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From Dean's Desk:

Prologue

There's a book by Bob Lutz titled, "Car Guys vs Bean Counters, The Battle for the Soul of American Business." For those of you who do not know Bob Lutz, he was the former Vice Chairman of General Motors. In addition he held leadership positions at Ford, Chrysler and BMW. Being a bit of a car guy myself, and not being very inclined (nor proficient) toward the number crunching side of the world, I read Bob's book with keen interest. Why is this important to this issue of UPDATE - because we feel there must be a balance. The inside jacket of the book has a quote that perhaps queues up this article: "It's time to stop the dominance of the number crunchers, living in their perfect predictable financially projected world (who fail, time and again), and give the reins to the 'product guys' (of either gender) those with vision and passion for the customers and their product or service."

Quants and Recollections

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Introduction

Perhaps our biggest challenge is that we don't have a large (or even small) research department, one that would keep us in tune with a broad range of current thinking on human performance issues. As a result, we rely on continuous reading and dialogue with our network of colleagues and professionals; an approach that can be more effective and more targeted. With that background, a short article in a periodical titled *The Week* caught our attention: "How quants have led us astray; Big data is a useful tool, but it shouldn't rule." The article was excerpted from Felix Salmon's longer piece for *Wired.com*, "Why Quants Don't Know Everything" (January 7, 2014). Not being tightly tied into financial markets or terminology, we had to find out what a "Quant" was.

The term "quant" is defined as follows:
*A **quantitative analyst** or **quant** is a person who specializes in the application of mathematical methods, such as numerical or quantitative techniques to financial and risk management problems.*

While the position typically applies to financial institutions, we saw the opportunity for an organizational cultural context. As we were collecting our thoughts, the light went on and we said, *we've written about this before*. Going back a few years, we found two UPDATE articles: "Loss of Instinct: That Good Old Gut Feeling" from 2007 and "The Lost Art of Observation" from late in 2008.

So what did Felix Salmon say that caught our attention? From the excerpt in *The Week*, January 21, 2014:

> It's time we quit "living by numbers alone," said Felix Salmon. Over the past three decades, many fields and institutions have witnessed "the rise of the quants—that is, the ascent to power of people whose native tongue is numbers and algorithms and systems rather than personal relationships or human intuition." These data geniuses of-

> ten "find numerical patterns or invent ingenious algorithms than increase profits or solve problems," but we're learning that there's a downside to our overreliance on data. Just look at the financial world, "where the rise of quantification could concentrate decision-making—and moneymaking—within a relatively small group of people at a bank's headquarters." When shortsighted and poorly regulated bankers put quants in the driver's seat, they led us to "catastrophe in 2008." We're much better off "marrying quantitative insights with old- fashioned subjective experience." The 2004 Boston Red Sox, for example, combined stats with traditional scouting to deliver the team's "first World Series title in 86 years." Big data is a useful tool, but it shouldn't rule. "As long as the humans are in control, and understand what it is they're controlling, we're fine. It's when they become slaves to the numbers that trouble breaks out."

So, who is Felix Salmon? As the finance blogger for Reuters, Salmon has argued that regulatory solutions capable of dealing with the risks posed by today's too-big-to-fail banks and complex financial innovations do not exist. He advocates the breakup of "financial behemoths" to disable banks from, and eliminate the incentive to "fraudulently game the system." While his background is financial, his analysis poses questions that extend beyond the world of finance to overall organizational culture.

Our take on all this is as follows. In the first article, "Loss of Instinct: That Good Old Gut Feeling", we begin the article asking:

> ***Can We Over Quantify?***
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> *Our culture seems to be entirely focused on metrics. There are a myriad of ways to look at a company's performance. Every aspect of a company can be measured and it seems that all decisions are made based on what the numbers indicate. We don't want to imply that measures are not important; they are. However, we question whether metrics are the answer to everything that arises in the life of a company. It appears, from personal experience and from following the business news, that metrics are everything and that any decision is made strictly based on the many and varied metrics that exist within any company. Leaders of corporations and their corporate boards of directors seem to be making key decisions based on metrics such as Return on Investment (ROI). We have become a data-driven society, especially within the business world. This emphasis is not unexpected, given the move into the "computer age" where data is easily generated and manipulated. We have so much data readily available. However, the strong leader knows how to use data, while at the same time still applying knowledge and instinct.*

The subsequent article, "The Lost Art of Observation", continues with the theme that numbers don't relieve the leader of paying attention to what's going on within his or her organization. We state:

> ***Focus on Numbers vs. Observation***
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> *In the last issue of Update we considered how our leaders in industry and government have become so driven by Return on Investment (numbers) that they don't see what is going on in their company and industry (observation). Our topic here is another aspect of the same issue. A good leader – at any level – is aware of what is going on. He/she knows the numbers and uses them to make decisions but is aware of the intangibles that are impacting the organization. Good leaders observe what is going on and how the things that impact their people are impacting the functioning of the organization.*
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> *Again, we cannot and do not minimize the importance of the numbers. They are absolutely essential to a business. However, they alone do not tell how an organization, a business, or a government is running. All organizations operate on the three legged stool of People, Process and Technology. Numbers alone cannot evaluate how these three legs are working. It takes*

observation and work to understand and measure all three. For example, you may have the latest technology but is it appropriate for your situation? Do the people using it understand how to use it and how it works? Is that technology appropriate for your processes? Do the processes have to change to fully integrate with the technology? Are such process changes appropriate for your business and are they cost effective? The list of such questions is long and pin-points how critical it is to observe and understand before making decisions based on numbers alone. Many are the questions that should have been thoroughly investigated before implementation of any new technology, but from experience we know they often are not.

Our Observations and Position

The 'quant' phenomenon has rippled into organizations. Everyone wants to know the numbers. Everybody is driven by 'the bottom line'. Businesses and non-profits, big and small, are obsessed with numbers. They tell us numbers don't lie, but we all know that's not entirely true. There are many examples readily available in the news going back to Enron, through to recent events where dollar signs with many zeroes following are lost, mismanaged or disappear. (We certainly are not casting aspersions on the quants. They probably mean well and believe in what they are doing, but…) There appears to be a trend where the influence that numbers have on decisions has, by default, placed the CFO in an unbalanced position in the decision-making process within organizations. Since they have the numbers, they control the numbers and they manage the numbers, why not run the whole company? If we are managing to numbers, why do we need leaders? We are rather confident that 'quants' see corporate leaders as necessary (or in some cases unnecessary) evils. We can cite several situations where CFOs are exerting far more influence than they are qualified for, and in selective cases have been moved up formally or informally into even higher influential positions. In the interest of not irrationally throwing darts at CFOs or the financial community as a whole, we will gladly discuss specific case studies if you wish. Please contact us.

To the detriment of the organization, often these "number guys" don't have extensive business/industry knowledge and/or background in their company to be exerting the influence they do. They don't necessarily have the context around which they are delivering numbers. What's even worse, they tend to not care or even relate to what Felix Salmon refers to as personal relationships or human intuition. In fact, we have observed a rather blatant disregard for the human resource of an organization, looking at people as commodities that can be traded, dumped, bought and sold.

Equally concerning is that the other decision-makers in the organization probably don't speak Quant so they don't necessarily understand the basis of the numbers. They most likely don't or wouldn't understand the algorithms and models used to generate the numbers. They are blindly following the numbers and making decisions without considering the human aspects of the decision or how the human aspects factored into the models and algorithms (if they did at all). We have to keep in mind that models no matter how sophisticated simplify the actual world because no model can factor in every aspect of how an organization functions.

Tom Davenport is the President's Distinguished Professor in Information Technology and Management at Babson College, Director of Research at the International Institute for Analytics, and a Senior Advisor to Deloitte Analytics. He has weighed in on this topic in a recent book *Keeping Up with the Quants*. One of the items he notes, which we think is right on target, is that if you don't understand the analytics at least to some extent you'd better learn. He quotes statistician George Box as saying "All models are wrong, but some are useful." Here is an important quant telling us models are wrong. Now he is probably saying that because, as noted above, there is no way any model can account for every factor in an organization. So, Mr. or Ms. Decision Maker, use your many other talents and consider the other factors that make your organization hum.

So what is the answer? Does there need to be an answer? Rather than a definitive answer we believe there must be a balance between numbers and people, with the focus on leadership proficiency. With leadership proficiency, the numbers people sit at the table, but are not the only speaker. They are part of a team. The team uses their 'quantitative insights' (as Salmon refers to it) as part of the information necessary to make decisions. Leaders understand that quantitative insights have a position but do not comprise the whole position. In addition, leadership proficiency does not relinquish leadership responsibilities to quants. That can be dangerous. Even Warren Buffett has warned us to "beware of geeks bearing formulas." Now, we know that Mr. Buffett looks carefully at numbers, but even he recognizes that there are many other factors to take into consideration.

We all remember the delightful story told in *Moneyball* about how Billy Beane used statistics to build a baseball team for the Oakland Athletics on a relatively low budget (for Major League Baseball). Beane used metrics to put together a "cost effective" team that has won division titles and appeared in the playoffs but has not been to a World Series. This relative success builds on one of Salmon's points regarding the limitations of the model:

> "The reason the quants win is that they're almost always right – at least at first. They find numerical patterns or invent ingenious algorithms that increase profits or solve problems in ways that no amount of subjective experience can match. But what happens after the quants win is not always the data-driven paradise that they and their boosters expected. The more a field is run by a system, the more that system creates incentives for everyone (employees, customers, competitors) to change their behavior in perverse ways – providing more of whatever the system is designed to measure and produce, whether that actually creates any value or not. It's a problem that can't be solved until the quants learn a little bit from the old-fashioned ways of thinking they've displaced."

Very telling statement isn't it? People will react to the numbers and focus on having "good numbers" whether they are the right things to do for the success of the organization or not. Your organization, your company, your industry is complex. Can the assumptions and simplifications that go into any model or algorithm really tell you everything you need to make a good decision? We think not.

Conclusion

We don't know if quants are impacting your organization in positive or negative ways, but we are pretty certain that they are impacting you in *some* way. Every organization has some focus on metrics – and it should. However, we urge you to understand the metrics and how they are developed. Keep the quants in perspective. They can provide you value, but should they be the sole factors in making critical organizational decisions? We think not. We urge you to lead intelligently, not blindly. Try to understand the data the quants present, but also try to get them to understand that numbers alone do not make a successful leader and that you want perspective to those numbers. As a leader, your job is to bring balance, to challenge where challenging is necessary. In the context of leading and using one's instincts, Tom Peters and Robert H. Waterman, Jr. in their landmark book "In Search of Excellence," discuss Managing by Walking or Wandering Around. Being engaged with one's people, demonstrating interest in what they are doing, knowing what they are doing and recognizing their contributions to the organization are key components to creating the balance. Do what's right for all aspects of your organization. Do not become a slave to numbers by letting the numbers be the underlying basis for decisions. Numbers are part of the information a leader must use when leading, not the only thing. Hopefully your business world is not as impacted as the banking and financial world by quants. Use them, but use them wisely.

Closing

Back to our previous newsletters, Instinct and Observation are keenly important in leading. Keep the broader perspective and maintain a balance. Quants are not the only answer, and while it's tempting to put a quant in charge either in a leader's absence, or even turn the operation over to a quant, resist that temptation. Consider this, if as a leader you are grooming your organization, and developing leadership you should have the framework in place such that quants are part of the team, but in the broader leadership context, you have your well-conceived succession plan in place such that the balance remains in your absence.

If you are interested in looking more into the history of the Quant, we found a great video that when you have about 47 extra minutes it's quite enlightening on the topic of Quants and their history and how in particular they have impacted the banking and financial industries. https://www.youtube.com/watch?v=ed2FWNWwE3I

<ins>A special thanks</ins>

Larry and I want to thank Bill Skibitsky for his comments and thoughts regarding this article. Our goal is to present insightful perspectives, but not be considered so contrarian that we are not credible. This topic has the potential of being misconstrued as a rant on quants, so as we stated earlier in the article we have an excellent network of leadership/business professionals. Bill is a key individual in that network, so we asked him to review and comments as he did. The best part of asking Bill is we know we will get both a qualified review as well as candid comments grounded in an extensive career of leadership positions of large companies.

In defense of the financial community

Our intention is not to vilify financial professionals. Finance people have a strong commitment to their fiduciary responsibility, as it should be. The issue arises when a 'them and us' divide occurs between those charged with watching the numbers and those charges with making the numbers. This divide is further exacerbated when neither group has an appreciation for the issues and struggles of the other.

CFOs and their people should and can be the canary in the mine shaft. They are extremely sensitive to moneys being spent and moneys being received. They deal in an environment of stress, rapid financial manipulations, impatient banks and vendors demanding payments. On the other hand, operational managers, if they are managing their jobs should know from their metrics, how their work is progressing against the moneys spent. The point here is that there are no secrets beginning with the bidding process to job performance through to close-out. Project planning, implementation, monitoring and completion are a team effort. It is the leader's job to ensure the team is in place and functioning properly.

<ins>Additional reading</ins>

"The Quants: How a New Breed of Math Whizzes Conquered Wall Street and Nearly Destroyed It"“
by Scott Patterson

"Dark Pools: The Rise of the Machine Traders and the Rigging of the U.S. Stock Market Paperback"
by Scott Patterson

"Inside the Black Box: A Simple Guide to Quantitative and High Frequency Trading (Wiley Finance)"
by Rishi K. Narang

"Broken Markets: How High Frequency Trading and Predatory Practices on Wall Street are Destroying Investor Confidence and Your Portfolio"
by Sal L. Arnuk (Author) , Joseph C. Saluzzi

"My Life as a Quant: Reflections on Physics and Finance"
by Emanuel Derman

"How I Became a Quant: Insights from 25 of Wall Street's Elite"
by Richard R. Lindsey (Editor) , Barry Schachter

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