

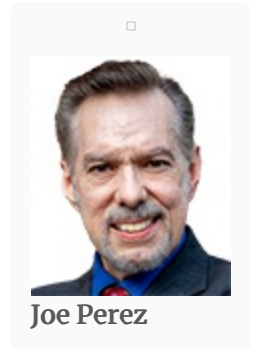
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Applying actionable data from concept to reality: Part 3

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As was mentioned in Part 1 of this series,^[1] the *data storytelling journey* is an imaginary horizontal line, along which there are five stages for best practices in getting from the idea (“Conception” on the left) to the completed visualization (“Direction” on the right) (Figure 1).

Figure 1. The Five Stages of the Spectrum



Fourth stage: Inspection—Give it space

After having “started the race” with the first stage of Conception, “making the case” (the second stage of Inception), and “motivating the base” (the third stage of Perception), it is now time to “give it space” with the fourth stage of the spectrum, Inspection (key word: “investigate”). Ask yourself, does your data stand up to scrutiny?

Attention to detail

As we learned from the third stage in the previous article, it is important to pay attention to visual cues (the precursor to Inspection). To illustrate this point, below is an example of a “word jumble” paragraph that has been widely circulated:

“Aoccdnrig to a rscheearch at Cmabrigde Uinervtisy, it deosn’t mtttaer in waht oredr the ltteers in a wrod are, the olny iprmoetnt tihng is taht the frist and lsat ltteer be at the rghit pclae. The rset can be a toatl mses and you can sitll raed it wouthit porbelm. Tihs is bcuseae the huamn mnid deos not raed ervey lteter by istlef, but the wrod as a wlohe.”^[2]

Unscrambled, it reads:

“According to research at Cambridge University, it doesn’t matter in what order the letters in a word are, the only important thing is that the first and last letter be at the right place. The rest can be a total mess and you can still read it without problem. This is because the human mind does not read every letter by itself, but the word as a whole.”

Upon reading the above paragraph, two questions to ask are (1) why do some individuals seem to be able to decipher the word jumble so easily (and under what conditions), and (2) which parts of the paragraph are true and which ones are fiction?

First, Cambridge University never conducted such a study. And while it is true that the human brain processes words as a whole (rather than one letter at a time), contextual inference is needed. That is, they should be rather small words and arranged in such a way that one can use personal experience for the brain to fill in the gaps. Additionally, it helps when basic sounds are preserved. For example, you can more easily guess that “toatl” stands for “total” than you could if it were spelled “talot” instead. Lastly, it is easier to unscramble words when one can predict what is coming next. That is, the human brain, from previous experience, is best at filling in the context from incomplete information when it can anticipate what is coming next.

This principle also applies to ensuring transparency in data storytelling: Just as words are perceived as pieces of a message, so images are perceived as parts of a story. This is necessary to ensure appropriate investigation can take place and transparency can be achieved.

The importance of transparency

Being totally transparent helps avoid the pitfalls of bias and unethical use of data upon inspection. When analytical professionals have done their due diligence, they will neither be bothered nor intimidated by questions such as:

- Did you ensure data quality?
- Where did you get your data?
- How do you know it’s right?

In a 2017 blog post, Matt Reaney, founder and director at a European talent search firm specializing in Big Data, advocated the importance of transparency in data and suggested three aspects of transparency,^[3] summarized below:

- **Start with a story (understand what is being visualized):** What better way to make sense of an unintelligible mass of numbers than to put them into a story? This guiding principle should be at the core of every data visualization. As was stated in Part 1 of this series, if key stakeholders understand the data, they are incentivized to take ownership, and by extension, this facilitates their ability to explain or justify the data and their actions when questioned.
- **Show the data as is (i.e., unmanipulated):** Show the data for what it is—including all its warts, blemishes, and wrinkles. Correct, honest decisions and correct conclusions can only come from accurate, unadulterated, unmanipulated data.
- **Secure the trust of the stakeholders:** Reaney says that transparency is all about trust, since common sense indicates that people are more inclined to believe what they can trust. In Reaney’s own words, “When the business learns to trust the numbers, they have a solid foundation for making the best decisions and subsequent growth.”^[4]

Impact vs. influence

Having taken transparency into consideration, as the data behind a visualization project is held up to inspection,

it is important to be aware of the difference between impact and influence, and how that difference plays into making data actionable.

Impact is typically recognized as being an effect brought on by *external* factors that tend to *push* on the status quo. In a 2015 *Harvard Business Review* study, the following was found: “Nearly 85 percent of a company’s performance is dependent upon external factors. Yet...many companies don’t know where to look to determine which external drivers are affecting business performance.”^[5] Those who make it a priority to identify those factors are PUSHED into acting upon them, thus making an impact in their organization.

By contrast, influence is generally known to be the power to affect from *internal* factors that tend to *pull* on the status quo. These are factors that an organization can control internally. Such factors include data structure/organization, the frequency of data collection and assimilation into the data warehouse, and the cultural climate already existing in the organization. Recognizing and dealing with these factors will tend to *pull* the organization’s strategy in the right direction from the *inside*.

An idea must be *visualized*, then *scrutinized* before it can be *realized*. In other words, the organization that has given the data some “space” to ensure it can stand up to inspection is well on its way to turning concepts into reality with actionable data.

A combination for success

It is possible to measure success in this area by capitalizing on this knowledge and turning ideas into reality by blending the external with the internal, leveraging them both into a cohesive strategy to meet short-term needs *and* provide long-term benefit.

This is because by this time (having adhered to the principles in the first four stages expounded upon in this series of articles), the analytical professional will have learned to take their data, differentiate it to come up with information, see the connections to derive knowledge, determine the meaningful connections to grant insight, and find the best paths between them for wisdom. At that point, impact will have been achieved.^[6] As a result, you will most certainly generate influence as well.

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