

# Emotional Excellence Boosts Performance

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## Summary

Industries have made many strides to improve the performance of their processes. In chemical process industries, constrained model predictive control strategies safely operate complex manufacturing processes, while in all industries, data-driven approaches like six sigma, manage transactional processes efficiently. Still there is much scope for improving the performance across all areas.

This is because human beings are a part of both manufacturing and transactional processes, and there is a strong link of emotional excellence to the performance in the external world. Surveys indicate that workplace negativity is costing the US economy \$1 trillion annually. Negativity and negative emotions are two sides of the same coin, and therefore, enhancing emotional excellence will improve the performance over and beyond what CMPC and six sigma can deliver.

The pursuit of higher levels of emotional excellence is a well-posed scientific problem as emotions can be measured and the process with which to bring about positive changes from within for a higher level of emotional excellence is meditation. Industries will find that the benefits of meditation far outweigh the cost of allocating time for the practice during working hours.

### Past Efforts in Pursuit of Perfection in the CPI

Chemists prepare products in the laboratory and chemical engineers scale that up into full-scale industrial production. Industries strive to achieve perfection, meaning, produce defect-free products.

Perfection translates into the pursuit of minimum variance, the theoretical standard. In this state, the product quality is influenced solely by unknown and uncontrollable causes.

The task of achieving minimum variance in manufacturing falls on automatic process control systems.

The first efforts to strive for minimum variance in manufacturing with process controls were pioneered by John G. Ziegler and Nathaniel B. Nichols who developed a set of formulas for tuning

PID-type single-loop controllers in 1942 [1]. This pioneering work falls short because industrial processes are multivariable, and often nonlinear.

The year 1979 may go down as the golden year in process control. Charles R. Cutler and Brian L. Ramaker presented a computer control algorithm called Dynamic Matrix Control (DMC) at the AIChE Meeting in Houston [2]. DMC had the capacity to specify minimum variance in the design phase, and it could be used with multivariable processes.

Carlos E. Garcia and Manfred Morari published the seminal article, Internal Model Control: A Unifying Review and Some New Results, in the journal, Industrial Engineering Chemistry Process Design and Development in 1982 offering a theoretical framework for DMC [3]. These approaches remain the state of the art today.

### **Pursuit of Perfection Across All industries**

A large number of processes in commerce are transactional, and they are static, in contrast to manufacturing processes in the CPI, which are dynamic. Industries, therefore, also strive to achieve minimum variance in their transactional processes.

In the nineties, the CMPC-equivalent for static processes called six sigma had arrived in the marketplace. Developed at Motorola in the mid-seventies [4] and popularized at General Electric Company in the nineties, six sigma too aims at achieving minimum variance. Six sigma remains the gold standard for transactional processes [5, 6, 7].

According to ASQ, some 80% of Fortune 100 companies and 50% of Fortune 500 companies have six sigma programs in place to some extent.

### **Obstacles to Perfection and an Unparalleled Opportunity**

Human beings look after transactional and manufacturing processes, and their emotional state can become an obstacle to achieving minimum variance. Think of the emotional state as an “uncontrolled” factor.

Human beings are endowed with two types of emotions: Positive emotions and negative emotions. Positive emotions include love, kindness, empathy and compassion, while negative emotions encompass anger, hatred, hostility, frustration, resentment, jealousy, fear, sorrow and the like.

The level of emotional excellence is determined by the extent to which positive emotions predominate in an individual, at the exclusion of negative emotions. An individual with a high level of emotional excellence remains centered even in the presence of extenuating circumstances that are part of life.

Lack of an adequate level of emotional excellence has a strong bearing on performance, health & wellness, creativity, etc. [8, 9]. This discovery may be formally stated as:

*In the absence of an adequate level of emotional excellence, the best of the best strategies cannot deliver minimum variance. Boost emotional excellence and the performance will zoom.*

Neither CMPC nor six sigma can deliver minimum variance in the absence of an adequate level of emotional excellence of the workers linked to these applications.

The late Mikel Harry, co-creator of six sigma at Motorola, had liked this discovery and its implications. He had posted the first author's article, Profound Implications of Minimum Variance Control on his blog, Business Improvement Times. That blog is no longer available, post Dr. Harry's death in 2017.

The business world is beginning to appreciate the importance of emotional excellence. Daniel Goleman's book, Emotional Intelligence, sold 4 million copies and has been translated into forty languages [10]. According to HBR, Goleman's article on Emotional Intelligence remains the most archived in their publication.

UNESCO's Mahatma Gandhi Institute for Peace and Sustainable Development published an extensive report, "Rethinking Learning: A Review of Social and Emotional Learning for Education Systems" in 2020 [11]. The report urges member States to introduce social and emotional learning (SEL) in school curricula. The UNESCO report aspires to build SEL for Education by 2030.

Relatedly, Gallup reported that there were 22 million workers in the US alone who are extremely negative or actively disengaged. This rampant negativity is costing the US economy between \$250 and \$300 billion annually in lost productivity, and when workplace injury, absences and fraud were added, the total cost could surpass \$1 trillion per year [12].

On August 19, 2019, Business Roundtable released a New Statement redefining the Purpose of a Corporation signed by 181 CEOs who committed themselves to lead their companies for the

benefit of all stakeholders – customers, employees, suppliers, communities and shareholders in contrast to the earlier shareholders-first ideology [13].

In the face of such rampant negativity among the workers, how and why will one group of stakeholders work for the benefit of all stakeholders?

The only way is to achieve a shift in emotions from negative emotions to positive emotions.

### **Cultivating Higher Levels of Emotional Excellence**

The pursuit of higher levels of emotional excellence is not an intellectual exercise. Just do a thirty-day self-assessment and convince yourself that such is the case. For success, the required positive changes have to come about from within.

The cultivation of emotional excellence is a well-posed scientific problem as emotions can be measured and the process with which to rise in positive emotions is meditation. Because emotions can be measured, the performance can be audited.

There are two methods for emotions measurement. One goes by the name, EQ Radio [14] which uses wireless Radio Frequency (RF) signals and it was developed at MIT. The second device (Bio-Well) developed by Prof. Konstantin Korotkov, Professor of Biophysics and Computers at a university in St. Petersburg in Russia uses harmless electrical signals [15].

There are many meditation practices. They involve some form of breath manipulation, and/or mantras. Meditation is neither a religion, nor a philosophy, and everyone can benefit from it.

### **Examples of Performance Improvement**

Meditation has demonstrated an improvement in performance in diverse areas of life.

Nobel laureate Elizabeth Blackburn and her associate Elissa Epel issued a stark warning to world leaders on the high societal costs of stress [16]. Blackburn suggested that meditation might lengthen telomeres and slow aging [17]. Medical researchers have since reported that meditation slows aging [18].

Negative emotions produce stress, positive emotions do not, and stress is a root cause of a large majority of diseases.

Patrick Mahomes, the quarterback of Kansas City Chiefs, is a regular meditator and credits his exemplary performance to his practice of meditation [19]. Kansas City Chiefs won the recent Super Bowl. Chicago Cubs credit meditation for their World Series victory after a gap of over one hundred years [20]. Seattle Seahawks credit their yoga and meditation practices for their Super Bowl victory [21].

Mumbai's Dabbawalas is a great example. The 5,000 semiliterate lunchbox delivery boys deliver an astonishing 200,000 lunch boxes a day, six days a week, 365 days a year, producing 1 defect (wrongful delivery, late delivery) in 6 million deliveries according to Forbes, and they have been at it since 1890 [21]. Not only are their processes six sigma compliant, the Dabbawalas possess a high level of emotional excellence. The Dabbawalas are all Varkaris (pilgrims) who travel a distance of 200 km on foot from one set of temple towns to another every year. And, they themselves are poor, and yet they manage to collect leftover food from restaurants and weddings and distribute it to the poor regularly.

Prince Charles, Virgin Group founder, Sir Richard Branson, among numerous luminaries, have visited the Dabbawalas to witness their operations. Harvard, Columbia and other business school students have visited Dabbawalas to study their operations. Harvard Business Review, CBS, BBC and other media outlets have reported on their operations. All this attention to learn how this group of semiliterate delivery boys is able to produce such incredible performance in the hope of learning how to replicate it.

Not only are their processes six sigma complaint, but additionally, their level of emotional excellence is high. See this presentation (pp. 22-25) of the spokesperson of Dabbawalas at the Madras Management Association ([video clip](#) on p. 24).

In a recent visit, the first author discovered that the emotional excellence of Dabbawalas was high. Since that visit, he and Dabbawalas have signed an MOU to explain to the world how exemplary performance becomes possible [9].

How exactly meditation lengthens telomeres, or how and why a lack of emotional excellence leads to shoddy performance, is not well understood, but it is certain both are correct.

The link of emotional excellence to the performance in the external world offers an unparalleled opportunity to leapfrog their global peers in competitiveness.

## **Case Study**

Three Mason-Ohio area high school sophomores organized two sessions for the first author in Mason, one on July 11, 2021 and the second, on August 1, 2021. Thirty-three participants attended the sessions. Here, participants learned a simple 21-minute meditation practice which they were expected to continue practicing regularly over the ensuing three weeks.

Figure 1 depicts the heart rate data for the 33 participants pursuant to the 21-minute meditation practice on July 11<sup>th</sup>. The heart rates of all participants have dropped. Thus, everyone is likely to benefit from meditation, albeit to a varying extent. This is because the present state is dependent on hereditary traits inherited from ancestors, and how they have lived their lives to the present age. These factors are not the same across individuals.

Figure 2 depicts the stress data for all participants. Alongside is shown the stress data for the first author. The participants who have not seen a reduction in stress are those who were not able to practice meditation regularly. In contrast, the first author is a long-time meditator.

## **How Rising Level of Emotional Excellence Improves Performance**

We have presented examples from diverse fields showing that an enhancement in emotional excellence with meditation leads to performance improvements in diverse areas, from athletics, to transactional processes, and to health. We suggest that the benefits of meditation extend across all areas of life. Meditation reduces stress, improves the focus of attention and the performance improves.

## **Benefits of Adding Meditation to Daily Work Routine**

When companies will set aside some forty minutes a day for meditation during working hours they will find that in a few months an unexpected amount of improvement in performance has come about in all aspects, and that the financial benefits from the meditation practices have far outweighed the cost of allocating the time for them.

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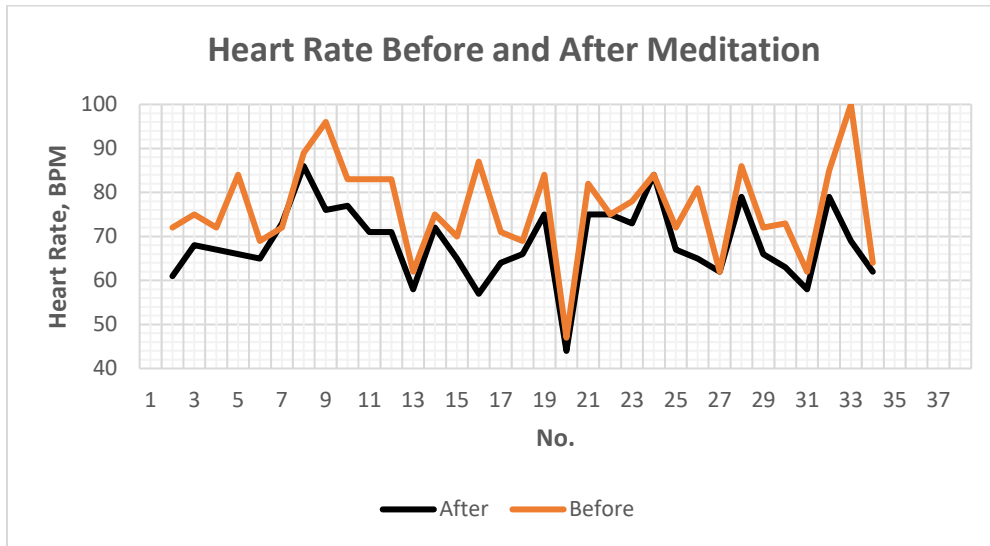
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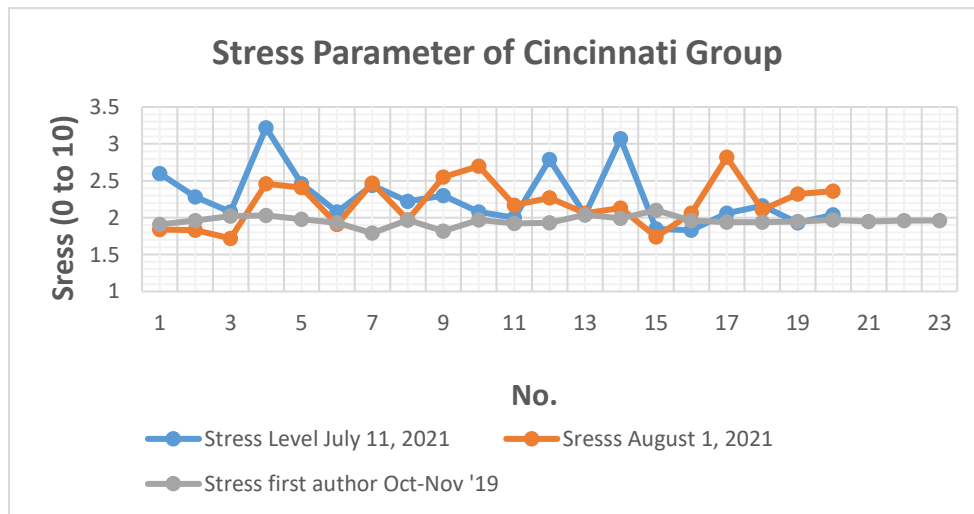
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## Illustrations



**Figure 1. Heart Rate Data for All Participants Pursuant to Meditation**



**Figure 2. Stress Parameter Data for Participants Before and After Three Weeks of Meditation**