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How To Be an Effective Statistician

Alexander Schacht PhD, UCB and The Effective Statistician

ABSTRACT

You as a statistician work effectively if you get the right things done in the right way at the right time. A statistician needs to exhibit strengths in four different areas to be effective:

- 1) Leadership consisting of self-leadership as well as influencing others. Leadership behaviors include driving projects proactively, having the overall goal in mind, communicating clearly, enabling smooth collaborations, and effectively delegating tasks.
- 2) Innovation in analyses and processes. Innovators challenge the status quo, see areas for improvement and implement solutions, and keep up-to-date with relevant statistical knowledge and apply it to solve real problems.
- 3) Knowledge about the data and the business environment. Knowledge comprises an understanding of how your work contributes to the bigger picture, business acumen, a solid understanding of many general statistical approaches, and decent programming skills.
- 4) Excellence in efficiency and quality. Excellence is exhibited by the ability to focus on details, capability of achieving high quality over an extended period of time, and delivery of quality results with minimal time and resources.

This presentation provides instructions for personal improvement in these four dimensions.

INTRODUCTION

Decades ago management guru Peter Drucker wrote his impactful book "[The Effective Executive](#)". In this book, he explains, what it means to be effective as an organizational leader. Further, he dives into the different tools that executives mainly use to achieve results in an efficient way. Like an executive, you as a statistician work effectively if you get the right things done in the right way at the right time.

My experience tells me that you need to focus on four dimensions and excel in all four to be an effective and impactful statistician over time. These dimensions were first introduced to me about 10 years as the framework for the functional strategy for the statistical sciences group while I was at Eli Lilly and Company. Although they were established as the strategy and direction for the entire function (>400 statisticians) to positively impact the business - and proved to be very effective - I realized that they also served as an excellent framework for individual development and improvement. I have adopted and used them as my guidepost since that time. The four areas, which the statistical leadership at Lilly referred to as "pillars", are:

- Leadership
- Innovation
- Knowledge
- Excellence

Credit as well to the Lilly statistical leadership for the easy to remember acronym: LIKE

In this paper, I will expand on each of these areas and explain how they can be leveraged as a guide for individual development and, ultimately, how this will result in greater impact on your organization as well as personal fulfilment & success.

Let me begin by sharing my background and experience to give you an idea of my journey and the impact these areas have had on the direction my career.

I have worked as a professional statistician for over 20 years, most of that time working for major pharmaceutical companies. I have several years of experience supervising other statisticians and have been recognized in my career with several technical promotions. I have authored or co-authored over 75 peer reviewed manuscripts, more than 100 presentations and posters, and present regularly at conferences around the world.

I am an elected board member for PSI, a global membership organization of statisticians in the pharmaceutical industry. My primary responsibility for PSI is leading all communication aspects, from email to social media, as well as being the point of contact for their scientific journal.



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with Alexander Schacht
and Benjamin Piske
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In 2018, I founded "The Effective Statistician" - a podcast dedicated to helping statisticians in the health care sector achieve their maximum potential to serve patients. This podcast has already more than 50 episodes and serves a global audience with more than 30,000 downloads. Earlier this year, I launched a first of its kind on-line leadership course for pharmaceutical statisticians with my business partner Gary Sullivan, a professional statistician with almost 30 years of experience, including 10 years as of leadership trainer for statisticians.

My experience, success and personal growth is largely a result of focusing on the four areas which I will discuss in this paper.

Now, we're all standing on the shoulders of giants. Many topics discussed here come from a variety of sources and being a life-long learner in these areas is key to becoming successful from my point of view. This goes hand in hand with being gritty in the sense as Angela Duckworth talks about it in her book *Grit: The Power of Passion and Perseverance*.

Since I learned about these 4 pillars at Eli Lilly, I'm constantly watching statisticians around me to assess how capable they are with respect to the LIKE pillars. It's amazing how clearly those that are successful separate from those that have average careers and those that fail to move forward at all. Those that are moving fast in their career and that are respected by many other statisticians as well as other business partners, are the statisticians that excel in each of these 4 areas. All those that have more average careers miss at least 1 of the four pillars and those that fail to progress usually miss out on at least 2 pillars.

You need to be strong in 4 LIKE pillars!

Throughout this manuscript, I will give you guidance on the four different pillars and what actions you can take, to improve in these areas. It's impossible to cover everything in detail in such a short paper, and thus, I will focus on only some practical tips as well as explaining some key concepts.

Also, the four pillars are not mutually exclusive. They overlap and if you are strong on all of them, they work synergistically for you. This will be self-evident from the description of the pillars.

If you want to learn more, you may listen to my [podcast](#) "The Effective Statistician" with its 50+ episodes and hundreds of ideas for further episodes. The podcast episodes are all dedicated to this topic and each episode is tagged according to the four different LIKE pillars.

LEADERSHIP

Leadership consists of two concepts: self-leadership as well as leading or in other words influencing others.

SELF-LEADERSHIP

To be a great leader, you first need to lead yourself. This includes having good personal systems, habits and behaviors to use your time and energy in the best way. Many tips around this are published under the terms of time management, employing good habits, creating a clear vision and having goals and action plans.



Statisticians are brain workers. Many of the different products we create need deep and uninterrupted working time to produce meaningful results. However, our modern style of working with the constant meeting culture, social media interruptions, regular email checking, and open plan office set ups, works against this so-called deep work. We need to actively and consciously create boundaries in which we as statisticians can work on larger deliverables. These may include study protocols, analysis plans, programs, sets of results, or other kind of reports.

Cal Newport wrote the book [“Deep Work”](#) exactly about this dilemma. Being an analytical thinker himself, he noted different ways of how people can organize their life to make deep work possible. He provides lots of practical advice on the different topics, that I don’t need to repeat here. I highly recommend this fundamentally important book as it will help you to organize your work life better and to see, what kinds of habits are good to adopt and which you should avoid or stop.

Another part about self-leadership consists of developing a clear vision for yourself. Not something, that is told to you by senior management, but a vision for how you want your life or at least you career to look like in the future. Having a 5-year vision, will help you to determine your yearly goals and these in turn will help you to create weekly and daily action plans. Michael Hyatt has published extensively about these concepts and his [podcasts](#) are highly recommended to learn about these topics.



As already mentioned, your results are very much driven by the habits, that you develop at work. We all develop habits about what we do first thing in the morning, how often we check emails, how we engage with social media, how we run or participate in meetings, or how we write and review programs.

James Clear makes the point, that our results are predominantly determined by the habits, that we develop. Now it's usually quite easy to establish bad habits - like checking emails far too often and it's really hard to build good habits, like working out regularly or being always on-task.

His book "[Atomic Habits](#)" discusses not only what habits are and how they are constructed, but also gives detailed and specific guidance on how to make it easier to stop bad and start good habits. It's written perfectly well for anyone working as a statistician in the typical corporate setting but also for free-lancers or statisticians running their own company.



LEADING OTHERS

The concept of leadership is often misunderstood as management or assigned leadership with having a title and being head of some department or group. The relevant leadership definition, that Gary Sullivan also adopted for the leadership courses for the American Statistical Association, reads as follows:

The ability to consistently deliver value to an organization or cause by inspiring others to take a specific direction when they truly have the freedom or choice to do otherwise.



It's worthwhile to investigate this definition closely. First, leadership is an ability. It's not a title or a job description. You don't get it from an impressive title on your business card. It's an ability, that can be learned and which like all skills needs training.

Vince Lombardi worded it quite nicely by saying: "Leaders are made, they are not born. They are made by hard effort, which is the price which all of us must pay to achieve any goal that is worthwhile."

Second, this ability is characterized by the results: consistently delivering value. And these will mostly be towards your department or company. But if you work together on a cross-companies project, like creating a better SAS macro, this becomes the common cause.

Third, you're not commanding others, you're not telling others, you inspire them. You help them understand, why a specific action makes sense. You show them, how they win in it. You create win-win situations, where others want to follow your guidance and advice. Thus, this is not about order and command - something that rarely works in companies and even less in voluntary groups. Leading in such a way is called emergent leadership in contrast to the assigned leadership with huge titles and large offices.

Unfortunately, this leadership is the pillar where most statisticians fail. And thus, I'm focusing most of this manuscript about leading others. But why do statisticians fail to lead?

- Influence,
- Negotiate,
- Drive change, or
- Lead.

But you may realize, that you have no clue how. Our training doesn't focus on these skills and more technical training doesn't help either. Colleagues in other areas spend much more time on this and naturally get better at it. They even enjoy doing these things. A situation, that puts statisticians at risk of being the nerd, that doesn't get it.



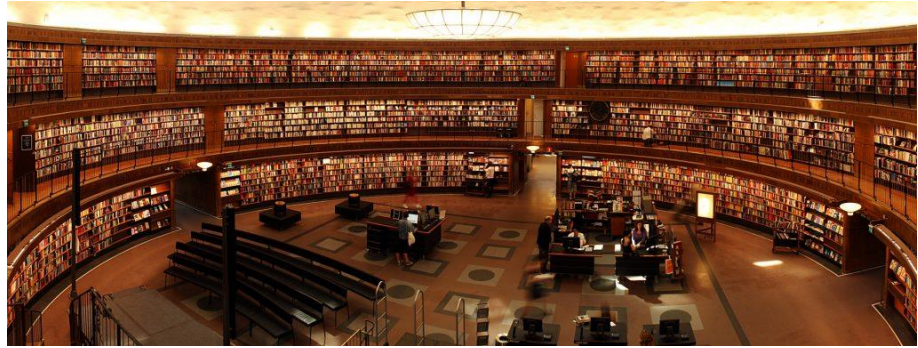
Furthermore, based on the above-mentioned habits of statisticians, there's often a lack of "big picture" thinking. The day to day activities of statistical consulting provides lots of tactical challenges, which statisticians generally love to dive into. The passion for detail of statisticians, which in many areas is a strength, turns out to be a disadvantage with respect to understanding how the tactical challenges fit into the bigger picture. E.g. is it worth investing a lot of time in fine-tuning the methodological approach for a challenge? Such questions are either not asked in the first place by statisticians or they struggle to answer such a question due to a lack of the broader impact on the business.

This lack of big picture thinking also excludes us as statisticians from the decision-making process, where this capability is essential. Now some might say, that this is not the role of the statistician, but as said above. This leads to average careers at best.

Now what should you as a statistician do about these topics? Reading this article shows, that you at least caring about this topic and changing the mindset on how you see yourself moves you a great step forward. This mindset will make you aware of opportunities, that you may have missed before and just the curiosity to change will naturally drive learnings in terms of leadership.

Although it's never too late to invest in leadership, I'm recommending starting as early as possible in your career. The longer you wait, the more time you lose to have the full impact, that your overall capabilities allow for. Become a student of leadership and embrace a life-long journey of improving your skills in the different parts of leadership. There's always an area where you can further improve your skills and usually you get better, while doing your day-to-day work just more consciously, open-minded, and reflective.

In terms of specific actions to take, I recommend taking on challenging roles and opportunities. Many organizations establish teams to drive forward e.g. process improvements. Such cross-functional groups



lend them self perfectly to learn about emergent leadership. Of course, it's great to have them within your business, but something outside of work might help you as well. As mentioned above, voluntary groups and organizations depend nearly exclusively on emergent leadership. Driving forward such initiatives in your local community offers lots of areas for learning.

Furthermore, sign up for non-technical trainings. Your annual performance plan, which you are measured against should optimally also contain a training and development part. Check, which non-technical trainings are offered by your organization or which of such trainings are taken by colleagues outside of your statistical department. Such trainings include but are not limited to:

- Cultural training,
- Communication,
- Leadership development,
- Change management,
- Presentation training, or
- Personality training.

If you're a reader, I recommend reading books about exceptional leaders (e.g. biographies) that you're interested in. These leaders may come from business, politics, sports, art, science, or other areas, that you're interested in. I personally loved the books about Steve Jobs or Pep Guardiola. Many of such books are also published as audio books allowing you to listen to them, e.g. while you're commuting. Also, there are many great podcasts about leadership and the one by Michael Hyatt – even if it's mainly targeted towards supervisors - helps in this aspect a lot.



Finally, you need to get out of your comfort zone to grow these leadership skills. Speak with your supervisor, if there are work assignments that helps you to get there. These might be larger projects or projects including other people, that you have not worked with before or in areas, that you're not familiar with. Such new assignments provide you with the opportunity of a fresh start in terms of building relationships and trust. Test different concepts of becoming a leader in these projects.

Furthermore, I strongly recommend finding an experienced leadership coach. Of course, this could be an officially assigned coach, which is paid for helping you, but mostly these are unofficial agreements. Look out for great leaders in your organization and approach them. In addition, you may want to speak with your supervisor in terms of the suggestions he might have.

A very important way to improve for you is establishing a daily to routing of committing to driving action. Create a morning routine at work during which you review the opportunities of the day to drive actions. Think proactively about the different meetings and situations that will arise over the day and how you can create win-win situations for the different participants to make sure, that the projects move forward into the right direction. Make it a routine to review this list in the evening before you quit to assess how successful you were. Then write down what worked and what needs further improvement. One step each day in the right direction will build lots of momentum over time.

Leadership and delegation go hand in hand. As an emergent leader, of course, you need to approach delegation from a different attitude. You can't just tell people what to do, but this is a benefit of emergent leaders. Anyhow, you need to understand the basics of delegation as not only supervisors delegate. If you're in a project meeting and you note down a follow-up action – who is doing what by when, this is essentially delegating. If you're working with a vendor, which does the programming for you, you're delegating. If you're asking a colleague for help, this is delegation. Even if you're asking your supervisor to do something for you, this is delegation. Get clear on how to delegate effectively. I've recorded a podcast episode on this topic, and you'll find further references there. [Just click here.](#)



INNOVATION IN ANALYSES AND PROCESSES

What does innovation mean for statisticians? I think, we should generally distinguish two different areas for innovation. Innovative approaches in statistical methods and innovation on the process side in terms of improvements either with regard to speed, quality or cost. Sometimes, it's possible to fundamentally change the process in such a way, that all three of these aspects are improved at the same time.



In terms of statistical innovation - this does not necessarily imply to create a new method, but mostly it will mean, to apply better methods or more appropriate methods compared to those, which has been used in the past. To illustrate this, I'm providing a couple of examples.

EXAMPLE 1:

Many statisticians have the habit to dichotomize continuous covariates in order to adjust for them in their models. Of course, this makes analyses and interpretation easier, but doing this mindlessly comes with the cost of missing important relationships. These become more transparent if graphical approaches (e.g. scatterplots) are used, that do not rely on dichotomization. In order to appropriately model the relationships in an easy and yet powerful way might be to apply fractional polynomials to both understand but also visualize the relationships.

EXAMPLE 2:

For continuous data observed over time, people mostly rely on line graphs or bar charts (if the continuous data are dichotomized e.g. in responders and non-responders). In addition, you could animate the scatterplots with the y-axis being the interpolated observation over time and the x-axis being the baseline value. Such an approach reveals better, how fast subjects change over time and if there are certain sub-populations, that behave differently than others.

EXAMPLE 3:

In the pharmaceutical industry, it's common to produce long lists of tables. If many endpoints are analysed similarly, maybe even across multiple subgroups, multiple time points, or different missing data imputation methods, you easily end up with hundreds or thousands of similar tables. It's nearly impossible to get a fast overview across all these tables to see, if there are e.g. certain subgroups, that behave differently across different endpoint or if there are patterns in the endpoints for a given subgroup. Creating a data base with appropriate meta-data about the subgroups, the endpoints, the analysis approaches and other relevant factors enables easy visualization of summary statistics across many tables. Interactive visualization based on this meta-data-base enables a much faster understanding of the data.

EXAMPLE 4:

Whenever there's an update to an existing data base, the question arises on the impact of the update on the overall results. Traditionally, that would imply checking all the different results of the new versus the old analysis to find relevant differences. As an improvement, you could store all the results in a meta data base as mentioned in example 3 and just compare the data bases before and after the update of the underlying raw data. With specific rules about what a meaningful difference defines, you would check for relevant differences automatically improving quality, speed and costs of the overall process.



These are just four examples, but you probably get the understanding, that innovation is not just about using more advanced statistical methods, but about anything, that helps the organization to work faster, cheaper, or with higher quality without sacrificing too much the other dimensions. In drug development, this often boils down to speeding up the drug development process, stopping futile projects as early as possible, decreasing the number of patients needing to be exposed to experimental treatments, or increasing the quality of the products or services. Ultimately, you need to understand, how your innovation impacts the end customer.

Now why is innovation relevant for you personally in terms of your career?

First, the higher your impact on the company is, the more you get rewarded. A basic principle of a business is to reward anybody, that improves the overall value of the company in relationship to the value he provides. Of course, this implies, that you as a statistician assess the value adequately and communicate the value adequately. The leadership skills discussed above will ensure this.

People love to work with statisticians, that make their life easier and improve their experience on how they get the results communicated. This also includes finding relevant and interesting answers based on the data. Of course, you'll run into people, that just want to get analysis in exactly the way, that have always received them. But again, if you have the right leadership skills, you'll help them understand how they can benefit from your innovative way. After all, if you can't demonstrate the value of the innovation, there's basically no value in this innovation. The value of your work is not defined by you as the statistician but by those, that need to work with your deliverables.

Another important point, which relates to the value, that you create with your innovation, is the example that you set as a person. Outstanding work gets rewarded by promotion for a couple of different reasons. The more value you bring, the more supervisors are interested

to show, that you're a role model for others. A promotion sends a very clear signal to your colleagues, about what good work looks like. Supervisors want to differentiate those, that innovate from those, that are just doing the same things repeatedly.

If you're innovative, you're relevant. You become an asset for the company, and the company becomes interested in keeping you. On the flip side, if you're not innovative, you risk being seen as someone, that provides standard work. And standard work is the first in line, when it's about outsourcing work.

It's impossible to outsource innovations - or pretty much impossible. Yet it's very easy to outsource standard work with clearly defined deliverables with clearly defined quality and timelines. The pharmaceutical industry is a good example for this with ever increasing budgets for outsourcing standard statistical work to vendors. Across the different pharma CROs the growth rates are huge, which is mostly driven by moving standard study analyses work from the large pharma companies to the large CROs.

But what do innovators do differently? Based on a [fast-company article](#) and my own experience, here are a couple of points and how they apply to statisticians.

BE OPEN FOR OTHER PEOPLE'S IDEAS AND ADAPT THEM

Innovation usually arises from the combination of existing ideas. Thus, listen to what others are saying and writing and see, how this applies to your context. Are there different aspects, that you need to combine in order to make it work for your project or business? Do you need to tweak the ideas a bit to make them work?

GOOD LISTENER

In order to do so, you need to be a good listener which asks follow-up questions - sometimes called active listening. Statisticians are usually good at this given their introvert style and passion for details. Use this strength to your advantage.

CURIOS ABOUT UNDERSTANDING THE PROBLEMS DEEPLY

Another strength of statisticians is their analytical thinking. A capability, that is trained across the professional life of a statistician. If you combine this with curiosity and the ability to see the bigger picture - as mentioned above - you're fully equipped to understand the problem deeply in order to find meaningful solutions.





CONFIDENT BUT NOT ARROGANT

Confidence is neither a natural strength nor a general weakness of statisticians. Being confident gives you the power to ask questions. It also shows the persons, you're working with, that you're capable. Arrogance usually arrives, if you stop listening too soon and quickly jump to solutions. This is sometimes driven by the ability and temptation to apply a technical method that you love. However, if this occurs before understanding the real problem, you end up with a solution, that fits a problem, which is not relevant. Humility combined with confidence is a great mindset to ask deep questions.

THEY DON'T LET THEIR EMOTIONS AFFECT THEIR INNOVATION EFFORTS

Don't let your ego, your fears, or any other emotions hinder you to move forward. Ego might stand in the way in adopting ideas from others and fear of failure is the biggest threat to moving forward. However, failure is inevitably combined with innovation. It's best said by Woody Allen:

"If you're not failing every now and again, it's a sign you're not doing anything very innovative."

Many statisticians are perfectionist. But innovation is never perfect at the start and it doesn't need to be. It needs some rounds of tweaking before it gets good enough. This is the time to roll it out - not when it's perfect, because perfect implies being late and costly.

THEY EMPATHIZE WITH CO-WORKERS AND CUSTOMERS

This empathy is not always a strength of statisticians. Many statisticians more like to work with their laptop rather than their co-worker. But if you're not interested in your colleagues and customers world and their problems, it's really difficult to come up with innovative solution to relevant problems. This is the place, where ivory tower solutions are built, which are beautiful from a mathematical point of view, but meaningless for the co-worker or the customer.



CHALLENGE THE STATUS QUO

This is an obvious challenge in terms of state of mind. If you're always satisfied with the status quo, there's no urge to change and improve things. Look out for areas for improvement and implement or at least propose solutions. From a methodological point of view, this requires to you to keep up-to-date with relevant statistical knowledge in your



field. However, only apply new methods to solve real problems - not just for the sake of applying a new method. As statisticians, we often love the methods and fall into the trap of using them for their own sake rather than to provide better answers.

Remind yourself regularly on these behaviours to embody them. Start practicing them with little steps, that move you outside of your comfort zone. These little steps will help you to gain trust in yourself and over time expand your comfort zone considerably.

KNOWLEDGE ABOUT THE DATA AND THE BUSINESS ENVIRONMENT.

It might sound trivial to you, but still lots of statisticians don't really know the data, that they're working on. They may not know about the reasonable values for certain variables or even if large or small values are desirable. These topics as well as particularities in terms of e.g. limitations around the collection process of the data are crucial. Otherwise, it's easy to miss bias in the data or overlook analysis mistakes. I once had the case, where the coding of the gender was wrong. A mistake, that can easily happen, but if you know, that the ratio in your population should be about 2:1 in favour of males, you can easily pick up on it.



Now it's clear to many statisticians, that knowledge of data is fundamental and they might only disagree on the level of detail, you need to be familiar with your data. But the importance of knowing about the business environment or how the data fit into the larger picture is less obvious.

We're not collecting the data for the sake of the data, but to get relevant answers from the data for our organisations. For this, we need to understand, what are the relevant questions and how does our data fit into this. If we find e.g. outliers in our data - are these interesting or do they represent real mistakes? Also, business acumen enables us to make sure, that our analyses answer the questions and if the outcomes are expected, surprising, or triggering new questions.

If we know, how the data fit into the bigger picture, we can anticipate the questions of the audience, which we present the data to and prepare ourselves for this. Being able to answer on the spot questions increases dramatically the trustworthiness of the analyses and even more the trust into the statistician responsible for the analyses. This has a huge impact on your reputation as it shows, that you know what you're talking about and that you're a valuable business partner.

Also, knowing the business background of the different stakeholders, helps you to put their questions into perspective. It helps you to make sure, you understand the real question behind the words, that were used. Speaking the same language, using the same vocabulary, makes it easier for the others to understand the results.

In order to understand the overall environment better, it's firstly important to understand the goals and the priorities of the organization. The latter might change over time. In some organizations, there are waves of hot topics and knowing, what's hot now helps to put things into perspective.

You can also identify business priorities easily by following the money. Where's the money coming from and where does the organization invest the money? Beyond any official communication, this proves usually quite good, where the actual priorities lie.



Another way to enrich your business knowledge is to study the competition. How competitive is the marketplace? What are the timelines and data of the competition? How does your data compare to the results of the competition or have they used different designs for their studies or alternative ways to analyse the data? Your business partners will likely be familiar with these topics and knowing about it, helps you to put your results into perspective. This is another way to help you be prepared for questions.

A very easy and effective way to increase the business acumen is to have lunch with people outside your usual day-to-day activities. In such a relaxed environment, you can not only build relationships, but you can easily gain knowledge from other parts of your organization whereas in return, they understand you better and why it may involve more than just pressing a button to come up with results.

Most statisticians work in cross-functional teams, yet many don't use this to pick up additional knowledge beyond their daily tasks. Even if the discussion of the moment during a meeting may not have a direct impact on your work, you can still distil background knowledge from it. What are the problems, concerns and hurdles, that your team is dealing with? What are senior management expectations on the team? What are restrictions or side conditions, that the team needs to consider? Understanding these topics usually helps you to understand your data and come up with more relevant analyses. It also makes you a more effective leader.



A further source of business know-how might be a mentor. Some statisticians have multiple mentors for different purposes. A more senior statistician might help you to improve your technical capabilities and a mentor outside your function, might increase your awareness around the business environment. Consider finding a mentor, that you relate with well, outside of your department.

A couple of years ago, I was asked to spend a day with a sales representative. Initially, I wasn't sure, how this will help me in my day-to-day activities. However, as I needed to spend this day anyway, I decided to approach it with an open mind. The sales rep was eager to share his best experiences with me and showed me, how he's using data with customers. It was eye-opening to me, how the analyses, which I had worked on ended up being used or not. Since then, I understood, that I'm the origin of the information, that cascades through an organization. If I'm not able to get it right in the first place, the probability of some Chinese whisper type behaviour increases dramatically. It showed me

how I can communicate my analyses in such a way, that it's ready to be used directly in customer interactions, without lots of additional changes throughout the organization. Since then, I'm always recommending spending a day with the with the customer facing team. This might be on the call centre or in the field.

The final piece of knowledge pertains to the solid understanding of many general statistical approaches and concepts, and decent programming skills. But as this is self-evident, I'm not diving deep into this.

EXCELLENCE IN EFFICIENCY AND QUALITY

The excellence part of being an effective statistician can be broken down into efficiency and quality. Efficiency means, getting things done fast and with a small amount of resources. Quality refers not only to having the right amount of checking your analyses but to follow overall quality principles.



The quality principles circle around these topics:

- Always put patient safety first (or your customer),
- Behave professionally,
- Follow good documentation,
- Make things traceable and repeatable,
- Communicate understandably, and
- Be unbiased or have good clarification of bias and be clear about precision.

These are the principles, that I came up with based on my experience, but there even UN released guidance for statisticians. The code of conduct can be found [here](#).

The following is taken from there:

Fundamental Principles of Official Statistics

In 1992, the United Nations Economic Commission for Europe (UNECE) adopted the fundamental principles of official statistics in the UNECE region. The United Nations Statistical Commission adopted these principles in 1994 at the global level. The Economic and Social Council (ECOSOC) endorsed the Fundamental Principles of Official Statistics in 2013; and in January 2014, they were adopted by General Assembly. This recognition at the highest political level underlines that official statistics - reliable and objective information - is crucial for decision making.

Of course, it's on one hand disturbing, that such a code of conduct is even necessary. But on the other hand, it helps us to understand, where the issues sit and what the general importance is.

Excellence in terms of being efficient goes hand in hand with self-leadership. It's important to constantly improve on your

- ability to focus on details,
- capability of achieving high quality over an extended period, and
- delivery of quality results with minimal time and resources.

I'm suggesting here some practical steps to improve your efficiency.

Being constantly interrupted by social media or having the urge to frequently checking Facebook and other social media is a disease of our time. Especially for knowledge workers like statisticians, this undermines our ability to get meaningful high quality work done in a reasonable amount of time. Make it hard for you to access social media by putting your phone out of reach, turn off notifications, or even shutting it off. Get offline to work on a document.



Another distraction is email. It's completely enough to batch email processing into a maximum of 3 or 4 blocks of scheduled time during the day. Disable any "new mail"

notifications and train yourself to adhere to the email checking times. Your environment will get used to it and your productivity will increase for sure.

Invest in your health to have the energy to work effectively. A tired and exhausted body has a severe impact on your brains ability to focus. Time management is not as important as energy management. Scheduling your cognitive important tasks over the day in those times, where you are most energetic helps you to decrease the time you need and increase the quality of the work.

To keep your energy levels high, it's also vital to take breaks regularly over the day. Use these breaks to actively re-charge e.g. by getting some fresh air and sunlight. In the end, it's not so important how long you work, but what you get done in total with what quality. Also, working is usually a marathon and not a sprint. Having sustainable work habits helps you to enjoy work over a long period of time without burning out.

CONCLUSION

Many statisticians focus too much on just some of these four pillars while forgetting about at least one - usually leadership. This not only leads to sub-optimal careers but even to frustration, frequent job changes and losing your passion about statistics. You can't reach your full potential, if you're not taking a balanced approach to these four key dimensions. Imagine, what would be possible for you, if you have good capabilities in all: leadership, innovation, knowledge and excellence? Where could you be in 5 or 10 years from now? Many people overestimate, what they can achieve in a year but underestimate, what they can achieve in 10 years. Think big, think bigger in terms of your aspirations and visualize how a day in your life would look like, if you are successful?



Remember this picture and make a commitment for yourself to work daily on these 4 topics. Set a yearly goal and break it down into quarterly goals. Then make weekly and daily to-do lists, that are aligned to your long-term vision. Three relevant actions each day will speed up your career over the long distance. Develop better habits. Start with it now!

ACKNOWLEDGMENTS

I'm thanking Gary Sullivan for helping with the content as well as a review. I'm also thankful for all those statisticians in my career – especially at Lilly, that helped me to grow and gave me the opportunity to learn about the four pillars.

RECOMMENDED READING

- *Deep Work* by Cal Newport
- *This is your life* podcast by Michael Hyatt
- *Atomic Habits* by James Clear
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