing inventory, and collecting purchasing patterns. Airlines rely on algorithms to determine not only the schedule, frequency, and number of flights, but promotional programs as well.[ii] With the advent of relatively low-cost technology, small and medium-size firms can also benefit from advanced analytics.

McKinsey Global Institute (MGI) stated that data are becoming the main factor of production, similar to physical or human capital. Their studies suggest that the use of sophisticated analytic models could result in a \$300 billion per year savings to the American healthcare system.[iii] In addition, the report described the value of these models for managers engaged in operational and tactical decisions as well as their strategic benefits for senior executives. For example, quantitative data can enhance the selection process. Rather than relying solely on interviews, recommendations from former supervisors, and a sense of culture fit, through analytics, an open position can be assessed using a number of variables thought to identify indicators of quality performance for the role. Once the ideal candidate characteristics are determined, assessment techniques can be administered to evaluate applicants and find the right fit.[iv]

The use and value of analytics was clearly identified in Michael Lewis’ book, *Moneyball*, which became a successful box office film as well. Faced with a tight budget for acquiring professional baseball talent, the general manager of the Oakland Athletics relied on sophisticated data rather than observation and surface-level statistics to trade for players, which led the Athletics to a division title (2003 Michael Lewis, *Moneyball*. W.W. Norton & Co.) (YouTube: <https://www.youtube.com/watch?v=yGf6LNWY9AI>).

The evidence suggests that given the analytic tools available, the ability to crunch the numbers will raise decision quality and render intuition obsolete as a means of attaining desired outcomes. Although it is reasonable to assume that sophisticated analytical models, such as Big Data, are the answer to 21st-century complexity, there are those in the academic and business community who question the strict devotion to quantitative decision frameworks.

The Case for Intuition



A number of concerns, however, have been raised about an overreliance on the movement toward the primary use of quantitative methods as the future of corporate decision-making. One assumption that drives the value of Big Data is the belief that quantitative input used to generate output is, indeed, accurate or has included the appropriate variables that would result in effective decisions. The reliability of the numbers can come into play and concerns about asking the wrong questions can impede the value of the results obtained. Advanced quantitative models will certainly offer more information;

however, with a greater focus on granular data, the big picture could be overlooked. As pointed out in a recent article, “the sheer size of today’s data means that companies need to be more careful than ever to treat

data as a slave rather than a master.”[v]

A number of studies have revealed that more information about a purchasing decision does not necessarily result in better choices. This has shown to be the case, for example, in Wall Street stock choices, job selection, grocery shopping habits, and college test taking as well as a number of other choices.[vi] [vii] In addition to individual decision-making conundrums associated with information overload, examples from the corporate world have also been identified. A few years ago, Cadbury, the British chocolate maker, produced an ad that was screened by the firm Millward Brown, the world’s largest tester of advertising. The analytic research indicated that the ad, which featured a gorilla playing the drums with background music from a hit Phil Collins song, did poorly in tests with consumers.[viii] The subject responses indicated the ad had limited brand appeal and awareness. The quantitative data clearly demonstrated a no-go recommendation. Even with Millward Brown’s recommendation, Cadbury decided to run the ad—with stunning success. Millions of online views, along with better perceptions of the Cadbury brand, resulted in higher sales. In this case, intuition, rather than rigorous quantitative analyses, resulted in a better outcome.

The medical profession is well noted for its reliance on algorithms for patient diagnoses. The practice of medicine is greatly aided by the availability of vast amounts of quantitative data in assessing physical conditions. One of the specialties where this advantage may be most prevalent is emergency medicine. However, research has demonstrated that experienced emergency room physicians often rely on intuition in carrying out protocol, particularly given the high stakes, high stress, rapidity, incomplete information, overwhelming data, and overlapping processes associated with the environment.[ix] It is not unusual for an emergency room doctor to intuit a symptom that the medical tests do not reveal as a potential problem as just the opposite and, in some cases, a life-threatening situation.

So, how do we sort out this conundrum? Is intuition indeed a relic of 20th-century management or a realistic approach to the complexity associated with strategic decision-making? Rather than attempting to determine whether sophisticated quantitative approaches offer better decision-making criteria than intuition, or vice versa, perhaps our attention should be directed toward a process that integrates the two in a manner that would result in better outcomes. The following section presents a practitioner perspective on the tension between rational and intuitive modes of decision-making.

Employee Schizophrenia: The Multiple Personalities of an Ad Agency

An example of the rational thought versus intuition enigma can be seen through an advertising industry quandary. Although the advertising business is often regarded for its fast pace and creativity, much of the day-to-day work performed within an agency is cyclical, methodical, data-oriented, and process-driven. Many an agency person can attest to client mandates to adhere to quantitative ad effectiveness benchmarks, segmentation research, tracking studies, and the like. These mandates tend to increase with the size of the client’s business. In the right hands, these data can guide the agency and the marketer alike to make better-informed decisions, garner insights that generate a competitive advantage, and avoid otherwise costly mistakes. There are also times when this data can be a hindrance and even a serious detriment to the output of the agency. Say, for example, a marketer has conducted a lengthy and costly customer segmentation study. Not surprisingly, plans will often be postponed and decisions will be delayed until the results of the research arrive. The promise of quantitative data creates an optimistic anticipation among the ranks, almost as if the results will reflect something of a silver-bullet quality. However, with rare exception, the actual results are far from magic, but rather beg more questions, add layers of complication, create confusion, and pose even more difficult decision-making challenges. It’s never as clean and clear as people think it will be.

Data provide the promise of certainty. However, in business, certainty is not too dissimilar from a desert oasis; pursuing it typically results in disappointment. Interestingly, many an ad agency veteran will testify

that agencies are at their best during either a) client crisis events or b) new business pitches. Both scenarios have several key factors in common: a lack of time, a lack of resources, and a lack of information. These factors tend to force people into intuitive decision-making mode. It is worth noting that the most effective agency people are able to toggle between the two modes, depending on the circumstances of the project.

Six Guides to Advancing Quality Decision-Making

The recommendations below may prove useful in resolving, in part, the conundrum associated with intuition in data-rich environments. These principles may allow the decision maker to pause and adopt a broader perspective in sorting out key issues in the process.

1. **Mind the mission:** Be crystal clear about the goal. It is Management 101; clearly defined outcomes and objectives are essential in making effective decisions. With that, practice a certain amount of self-honesty to determine if the mission has shifted to supporting and/or validating the data, rather than using data to achieve the stated objective. This strategy can slow the decision-making process to allow the leader to be more focused on the goals to be accomplished.[x]
2. **Don't treat data like a person:** Data are inanimate and silent; treat them accordingly. Resist the temptation to give data a seat at the head of the table and a loud voice. Don't be afraid to ask yourself, "Does this make sense?" Similarly, appoint the most appropriate people to the task. Nasr, CEO of Armedia (2015), describes the value of Subject Matter Experts (SMEs), who reflect on the richness of the data to substantiate the value of the information.[xi]
3. **Listen to your gut, particularly in the early stages:** Research suggests that physical sensations (i.e., gut feelings) can be an extremely reliable source for effective decision-making.[xii] We often get that sense of "knowing" long before we are able to verbalize it. So, next time, take notice when your gut is talking and do not be so quick to discount it, but instead incorporate those feelings in a process that verifies their substance. Gladwell refers to the phenomena of 10,000 hours of experience as a means of building intuitive expertise.[xiii] We may conclude, therefore, that "gut" reactions may have a place in the early stages of the decision process. Perhaps it is one's experience, based on multiple trials of the same or similar events, that can activate both acute perception of the issue at hand and a flurry of creativity that may expand alternative perspectives. However, as described above, there is likely to be added value if the decision-maker can utilize the tools that allow the decision-maker to "apply the brakes" before taking hasty action.
4. **Recognize emotions:** Being aware of the emotions related to the issue associated with the decision can be helpful in teasing out the extent to which they may bias your action.[xiv] Optimism or pessimism surrounding the circumstances or individuals involved in the decision outcome can cloud an objective decision. The decision-maker needs to ask, "To what extent are my emotions driving my actions?"
5. **Reflective Inquiry:** There is evidence to suggest that taking a step back allows the decision-maker to consider further available options.[xv] [xvi] For example, journaling offers the opportunity to move intuition from mind to paper or electronic visualization. Writing a script in which the "author" examines the goals and initial reactions may result in widening the decision pool, leading to more effective outcomes. Questioning assumptions in the dialogue could provide insights that were not recognized in the initial process. The writing exercise allows the decision-maker to consider ways in which the initial judgment could be improved and, therefore, may portray the "landscape" in a broader manner.
6. **Devil's Advocate:** Intentionally seeking out a contrary opinion may strengthen the process.[xvii] Asking a member of the organization who has knowledge of the issues the question "What is wrong with this action?" may bring about an awareness of the limitations of the initial action and result in an improved decision.

Guiding Intuitive Decision-Making in Data-Rich Environments

In summarizing the dichotomy associated with rational thought versus intuition, please return to the exercise we asked you to engage in at the beginning of the article. The purpose of this “drill” was to examine the extent to which you used data gathering in making your most recent decision. The more you focused on more analytic investigation—“What data do I need to collect?” “How do I make sense of the data?” “What actions do I take based on the analysis of the data?”—the more you embraced rational thought. On the other hand, the greater your feelings about the decision—“What does my experience tell me about this decision?” “Are there any lessons from the past that I can draw from?” “How does the decision feel to me?”—the more you relied on intuition. Both processes could have led to positive results, but the purpose of this article is to recognize the value of each, meaning: the integration of rational thought and intuition to enhance the quality of decisions.

Intuitive decision-making hinges on two key factors: experience and time. It stands to reason that the more experience one has with a business, an industry, a consumer group, or so on, the more easily one will be able to intuit an appropriate course of action. Likewise, the less time and information one has, the more one is forced to rely upon intuitive sense.

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- [iii] *The Economist*. (2011) Schumpeter: Building with big data. May 28, p. 74
- [iv] Kahneman, D. (2012) *Thinking, Fast and Slow*. Farrar, Straus & Giroux: NY.
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- [xiii] Gladwell, M. (2008) *The outliers: The story of success*. Little, Brown & Co: NY.
- [xiv] Coget.
- [xv] Ibid.
- [xvi] Sadler-Smith, E. & Shefly, E. (2004) The intuitive executive: Understanding and applying ‘gut feel’ in

decision-making. *Academy of Management Executive*, 18, 4.

[xvii] Ibid.

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