Few issues have generated as much concern and confusion as the rise of Big Data, but given the impact on every industry, community, and person, should we expect anything less? Data is simply all of the information around us and about us. Yet, for all the reasons described in this report, it can be hard for individuals, policymakers, and other public and private sector stakeholders to fully comprehend and appreciate the data movement.

As a result of this incomplete knowledge and awareness, there is sometimes an unwarranted fear of data, a concern that information produced by the Internet of Things and all the technologies we use is reducing human beings to sets of 1s and 0s. As the age-old sentiment says, people fear what they do not understand. For many people, this fear boils down to a simple question: could the rise of data come to replace human intelligence?

In short, no. As the research and scholars in this report show, data does not work that way. Data contributes to informed decision making, but it is only a part of the equation. As history has proven time and again, being a good leader is about making good choices. In every setting, leaders must use a mix of reliable information and experience to decide the best course of action. The growing saturation of data-generating technologies contributes to an ocean of information that, when analyzed, can reveal new connections, trends, and opportunities. Yet, in the end, it will always be a person with a heartbeat (not an algorithm) that makes a final decision.

A recent report from The Economist Intelligence Unit, “Decisive Action: How Businesses Make Decisions and How They Could do it Better,” investigated how intuition fits into business executives’ decision-making processes. In a survey of company leaders, the study found that 42% of respondents characterized their decision-making style as data-driven, while 17% noted a primarily empirical decision-making process. Just 10% reported a largely intuitive decision-making style.
Yet, when asked what they would do if data contradicted a “gut feeling,” nearly 60% of business leaders said they would reanalyze the data; 30% said they would collect more data; and, a meager 10% would ignore that little voice inside and do what the data says.

What this tells us is that even as data-driven decision making is an important and growing force, it does not trump good, old-fashioned human intuition. Nor should it. For all of the powerful, valuable insights data can offer, it can never replace a conversation between parties, an experience-based deduction, or any of the unreplicable cognitive qualities unique to human beings.

Data veracity is a challenge for analysts. This refers to data accuracy as well as source reliability, the context out of which the data comes, the methods for sorting and storing information, and a range of factors that can influence the data’s validity. Remedying this is already a large, time-consuming effort. The Harvard Business Review reports that workers can spend up to 50% of their time looking for data, fixing errors, and trying to validate the numbers they have on hand.2

While this shows the ongoing challenge of acquiring high-quality data, it also underscores another way in which the human element remains critical. Collecting data and preparing it for analysis still demands a human intelligence. It is that intuitive hunch, that gut feeling that can push a business leader to pause before acting on data analysis that just doesn’t add up. Without human knowledge and wisdom, we might end up chasing Big Data red herrings. Instead, data informs our thoughts, actions, and discussions and elevates them to a higher level. The data and the decision-maker must work together to produce groundbreaking innovations and business insights.

Balancing Needs and Opportunities
Each of the chapters in this report discusses the core, interdependent attributes of the data-driven world. Realizing the most value from data is a careful balancing act, with multiple competing priorities that must receive appropriate attention and commitment or we will not enjoy the jobs, innovations, efficiencies, and better quality of life that data can yield.

As Leslie Bradshaw writes in Chapter 3, the data movement is akin to the era-advancing technological breakthroughs of centuries past, which included the printing press, the steam engine, and the semiconductor. Like Big Data, each of these technologies presented a steep learning curve for society, demanding knowledge for effective application. Recognizing that the human element is an indispensable part of the data movement, the challenge for modern society is to foster data literacy among policymakers, business leaders and entrepreneurs, and citizens, such that we can realize data’s value.

This value is substantial. Data brings enormous opportunities for growth. It drives innovation and business success, which in turn deliver cascading economic and productivity gains. Indeed, as McKinsey finds (and as Joseph Kennedy cites in
Chapter 2), the better use of data could increase global income by $3 trillion each year in just seven industries. These potential economic gains are compounded if data is shared between organizations. For example, in 2012, the data-driven marketing economy topped $156 billion and created 676,000 jobs—70% of this value and employment depended on moving data between firms.\(^3\)

While dollar figures are important, so too are the competitive benefits that come with data-driven business and innovation. John Raidt writes in Chapter 4 that the United States is unrivaled in its capacity to extract the most value from data. Yet, other countries are also looking at how data can help them, and the United States must continue fostering the data-driven economy with targeted steps towards greater competitiveness. This includes building a vibrant and dynamic STEM workforce, expanding a robust broadband infrastructure, developing trade agreements and practices that ensure the flow and protection of data, and adjusting publicly funded R&D to better develop data capabilities and public-private collaboration.

One way collaboration can be encouraged is through the principle of Open Data. As Joel Gurin describes in Chapter 6, Open Data can be used by anyone as a free (or low-cost) public resource and can be used to start new businesses, gain business intelligence, and improve business processes. While Open Data is not limited to public sector data, the most extensive, widely used Open Data comes from government agencies and offices. As such, governments at all levels need to develop policies and processes to release relevant, accessible, and useful Open Data sources to enable innovation, support a better-informed public, and create economic opportunity. By doing so, we unleash untapped potential in our economy and workforce, providing benefits and linking entrepreneurs, consumers, and average citizens in every region of the country.

All of this demands a national strategic plan for properly aligning public policies, resources, and priorities. As Matthew Harding writes in Chapter 5, Big Data needs to be grounded on open standards and requires advanced technological solutions to monitor and enforce high quality in acquisition and use. Clear principles of data ownership are urgently required. Public policies should encourage responsible use of data. Privacy and security concerns are best addressed by industry-led initiatives that are flexible, innovative, and technologically sound. Policies that restrict or prevent data access and sharing are a major impediment to innovation and public welfare.

Effective, strategic policies are just as important in the private sector, as corporations and governments alike face complex questions about data ownership and use. These questions are frequently (and unfortunately) reduced to vague calls for privacy, but as Benjamin Wittes and Wells C. Bennett note in Chapter 7, privacy is actually not an accurate word for discussing corporate responsibilities and consumer protection. The word promises a great deal more than policymakers are prepared to deliver, and in some ways, it also promises more than consumers want. Rather, what is needed is protection against “databuse”—the malicious, reckless, negligent, or unjustified handling, collection, or use of a person’s data in a fashion adverse to that person’s interests and in the absence of that person’s knowing consent. Companies must be reasonable and honest data custodians, handling data in a forthright and secure fashion, one that does not injure consumers and gives them reasonable information about and control over what is being done with their data.

**Towards a New World**

The data movement is unlike anything we have seen before. It connects all people, activities, and the goods and services we create. It transcends national borders and arbitrary barriers between people, cultures, and ideas. This new world, shaped by data, gives us a rare opportunity to explore and discover.

An historic parallel are the adventures of the first nautical explorers. As these early, ultimate risk-takers looked out from the shoreline, preparing to shove off into open waters, they had their sails at the ready to go somewhere, but where they would land and the direction they would take was often unknown. To be sure, the forces of nature certainly impacted those journeys, but it was human hands, firmly grasping the rudders of available technologies and innovations, that steered these pioneers to new shores of opportunity.

Today, we find ourselves on the verge of a similarly epic journey, its endpoint ever-uncertain. The direction we take will be decided by the forces of
nature and commerce, as well as the debates and discussions we have about what the data-driven future should look like. The rudder by which we steer is held with imperfect hands, where error and discovery are just a few degrees apart. Yet, this is a journey we must take if we are to keep moving forward.

The winds of innovation are blowing, our sails are raised, and there is an ocean of data and possibility before us. At the outset of any adventure, a measure of anxiety can be healthy and helpful, but this ship of opportunity is of our making and fully within our control. If there is one lesson we can take with us on this voyage, it is this: the power of data is not what it can do but what we can do with it.

ENDNOTES


ABOUT THE AUTHOR

Rich Cooper is vice president for emerging issues and research for the U.S. Chamber of Commerce Foundation where he is responsible for the exploration of issues that will impact the private sector over the next three to five years. He directs a team of scholars, researchers, and managers who present programming, publications, and events to better inform and best prepare business leaders for the future. He is a senior fellow with The George Washington University’s Homeland Security Policy Institute, the past chairman of the Homeland Security Division of the National Defense Industrial Association, and has previously held senior positions at the U.S. Department of Homeland Security, NASA, and in the private sector.