

: Are there strategic decision making 'big data' use cases?

Daniel J. Power

Editor DSSResources.com and Decision Support News

It is generally assumed that managers want to make data-driven decisions, rather than intuitive or "gut feel" decisions. Some evidence suggests that senior managers are only "pushing" data-driven decision making for operations decision makers. Are there important, strategic, long-term decision making use cases? Do senior business and government executives want to use "big data" to support their strategic decision making? Are there any examples of using "big data" to support strategic decision makers?

Many senior executives want operating personnel and lower-level managers to use predictive analytics and "big data" decision support applications. Also, some senior managers want to hire data analysis specialists, data scientists and managers who understand "big data" applications. There is little evidence that senior managers want or think it possible that "big data" and analytics can or will impact long-term strategic decision making.

"Big data" software and hardware salespeople however, seem to think the possibilities for changing companies and the world with "big data" are unbounded. A fundamental shift is supposedly happening in how decisions are made because of "big data". New data does mean more and better measurement, more record-keeping and more analysis, but there is no guarantee that the data will influence significant or strategic management decisions in a meaningful way. Senior managers must want to use data and analytical decision support if the envisioned data revolution is to actually occur. Managers should be skeptical about "big data" because they must trust the accuracy of convenience data and correlational analyses. More data doesn't mean more decision relevant or more meaningful data. Also, using data mining and other tools to analyse data stores does not guarantee findings and results that are meaningful. Analyses based upon correlations and associations do not establish causal connections.

Managers need to identify novel data use cases that create value for strategic decision making. For example, assisting in creating a new business, helping introduce a significant new product and hiring the leaders of tomorrow for a company. These more strategic decisions may **not** however be appropriate for the realm of "big data" and analytics. Intuition, collaboration, and small data may be much more important than "big data" sources for making "big picture" strategic decisions.

Let's examine some "big data" use cases (cf., Laskowski, 2013). A number of sources identify a fast food restaurant chain's use of cameras to determine what to display on the drive-up menu screen as a "big data" use case. Depending on waiting line length, the menu screen will display either items that are quick to prepare or items that may take longer. Perhaps image recognition and wait line

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length inference is a novel data use, but such an application is automating an operating level decision that a person could easily make and then quickly, and manually change or toggle the electronic data display.

Another use case that has been cited is police departments using software from PredPol, the "Predictive Policing Company". The PredPol (<http://www.predpol.com/>) software uses crime data for a geographic area to assign probabilities for future crime events to regions of space and time and a map software display presents estimated crime risk in a user friendly framework to a law enforcement decision maker like a shift sergeant or lieutenant. Again this use case is for an operational decision making task and the volume, velocity and variety of data used is traditional and structured. Crime data is not thought of as "big data" even if it is updated in real-time. For example in 2012, approximately 10 million crimes were reported in the entire United States.

Many other use cases are cited, but let's examine the beeping medicine caps that keep track of prescription consumption created by Express Scripts and the automated phone calls made to remind customers when to take their medicines. These data-driven applications may help individuals remember to take an action, but the use cases are at best new products. These products are not derived from "big data". A "small", structured database is probably used for the phone reminders. The beeping reminder prescription bottle cap is not exploiting "big data" either.

Data is useful, very useful. We have more of it and the volume will increase because data capture and storage is inexpensive. Today we can more easily capture and analyze data in real-time, so we will do that. Data in formats that are unstructured can now be captured and stored and in some situations the data can meaningfully be analyzed. Managers are finding novel uses for data to support decision making and more uses will likely be identified. Strategic uses are much harder to identify. Both corporate-level managers and senior government decision makers know that "wicked", non-routine decisions are still the primary responsible of smart, well-informed people. One hopes those senior decision makers use all of their capabilities, request and read targeted research analyses and use facts to make the best decisions humanly possible in those situations.

Analyzing "big data" to find a great business plan or to identify the next revolutionary product idea seems like wishful thinking. Trying to use "big data" for that purpose reminds me of the story of the small boy who woke up on Christmas morning to find a huge pile of horse manure in the living room by the Christmas tree instead of presents. His parents discover him happily and enthusiastically digging in the manure. They ask "What are you doing son?" The boy exclaims, "With all this manure, there must be a pony here somewhere!"

Overall, I am optimistic about finding many novel use cases for new data sources. I am concerned however that in some specific cases "big data" will be little more than a huge pile of horse manure.

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Also, it is my belief and hope that "big data" and analytics will **not** replace experienced and talented human strategic decision makers at anytime in the foreseeable future.

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Author: Daniel Power

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