



Decision Sciences Myths Debunked

White Paper



Author: Dhiraj Rajaram
January 2011
www.mu-sigma.com

Data-driven management yields better results for business -- and getting started is easier than you may think.

Decision Sciences is the discipline of solving business problems by using first principles with a mix of mathematics, business knowledge, and technology. Familiar examples include data mining and predictive analytics. It emphasizes the adoption of a structured, hypothesis-driven approach to break down the problem, analyze data, and make business decisions.

Executives often make poor decisions when they rely on intuition and try to predict the future based on gut feel. Decision Sciences provide effective methods to examine alternatives, separate facts from biases, and improve decision making. Many Fortune 500 companies and industry pioneers are leveraging data-based methods to identify efficient ways to do work, adapt to swift changes in the economic environment, and react to changing customer needs. But despite the growing acceptance of Decision Sciences, myths about the field persist in the marketplace.

Myth: Decision Sciences requires clean data.

Reality: It is true that building enterprise data warehouses would help institutionalize data-driven decision making, but it is not a prerequisite to getting started. "Dirty data" -- raw pieces of information that are not cleansed, are stored in disparate sources and contain missing values and outliers -- can still yield value. And processing data can induce bias and skew results. The most important requirements for getting your organizations to start making data driven decisions are raw data and analysts who are capable of operating with a hypothesis-driven mindset.

Myth: Decision Sciences raise the risks of breaching data privacy and security.

Reality: Techniques to mask customer sensitive information transform data without altering the intrinsic patterns that exist and are necessary for analyses.

Myth: Decision Sciences requires a large budget and expensive off-the-shelf

tools.

Reality: Sophisticated analytics software is not a pre-requisite; first principles-based thinking and a hypothesis-driven mindset are the key elements. Force-fitting generic models to the tools available in the market will give incorrect to average results. A qualified analyst can cut and slice the information available without any expensive software to yield insights that guide businesses to make the right decisions.

Myth: Decision Sciences requires highly trained personnel.

Reality: One does not need a PhD, formal training in statistics or proficiency in programming logic to get started on decision sciences. Understanding the information available, applying it in the right context and asking the right set of questions are the keys to successfully practicing Decision Sciences. To quote a famous statistician John Tukey, "An approximate answer to the right problem is worth a great deal more than an exact answer to an approximate problem."

Conclusion

Demystifying Decision Sciences helps an enterprise open doors - each open door leads to actionable insights and new doors. It is a constantly evolving maze and business managers need to use the right combination of business, math and technology to prioritize issues and open the right doors - making it more ubiquitous and guiding all decision processes.

Firms that approach Decision Sciences expecting an "aha!" moment will likely be disappointed at the lack of dramatic insights or incredible new market opportunities. The reality is that Decision Sciences provides improvement and focus to existing business processes, not million-dollar discoveries.

Dhiraj Rajaram is the founder and CEO of Mu Sigma, an analytics services company that helps clients institutionalize data-driven decision making.

About Mu Sigma:

Mu Sigma helps clients institutionalize analytics in their organizations using global delivery. We are headquartered in Chicago, USA with a delivery center in Bangalore, India. Mu Sigma's scientific community, which consists of practitioners from leading educational institutions in the United States and India, enable us to deploy cutting edge analytics for our clients. Our best-in-class processes leverage expertise in statistics and econometrics in the areas of marketing, risk and supply chain. The techniques our professionals use range from conventional statistical and operations research techniques to advanced artificial intelligence techniques.