PROMOTING RAPID, SUSTAINABLE OPERATIONAL CHANGE IN BUSINESS

ORGANIZATIONS

A Synthesis Project Presented

by

MICHAEL A. LIHON

Submitted to the Office of Graduate Studies, University of Massachusetts Boston,
in partial fulfillment of the requirements for the degree of

MASTER OF ARTS

May 2009

Critical and Creative Thinking Program

PROMOTING RAPID, SUSTAINABLE OPERATIONAL CHANGE IN BUSINESS

ORGANIZATIONS

A Synthesis Project Presented

by

MICHAEL A. LIHON

Approved as to style and content by:

_____
Nina Greenwald
Chairperson of Committee

_____
Arthur Millman, Member

                                   _____
                                   Peter Taylor, Program Coordinator
                                   Critical and Creative Thinking Program

ABSTRACT

PROMOTING RAPID, SUSTAINABLE OPERATIONAL CHANGE IN BUSINESS

ORGANIZATIONS

May 2009

Michael A. Lihon, B.S., Worcester State College
M.A., University of Massachusetts Boston

Directed by Nina Greenwald

The dual purpose of this position paper is to communicate both the kinds of thinking needed to

make rapid operational changes in business organizations and the kinds of thinking needed to

sustain these while further changes are being incorporated. Promoting sustainable change in

business operations is a process of adaptation characterized by strategic steps taken by an

organization to stay competitive in the global business environment. Specifically, this paper

focuses on industries that involve complex manufacturing or production operations that need

improvement. It is directed to managers, supervisors and technicians who wish to incorporate

efficient sustainable change in production. It is proposed that standard approaches such as

Quality Improvement Methodologies (QIM) are enhanced through learning to use critical and

creative thinking dispositions (habits of mind) and strategies for achieving rapid, sustainable

operational change in business organizations. QIM can yield far better results when the training

is implemented through phases of learning with thinking dispositions and strategies. This will

result in an organization's ability to adapt quickly to changes necessary for remaining

competitive in global markets.

LIST OF FIGURES

TABLE OF CONTENTS

CHAPTER 1

INTRODUCTION

The aim of this position paper is to provide managers, supervisors and technicians concerned with process improvements with critical and creative thinking skills that significantly increase the likelihood of achieving their goals through Quality Improvement Methodologies (QIM). The need to remain competitive in the global marketplace is the major impetus for having a business operate in a manner that will result in effective, rapid, sustainable change. This paper also addresses ways in which critical and creative thinking can cultivate thinking dispositions (habits of mind) that promote receptivity and readiness, which sets the stage for achieving these outcomes.

Quality Improvement Methodologies

QIMs are processes or procedures designed to improve the performance of a business for the purpose of remaining competitive in an industrial market. This paper proposes that the likelihood of achieving rapid, sustainable change through QIM increases significantly when it is being learned through such habits of mind as: intellectual perseverance and risk taking, and such strategies as self-convincing talk and creating mental movies (imagining ideas). In the context of a learning environment in which many ideas are invited and collaboratively considered, individuals become much more capable of understanding why there is a need for operational change that is both rapid and sustainable. In another sense, the aim is to improve aspiration, about which learning organization specialist Peter Senge (1994) has this to say: "Aspiration is the capacity of individuals, teams, and eventually larger organizations to orient themselves towards what they truly care about and to change because they want to, not just because they need to" (p. 17).

Contemporary organizations employ a vast array of quality improvement methodologies (QIM) to improve the return of investment (ROI) for the stakeholders and stockholders. ROI is a financial term utilized in business to measure the ratio of money gained or lost to money invested from an investment made by an organization, such as the acquisition of new equipment or technology, in a period of time. We can also say that QIM are strategies to improve the bottom line of the income statement – net profit – of an organization. QIM are methods for ensuring that all activities necessary to design, develop, and implement a product, within a given company, are effective and efficient with respect to the company and its performance. These methodologies focus not only on product quality but also on the means of achieving it. Quality Improvement Methods (QIM) are put in place to streamline processes, reduce waste, improve customer service and result in return of investment. Examples of QIM methods are Six-Sigma, Lean Manufacturing, and Continuous Improvements.

Six-Sigma is a strategy that seeks to identify and remove the causes of defects and errors in the manufacturing of products, and with respect to those tasks which relate to accomplishing a particular goal (Keller, 2001). The basic premise of Six-Sigma is that a defect in a product can lead to customer dissatisfaction. With this in mind, metrics are established to identify the current performance situation of the product. Next a system is put in place to improve certain aspects and after a while these are compared with previous data. Lean Manufacturing is a system that is aimed towards attaining the shortest cycle in a production setting (MacInnes, 2002). The shortest cycle eliminates waste. Lean manufacturing systems focus on decreasing system response time so that any production system is able to change and adapt to the demands of a changing market. This is particularly important for staying ahead of the competition in product updates, and to reduce unnecessary inventory. Continuous Improvement, also known as Kaizen (Dinero, 2005),

is a philosophy for continuously improving all aspects of the work place or the industry. This philosophy is applied not only to all daily operations of a business, but is a check on Six-Sigma and Lean Manufacturing. After any results obtained by the latter processes, a vision of a continuous application of metrics has to be put in place. The latest results create the new point to start and begin the optimization process again.

These methods are used in organizations to stay competitive and to gain market share in the global economy, a process now known as globalization. As time goes by and globalization evolves, more and more markets and industries are investing themselves in the global business. Because competition for new markets becomes harder, business organizations cannot wait until the need for development is forced on them by obsolescence of a product. Rather, it is critical to anticipate the expectations of customers, implement new designs for popular products favorable to them, and improve customer services.

Globalization in Business

By the term globalization I mean that the business world is becoming "flatter" or more accessible to many customers around the world, through technologies, like the Internet, and strategic philosophies, like the design of a global supply chain. For example, consider the evolution of the toothbrush which evolved from a simple brush made from a rag attached to a stick to nylon filaments attached to a flat handle, to ergonomically designed electric brushes with a variety of movements for more effective cleaning (The History Of Teeth Cleaning, 2004). Toothpaste has also undergone continuous improvement to supply the demand of the different groups of customers that can be found around the world. There are now many flavors and functions targeted to specific interests and needs of customers, (e.g., tartar control, whitening

capabilities, antiseptic). Industries that continuously update and revise their goals are able to offer the best products and services, increasing their chances to remain viable in current and future markets. Many designs of products have evolved from companies located in the USA. Some of these products are now fabricated in countries far away from their places of origin; some are now made in China. Customers are from all over the world. There are also companies with new dental hygiene products that come from understanding just how broad this market can be. As the production of new products grows, so does the competition for market shares. Customers all over the world will look for better products at better prices, and companies are positioning themselves for a greater number of customers. For these reasons, efficiency and effectiveness are essential for better use of the resources of the business. As a result of better efficiency and effectiveness, the business gets to produce better products with lower costs. In the end, the result is shared with and benefits customers.

More Reasons to Make Improvements

Why keep trying to make improvements or changes in processes that run well? Production facilities and headquarters of manufacturing companies have a direct relationship with society, and therefore companies can aid in society's welfare. For example: good products and services that are competitive in the economic world will support the stakeholders and their families; the organization can also make charitable contributions to society by supporting schools, universities, and non-profit organizations that look after the less fortunate. On another level, there is the possibility that the organization can meet its demise if it falls behind in its personal and professional responsibilities. The consequences of failing to maintain a competitive and productive industry can affect society in many different ways. For example, unemployment

rises, and families struggle to stay economically well. Ultimately, all businesses, schools and governmental organizations carry the burden of supporting a greater part of society.

The commitment to change and improve should be a responsibility of everyone at all organizational levels as well as personal levels. Improvement should be seen not just as the duty of the organization to itself, but also for its responsibility to society as well. Every single employee of an organization, and society too, should be responsible for keeping up with changes for improvement to keep the economy in a healthy state of competitiveness. Therefore, learning how to change and sustain those changes made to improve a business organization is key to supporting ourselves and the society in which we live.

Sadly, in organizations, we often find resistance to changes in processes already implemented and even more when trying to incorporate new operational changes while also incorporating new processes. I remember a situation in a highly technical industry where I was supervising the production of 24/7 pharmaceutical products. A new manager was assigned to clean up the production process and make the process more efficient. Although there were many things to be improved, the question was not only what metrics and quality improvement tools were going to be used, but also how to use them. As you might guess, most new managers come into a new position thinking that he or she is the one who will make all of the significant changes with the new QIM and that nothing will stop them from doing so. They are the ones with ideas for what to put in place, and all subordinates and other managers are expected to obey. Yes, you heard me correctly: managers expect to be obeyed. So they try new implementations for months and sometimes years, with results that are slim in terms of improvement, and not lasting.

I was caught in the middle of just such a struggle, growing increasingly curious about what caused the failures. The idea occurred to ask people what they thought were the reasons

changes weren't making much of an improvement. Interestingly, the answers were not a surprise to me. Although, my experience allowed me to understand the reasons the changes weren't working, I still needed to ask the rest of the group if they felt the same way I did when I was in their position. My quest for answers started by randomly asking technicians and operators to share their opinions with me. These will remain confidential.

I knew that if workers do not like what is going on, the first thing they do is to blame the manager for not doing a proper job, or, they say that they could do a better job at improving operations. However, this was just the "warm up" period. A bit later in conversations with workers, their feelings come out. And the things they say translate into: "excellent process to be implemented but the process of implementation is not good"; "I don't have the energy for the number of changes they are planning to make"; "It is one change after another one, I just do not know any more what to expect to do next day"; and "it is a constant struggle to face work every day."

The constant reminders to keep up with changes are, in themselves, a drain on energy that could be used more efficiently. The problem occurs when quality processes are implemented; they work successfully for a period of time and then fall apart. They cannot be combined with any other new change because workers now have to learn something new. For example, when implementing a new Standard Operating Procedure (SOP) and shortly thereafter a new software system, most of the time one of the two changes loses attention in retention of knowledge. It is not until the first training is completed in full that the second one can take place. These are key factors in running a successful business. In addition, organizations have to not only run these processes successfully, but they have to employ them continuously. This is where Continuous Improvement comes into the picture.

<u>What is Continuous Improvement?</u>

Continuous improvement within an organization is a strategy for reducing the cost of operations and increasing productivity. Productivity in economics is the ratio of what is produced to what is required to produce it. The participation of workers is essential to producing effective results. Most for-profit business organizations are in search of economic benefits for the stakeholders and stockholders. This continuous improvement strategy aligns with the goals of most business organizations and is the most realistic approach for staying competitive in the global market. The bottom line is to improve the net profits of any organization.

This introduction discusses some of the reasons for making continuous improvement in business and also improving on the improvements. This is what promotes rapid, sustainable operational change. This introduction also describes what is meant by Quality Improvement Methodologies, Globalization, Continuous Improvements and reasons for their existence. These terms are essential for understanding how specific kinds of thinking processes can improve the implementation of QIM. In the next chapters I will introduce ways of thinking and learning, and how they are related to increasing the effectiveness of these models for increasing productivity and promoting sustainable change in business operations.

CHAPTER 2

HISTORICAL BACKGROUND

In the past, most top management groups in business organizations have been convinced that, because of the loss of market share, they had to improve their products and services. Top management groups in Marketing, Logistics, Manufacturing and Operations certainly know and have applied quality improvement methodologies. Although business organizations applied these standard quality control processes, they realized that the results were not appreciable. Quality improvement methodologies had become "fads" applied in business to create the illusion that something was being made to gain market share. Today organizations are still experiencing unsatisfactory results from QIM with respect to their history.

There have been, however, some companies that experienced a little improvement with the implementation of QIM. Key Performance Indicators (also known as KPI) are often part of QIM procedures, used to help an organization define and measure their progress towards their goals. These metrics are data gathered from the present performance of a process. For example, in a production plant KPI will provide information about how many pieces or parts were produced during a certain period of time, for example, in a work shift, a day, or a week of production. Any percentage of increase in KPI was indeed a good result. The thought was to keep applying QIMs to the existing operations. But how often should these improvements be worked on or applied? How can businesses keep on gaining market share?

When QIM became part of the solution to improve market share, reduce waste in operation processes, and improve production times in response to market demand, they were then continuously applied to the recipe for success. Such new processes for improvements were the solution. The quality improvement methodologies known prior to 1986, when Six –Sigma

was introduced, were Quality Control (QC), a system to ensure that products and services met customers expectations and requirements; Total Quality Management (TQM), which was the strategy to strive for quality in all aspects of an organization's performance; and Zero Defect (ZD), a quality performance process to reduce volumes of pieces rejected from a production line. There were also other theories and methodologies, which were used before and after, like Lean Manufacturing, and Just-in-Time (Dinero, 2005.)

The results of the implementation of these quality methodologies were not what organizations were expecting. For example, after the introduction of TQM, the results showed a successful leap in efficiency and productivity, which occurred for a while before workers and managerial staff realized they had to motivate workers to continue the projects involved in TQM. Thereafter, they were losing interest and the projects were resulting in no major accomplishments. But nowadays, new approaches in conjunction with new theories become the possible solution. In theory, this means that new methodologies will work if they have trained and motivated personnel, and knowledge to implement process improvement projects. However, not every member of an organization is willing to invest much energy to learn for the company, especially when they already think that they know how to do their job.

Training and motivating personnel have been a powerful impetus for solutions to make continuous improvement in organizations better. Major work in the area has been done by Peter Senge, Art Kleiner, Charlotte Roberts, Richard Ross, and Bryan Smith. All worked on The Fifth Discipline Fieldbook; and John P. Kotter and Dan S. Cohen worked on the book, The Heart of Change. Both of these books provide the understanding of methodologies needed for incorporating change in business organizations.

<u>What Have Been the Results of Past Actions on Changes for Improvements?</u>

Most companies want to be 'smart companies'. Smart companies develop products and services on a continuing basis and deliver them at a price that represents a greater value for customers. Being smart about how to think smart offers the greatest chance for a business to succeed in a fast changing, competitive world. David Matheson and Jim Matheson (1998) define what it means to be a "smart organization" in their book, <u>The Smart Organization</u>. They define this as making good strategic decisions (Matheson & Matheson, 1998, p. 1). However, this is just the beginning of such a journey. The next step is to 'act smart'. Acting smart is the process of effective decision making and implementation (Matheson & Matheson, 1998, p. 21). Implementing decision making involves more than giving an order to follow directions from upper management. It involves mobilizing everyone in the organization to take an active role in bringing about desired change. This active role, as I see it, involves an active participation of employees in thinking "smart", and by this I mean becoming effective critical and creative thinkers.

In the past, worst case scenarios where companies have not succeeded in becoming smart have resulted in resistance or just paying lip service to quality improvement implementation, cynicism by the employees, and training anxiety. These organizations had yet to work on a number of strategies to move towards becoming smart. Most of these organizations remained as what is commonly known as small businesses, or businesses with fewer than 100 employees.

In the past the results of trying to become a smart organization have been disappointing. Personal needs of the employees have been neglected and haven't been seen as important enough to act upon. In the quest of becoming a smart organization, organizations have considered paying more attention to Maslow's hierarchy of human needs, a theory of human development

that proposes physiological and psychological requirements people have in order to grow to be emotionally healthy. And they have been implemented to supplement the responsiveness of the organization, and thorough communication of common goals, vision, skills, resources, action plans, and incentives. Paying attention to Maslow's hierarchy of humans needs (Maslow, 1943) as a prerequisite to becoming effective in life, has been a good new addition. However, the fulfillment of these needs have fallen short because of the need to constantly motivate employees. Constant personalized motivation, at times, could become more effort than supervisors are able to provide.

This synthesis is intended to supplement the above situation with a thinking process learned through my studies in the Critical and Creative Thinking program. These thinking strategies, if implemented, are important keys to a company successfully becoming "smart," so that it can also implement effective rapid, sustainable change.

CHAPTER 3

THINKING DISPOSITIONS THAT PROMOTE SUSTAINABLE
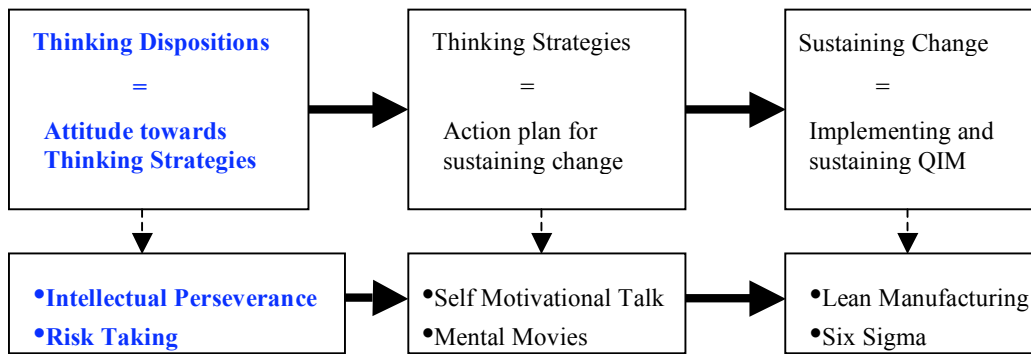
CHANGE IN BUSINESS ORGANIZATIONS

Quality Improvement Methodologies (QIM) applied to business organizations will yield much better results when managers and employees practice thinking dispositions that foster critical and creative thinking. While training and learning in a business organization involves hands on participation for practical processes, cultivating the ability to think is what will result in transferring training to other domains where effective problem solving is also needed. As Daniel Reisberg (2006) states in this book Cognition, Exploring the Science of the Mind, the intention to learn leads people to approach the material in a certain fashion, and it is that approach that matters for memory (Reisberg, 2006, p. 164). This means that, while memory is important for the development of learning, in this case business processes, it is one's attitudes or dispositions toward learning which are the real key to promoting sustainable changes in business organizations. This chapter discusses ways to cultivate thinking attitudes that engender specific strategies for creating sustainable changes in business organizations and is based on my coursework in the Critical and Creative Thinking Program at the University of Massachusetts, Boston.

Intellectual perseverance, as a thinking attitude, is a willingness to persist in finding solutions to problems. In business, for example, intellectual perseverance is needed to understand how to reduce production costs without affecting the quality of the product. This is a complex issue that does not have an obvious or simple answer and requires a great many steps and stages in concerted rigorous thinking that is essential to solution finding. Intellectual perseverance is also prerequisite for risk-taking – for enhancing the confidence and willingness to experiment

with ideas, while recognizing that even if they don't work in the largest sense, there is much to be gained from mistakes throughout the thinking process.

Figure one shows the facilitative relationship between thinking attitudes and thinking strategies. It also portrays the sequence of discussion in this paper. The highlighted section refers to this chapter.

Figure 1

Thinking Dispositions = **Attitude towards Thinking Strategies**	Thinking Strategies = Action plan for sustaining change	Sustaining Change = Implementing and sustaining QIM
•**Intellectual Perseverance** •**Risk Taking**	•Self Motivational Talk •Mental Movies	•Lean Manufacturing •Six Sigma

According to Tishman (in Costa, 2000) ability, sensitivity, and inclination, are the three essential dimensions of thinking dispositions. Ability is the power to carry out an action. It is the knowledge, along with the necessary tools, and the strategy to think in depth about a given situation. Ability refers to the skills that are necessary to think through and perform a task in an organized way. In business, those who have the ability think critically in depth and solve problems can make decisions that increase the effectiveness and wellbeing of the company. Ability is being able to use critical and creative thinking tools to solve problems. For example, in considering my own thinking abilities, I find it very helpful to reflect on, in a step-by-step manner, how my mind is working to solve a problem or to make a decision.

Another important dimension of thinking dispositions is sensitivity. Sensitivity is the "radar" that picks up potential problems or activities that need to be changed or improved. Sensitivity signals the need for a person to initiate thinking about their thinking. This means thinking about the thinking process in which we are engaged. It is also the capacity to respond to changes in the environment and to perceive opportunities to improve. In a business situation where production strategies are important to the success of a product, sensitivity is needed to carry out the work of identifying the most appropriate production process. It is what provides us with the opportunity to move forward in a continuously changing environment and recognize what is needed to produce a satisfactory product. For example, if you have been working repeatedly at the same routine job for some time, at some point you sense and identify problems with the process. It is now that the search for improvement can begin. For example, the operation may need a new set of goals to improve productivity or the product needs to be updated.

The third dimension of a thinking disposition is inclination or motivation to persevere in the relevant activity. Inclination is the drive or desire to engage in and sustain actions. It involves the perseverance to think through a task until it is achieved. If we think of the word inclination, one of the first things that might come to mind is the view of something that is not in balance and will tend to move from its original position. Inclination predicts movement-seeking change. It predicts movements towards actions to find information to act to achieve proper position.

At work, this inclination should be towards making a difference in improvements for the benefit of the organization. Inclination, in other words, is the power and the desire to do what needs to be done to move forward and to find ways to make processes efficient and effective.

The combination of these three dimensions of a thinking disposition - ability, sensibility, and inclination - is the foundation for devising and implementing successful thinking strategies.

Intellectual Perseverance and Risk Taking are examples of thinking dispositions that promote specific thinking strategies. Thinking Dispositions can be likened to engines that power thinking strategies, to the horse that draws the critical and creative thinking cart. It's the thinking disposition that gets the cart rolling, and enables one to persevere and employ specific strategies for generating ideas and solutions. A thinking disposition is an essential frame of mind that sustains a thinking task and keeps us productively and confidently engaged in the pursuit of developing understanding and finding effective solutions.

Looking More Deeply at Intellectual Perseverance

Intellectual Perseverance is an example of a thinking disposition that can lead to solutions for achieving sustainable changes in business organizations. Throughout my quest to find information on intellectual perseverance, I located "The Critical Thinking Organization" website, and a book on "The Socratic Questioning", written by Richard Paul and Linda Elder (2006). These two sources have expanded my view of intellectual perseverance. For example, intellectual perseverance is the tenacity to stay the course in the search for the answer you are looking for, and for the answers you do not know you are looking for. This means that there is always more information to come.

The Critical Thinking website has this interesting description of intellectual perseverance:

Having a consciousness of the need to use intellectual insights and truths in spite of difficulties, obstacles, and frustrations; firm adherence to rational principles despite the irrational opposition of others; a sense of the need to struggle with confusion and unsettled questions over an extended period of time to achieve a deeper understanding or insight. (p. 4)

The individual who practices intellectual perseverance understands that this persistence is crucial to the process of gaining insight and understanding, which is essential for solving

problems effectively. However, along with this one also realizes that there may be no final

closure in understanding. Learning occurs in steps and stages.

In addition, <u>The Thinker's Guide To The Art Of Socratic Questioning</u> (Paul and Elder,

2006) describes a circumstance in which Socrates finds himself questioning his perseverance and

the way this would not only benefit him, but those who participated in his discussions.

> Socrates exhibited intellectual perseverance, pursuing ideas and questions
> with energy and zest, infecting others with his delight in learning, never tiring
> process. Consistently attempting to live in accordance with the ideas he espoused,
> and never afraid to stand alone in his views, as long as those views have been
> rigorously analyzed and assessed, Socrates was a living example …(p. 68)

Socrates recognized the importance of not giving up in a thinking pursuit. He

communicated this in a way that inspired others to pursue learning challenges. Such inspiration

is transferable to business settings where critical thinking is so essential for bringing about

needed change. Intellectual perseverance not only is a key disposition for promoting sustainable

change, but a thinking behavior that can inspire others in the business community to do the same.

<u>The Relationship between Intellectual Perseverance and</u>
<u>Quality Improvement Methodologies</u>

Intellectual perseverance is the persistence to grapple with intellectual complexities when

they seem incomprehensible, such as often occurs in an organization. For example, during my

college years, I struggled with understanding chemistry. My major was in biotechnology and I

had little interest in learning much about chemistry and did not learn much about it. After getting

a job in the pharmaceutical industry, I realized the importance of having a deeper understanding

of this subject. This reality shocked me in a way that motivated me to learn more about

chemistry beyond just the basics. And even though I had forgotten all the basics, I immersed

myself in a self-learning mode to speed up the learning process and gain the necessary higher level knowledge required of the field. I took extra classes, read specialty magazines, and every other day looked for new publications in chemistry related to my job. At times I felt exhausted by all this energy I was expending in understanding the complexities of chemistry – a subject I did not like in the first place – but which gave my mind a challenge nevertheless. On occasions I let my mind take time off from the quest of learning chemistry, but after several days my mind was back on track searching for possible things I might not know. This is an example of what I view as an illustration of intellectual perseverance.

Being intellectually perseverant is clearly an advantage in the process of considering the kinds of operational changes needed in business. This willingness to continue learning beyond what we think we know, and the conviction that there is always something new to learn, is the kind of spirit that promotes more effective use of any quality improvement methodologies.

<u>Risk Taking</u>

Another example of a thinking disposition is risk taking. Risk taking opens doors to creative thinking and problem solving. It can unveil opportunities for creativity where we might think there are none. Risk taking is about stepping out there and taking chances – it's about being bold and confident .As risk takers we need to demonstrate confidence and pride in our accomplishments while still demonstrating desire to learn and grow. Robbins and Decenzo (2001) in their book <u>Fundamentals of Management</u> talk about the impact of being a risk taker at work. They highlight risk-taking behavior the following way:

> …The final personality trait influencing worker behavior reflects the willingness to take chances – the propensity for risk-taking. A preference to assume or avoid risk has been shown to have an impact on how long it takes for individuals to make a decision and how much information they require before making their choice. For instance, in one classic study 79 managers worked on a simulated human resource management exercise that requires them to make hiring

decisions. High-risk-taking managers made more rapid decisions and used less information in making their choices than did the low-risk-taking managers. Interestingly, the decision accuracy was the same for both groups (Robbins and Decenzo, p. 266).

The idea I take away from this is that individuals (e.g., managers or specialized technicians) that have been trained in a certain job skill can make decisions, propose solutions, or recommend wild ideas that come from gut-feelings as a result of experience. While it is often difficult to explain the logic of making a certain decision, the results can turn out to be more valuable than not stepping out there with an idea – which is part of the adventure of risk taking.

In business organizations risk-taking is not only about making decisions in terms of hiring, but about taking risks for self-development, such as investing time in learning processes which we were inclined to think had no use. Also, taking risks is about communicating new ideas to the rest of the organization. Often we think we could be ridiculed if we present an idea that is not in line with department or company goals, opposed to viewing it as possibly revolutionizing the course a company could take.

The next section explains in more detail how the elements of thinking dispositions can be applied to sustain improvements in an organization through quality improvement methodologies (QIM).

Risk Taking Leads to Thinking Strategies that Enhance Quality Improvement Methodologies

Risk Taking can result in degrees of positive results or disappointments, from which dividends can be drawn. The implementation of quality improvements methodologies requires, for all intents and purposes, changes that are made towards promoting a more efficient operation. Risk-taking is opening doors to finding and developing ideas and solutions. This does not mean that we need to take a plunge and hope that it works out, but rather we need to confront what

seem like "unsafe" business environments in which criticism and rejection of our thoughts or ideas is anticipated. Risk taking involves keeping our insecurities in check, even in an "unsafe" environment and allowing our thinking to proceed toward solving problems. In process improvement, taking risks means trying out ideas that no one else has been able to imagine. Through this process we apply thinking strategies to envision and talk to ourselves about possibilities for new changes.

As I researched a creative role model for one of my CCT courses, Henry Ford captured my attention. Ford spent a lot of time thinking about his passion, which was building automobiles. He thought about learning all he could about engineering and its application to automobiles. Similarly, all I think about is how to better understand and connect the applications of lean philosophy to business operations (which, by the way, relate to ideas that Henry Ford had). Pretending to be Henry Ford made me more deeply grasp how immersion in an interest can become a passion. Ford dreamed about the automobile regardless of how well off he was economically. There was already a family business, which allowed him to pursue his passion for automobiles. His persistence in developing his ideas was inspiring as were the risks he took to learn something new. Risk taking is about stepping out of our comfort zones and embracing the thinking needed to improve something.

Utilizing Thinking Dispositions

In businesses which have a large number of employees, (e.g., administrators, accountants, production operators, technicians, engineers) production moves along through the willingness of employees to perform daily responsibilities. However, there are employees who need to be guided, trained, and motivated. It is well known that motivation is critical to work place

effectiveness. This means that managers and supervisors need to have special skills that motivate workers to perform their jobs in the best way possible in order to meet the production numbers, the key performance indicators, or sales quotas. For the most part, without motivation workers would make the minimum effort required to perform their obligations with the company. This is what is meant by "meets expectations" in a job performance evaluation. If a union governs the workers in an organization, workers perform their job obligations in still more mechanical and less creative ways.

For example, an industrial worker who has been working in the same plant for over five or six years, performing the same job with no desire to improve her actual position, will maintain the same mind set over that period of time. If this person is in the habit of arriving to work and doing exactly and only what they have been doing for many years, this mind set precludes interest in thinking about how to do their job better. This individual is "stuck" in a rigid way of thinking. If something goes wrong out of an area of expertise, the strategy is to ask the immediate supervisor to solve the problem. If the supervisor is the same kind of thinker – one who doesn't practice critical and creative thinking - in my experience this is what's likely to happen. Time spent in referring a problem to someone else can translate into a lower productivity for the department and the overall company. Having people who can think critically and creatively is extremely practical. It saves time and money.

Saving time in a business operation is just the beginning of what it takes to become a successful organization. If every employee involved in production had the disposition to think through problems encountered on the job, the organization would boost tremendously the success rate in meeting time line expectations. The principle of Lean Manufacturing is to reduce

"waste" that can affect the costs of production and improve productivity. Thinking dispositions such as those I have discussed are the catalysts for effective lean manufacturing.

There's another important aspect pertaining to cultivating employee thinking dispositions. The company culture starts from the top of the organization and filters down to the lower levels of organizational structure. If high level management models good thinking dispositions, "leading by example" filters down to the rest of the organization who will follow suit.

When good thinking dispositions are practiced throughout the organization, employees from all levels will have the opportunity to practice more self-directed, effective thinking. An outcome of this is that businesses tend to flourish and competitors have a hard time catching up and staying in competition with the company. It is motivation and thinking effectiveness that gives businesses competitive edge. Chapter 4 provides examples of thinking strategies that derive from practicing good thinking dispositions.
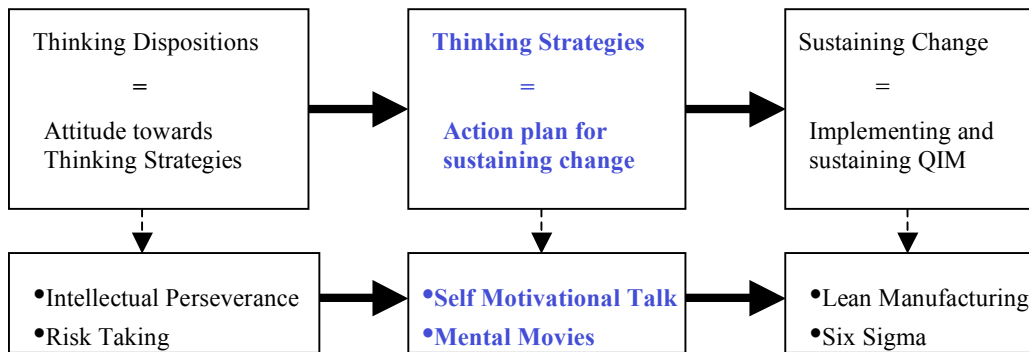
CHAPTER 4

STRATEGIES FOR ACHIEVING SUSTAINABLE CHANGE

IN BUSINESS ORGANIZATIONS

This chapter discusses two thinking strategies that can help bring about sustainable change in business organizations: Self Motivational Talk and Mental Movies. Self Motivational Talk refers to communication with the self and makes us aware of ideas we want for ourselves. Mental Movies are the visualization of those ideas. Utilizing thinking dispositions such as intellectual perseverance and risk taking, as discussed in the previous chapter, sets the stage for the use of these strategies. This process is about learning to think more effectively. As Edwards (2001, p. xvii) states in his article "The Vision," "Learning to think begins with recognizing how we are thinking now." Gaining mastery of our own thinking processes advances our learning and also heightens our enjoyment of the learning process. And when learning is enjoyable in a business organization, the probability of achieving effective sustainable change is considerably greater.

Thinking strategies don't just help organize our thoughts. They set the stage for our minds to receive information and convert our thoughts into an action plan. This practice also enhances the ability to focus on learning and increase our concentration span. As Costa (2001, p. 80) wrote in his article "Habits of the Mind," intelligent people plan for, reflect on, and evaluate the quality of their own thinking skills and strategies, and thinking about thinking is the first step towards a better reflective mind.

Figure 2 illustrates the relationship between thinking dispositions (thinking attitudes) and thinking strategies, and their role in increasing the effectiveness of widely used assessment tools (QIM; Six Sigma) in business organizations. The highlighted section refers to this chapter.

Figure 2.

Thinking Dispositions = Attitude towards Thinking Strategies	**Thinking Strategies** **=** **Action plan for** **sustaining change**	Sustaining Change = Implementing and sustaining QIM
•Intellectual Perseverance •Risk Taking	**•Self Motivational Talk** **•Mental Movies**	•Lean Manufacturing •Six Sigma

What is Self Motivational Talk? (Strategy)

Self motivational talk is a term that refers to communication with the self. Its purpose is to raise our awareness of our thinking, and it can lead to recognizing possible new strategies and creating change as a result. The idea works by convincing ourselves of the things we are capable of doing. It is like when we advise our friends and family about how they should think, behave, or act under certain circumstances for their own good. We tell them with certainty that they are capable of doing extraordinary things, and they should believe in themselves. Often enough, we fail to think the same way when it comes to ourselves. This same talk can be applied to ourselves and can encourage, within ourselves, the ability to learn new processes despite how difficult they might seem.

The strategy of talking to ourselves includes reflecting on and generating our ideas and goals. We reflect on what we want to accomplish and how this can be achieved by taking new directions in action planning. We talk to ourselves to convince ourselves that we are able to accomplish our goals. We have to believe we can achieve our goal, and while working towards

23

that goal, we need to keep reassuring ourselves. Reflection opens the door to create new sets of ideas that could be applied to solving dilemmas encountered in the pursuit of our goals.

Examples of phrases that can be used to encourage ourselves to improve are: "I need to believe in myself"; "I need to keep my priorities straight", and "I need to focus on what I want". These are phrases that I have used myself; however, many other techniques are available to us. Shad Helmstetter (1982) wrote a book called <u>What to Say When You Talk to Yourself</u> in which he describes self talk as follows:

> Self-talk is a way to overwrite our past negative programming by erasing or replacing it with conscious, positive new directions. Self-talk is a practical way to live our lives by active intent, rather than by passive acceptance.
> With self-talk we have a way to give new directions to our subconscious minds by talking to ourselves in a different way, consciously reprogramming our internal control center with words and statements which are more effective, more helpful to every part of us that we would like to improve. The self-talk statements paint a new internal picture of ourselves as we would most like to be.
> Self-talk gives each of us a way to change what we would like to change, even if we haven't been able to do so in the past. It offers us the chance to stop being the old self and start to become a different, better self, a self which is no longer the product of conditioned response, but governed instead by personal choice…(p. 72)

The purpose of this paper is to recommend ways to promote faster learning and change. We can "convince" ourselves that we can become better learners and thinkers. Self motivational talk is a promising tool that can be mastered with daily use and can become a driving force for change.

Self Motivating Talk : A Strategy for Creating Sustainable Operational Change in an Organization

Self Motivating Talk, as practiced in a business organization, can be directed toward specific goals for personal and professional development: for example, acquiring a higher level of knowledge or designing new business processes.

Peter Senge (1994) and colleagues have this to say about some of the difficulties they encountered in organizations undergoing structural change. "The sources of these problems cannot be remedied by more expert advice, better consultants, or more committed managers. They rely on our most basic ways of thinking. If these do not change, any new "input" will end up producing the same unproductive types of actions" (p. 6). What this means is that we need to understand how to learn before we can learn anything else, and we need to understand change before we seek a sustainable change. For this reason, reflecting on our thoughts is the first most basic thinking strategy for the proper utilization of mind in the workplace. Reflection and generation of ideas using self motivational talk also involves the constant mental revisiting of processes to find new ways of improving them and creating change.

We will also see that the reflection and generation of thoughts and ideas is important for sustainability. Bear in mind that the whole purpose of becoming skilled with this process is to sustain operational change in organizations.

An example of how to use self motivational talk in the workplace is the following. I often spend quite a bit of time analyzing commercials for new products on TV. In the case of toothpaste, I think about the tremendous amount of imagination that the researchers use in order to produce new products for the different clients they have. There are combinations of flavors, tartar control and whitening products. Everybody needs to brush their teeth, so toothbrush

purchasers are plentiful. How many different tastes will toothpaste companies need to assure a profitable greater market share? I think about the process of how to think about what other combinations could be needed and how they might think about coming up with the different combinations of products, and I then try to apply the same thinking process to any other process I might encounter at work. It does not mean that this way of thinking is only applicable to the development of a consumer product, but it can be applied to the development of specific employee policies in the organization or an internal policy made to benefit the employees. John Metzger, the innovative leader of Boulder, Colorado's Metzger Associate Inc., allowed his employees to design his company's "Live Long and Prosper" incentive and benefit plan. This resulted in employees being reimbursed for those activities that took them out of the office: $600 for physical fitness activities (gym membership, a stationary bicycle), $500 for outdoor living activities (ski passes, sailing), $600 for relaxation activities (guitar instructions, vacations), and $1,000 for education. Employee turnover dropped from 15 percent to 2 percent after this program was started (Dubrin, C23). The similarity between these two scenarios, designing the right toothpaste for the right customer and designing the right benefit plan for your company, is that they utilize same thinking strategy. We can motivate ourselves to think about the similarities of processes that we can identify in other places and adjust them to new processes. Self motivational talk promotes reflective thinking. For example, "I need and I know I can identify a process that can lead me to the following solution." After the process has been identified, reflection on the process might generate a process solution.

<u>What are Mental Movies</u>?

I think of Mental Movies as visualizations of what is possible. Positive or creative visualization is imaging what we want happiness or affection, or fulfilling work to be like. The creation of mental movies is based on having a serious objective and on experiencing the process of accomplishing it through visualization. Unlike aimless daydreaming that comes and goes Mental Movies have a specific intent as described in <u>Psychological Interventions: A guide to strategies</u>:

> Creative visualization is the technique of using your imagination to create what you want in your life. It is purported to be accomplished by various means including expecting the best, focusing intensely on a desired goal, and repeating affirmations and the use of vision boards. Creative Visualization is distinguished from normal daydreaming in that Creative Visualization is done in the first person and the present tense – as if the visualized scene were unfolding all around you; whereas normal daydreaming is done in the third person and the future tense – the "you" of the daydream is a puppet which the real "you" is watching from afar. (Ballou, 1995)

Creative visualization engages the imagination and can lead to a viable plan of action. It is about creating a screenplay in our minds in which we witness ourselves removing obstacles that otherwise would stop us from achieving our goal.

When we think about change and acquiring new knowledge, we often find these to be barriers to moving forward in our workplaces. In every step towards improvement, personal or professional, we are going to have to learn and embrace change. Visualizing ourselves in a Mental Movie where we are the main participants helps us cope with fear of change.

<u>How to Generate Mental Movies to Enhance Quality Improvement Methodologies</u>

This process brings practitioners to 'The cognition of how to generate mental movies,' or learning how to project the self into a positive visualization and with a positive disposition to

learn or apply new processes. Our visualization needs to incorporate a positive vision of the future. To create Mental Movies of the self, one needs to apply all the concepts detailed earlier in this chapter, like Self Motivational Talk. In this process we organize what we need to think about. We need to think positively, envisioning ourselves as capable, successful learners who can bring about and adapt to change. The way positive Mental Movies are generated is similar to mindfulness meditation. For example, I might envision myself managing a challenging learning task or undergoing successful change. My mental movie gives me confidence that I can be successful, because I see myself that way. "In mindfulness meditation, the mediator sits comfortably and silently, centering attention by focusing awareness on an object or process, that could either be the breath, riddle evoking questions, a visualization, or an exercise" (Perez-De-Albeniz, and Holmes, 2000). Self regulation of attention is the first step, where energy is focused on calm and relaxation to have the mind think about just a single idea or vision. The second step during a deep concentration is to visualize our actions related to a certain process in the future. For example, at work and when organizing an experiment I think about the outcome I want to see, visualizing a movie in the back of my mind that has me giving my supervisor and colleagues positive results of the operation. There are positive results in terms of the ways the operation was run. I see myself surrounded by joy and support from colleagues. This visualization gives me strength and sets the mood for my own expectation on what I need to do to perform successfully at work. These special ways of thinking can only be expressed with the confidence to take risks with our thoughts and actions.

In a business organization, practicing effective thinking dispositions is the key to understanding what thinking strategies to apply to a given situation. In turn, this significantly

enhances the positive effect of quality improvement methodologies (QIM), which can lead to more rapid, sustainable organizational change.

CHAPTER 5

INTEGRATING THINKING DISPOSITIONS AND THINKING STRATEGIES INTO
QUALITY IMPROVEMENT METHODOLOGIES: SOME CONCLUSIONS

This chapter summarizes and draws conclusions about key ideas presented in this

synthesis. The focus of this paper is the importance of integrating thinking dispositions and

thinking strategies in business organizations to promote sustainable change. A three stage

process for facilitating this is proposed. The first stage is understanding what is meant by

thinking dispositions. Two examples of thinking dispositions discussed in this paper are

intellectual perseverance, and risk taking. The second stage is the application of thinking

strategies, which are driven by thinking dispositions. Thinking strategies generate action

plans for achieving sustainable change. Two thinking strategies are discussed: self

motivational talk and mental movies. The third stage is the application of thinking strategies

to increase the effectiveness of lean manufacturing and six-sigma which are standard

procedures for assessing and improving business operations. The overarching goal is to

achieve a competitive edge in a global business market.

Quality Improvement Methodologies like Lean Manufacturing and Six-Sigma are tools

used by organizations to improve productivity. Unfortunately, when used in the usual way these

methodologies have limited short term success in promoting productivity and much less success

over the long haul. Six-Sigma is a strategy for identifying and removing the causes of defects

and errors in the manufacturing of products (Keller, 2001). Lean Manufacturing is a system

directed towards attaining an efficient production cycle (MacInnes, 2002). When the tools of

critical and creative thinking are incorporated into these methodologies, the likelihood of

attaining effective sustainable solutions in business organizations increases dramatically.

The integration of thinking dispositions and thinking strategies with Quality Improvement Methodologies (QIM) seeks, at first, a ten to fifteen percent improvement in the overall performance of the operation of a given department. A ten to fifteen percent success rate can have considerable positive impact on the finances of the company and, ultimately, create a ten to fifteen percent development in productivity in our economy. When employees learn these practices, they can become more innovative and receptive to new changes. They become much more comfortable speaking and taking active roles in improving in their daily jobs, which affects the overall performance of the company. Their confidence levels increase, which energizes their creativity. In turn, the entire work environment improves. When employees experience a positive, prosperous organizational environment, if they start feeling good about themselves and have higher self-esteem, the organization can move rapidly toward realizing the objectives of a shared vision.

Training in the dispositions and skills of critical and creative thinking and integration of this into QIM should take place under the guidance of a specialist in critical and creative thinking. It is recommended that basic employee training include critical thinking, creative thinking, and dialogue processes. Organizations should strive for implementing learning processes in their daily routine with the support of a company culture that seeks a safe environment for creativity.

In addition, while providing understanding of mental processes and dispositions like mental movies, self convincing talk, risk taking, and intellectual perseverance are initially important steps in the process of training, they can create some resistance.

The program in Critical and Creative Thinking has given me many tools and skills to help establish a receptive environment where people can feel comfortable about making change. For

example, dialogue techniques such as the ability to listen carefully and to suspend judgment help people become more receptive to change because they feel understood and can empathize and understand others. To listen empathetically is to understand from someone else's point of view, to experience other peoples' mindsets and view the world as they do. To be able to suspend judgment promotes thinking more deeply about points of view outside of your own. Suspending judgment helps prevent leaping to a conclusion in the absence of sufficient information and understanding.

The infusion of critical and creative thinking in a business organization fosters a more expansive vision for what is possible. I propose that such a program begin on a small scale to permit careful evaluation of its strengths, weaknesses and any approaches that may need to be changed, modified or revised. The role that I envision as a change agent is to create an organization that can flexibly adapt to variations in business environments and the economy. Such agility can result in a transformed organization, capable of making rapid, profitable, sustainable change.

BIBLIOGRAPHY

Ballou, Mary (1995). <u>Psychological Interventions: A guide to strategies</u>. Westport, CT: Praeger Publishers.

Costa, Arthur L. (2001). <u>Developing minds: a resource book for teaching thinking</u>. Alexandria, VA: Association for Supervision and Curriculum Development.

Dinero, Donald (2005). <u>Training within industry: The foundation of lean</u>. Wooster, OH: Productivity Press.

Dubrin, Andrew (2007). <u>Leadership: Research Findings, Practice and Skills, Fifth Edition</u>. Boston, MA: Houghton Mifflin Company.

Edwards, John (2001 a). "The vision." In Costa, Arthur L. (2001). <u>Developing minds: a resource book for teaching thinking.</u> Alexandria, VA: Association for Supervision and Curriculum Development.

Helmstetter, Shad (1982). <u>What to Say When You Talk to Yourself.</u> New York: Pocket Books.

Keller, Paul A. (2001). <u>Six Sigma Deployments: A Guide for Implementing Six Sigma in Your Organization</u>. Tucson, AZ: Quality Publishing.

Kotter, John P. and Dan S. Cohen. (2002). <u>The heart of change: real-life stories of how people change their organizations</u>. Boston, MA: Harvard Business School Press.

H2g2 Editors. (2004). <u>The history of teeth cleaning</u>. Retrieved May 13, 2009, form BBC Website: http://www.bbc.co.uk/dna/h2g2/A2818686.

MacInnes, Richard L. (2002). <u>The lean enterprise memory jogger</u>. Salem, NH: GOAL/QPC

David Matheson and Jim Matheson (1998). <u>The Smart Organization</u>. Boston, MA: Harvard Business School Press.

Maslow, Abraham. (1943). <u>A Theory of Human Motivation</u>, Psychological Review, (50), 370-396.

Paul, Richard (1987). "Dialogical thinking: critical thought essential to the acquisition of rational knowledge and passions." In J. Baron & R. Sternberg (Eds.) <u>Teaching thinking skills: theory and practice</u>. New York: W. H. Freeman.

Paul, Richard and Elder, Linda (2006). <u>The thinker's guide to the art of Socratic questioning.</u> Dillon Beach, CA: Foundation for Critical Thinking.

Perez-De-Albeniz, Alberto and Holmes, Jeremy (2000). <u>Meditation concepts, effects and uses in therapy</u>. International Journal of Psychology, (1), 49-59.

Reisberg, Daniel. (2006). <u>Cognition, Exploring the Science of the Mind</u>. New York, NY: W.W. Norton & Company.

Robbins, Stephen and Decenzo, David (2001). <u>Fundamentals of management</u>. New Jersey: Prentice-Hall, Inc.

Senge, Peter M., Art Kleiner, Charlotte Roberts, and Rick Ross. (1994). <u>The fifth discipline fieldbook</u>. New York: Currency.