

## Essay

# Pursuit of Zero Defects for National Transformation

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### Abstract

This essay explains that the pursuit of minimum variance in all external activities is necessary but not sufficient for national transformation. External excellence is achieved with qualitative initiatives such as six sigma but minimum variance in external activities cannot be achieved when the internal excellence is inadequate. Combine the two and the performance zooms. The scientific framework for national transformation is a result of the combination of the science of external excellence and the science and practices of internal excellence. The framework has broad implications for a better and a more peaceful world.

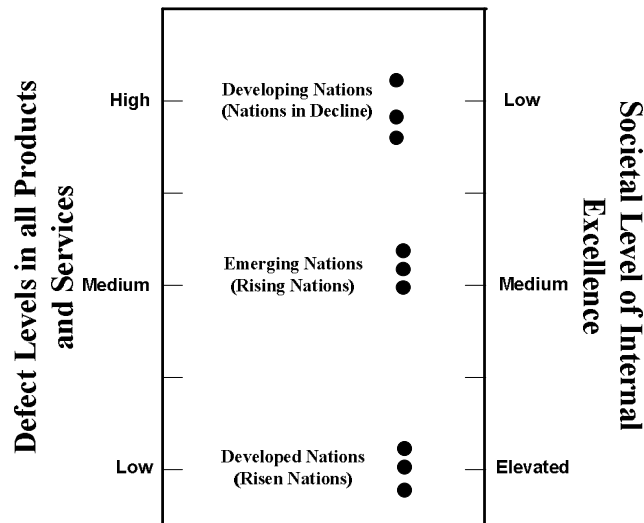
**Keywords:** Minimum variance, zero defects, external excellence, internal excellence, statistics, meditation.

### The Concepts

The Indian Statistical Institute, Coimbatore Branch organized a Conference on Governance towards Zero Defects, Coimbatore, October 28 – 29, 2017 on the occasion of the 125<sup>th</sup> birth anniversary of the late Prof. P. C. Mahalanobis, founder of Indian Statistical Institute. Pursuit of zero defects indeed has the capacity to transform India into a global power. To explain, Figure 1 below is a qualitative plot of nations versus defect levels in all their products and services. The qualitative plot divides developed, emerging, and developing nations according to defect levels. The defect levels in emerging nations, such as India and China, are seen to be high relative to developed nations, making it clear that the only way India can hope to join the ranks of developed nations is to dramatically reduce defects levels in all its products and services. A statistical methodology such as six sigma is the proper branch of knowledge to use to achieve this goal. To be clear, zero defects is a hypothetical concept meaning that it is theoretically impossible to achieve zero defects owing to the presence of uncontrollable and unknown causes omnipresent in all manufacturing and transactional processes that statisticians refer to as common causes. Thus, minimum variance is a theoretical standard; better performance cannot be achieved.

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**Figure 1.** Defect Levels and Internal Excellence vs. Nations

Several years ago, the author made a critical discovery: In the absence of an adequate level of internal excellence, even the best of the best quality initiatives such as six sigma cannot deliver anywhere close to minimum variance performance. Figure 1 also reflects this line of reasoning. The defect levels in emerging and developing nations are high for two reasons: The processes and transactions are not designed and operated well but also that the average level of internal excellence is lower. Raise internal excellence and the performance zooms. So, what quality professionals have taken to be minimum variance is really not that, meaning further improvement in performance is possible by raising internal excellence. Ancient India being home to the practices of internal excellence, this brings us face-to-face with the wisdom of our ancient sages, now corroborated with science and scientific experiments.

When the science of external excellence (six sigma like statistical methodologies) is combined with the science and practices of internal excellence, what results is a scientific framework for world transformation towards a better and more peaceful world. A synopsis of the framework is outlined in the paper, *Profound Implications of Minimum Variance Control* from Dr. Mikel J. Harry's Blog, "Business improvement Times". Dr. Harry is co-creator of six sigma while he was at Motorola in the seventies. In addition to Dr. Harry, the scientific framework has resonated with numerous eminent individuals who include Padma Vibhushan recipients some of whom are also Fellows of the Royal Society, UK, three-time US presidential nominee, and President of Switzerland. Several years ago, the author traveled to Buffalo, NY to meet with Dr. C. R Rao (he is now 97 years old), FRS, Padma Vibhushan, and recipient of US President's National Medal of Science. In the meeting the author will cherish forever, Dr. Rao commented, "This is very important". Dr. Vijay L. Kelkar, Padma Vibhushan, and currently President of ISI too is fully on board vis-à-vis the framework and its importance for India.

Indian Statistical Institute and the author's firm, Six Sigma and Advanced Controls, Inc., have entered into an MOU to take the framework forward to Indian public and private sector organizations. Today's students are tomorrow's leaders, movers, thinkers, and shakers and therefore, there is an urgent need to introduce a course on the subject in all college curricula. References 2 and 3 are intended to serve as text for the course an outline of which may be found in the ASEE paper (Reference 4). The author has introduced the framework in his six sigma class of the MBA program of the University of Kentucky at TEI/Piraeus in Athens, Greece that he has been teaching for eleven years and the students love it. He has also presented a talk on the framework in several countries including the Congress of one always to enthusiastic audiences.

### **Further Readings**

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