

Seeing Strategic Opportunities Exploiting “Better-Faster-Cheaper”

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Since the early 1980’s, the US automotive industry has watched its market share decline. Questions were raised, solutions attempted, and money spent. Market share continued to erode. Academic studies followed. In 1990, the MIT International Motor Vehicle Program concluded a five-million dollar, five-year study on the future of the automobile, claimed to be “a groundbreaking analysis of the worldwide move from mass production to lean production”. The authors of the summary text of this study, *The Machine That Changed the World*, offered the explanation to market share decline as a lack of “lean production”. In reviewing this study, The New York Times cited that “the fundamentals of this system are applicable to every industry across the globe...[and] will have a profound effect on human society – it will truly change the world.” More questions were raised and implementation solutions followed yet again. The search continues. A December 1997 article in Fortune magazine claims that “two days a month, more than 50 automotive executives and engineers travel to a sprawling manufacturing complex in Georgetown, KY, to learn how Toyota makes cars.” What is it that continues to confound knowledgeable and experienced people? And for how long will the search continue?

The real act of discovery consists not of finding new lands, but in seeing with new eyes.

Marcel Proust

The material highlighted here provides a set of new eyes to discover and exploit strategic opportunities that prior discoverers have been unable to see. New eyes are required to explain “what is” and “what could be”. These new eyes result from a better understanding of the five elements that follow, and their interdependencies.

Acceptability and Desirability

The adage *If it ain’t broke, don’t fix it* exemplifies the management philosophy of *acceptability*. By contrast, the management philosophy of *desirability* lies at the heart of continuous improvement – that is, “better-faster-cheaper” is always attainable. Further contrasts, extending beyond vocabulary differences, follow below.

	Acceptability	Desirability
Vocabulary	OK, fast, cheap, safe, lean	Better, faster, cheaper, safer, leaner
Perspective	everything is absolute	everything is continuous
Behavior	reactive	proactive
Focus	problems	opportunities
Activity	fix	improve
Requirements	meet expectations	exceed expectations
Attitude	success vs. failure	learning and growing

The philosophy of *acceptability* does not encourage *desirability*. A newer set of eyes will allow one to discover that the philosophy of *acceptability* cannot deliver its ultimate objective – zero defects or 100% acceptability. Only with *desirability* can one deliver 100% acceptability, and more.

Our expectations are not high enough

David Kearns

Appreciation for a System

A product, be it a liquid rocket engine or a pen, is a system of parts - working together interdependently. Similarly, the organization is a system of inputs - materials, machinery, methods and people – with interdependencies, requiring cooperation. Newer eyes recognize and appreciate that isolated improvements of a component of the system can result in a “worse-slower-more expensive” product. The management philosophy of *acceptability* may encourage local gains at the expense of the system.

Theory of Knowledge

New theories are nothing more than unexplored cause and effect relationships. They represent the life blood of *desirability* and the roadmap to “better-faster-cheaper”. A newer set of eyes acknowledges that management is prediction and prediction is based on theories.

Psychology

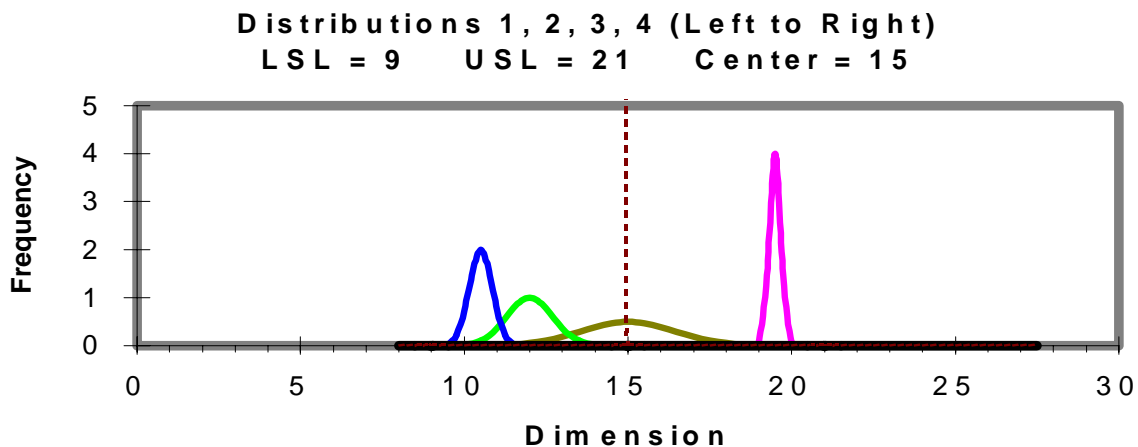
Society depends on individuals who volunteer their resources, be it time, money, or blood. The act of volunteering is not mandatory or “must do”. Instead, volunteers operate from a “want to do” mindset. Their natural and normal motivation is internal. Newer eyes recognize that the way we treat people affects the rate at which theories are created, the degree to which individuals will cooperate, and the whether they will operate from *acceptability* or *desirability*.

Knowledge about Variation

Variety is the spice of life. A new set of eyes will exploit an understanding of variation and manage it for maximum profit. In doing so, a newer set of eyes can distinguish the four paradigms of variation – A, B, C, and D.

Consider the set of distributions of process variation for a given “dimension”, as shown below. Given the ground rules that these distributions represent the abilities of four suppliers with: 1) equal cost and delivery schedule, 2) distribution averages and levels of variation not subject to change, 3) acceptability (zero defects) guaranteed, and 4) specification limits as shown with a target (“preferred”) value of 15.

A new set of eyes would recognize distribution 3 as the best alternative since the dimensional variation from the target value is at a minimum among these four choices – paradigm C thinking. The emphasis of paradigm C is *piece-to-target* consistency, which reflects appreciation of the entire system in which this piece operates. The selection of distribution 4 as the best alternative would reveal an emphasis on *piece-to-piece* consistency. A new set of eyes would recognize this as paradigm B thinking. The conclusion that each distribution delivers “zero defects”, hence 100% acceptability, is recognized as paradigm A thinking. Paradigm A and B thinking have their roots in *acceptability* and, as such, encourage local gains at the expense of the system.



Paradigm D thinking represents the ability to deliver minimum variation for a range of targets. In this regard, paradigm D thinking represents variety and flexibility. A simple analogy to differentiate paradigm C thinking from paradigm D thinking: a baseball pitcher who consistently targets one spot in the strike zone is a paradigm C pitcher, one who has the flexibility to adjust to differing targets and hit each consistently is a paradigm D pitcher – a superior pitcher.

Working Together

Taken together, these elements provide a new vision to exploit “better-faster-cheaper” and a sustainable strategic advantage over our competitors. As an example of these elements “working together”, a team of define and produce engineers fabricated two sets of combustion chamber hardware for the RS-68 program. Based on historical data, these engineers were told to expect a 50-85% level of acceptance for braze joint quality for the 1200+ braze joints per hardware set. Their expectations were higher and so were their results - 100% acceptability for the first article and 99.8% for the second. The conclusion – taken together, these elements provide a powerful new vision for Boeing. How much “better-faster-cheaper” can team Boeing become by 2016 ? I believe that the fundamentals of this system are applicable to every industry across the globe and will have a profound effect on human society – it will truly change the world.