



Gaining Decision Advantage in the Boardroom

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As an analytics professional in 2023, the so-called “killer app” is the ability to effectively communicate your work. Words matter and bridging the intellectual “gap” between our specialty and our audience falls on us. We must simultaneously convince our nonanalyst decision makers that our work was performed correctly without watering it down to the point that it is not intellectually honest. The style and way we communicate our work, whether in a peer-reviewed journal or an executive-level decision forum, should inspire confidence. We do both our profession and our clients a disservice by not considering our tools a custom-made language.

The voice of the analyst is just one in an often noisy, crowded, and complex decision-making environment. It is a painful experience where the best analysis is ultimately for naught because the audience does not understand it or accept it. In thinking about this, my premise is that the analysis is meant to inform a decision or provide insight into an uncertainty, question, or challenge.

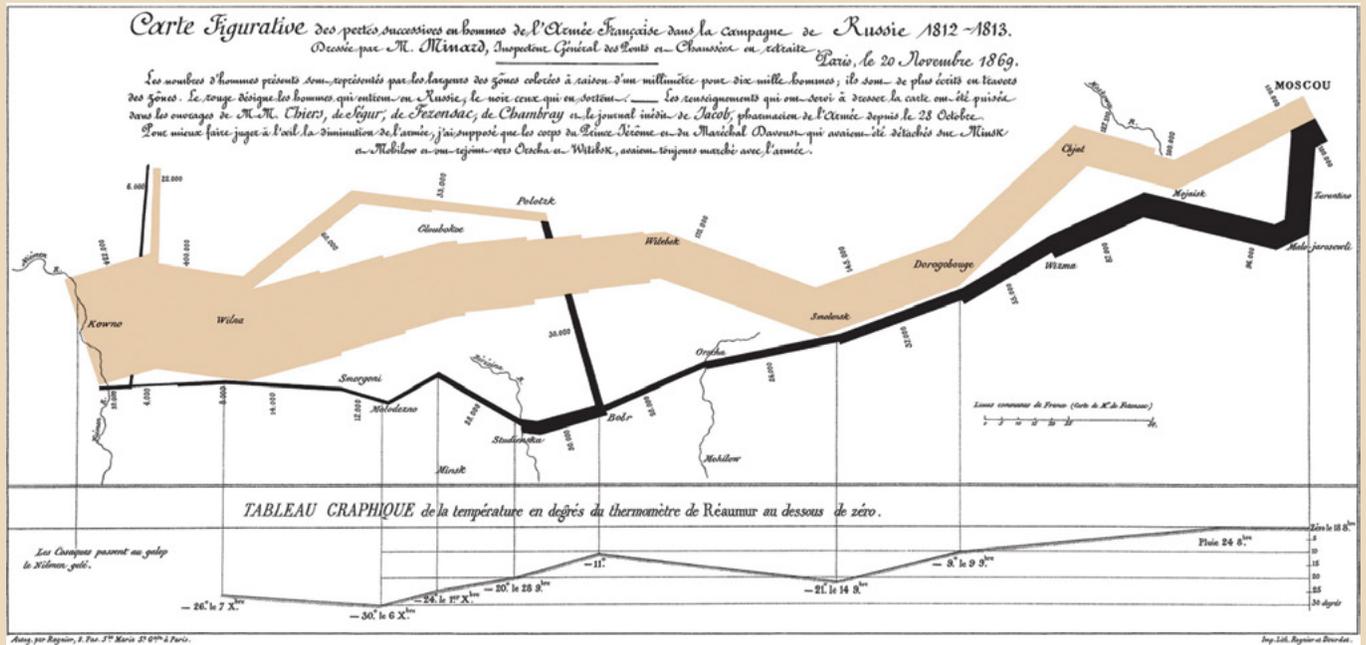
The essential elements and principles for dominating the boardroom in the battle of decision support are data storytelling, professional relationships, and professional engagement.

We can define success as the decision maker’s intellectual “market share.” In this context, we do not require that your analysis be followed, only that it be thoughtfully considered.

Essential Elements and Principles

The best analysis is worthless if it is not communicated clearly, logically, and in a language that your audience can understand. A common mantra is that there are no new lessons learned, there are only lessons to be re-learned. If you want a new idea, read an old book. Most analytic professionals are familiar with the map by Charles Joseph Minard (see Figure 1) that portrays the losses suffered by Napoleon’s army in the Russian campaign of 1812. It was

Figure 1



Charles Joseph Menard's map showing the losses suffered by Napoleon's army in the Russian campaign of 1812.

created in 1869 and is innovative given the period in which it was created. Given all the technological advances in data visualization, why hasn't a more recent exemplar been created?

We focus on the graphic—the presentation—over our audience's reaction to it. So, for discussing what we consider (rightly?) to be one of the biggest “misses” in presentation, we are not going to show the graph itself, which resembles a plate of spaghetti. It is the (in)famous Afghan stability graphic. While different decision makers will have different reactions, we generally consider this specific one to be “bad.” Upon viewing the graphic, then-Secretary of Defense Robert Gates made an obvious facial expression of incredulosity. To his left was General Stanley McCrystal, the leader of U.S. and NATO forces in Afghanistan, and to his right was the U.S. Ambassador to Afghanistan. They each had a “pained” facial expression of disbelief. Arguably, if the senior decision maker and other principals in the meeting are making these types of facial expressions, you have not gained decision advantage.

Data Storytelling

Analysis is not the only game in town. Excellence in presenting your analysis approach, results in charts and figures, and insights and recommendations is just as

important as the analysis itself. Your presentation skills can never be so good as to turn bad analysis into good analysis, but they can be so bad as to turn otherwise good analysis into irrelevant analysis.

There are many references on how to present information (Tuft, 2001; Few, 2012; Knaflic, 2015; Cairo, 2013; Brinton, 1919). However, data storytelling is a much broader subject. It is the narrative arc that takes the audience from the introduction to the conclusion, and it has multiple levels. In the broadest sense, there is a corporate or enterprise level. As an example, a presentation on current operational readiness of a large factory or fleet of assets could have an overarching theme of the inherent tension between resources necessary to achieve near-term readiness goals and performing configuration modifications to upgrade systems. At the operational level, the analyst must consider options for individual charts, figures, and tables from the client's perspective. Presenting extremely complicated graphics that only you could possibly understand will cause the audience to tune out. You must leverage pre-attentive attributes¹ that show the audience where to look

1. Pre-attentive attributes are visual attributes that our spatial memory subconsciously processes before the information is sent to the attention processing parts of the human brain. Thus, we can see these patterns without thinking or processing.

and follow Gestalt principles of visual perception² to ensure your graphics have a clear order to them. There are many appropriate graphic options such as horizontal bar charts or maps. There are other graphic options that should be avoided. In particular, “food” graphics. No spaghetti or donut or pie charts, especially 3D pie charts and exploding 3D pie charts. The third dimension only serves to increase the visual clutter and complexity and humans are not very good at estimating quantities from angles.

There are several additional considerations for data storytelling. First, if you are presenting the analysis, you own the slides and words matter. You should be rightly proud of your work, and you should be the person most familiar with the details. If someone else not in your direct organization hierarchy presents your work, you will unfortunately lose credit for your work, the nuances of your work will not be provided, and the desired “so what” will be lost.

Be warned! A slide could derail your argument! This type of slide provokes a conversation that distracts from the enterprise level narrative arc. Remember, you can’t always show your competence, but you can usually avoid showing your incompetence. For example, you construct a graphic that shows negative probability or another impossible outcome. Instead of talking about the operational readiness of a large factory, you are now talking about the finer points of probability and statistics. These types of errors are readily apparent to even nontechnical audiences and give those who seek to refute your analysis an easy starting point to question your work. To use a soccer analogy, it is an “own goal.” Similarly, your presentation could go off-track due to nonverbal cues and choice of spoken language. Finally, every slide should stand alone since it is common practice for a slide to be removed from the presentation. Verbal information from your presentation and details on the preceding or subsequent slide will be long forgotten. It is a rare case where you consciously construct a slide that is unintelligible to engender a verbal dialogue.

Professional Relationships

In any professional setting, building trust and two-way relationships will pay dividends. Relationships matter and there are several facets of thought. It is important

2. The seven Gestalt principles—(1) figure ground, (2) similarity, (3) proximity, (4) common region, (5) continuity, (6) closure, and (7) focal point—describe how humans group elements, recognize patterns, and simplify complex images.

to develop your professional network before you need it and if the only time you talk to someone is when you need something, soon nobody will talk to you. If you need performance data for a certain system or projections for sales over the next five years, receiving this data could be challenging. On one end of the spectrum, if the analyst has a professional relationship based on trust with the individual who has the data, they will quickly receive the data, it will be accurate, and your project stays on track. On the other end of the spectrum, if there is no trusting relationship, the analyst team could have to inform the person that the analysis project will proceed without their data. This approach may result in the person being more concerned with the results obtained without their data, than with it. Either way, this circumstance is less than ideal.

Trust and professionalism are indispensable in business development, or, to use a finer word, sales. Beneath the economy of dollars and cents is another, more influential economy, that of goodwill and collaboration. It is my experience that good deeds—and bad misdeeds—really do come back to you in the end. One hand washes the other.

A trusted relationship is invaluable to an analyst because it can reveal an otherwise hidden aspect of the project. In my career, this type of relationship provides a level of understanding known as “inside baseball.” It can provide a level of comfort that there will not be any true surprises during the presentation by revealing the proverbial trap doors and minefields. In addition, this type of friend will discreetly tell you that you have an ugly baby when there is still time to make revisions and make you aware of another organization’s position on the subject of your analysis.

There are circumstances where an analyst can harm their professional network. Most importantly, never “beat up” someone with their own data. They may not favorably view your results, insights, and recommendations, but they should never be surprised by them in a decision-making forum.

Professional Engagement

To be heard, you must speak effectively. There is a progression in an analyst’s professional development. It begins with an idea. This idea germinates into a conference presentation and/or non-peer-reviewed article. This experience results in a better future

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conference presentation. Ultimately, the analyst's work is published in a peer-reviewed forum. Even if you do not present, attendance at a professional conference will provide knowledge of emergent tools, techniques, and procedures, identify who else is conducting research in your area of interest, and build professional relationships. This professional development is directly applicable to improving your ability to be heard in the noisy and crowded decision-making environment.

Publishing independent research or presenting at a professional conference, such as the outlets provided by MORS or other societies, subjects the analyst to the peer-review process. While the peer-review process is necessary, unfortunately many times it takes on a negative tone because it focuses on what is wrong and not what is right. We all must realize that there is no such thing as a perfect study, report, or presentation, but the analyst who has never made a mistake is unlikely to have ever communicated anything of interest. We should all remember that peer review or critique is normal and an important part of research; to be effective, it should be constructive with no intent to embarrass. What's important is what's right, not who is right.

Publishing independent research or presenting at a professional conference poses a dilemma. There is a trade between wanting to be accurate, which frequently means withstanding the test of time and being quick. "First to paper" can be an insurmountable advantage, which is yours to claim or ignore at your peril. Another challenge of professional engagement is casually meeting with colleagues who have a prickly personality. It is an important aspect of maintaining your professional network, builds trust, and may provide a little "inside baseball" knowledge.

Conclusion

I have presented practical considerations necessary for a decision maker to thoughtfully and deliberately consider the insights and any recommendations presented by an analyst. The circumstances of every analytic task are unique, which means the analyst must purposefully consider their approach to (1) data storytelling, (2) professional relationships, and (3) professional engagement. However, there are overarching, strategic lessons that remain timeless and form a practical framework for gaining the decision maker's intellectual

buy-in. This practical framework will mitigate the uncertainty caused by new or unforeseen challenges. In this competition to be heard, good analysis can only be effective if it is communicated well. 🌐

References

- Brinton, W. C. 1919. *Graphic Methods for Presenting Facts*. The Engineering Management Company.
- Cairo, A. 2013. *The Functional Art: An Introduction to Information Graphics and Visualization*. New Riders.
- Few, S. 2012. *Show Me the Numbers: Designing Tables and Graphs to Enlighten*. Analytics Press.
- Knaflic, C. N. 2015. *Storytelling with Data: A Data Visualization Guide for Business Professionals*. John Wiley & Sons, Inc.
- Tufte, E. R. 2001. *The Visual Display of Quantitative Information*. Graphics Press.

About the Author



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is a retired Navy officer who teaches courses in probability and statistics at the Naval Postgraduate School. While on active duty in the U.S. Navy, he served more than six years at the Assessment

Division (OPNAV N81), MORS's Navy government sponsor, performing applied operations research. His experience on the Navy Headquarters staff included performing analysis; developing analysis products in collaboration with the office of the Secretary of Defense, Joint Staff, and Service analytic communities; and improving models used to inform Navy Service resource allocation decisions. His final assignment on active duty was as a military faculty member in the Operations Research Department at the Naval Postgraduate School. His current research interests include campaign analysis, the intersection of game theory and great power politics, military capabilities that produce a "crisis in warfighting confidence" in an adversary, and the critical power skill of data storytelling. Brian Morgan served as the 55th President of the Military Operations Research Society and continues to contribute to the Society as an Advisory Director.