

---

# Big Data, Big Decisions: The Growing Need for Acting with Certainty in Uncertain Times

DAVID KENNY

---

We live in an era when the rise of Big Data is widely hailed as an unprecedented enabler of great breakthroughs for humankind. And yet, the massive rise of Big Data has not produced a commensurate improvement in the quality and timeliness of decision-making. More and better data can never fully eliminate all uncertainties, so human beings must still make the big decisions. As large, complex issues such as climate change, energy, and health care increasingly threaten the well-being of billions of people, we must move beyond the collective inaction of thoughtful, well-meaning leaders who want to do the right thing but who require complete certainty of all the facts before taking action.

## THE PROMISE OF BIG DATA

In the business world, we have all been focused on the idea of Big Data for several years, a movement accelerated by the rapid emergence of the cloud and the proliferation of mobile devices. Consequently, the business world has more sensors collecting exponentially more data about

---

*David Kenny is Chairman and CEO of The Weather Company, where he oversees the company's portfolio of weather businesses, including The Weather Channel, weather.com, wunderground.com, and WSI.*

---

people, places, and things. And as computing power becomes cheaper, an almost limitless collection of data can now be dissected, analyzed, and admired in a numbing parade of charts and graphs.

At The Weather Company, for example, advances in technology and computer science have enabled us to transform our forecasting ability.

*We used to forecast the weather four times a day, every six hours. Now, we do it every fifteen minutes.*

..... We have more information and better insight into the weather than ever before. In fact, we improved our forecasting capabilities more last year than in the previous decade. We now ingest terabytes of data every minute from millions of sources as diverse as the wings of airplanes, the depths of the oceans, and the backyards of ordinary citizens operating personal weather stations. We used to forecast the weather four times a day, every six hours. Now, we do it every fifteen minutes.

We have also become far more precise geographically, as we have sought to give mobile users forecasts pinpointed to their exact locations. Overall, we now deliver much better forecasts and predictions, which should enable our customers to make better decisions.

We see great examples of similar progress in other fields. In some encouraging cases, Big Data has helped make better incremental decisions like, “What am I really searching for?” Or, “Where is the best table available for dinner on Thursday?” Or, “What else would this customer like to buy from us?” But we are also seeing Big Data better inform some more meaningful decisions like where to direct cancer research, how to get humans to Mars, or how to evacuate hundreds of thousands of Filipinos in the path of a typhoon.

Even so, as I talk with other leaders from both the public and private sectors, I hear a common concern that we are only scratching the surface in translating the growing power of Big Data into meaningful advances.

## TURNING DATA INTO DECISIONS

Despite all that progress in collecting and synthesizing data, many leaders know their company or government could move much faster and more boldly when it comes to converting data and analysis into decisions and action. Unfortunately, the rise of Big Data has not eliminated “analysis paralysis,” and in many ways has actually enabled indecisiveness. Because as more data has become available, it has become easier to get lost in details, and more tempting to want the data to make decisions for us.

We see that kind of paralysis all the time in the world of weather forecasting. We witness critical moments when leaders do not take action in the face of clearly ominous circumstances, largely because the data does not confirm what will happen with 100 percent certainty. Some recent examples reflect just how cruel the consequences of such indecision can be. In our headquarter's city of Atlanta last year, we witnessed less than two inches of snow and ice strand many thousands

*Unfortunately, the rise of Big Data has not eliminated "analysis paralysis," and in many ways has actually enabled indecisiveness.*

of citizens in their cars for twelve hours or more, largely because officials did not act on the forecasts until it was too late. And in rural Nepal last fall, forty-seven trekkers were killed by winter storms, largely because the forecast of those storms were dismissed as "just news."<sup>1</sup>

In both of those situations and many others like them, the decision-makers did not take the right actions at the right time because the data did not feel *certain* enough for them to act. But we know that no matter how big the data may get and how precise the forecasts may become, some level of uncertainty will always remain in every situation, and leaders cannot look to the data to make the decisions for them. The big decisions will always ultimately need to be made by people.

## LEADERSHIP AND DECISIONS

Consequently, our leaders must become increasingly comfortable with evaluating risks and probabilities so that they can make timely decisions to take the actions required to deliver the best results for our societies. In their book "Analytics at Work," Thomas Davenport, Jeanne Harris, and Robert Morison point to leadership as the single most important factor in a company's ability to turn data into good decisions. They go on to say, "The best decision-makers will be those who combine the science of quantitative analysis with the art of sound reasoning."<sup>2</sup>

Indeed, in the past few years at The Weather Company, we have talked a great deal about the importance of becoming a distinctively great "data company," capable of converting information into value for customers far better than any competitor. More recently, we have also begun striving toward becoming a great "decisions company," a company that provides our customers not only with good information but doing so in a way that helps enable the people we serve to make good, timely decisions based on

short and long-term weather predictions. That commitment has required us to become better decision-makers ourselves, which is a capability that must become a larger part of who we are and how we operate.

### BIG DECISIONS ON BIG ISSUES

The emergence of that kind of decision-making will be critical if we are to realize our full potential when it comes to using Big Data to solve the most daunting set of problems our species has ever faced. Those problems include complicated issues like managing climate change, overcoming scarcity of water and food, and providing accessible health care for more than 7 billion people. They also include smaller, but frustrating, issues like the unnecessary loss of human life because of simple things like texting-while-driving or the lack of flu immunizations.

For each of those problems, we collectively have an enormous amount of data illuminating the causes, effects, implications, and potential solutions. And yet, because of the huge scale and complexity of the data, we collectively fail to take decisive action. This has been especially true on

*The greatest deterrent to meaningful progress is not a powerful cabal of special interest groups ... Instead, it is actually the collective inaction of thoughtful, well-meaning leaders who want to do the right thing but who require complete certainty of all the facts before taking action.*

the topic of climate change.

As my colleagues and I have engaged on the issue of climate change, it strikes me that the greatest deterrent to meaningful progress is not a powerful cabal of special interest groups conspiring to maintain the status quo. Instead, it is actually the collective inaction of thoughtful, well-meaning leaders who want to do the right thing but who require complete certainty of all the facts before taking action.

For instance, while an overwhelming majority of studies have confirmed the tremendous threat that carbon emissions pose to our planet, some ambiguities still remain. In nations such as Germany and Denmark, leaders have taken action in the face of those uncertainties, creating powerful incentives to inspire companies to invest heavily in alternative energy sources. But in many other nations, the lack of perfect certainty is allowed to justify inaction. Repeatedly, no action is taken, either out of a fear of the relatively small chance of being wrong, or because various

special interest groups have actively used selective data to sow doubts.

Looking back at history, we have seen the human losses that can be inflicted by such delays. For instance, how many lives were taken because of our collective failure to take action on the health effects of smoking or the need for mandatory seatbelts in automobiles? In retrospect, the conclusions about those threats seem ridiculously obvious. It is difficult to imagine that we as a society waited so long to take action, all because of relatively small amounts of uncertainty. When we look at the likely consequences of failing to take action against climate change right now, it is easy to imagine that history will judge us harshly for failing to do *something* because we didn't know *everything*.

*When we look at the likely consequences of failing to take action against climate change right now, it is easy to imagine that history will judge us harshly for failing to do something because we didn't know everything.*

#### ENDNOTES

- 1 Nida Najar and Philip Pan, "Recriminations Follow Deaths of Hikers in Nepal," *The New York Times*, October 17, 2014, <<http://www.nytimes.com/2014/10/18/world/asia/nepal-to-establish-weather-warning-system-after-hiking-disaster.html>> (accessed March 29, 2015).
- 2 Thomas Davenport, Jeanne Harris, and Robert Morison, *Analytics at Work: Smarter Decisions, Better Results* (Boston: Harvard Business School Publishing Corporation, 2010), 15-16.