



# ENTERPRISE IMPROVEMENT PATHS: SIX SIGMA VS. TRANSFORMATION "Enterprise Transformation"

---

by Robert D. Gilbreath | November 8, 2004 |

---

10 Glenlake Parkway, Suite 130 | Atlanta, GA 30328 | tel. (678) 353-3378

Executive Insights  
Gordian Transformation Partners Inc.  
Copyright © 2004, All Rights Reserved

## Six Sigma vs. Transformation

To everything there is a season, says the book of Ecclesiastes. In the world of business improvement, Enterprise Transformation is coming into its own, and it seems like it's now open season on six sigma.

Perhaps this is a natural turn of events, for whenever something such as six sigma is so highly and singularly touted as the way, the answer, the Holy Grail, it usually doesn't take long for the inevitable backlash to appear. Forces are lining up on both sides of this issue, pro and con. People are taking stands; managements are becoming polarized into two camps. If you're a six sigma enthusiast you might call these camps the believers and the heretics. If you're into change, or enterprise transformation, you might use the terms zealots and realists.

So where do we stand, square in the middle of the most massive restructuring of industry in our lifetimes, on the cusp of a tenuous recovery, as technology and a dozen other change drivers cause each of us and our companies to question how we work, what we do, even who we are? Is six sigma, (or quality, or continuous improvement) the answer? Or is it a grand deception?

This question of whether six sigma is dead, whether it's a relic of the past, is not a trivial or academic one. Whether quality works or doesn't is not a question you should take lightly. In fact, it's not a question you should take at all.

It's a fool's choice, a bogus distinction. If you spend any time at all arguing over whether six sigma is the way to improve or the way to fail, you've fallen into a logic trap, you're the victim of a syllogism; being forced to make a decision between two alternatives when both are equally valid. On the path to corporate improvement, six sigma isn't in itself good or bad, old or new, right or wrong. Neither is the transformation alternative—profound corporate change can be vital or deadly depending on whether it's needed and how it's conducted.

Let's start by realizing that forcing you to choose between six sigma and transformation derives from the philosophical concept of pluralism--a doctrine holding that the world is not a unit in law and structure, but the scene of contrary forces and processes. We may not have known it as pluralism, per se, but each of us knows about contrary forces such as the yin and the yang, good and evil, light and darkness, knowledge and ignorance, love and hate.

### Pluralism: the battle of contrary forces

This paper presents a plea for balance, suggesting that the world is sometimes defined through pluralism, the battle of contrary forces and processes. Here we will suggest that each improvement method, in its own season, is neither good nor bad, right nor wrong, but appropriate or inappropriate given the circumstances of your company, your competitors and the challenges you confront.

Table 1: Some differences between the two approaches

Characteristic	Six Sigma	Transformation
Description	Improvement methodology that concentrates on eliminating mistakes, wastes, and rework. Focus is on continuous improvement.	Fundamental or profound change in the enterprise. Focus is on adaptation and discontinuous improvement.
Goal	Drive out defects. Conform to standards.	Think and act differently across an organization.
Applies to	repetitive, operational processes of production and delivery	episodic projects involving organizations, cultures and strategic moves.
Best when company is	concerned with efficiency and productivity	concerned with problems and opportunities
Begins with	hypotheses for improvement	strategies for survival and exploitation
Success indicators	Quantified and discrete	Often qualitative and subjective
Results in	conformity to goals and standards	an enterprise adapted to new conditions and demands
Deals with	work and tasks	people and roles
Change involved	Incremental	Quantum

Two extremes are inherent in all aspects of business, and even in the struggle for life itself. They are 1) the need for constancy, and 2) the need for change. For consistency on the one hand, and creativity on the other. And here's where the attack against six sigma and related improvement methods is most effective. It cites an undue emphasis on constancy, on consistent processes and predictable results, to the exclusion, some say, of creativity, innovation, novelty.

This isn't a petty distinction, or a battle of abstractions. It goes to the heart of all arts and sciences, all industry and enterprise. It stretches beyond the earth and into the farthest reaches of the universe. It plunges deep into the microcosm of genetics, down among the DNA, the very code and conduct of life.

For most quality processes deplore variation, seek to drive it out, to eliminate difference from standards. That's the very definition of six sigma: 99.999.....% consistency, with just a few defects

in a million. In the pursuit of conformance to requirements, in the punitive naming of differences as defects, quality programs have chosen their objective: uniformity, consistency, and the controls required to assure them. Stay within the lines, we're told, follow the rules to the letter. Different is bad. Surprise is failure. "Zero Defects", an early slogan from the quality movement, sums it all up.

But this is neither good nor bad. In order to judge this doctrine we need a context clue: is it appropriate or inappropriate?

Change provides the unorthodox, they say, with orthodoxy.

Let's look at the other pole: Creativity, change, novelty. By their definition these abhor predictability, shun sameness, and exult in variation. Surprise is the goal, an enchanting encounter with the unexpected. Creative people despise conformity. You see this in the way they dress, the way they live, the ideas they espouse. Change is the champion here. Distinction, difference: these are the terms used to ennoble variation, and the pejorative word "defects" is reserved for those who stay within the lines, not those exploring beyond them. There is no original sin here. Originality is the objective. Change provides the unorthodox, they say, with orthodoxy. Abnormality is a complement, not a condemnation.

If you examine our language you'll quickly find that Western culture has been on the side of the conformists. Take the terms we use every day to indicate something new, different, or unexpected: Deviant, freak, shocking surprise, capricious, flawed, strange, on the edge. Not exactly accolades. Can you imagine using these terms to describe the chairman of your electric utility? "He's so deviant, freaky, he provides us with a shocking surprise every day. He's capricious, admits his work is flawed. He keeps the board and Wall Street constantly on edge. His wife best describes him as 'strange'".

But take these same adjectives and imagine People Magazine doing a story on a brilliant artist, a composer or avante guard choreographer: "He's such a pleasant surprise on the contemporary scene. He calls himself a deviant, a freak, and his rebellious streak shines through in his work, which, always the perfectionist, he freely admits is sometimes flawed. Friends revel in his capriciousness, his fresh, even strange approaches. He's turned the art world on edge."

And yet, despite this cultural bias, we all revel in the new. We take vacations to explore different countries, dine in exotic restaurants, and enjoy movies and books which take us to unfamiliar lands and times. And, to be sure, our words reflect this. We compliment someone by calling her refreshing, inventive, modern, unique, and creative. All these terms, positive and pejorative, are loaded. They slide the weights on the balance beam either toward or away from the two ends: constancy and change. All life is a struggle to attain this balance. To keep what is appropriate, to safeguard what works, and to continuously seek out variations, new approaches, more appropriate ways of thinking and acting in light of change.

Some people see this as a paradox, others as simple pluralism. Let's examine the twentieth century's most basic paradox, and determine if it helps shed light on this tug of war between consistency and creativity.

## Entropy vs. Evolution

Most of us are familiar with some version of the second law of thermodynamics, the one that says energy can only be changed in one direction, from usable to unusable, from order to disorder. As the capacity of a system or particle to provide usable energy (usually in the form of heat or motion) diminishes, its entropy increases. The world, says the second law, is winding down. It is only a matter of time before heat death ultimately occurs. Order devolves into disorder. Decay is the unseen hand that guides all planets, all molecules, all systems; relentless, certain decay.

Evidence of the second law is everywhere. When a forest burns usable wood, lumber, animal habitats, dissolve into ash and smoke. We have no report on record of ashes and smoke evolving suddenly into a forest ecosystem. When you chew a piece of gum and toss the wrapper into a trash can, usable energy taken to create, fold and ship the wrapper to you is lost. No one has ever seen the opposite occur. No wrappers jumping out of cans and folding themselves in the air. Entropy, the tendency towards disorder, reigns supreme. Entropy is the sullen march towards randomness, the enemy of complexity and structure.

But wait a minute! If this is true, how does it square with the evolution of life? Isn't the history of evolution one of simpler, more primitive life forms being replaced or supplemented with more complex species? Isn't the evolutionary march tilted upwards, beginning with primordial soup, continuing through flatworms, crayfish, alligators, onto rats, up through apes and finally, at the summit of complexity and order, human beings themselves? If Entropy ruled, complex systems, such as organisms, would devolve rather than evolve. Energy would escape, causing progressive generations to become less developed, simpler, less organized and specialized. In a few hundred million years we'd evolve into flatworms!

The play between Entropy and Evolution isn't paradoxical--it's pluralistic.

Scientists and philosophers have pondered this seeming paradox for decades before some wise ones realized that it is not a paradox at all. The play between Entropy and Evolution isn't paradoxical--it's pluralistic. Life is the antithesis of randomness, to be sure. Life itself laughs at entropy, flourishing by capturing energy, order, or negative entropy, from the sun and from other life. When a lion eats an antelope it steals negative entropy, or order, from its prey. When an aluminum company mines and processes ore to make an ingredient in chewing gum wrappers, it converts disorder to order. It defies entropy by stealing negative entropy from the earth's crust. Entropy and Evolution aren't opposites. They are competing forces. Pluralism again.

Life is order. Life, whether one-celled bacterium or human beings, is defined as the creation or organization of order from disorder, and the replication of such patterns through time. Life struggles towards complexity and enthalpy (negative entropy). Life converts old order to disorder, and then further converts it to new order. Order, disorder, order. That is the drumbeat of life. The cow eats perfectly ordered grass, converting it into a messy cud, and further converting it into highly ordered milk--to feed her calf. Order, disorder, new order. Constancy, change, constancy.

Uniformity, defect, new uniformity. Control, chaos, control. To everything there is a season. A time to build up and a time to break down.

The goals of all living beings, then, are not paradoxical, but pluralistic. We strive to make sense of the world, to create ordered families, civilized societies, rules, laws, standards of behavior. All these support progress, safety and security. But they also guarantee monotony and susceptibility to change. Hence the innate desire for variation, for newer, more adaptive ideas and actions. The joy of surprise in the new, the freedom that comes with abandoning the old. These too are essential to progress, safety and security. A balance is needed between these two imperatives: 1) to keep true to plans, to known requirements, to the past, and 2) to keep true to possibilities, to novelty, to the potential for difference.

## Life is not a mere replication of the past

Suppose life existed with one and not the other. Suppose, for example that each generation was a perfect replication of the previous one. The son identical to the father, the daughter a perfect replica of the mother. Zero defects. Variation driven out of existence. Carry this back a few thousand generations to the precursors of Homo sapiens.

Suppose the mother was Lucy, the ancient primate unearthed by Donald Johansson--a 3 foot tall hominid whose 3 million year old bones were found in Ethiopia? Under the premise of zero defects (no mutations, no evolutionary surprises) we wouldn't be sitting here discussing anything. We'd be out on the lawn grubbing for edible insects and tubers, or swinging from the trees, grunting and grooming lice from our fur. We'd all be Lucy's--and the future of our species, indeed of each of us, would be an endless sequence of again and again. Until some other tribe discovered stone tools and weapons and literally beat us out of existence. But then again, we'd be following the rules and they wouldn't. We'd be right and they'd be wrong. And we would be dead and they would be alive.

Life demands variation to maintain itself. And not just random variation, the type that occurs when a DNA strands unzips and fails to copy itself with total fidelity. Combinations of DNA strands from outside the individual are designed to create endless varieties of every species. That's planned variation, welcomed diversity. That's why life invented sex--the mingling of difference to achieve new and untried possibilities in every individual. Life depends on both: plans and possibilities, consistency and creativity. When either one is absent we're in trouble. Growth or life without rules is another term for cancer. But life without variation is vulnerable too.

Life demands variation to maintain itself.

## Monocultures

If you travel through Atlanta in the spring, you might think the city had been hit by a freak snowstorm. Although the temperature hovers in the mid-70's, the trees are covered in white.

Bursting with flowers, the city's millions of Bradford Pears will be in full bloom. There is a reason for their popularity, and a reason to worry, too.

The Bradford Pear is a landscape architect's dream. They grow straight and round, are full bloomers in the spring, leafy in the summer, and crimson torches in the fall. They throw off no messy fruit, require no pruning, are uniformly shaped and flourish in all levels of sun. That's why they are so popular in Atlanta. Bradford Pears cover every shopping mall lot, border every homeowner's yard, and line every boulevard and office park. Uniform, consistent, controlled. And scary.

Suppose the unchanging Bradford Pears are attacked by some mutant, some changing tree blight or boring insect? Some life form that has evolved to penetrate its defenses, or find its unique vulnerability? A good portion of the trees in the city would be wiped out in a matter of days. Untold millions of dollars in damage would be wrought.

Species, societies, governments, and businesses with a high degree of uniformity are not robust.

Species, societies, governments, and businesses with a high degree of uniformity are not robust. They are vulnerable. In horticulture they call this condition monoculturism. It's been taken to extremes in Central America, where corporations plow up rain forests and plant endless row upon row of fruit trees, all the same, all according to plan, all meeting requirements, zero defects. One new pest or fungus and the land can turn into a lunar landscape. So would the lives of the people dependent on the plantations.

Paper companies boast of giant replanting efforts to "renew" the resources (trees) they "harvest". You'll see hundreds of acres of baby pine planted after logging, row upon row, clone plant upon clone plant, all the same variety, same species, and same vulnerability. This practice destroys a robust, adaptive ecosystem of hundreds of species and replaces it with one. Uniformity, consistency, zero defects. More monoculturism, more vulnerability.

Monoculturism is apparent not just in replanted forests or on Atlanta's lawns. We see it in corporate cultures as well; where everyone must think the same, act the same, and respond to rewards and punishments the same way. Where training programs reinforce monocultural views and uniform performance standards. Where difference is abhorred. Where variation is driven out. One change in the environment can bring such a culture to its knees. What happened to the Dutch Elms of America and will inevitably occur among the Bradford Pears is sure to strike these companies.

One cannot mandate innovation, plan surprise, or outlaw change.

Would you like an example? Consider the company where most employees were white males, wearing white shirts and blue suits. Where everyone took the same training, sold the same equipment, aspired to climb the same rungs in the same ladder. A company where a man could be fired for wearing a pink shirt or thinking a fucia thought. Consider IBM as it spiraled downward in

the early nineties. Monoculturism is an evil not confined to trees. Sometimes it strikes titans of industry. But the result is the same. Evolution stops, Entropy takes over. Decay is in the air, and death, the ultimate decomposition into chaos, stalks every row of the uniform forest.

"There are more things in heaven and earth, Horatio, than are dreamt of in your philosophy," says Hamlet. And there are more ideas for improvement, more innovations, more possibilities in our companies, than are dreamt of in our six sigma processes or among our reengineering teams. One cannot mandate innovation, plan surprise, or outlaw change. One can only provide for it, allow it, preclude it from being stifled or driven out as some defect, some deviation.

## Variation is not failure

Does anyone you know speak Esperanto? Probably not, and that's too bad. Esperanto is an artificial international language devised by a Polish oculist in 1917. It was supposed to bridge the cultural gaps among nations, bring people together, ensure world peace, lubricate commerce, and make the world one gigantic smiling love fest, with all humans singing in a language none of them were born to. Esperanto, despite many efforts to promote it, has been a complete failure.

For as Hamlet reminds us, there are more thoughts than can be expressed in any one language, regardless of which one, real or artificial. Monoculturalism again, seeking to drive out millennia of human diversity. Seeking to compress the flavor, the essence, the life experiences and aspirations of all humankind into some sort of efficient newspeak. Language can never be reduced to data exchange. Diversity makes cultures robust and inventive. Uniformity puts them on death row. Take heart, those who promulgate absolutes, constants, or mission statements. Stay away from loaded words like all, only, or must. This is the language of exclusion. These are the shibboleths of the culture that can't change. Innovators aren't heroes where this language is spoken. They're heretics. Until some boring insect, some tree blight called a competitor arrives. Then innovators are highly sought after. But by then it may be too late. They might have already been driven into the desert. How do you say "stupid" in Esperanto?

Variation is not failure;  
it is an expression of  
possibility.

Variation is not failure; it is an expression of possibility. And, in moderate doses, to be treasured. Consider evolution again, and the words of the renowned biologist Loren Eisley: "Life, in its infinite prodigality, cherishes failures, in one guise or another. In the evolutionary struggle it was the different ones, the failures, who had always won, but by the time they won they had come to be called successes. This is the final paradox," Eisley says, "which men call evolution."

## Constancy vs. Creativity

Suppose we're forced allowed to choose between these two extremes, between constancy and creativity. You might think a writer would opt for creativity every time. But let me tell you, if I'm

ever laid out on an operating table and a team of physicians is performing open heart surgery on me, the last thing I want is an innovator in the bunch! Creativity? No thanks! But think this over again. Suppose doctors always opted for the tried and true, only perfecting what's worked in the past, in some incremental way. We wouldn't be into endoscopic surgery or Magnetic Resonance Imaging. We'd be breeding bigger leeches and building jazzier bone rattles. Progress demands experiment. Experiment presumes variation.

Take the difference between printing and painting. Adherence to the original, true fidelity, zero defects--these are the rules of good printing. But if we applied them to painters we'd have perfect replicas of the Mona Lisa--zillions of them, all drawn painstakingly by hand. Consistency works with printing, creativity works with painting. Artists have dirty words for consistency. They call it copying, forgery. It can land you in jail. Even if, and especially if, your copies have zero defects!

In this light, anyone who feels that his or her children should think, act and believe the exact same way they do, who want their children to dream the same dreams, harbor the same fears, pursue the same visions, are enemies of civilization. This attitude would stop human attainment in its tracks. Only by creating different people, with different ideas and skills, indeed, different dreams, can we ever hope to advance humankind.

### The Beauty of Standards

As counterintuitive as it sounds, standards are the ingredients of innovation! Standards, norms, rules--they're the only way to sidestep chaos and attain creativity. They are the bricks and mortar of innovation. And the world is full of examples.

- DOS, the universal operating system for most early personal computers is a very complex and demanding standard. But prior to DOS (or its competitors) there were no standards. We had pretty good personal computing hardware in the late 1970's, but no one agreed on the operating software. DOS, as inefficient as it was, unified the creative software community. With a simple standard, all sorts of imaginative applications could be written and implemented. Microsoft's Windows took the same path.
- Telephone and Postal Exchanges serve the same purpose. Without extreme standardization we couldn't communicate or even ship letters to each other. Universal service in telecommunications demands agreed upon standards--with no defects.
- Blood donation would be crippled without uniform testing and classification systems that continuously pursue the goal of zero defects. Suppose creativity came into play? You'd stumble into the Emergency Room clutching a sucking chest wound. The nurse would ask you if you knew your blood type. "Yes," you'd moan, "scarlet!" or "virile" or "Irish!" or "10W30!"
- Civilization is based on laws, and laws--either common or codified, are nothing more than standards of behavior and punishment for deviation.

- Trade and commerce, around the world rely on standards. Weights, measures, currency, exchange rates, interchangeable parts. Imagine going up to the order window of Wendy's and asking for a hogshead of Pepsi and a sheaf of bread.

Standards let us leap over confusion and get to real creativity. Every language in the world has standards. We call them a vocabulary or lexicon, grammar, and a semantic system. Given these rudimentary standards, we can make everything from a bumper sticker to a Shakespeare play.

Music is the same. Standard keys and common instruments yield infinitely variable compositions. And take the game of chess. The rules are few and extremely simple, but the combinations of moves are infinite in all dimensions.

Standards let us leap over confusion and get to real creativity.

A bumper sticker is much better than a Shakespearean play when your message is short and powerful. Blood can be described as blue or burning or royal or cold in a novel, but not in the emergency room.

## Conclusion

Listen to yourselves and your colleagues at work. Pay attention to the words that are used. When you hear variation, for example, or difference, ask yourself if it's a pejorative or a compliment, if the speaker is a champion of conformity and control or a believer in the value of creativity. When you hear six sigma, quality, zero defects and the like, ask yourself if it's applicable, if it means assurance or monotony.

If the word "process" crops up, see if the speaker is infatuated with how work is done rather than what that work does, or what it means. And most of all, avoid the trap of logic that supposes that six sigma and innovation are antithetical, that standards are the enemy of innovation, or that creativity is dangerous and has no place in your business.

Remember that continuous improvement means continuous questioning. Continuous justification, re-calibration, change. No one knows the way, the only way, the singular method for improving. And no idea should be cast out as defective or deviant simply because it appears to contradict what we've been doing or what we've been told.

Build a new lexicon for improvement. Include these key words--appropriate and inappropriate.

Stay away from labels like right or wrong, good or bad, controlled or chaotic. Build a new lexicon for improvement. Include these key words--appropriate and inappropriate. For those are the poles that define the new pluralism of management. No improvement method, no work process, no organization is good or bad, right or wrong. Each is either appropriate or inappropriate, given your improvement mandate and your competitive conditions.

A time to build up and a time to break down. A time to gain what is appropriate and lose what is no longer viable. A time to keep what still works and a time to throw away what's outlived its usefulness. A time to drive out variation and a time to embrace it. A time to adopt six sigma, and a time to transform.

