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The Real Story Behind Big Data

Kieran Conboy, Eoin Whelan, and Sean Morris

Business analytics has rocketed to the top of the corporate agenda with claims that “data is the new oil” [1]. 85% of Fortune 500 companies invest in big data initiatives, with estimates of the analytics market at $18.3 billion in 2017 and forecast to grow to $22.8 billion by 2020 [2]. Despite the exponential growth and interest in business analytics, there are question marks over the extent to which organizations actually realize value from analytics [3]. All too often, managers put their focus on analytic tools and the data scientists. However, through our research and consulting work, we’ve learned of many examples of expensive analytics projects failing to deliver, even when state-of-the-art tools and highly competent data scientists are in place. In most cases, the data analysis is sound, the predictive models are great, but the resulting insights are not acted on because they require change in the organization. So nothing gets done.

Why so? In order to really leverage the power of analytics, the capability has to be ‘woven’ into the stories of the organization and its people. In our hyper connected world where data is king, storytelling may seem old fashioned. But we remember stories, not spreadsheets. Storytelling is truly universal through all of recorded history, from oral storytellers and early ‘rock art’ in hunter-gatherer tribes to the proliferation of writers churning out books, TV shows and movies today. It is universal, transcending all cultures across all continents, with some of the most ancient cultures writing text in Chinese, Egyptian, Greek, Latin, Sanskrit, and Sumerian.

Senior managers may feel crafting a story around the data may seem like a pointless and laborious effort, that the facts alone are enough to initiate the desired change. Unfortunately, this opinion is based on the flawed notion that business decisions are solely based on logic and reason. A multitude of experiments from the field of behavioral economics clearly prove that emotion, not rational thinking, is what determines the decisions we make. And very few things stir our emotions quite like a good story. Data may hold tremendous amounts of potential value, but if an insight isn’t understood and isn’t compelling, no one will act on it and no change will occur.

Throughout time, storytelling has proven to be a powerful delivery mechanism for sharing insights and ideas in a way that is memorable, persuasive, and engaging. A good example of modern day storytelling is the popular TED conference series and its slogan of “Ideas Worth Spreading.” Analysis of the most popular 500 TED Talk presentations found that stories made up at least 65% of their content [4]. Combining data with a good story is a delicate balancing act. Too much story and not enough data and you’ll quickly be dismissed as lacking legitimacy. Too heavy on the numbers and nobody tunes in, as we’ve seen in our experiences.
A medical technology company we worked with conducted an extensive organizational network analysis, mining email patterns and employee surveys, to determine the level of collaboration between its various business units. The resulting visual and mathematical data revealed a massive rift between the IT and HR personnel. Management were considered that missed efficiencies and suboptimal HR systems were the consequence of this lack of collaboration. The operations manager who led the network analytics project realized that just presenting the visualizations and numbers to members of IT and HR was unlikely to result in any constructive change. Instead, he used the network analytics to enhance the story he was going to tell. On reporting back the findings to IT and HR, he followed the Freytag pyramid approach, the dramatic arc of exposition, rising action, climax, falling action, and dénouement used in most movies and plays, to structure his story. Drawing on connotations from Romeo and Juliet, the story began with images of a harmonious relationship between the departments, until the implementation of a new HR management system went horribly wrong. The heads of the IT and HR families blamed each other (which is what actually happened two years earlier in the company) and relations between the two soured. The network analytics were then produced as evidence of the clear rift. To reignite collaborations, the operations manager turned to the ‘falling action’ element of the story where the conflict begins to thaw in the future. A small few heroes from both groups begin to seek simple advice from each other, which grows into collaborating together on a proposal for a more streamlined online recruitment system, from which introductions and other collaborations are spawned between the two departments and more successful projects emerge. Pulling in the network analytics again, the Ops manager produced visuals illustrating how the rift would heal over time as a result of the actions of the heroes, with the intimation to the audience to become one of the heroes. When analytics were woven into the story, the change required to advance the organization became much more tangible.

**Implementing the Analytics Storytelling Initiative: Lessons for Executives**

While it may seem intuitive to weave analytics into and around the stories of your organization, our research and consulting experience shows that this can be quite challenging. Ineffective and sometimes damaging use of stories and analytics will emerge, unless a number of steps are carried out;

- **Hire and train good analytics storytellers:** Data scientists are in huge demand in the labor market but very few companies are thinking about storytelling skills. By all means, ensure your company gets the data science skills needed, but don't miss the opportunity to complement those deep analytic skills with team members who are more gifted at narrative, who are close to the business context and great at helping others see the big picture that the data underlines. While the craft of a good story may come naturally to some, it is also a skill that can be learned, even by those with the deepest of analytics specializations. But
it takes work and investment. Leaders also need to recognize that there may be people in their team who are better than them at crafting a story with analytics, and they should be chosen to deliver the story an audience.

- **Complement storytelling and analytics**: Storytelling techniques can be complemented with cold data to ensure the richness of the story is corroborated with the credibility and objectivity of supporting data. At Fidelity Investments, the ITEC team were charged with driving to a standardized approach to planning, building and shipping software across its federated business units. By combining visualization of both the current state and progress across each business unit with a narrative of benefits to employees and the firm, the ITEC team were able to accelerate progress, mobilize the organization towards the goal and get thousands of technologists to embrace and adopt the standards. An additional benefit of the visualization techniques was how it enabled comparison of progress to drive a dialogue across technology leadership, which steered the story in the right way. Those who were able and willing to trail blaze could reassure other leaders on the benefits from standardization.

Analytics technology such as eye-tracking and emotion-sensing technology can also help build rich stories. For example, in proposing to increase the speed limit at which UK motorists can travel through highway road works, Highways England did not just rely on personal stories of drivers stuck in traffic congestion, but instead conducted a study using heart rate monitors, GPS trackers, and dash cameras to measure reactions. Drivers are less stressed when driving at 60mph than 50mph. The combination of the analytics and the story tells a much richer story than either one alone.

- **Tailor the analytics to fit the story**: People get excited about analytics, and strive to use the latest and greatest tricks and features. Instead, one needs to think about the ‘stories’ of the organization and people in it. If, for example, an executive arrives from a run at 8:55 each Monday morning, and has five minutes while grabbing coffee before going into the weekly resource allocation meeting, then the analytics report must fit that scenario. A 20 page analytics report, even if high quality, will not be read, whereas a 1 page, 3 point analytic summary, even if crude and rudimentary compared to the other, is more likely to be used.

- **Ensure appropriate analytic story authorship**: Stories are an embodiment and physical representation of their author, and so carry their positive and negative traits. Choose authors carefully, as the analytics capability will only be as powerful as those creating the story. Some are ‘highly creative’, ‘visionary’, ‘next gen’, ‘outside the box’ thinkers, while others are ‘very limited creatively’, and ‘live in the past’, and love ‘the status quo’, and ‘don’t want anything that would require a change of mindset and a bit of extra work’. Many authoring strategies can be employed. One trustworthy person may author all stories, authorship can be delegated to those with the niche expertise specific to each story, or indeed
the customers or users can write the stories. Regardless of strategy, an effective peer review process to evaluate analytics stories is critically important.

- **Ensure analytics stories capture the ‘dark side’ of the organization**: Analytics capabilities are often built on the idealistic but fail to acknowledge an organization’s informal, messy realities. There are patterns of power and domination at play, and staff ‘weaponize’ data - using and manipulating analytics to support their own agenda rather than that of the organization. While getting people to relay their darker side - their dislikes, insecurities and fears – is inherently difficult, it allows analytics designers to create something that addresses and embraces those traits, and so ultimately is more likely to be used.

- **‘Ensure analytics stories ‘live’**. Ensure the weaving of analytics and story is continuous in your organization, rather than a one off or occasional initiative. For many reasons, stories degrade very quickly over time, rapidly and radically diminishing their power as a communication tool. Firstly, the story has a ‘glory period’, where it is often richly described, discussed and debated when it is first created. However, novelty quickly wears off, and the level of debate and discussion soon drops. Secondly, the person who created the story and those that were there at the time it was told often move on. The rich, tacit, non-documented nature of stories that are not on paper, can be lost on staff that were not there when it was relayed. Finally, the story describes a context, a persona or a need that themselves changes over time. Therefore, any story will suffer from natural degradation as it captures less and less of the continuously evolving and emerging stories of the organization.

Storytelling is not a panacea and not all stories are good. A bad story is confusing, boring, and can cripple the valuable insights painstaking gathered from an analytics initiative. But with thought and effort, a story enhanced with analytics can inspire real organizational change.