Will Sustainability and CSR Expand Safety's Focus?

Michael A. Taubitz, BSME, M.A.
Senior Advisor
FDR Safety
Fenton, Michigan

Introduction

Many organizations are working on long-term sustainable growth. While there are differences between sustainability and corporate social responsibility (CSR), working on one typically means that you are working on the other. Sustainability requires a balance of environment, economic and social aspects, often referred to as the triple bottom line. While environment has a large and natural foundation in sustainability, the strategic role of safety is less visible.

Once the context of the "big picture" is understood, the challenges and opportunities of better integrating safety into the bigger picture are explored. Both sustainability and CSR have significant focus on societal impacts, suggesting that safety must expand its focus beyond the workplace.

The constraints of current metrics, the "safety silo" and limited safety focus are discussed. Turning those constraints into opportunities offers exciting challenges for SH&E professionals. Proven methodologies to improve operational excellence built upon safety as a core value are presented.

Understanding Sustainability

The traditional definition of sustainability calls for policies and strategies that meet society's present needs without compromising the ability of future generations to meet their own needs.

The global vision of sustainability was an outgrowth of the United Nation's 1987 Brundtland Commission.[1] The UN premises embraced three pillars of sustainable growth. These are environment, social, and economic, sometimes referred to as the "the triple bottom line," to balance social, environmental, and economic aspects. A model of how these elements fit together is shown in Figure 1.
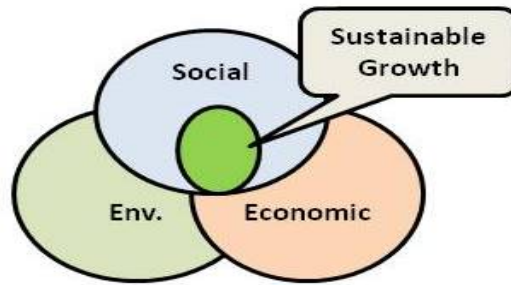
Figure 1: A model for sustainable growth

Sustainability is also referred to as the 3Ps: people, planet and profit. It is a complex goal that includes biodiversity, climate change, carbon footprint, and so on. Companies report on sustainability initiatives using guidelines from the Global Reporting Initiative. (GRI) For purposes of this paper, we will focus on the how safety fits into sustainability.

Global Reporting Initiative

The Global Reporting Initiative is a network-based organization that has pioneered development of the world's most widely used sustainability-reporting framework and is committed to its continuous improvement and application worldwide.[2]

In an effort to ensure technical quality, credibility, and relevance, the reporting framework was developed through a consensus-seeking process with global participants drawn from business, civil society, labor, and professional institutions. The cornerstone of the framework is the *Sustainability Reporting Guidelines,* first published in 2006. In March 2011, GRI released the *G3.1 Guidelines*, an update and completion of the *G3 Guidelines*.

Corporate Social Responsibility (CSR)

CSR is a form of corporate self-regulation integrated into a business model.[3] CSR policy is intended to function as a built-in, self-regulating mechanism where the inclusion of public interest into corporate decision-making facilitates achievement of a triple bottom line that benefits People, Planet and Profit.

If we compare efforts geared to sustainable growth with those designed for being socially responsible, we will find many similarities. This paper does not delve into the nuances that separate the two strategic initiatives for we might well come away with the observation of trying to make a distinction when there is little difference. Sustainability, as we know it today, came from the United Nations while CSR came from the International Organization of Standardization, commonly referred to as ISO.

Whether your organization has a foundation based upon sustainability or social responsibility matters not. What is important is to understand that both are similar, with often overlapping goals. Regardless of which strategy drives your organization, it is safe to assume that the concept of continuous improvement is common to all companies.

Any organization desiring to meet strategic future challenges must have a culture and systems that drive improvement in all facets of the business. Continuous improvement is always focused on the customer and the bigger picture of the organization's role in the bigger picture of society and the planet.

The Bigger Picture
Both sustainability and CSR require organizations to have a focus on social issues that extend beyond the workplace. Particularly with sustainability, environmental or "green" initiatives play a major role, being one of three major legs. However, neither sustainability nor CSR currently has a strong focus on safety.

The good news is that the American Society of Safety Engineers (ASSE), The American Industrial Hygiene Association (AIHA), and the Institute of Occupational Safety and Health (IOSH) have established a collaborative partnership, creating a new Center for Safety and Health Sustainability.[4] This Center is dedicated to helping to infuse safety in a more prominent role in sustainability. However, it is up to the entire profession to take up the challenge.

The door is open, and it is up to us to determine the best way to market why and how safety can help drive both sustainability and CSR. Perhaps it is time for safety professionals to recognize that workplace safety is necessary, but no longer sufficient.

Current Constraints

Manufacturers and other organizations have implemented numerous policies and procedures to prevent workplace injuries. Most have become so focused on best practices, being OSHA compliant and observing OSHA's recordkeeping procedures that safety's "big picture" is the equivalent of a 14-inch television. Seriously, our own paradigms constrain us from looking at the true "big picture."

Less than four percent of accidental deaths occur in the workplace;[5] the remaining fatalities result from accidents while driving, in the home, or at public places. While the number of workplace accidents and vehicular deaths continue to decline due to recent safety campaigns and initiatives, accidental deaths in the home or in public places are on the rise.

Employers must deal with the same disruptions to production and work schedules whether injuries occur at work or away from work. So why not pay attention to the other 96 percent of injuries or deaths that occur outside the workplace? Consider the financial consequences when a valued employee, or member of the employee's family, is in the hospital for three days, three weeks or three months because he didn't buckle his seat beat and was seriously injured in a car accident. The enormous cost to the employer can no longer be ignored.

Off-the-job events or catastrophes that lead to employee injuries or fatalities are vastly different from OSHA-recordable types of injuries or illnesses, which tend to be less severe. By not taking action that encourages safety outside the workplace, employees expose themselves to potentially severe off-the-job accidents that often lead to loss of life and/or significant property damage.

In this day and age, a manufacturer's public image may also be tarnished if employees behave in unsafe or reckless ways, causing injuries not only to themselves, but to innocent bystanders. Public opinion of the company can quickly shift, damaging the company's long-established reputation, and encouraging its customers and shareholders to start questioning its business culture.

If you have responsibility for safety in an industrial operation, it is a fair bet that you focus the vast majority of time and resources on occupational injuries and illnesses. **This narrow focus on occupational safety is necessary and appropriate, but not sufficient for several reasons**:
- Accidental deaths in the workplace are only a small fraction of the overall accidental deaths in the United States.
- We help our employees and reduce costs by devoting time and effort to off-the-job safety.
- If we want to get the hearts as well as the minds of our employees to assure that good safety practices are always followed, we must demonstrate a "We care" approach that shows that we care about them, on and off the job.

Other than current health and safety paradigms, there is no constraint that organizations only concern themselves with on-the-job risk.

Let's explore "why" we ignore the opportunities of working on the big picture of safety. We begin with silos and collaboration.

Silos and Collaboration

We are a nation of silos. No business, institution, or government agency is immune from the silo syndrome, where barriers develop among the organization's many functions. A silo is a tall, self-contained cylindrical structure that is used to store commodities such as grain after a harvest. It is also a figure of speech for organizational entities—and their management teams—that lack the desire or motivation to coordinate or communicate with other entities in the same organization. A recent study by *Industry Week* found that business functions operating as silos are the biggest hindrance to corporate growth. A more recent American Management Association (AMA) survey shows that 83 percent of executives said that silos existed in their companies, and that 97 percent think they have a negative effect.[6]

In an organization suffering from silo syndrome, each department or function interacts primarily within that "silo" rather than with other groups across the organization. Quality or lean manufacturing staffs may see themselves as somehow different from safety or environment. This manifestation of silo syndrome breeds insular thinking, redundancy, and suboptimal decision-making.

In such situations, you might find teams of employees engaged in continuous improvement efforts that lead to bypassing needed safeguards, all in the quest for greater efficiency and productivity. When safety later points out that there is non-compliance with OSHA and/or increased risk, the organization suffers from having to retrofit what was intended to be an improvement process.

Safety personnel are perceived as not being team players when, in fact, the integration of safety in the continuous improvement process could have avoided the wasted time and monies spent to get things back in compliance. You will also typically find no one addressing anything outside the plant walls because "it is not in my scope of duties and responsibilities." This is more silo thinking.

Professional organizations, trade associations, and the government also exist in their own silos, focusing on the identified needs of their constituents. That is fine, but what happens when a greater good can only be achieved by tackling issues that transcend the traditional silo? Collaboration is required but the person trying to "bust the silo" may be criticized for losing focus in his or her own silo, or asked, "Why are you here?" from someone in a neighboring silo. In very large businesses, it is possible to find the following organizational silos, each dealing with the health and wellbeing of employees:
- Safety
- Industrial hygiene
- Ergonomics
- Fleet safety
- Medical / Wellness
- Benefits
- Workers' Compensation
- Security
- Engineering

In smaller companies, these functions are better integrated because there are fewer people. However, the conflict of having sufficient resources maybe more pronounced in these situations. For example, it is common and appropriate to have safety, health, and environment, (SH&E) as an integrated function. If environmental impacts or "green" initiatives begin to infringe upon the resources for safety and health, that is a concern. However, bridging the silo of safety and environment will not exist because it is under the same leadership.

In some companies, HS&E personnel also handle worker's compensation – again a logical extension of grouping occupational risks into one organizational function. Let us assume that a company HS&E manager determined that safety efforts should be extended to off the job safety and driving while on personal time. The rationale is that 24-7 safety awareness provides better protection for the employee and his family, saves money and enhances awareness at work. Apart from National Safety Council aggregate data, the HS&E pro may have little luck in garnering company-specific data to warrant new initiatives outside the plant walls.

In an article in Bloomberg *Businessweek*, dated February 2010 article, it states,

> Managers focus on guarding turf rather than on engaging colleagues outside their group. Instead of reaching across the organization, people in command-and-control cultures primarily move information and decisions vertically.[7]

The author's personal experience and conversations with other SH&E professionals suggest that the data is typically not available to safety, and healthcare systems have traditionally existed as claims payment systems that do not identify injuries and illness resulting from accidents.

There are companies with software capable of extracting the real cost of all injuries and illnesses. These organizations can demonstrate focusing on the big picture, but if we don't see the need to first spend the money to get real data, we will remain ignorant of how much companies are spending for injuries from vehicles, at home and in public places. Without concrete data, it is a fair bet that a new initiative for off-the-job safety may only receive token acceptance and resources.

One of the "silo" problems of not seeing the big picture is that off-the-job safety does not have its own organizational silo. If Human Resources and/or Safety departments have the vision, they will have to contend with other potential roadblocks.

Measurement/Paradigms and Management Focus
The cry for leading indicators has been going on for many years, but we still benchmark and worry over the OSHA recordable and lost work-day case rates. Managers are driven by their boards and top management to continuously improve, and things that are managed are things that are measured. However, there is a difference in measuring performance and managing to a number to the exclusion of good business sense.

Worse yet, the safety profession tied the focus on recordable injuries to the myths of Heinrich. Fred Manuele, in an article in *Professional Safety,* debunked the Heinrich myths, showing a path forward for looking at the "true causal factors of accidents."[8]

While Fred Manuele's article did not address the subject of off the job safety, I submit that the same reasoning—and barriers of current thinking—applies to why we do not consider safety 24/7.

People need to measure all types of safety-related aspects to be able to tell when things are working right and when things require correction. From Manuele's article, we know that hazards for the low-probability, high-risk injuries (high energy, falls, confined space, etc.) are different from those of minor injuries (strain, sprain, lacerations, etc.). If we had a database of near-miss incidents for tasks where hazards could result in serious or fatal injury, we would probably do a better job of addressing those risks on a proactive basis. Most organizations do not have such data. The same is true for off-the-job injuries. Since we do not have data, the issues are not as much of a priority as are OSHA recordable cases.

OSHA recordkeeping was introduced in the 1970s, and companies should view it as a compliance issue, not one of reducing risk. Safety pros have fallen into the trap of benchmarking and seeking ever-lower numbers, while ignoring the big picture of safety as described by National Safety Council (NSC) data. The NSC states:

"Off-the-job" injuries are injuries that involve employed people when they are not working. For example, a restaurant cook cuts his hand on a knife while fixing dinner at home or a truck driver who slides off an icy road while driving his car to work, hits a tree, and suffers a sprained wrist. These injuries occurred off-the-job. If similar injuries had occurred while in the restaurant or driving a truck, they would have been on-the-job injuries. If the cook and the truck driver had been retired, then the injuries would have been neither on-the-job nor off-the-job because the people were not employed. They would have been classified and nonwork injuries. Off-the-job injuries are of concern to employers because NSC statistics show that for each on-the-job death due to unintentional injuries there are about twelve off-the-job deaths of workers due to unintentional injuries. And for each on-the-job injury involving lost time there are about three off-the-job injuries. There are about six times as many days lost from work due to off-the-job injuries as for on-the-job. Employers have to deal with the same disruptions to production and work schedules whether the injury occurred at work or away from work."[9]

Lessons Learned

M.J. Caserio, who was a General Motors Vice President and General Manager of the AC Spark Plug Division, states:

 Off-the-job safety is an area of industry's total safety effort that offers more opportunities – and more challenges – than almost any other. It has been said that an American is 'one who'll spend half a day looking for vitamin pills to make him live longer, then drive 80 miles an hour on a slick pavement to make up for the lost time…. In 1965, General Motors had 10 on-the-job fatalities. Over the same period, 241 of our people died as the result of off-the-job accidents. Unfortunately, the latter figure is increasing, and it cannot be explained away in terms of increased employment. Off-the-job accidents are cause for a good deal of concern for several reasons. First, because a high value is placed on human life, it is important that everything possible be done to preserve it and make living comfortable. Second, many companies today recognize general safety promotion as one of their major civic responsibilities in the communities in which they operate. Finally injuries suffered by employees off the job affect business both directly and indirectly through absenteeism, need for replacement training, loss of production and the cost of medical and insurance programs.[10]

Two key points about the article that are noteworthy:
1. This is not a Safety Director talking; it is the equivalent of a CEO of a major company, as AC Spark Plug was a major manufacturing operation.
2. General Motors had an off-the-job safety process that actually measured accidental injuries outside the workplace.

That article was written 45 years ago; imagine if GM had continued with the process. Would it have helped control the healthcare costs that crippled the company in the 1990s and the early part of this century? One could envision that, to some degree, the answer is "yes," especially when we consider NSC statistics published each year.

What happened? The author is old enough to remember first-hand. (One of the benefits of age is that which seems like ancient history to some is the direct experience of others.) I was hired by GM in 1965 as a General Motors Institute (now Kettering University) Cooperative Engineering Student. I became safety supervisor in a Flint manufacturing plant in 1977, at the tail end of the transition period from the old recordkeeping system to the new.

Before the Walsh-Healy Act of 1970 and the birth of OSHA, industry relied on the old ANSI Z16 standard for measuring workplace injuries. Some companies, like GM, augmented their in-plant efforts with off-the-job reporting.

The Bureau of Labor Statistics (BLS) guidelines, with the force of regulatory compliance, became industry's new metric. The challenges of learning and implementing a new system in the first half of the 1970s forced organizations to put their entire focus on compliance. The 96 percent of accidental deaths occurring in vehicles, at home and in public places were outside the scope of OSHA. It was not long before they were also perceived as beyond the scope of management. Companies like GM quit measuring injuries outside the workplace and devoted the vast majority of their efforts over the next 40 years to workplace incidents.

The 1990s saw a rebirth of efforts for safe driving, wellness, and other family and community-oriented efforts but the measurement of off-the-job accidents remained dormant.
Other companies besides GM also "get it." You have merely to read to read NSC's "CEOs Who Get It" to recognize that a select group typically has some form of off-the-job safety process. This is also true for the nominees and winners of the prestigious Campbell Award.

The further good news is that companies like DuPont, Monsanto, and Deere and Company are devoting significant effort to what we currently call off-the-job safety.

Making Safety a Core Value

First, safety needs to get back to where we were heading 40 years ago. Make safety a value, not a priority. If safety is a value, the answer to the question, "When and where does my value stop?" is an easy one. If safety is truly a value, it must be 24/7, not "off the job," which connotes an afterthought to the primary focus of occupational safety. Once we step from the constraints of our own self-imposed paradigms, we can understand that tackling safety 24/7 has numerous advantages.

A few companies with excellent safety processes have programs that attempt to address risk on and off the job. However, those same organizations often remain focused on OSHA recordable rates and incidents while on the job.

If we wish to drive long-term sustainable growth by protecting our most valuable assets, we need to increase awareness that safe behaviors on and off the job require 24/7 thinking. If you desire employees to think more about safety, they must become more conscious of the impact of on their family if they are hurt or killed. We are all human, and as humans, we sometimes do things that are contrary to what we should do.

If you have a room of executives, hourly employees or safety pros, and asked if anyone ever acted unsafely, everyone would have to raise their hands if they are being honest. Think about the times that you personally have driven over the speed limit, used a cell phone while driving, did not work safely on a ladder, lifted heavy items improperly or a performed host of other behaviors that put you at risk.

Professionals who extol others to work safely often violate some law or common sense rule that would improve their safety. Repeating—we are all human.

Every socially responsible organization wants employees to be safe on the job, off the job and while driving. If injured, the employee realizes pain and suffering, and the company loses the services of the employee. In many companies, the cost for healthcare is often far greater than the costs for workers' compensation.[11] The potential for pain and suffering may not be in the forefront of the person's mind, and the cost to the company is certainly not part of their thinking. Perhaps, the impact on their family and loved ones could be. If we are to appeal the hearts and minds of everyone in the organization, we cannot suggest that their safety is more important at work than it is off the job or when driving. You can bet the devastation to their family is the same, regardless of where a serious or fatal injury might occur.

Let us face it; traditional safety metrics do not help us get at the root cause issues of time and comfort, nor to the more important issue of instilling safety awareness based on love of family. To make safety a 24/7 value, we need to deal with a topic seldom discussed.

Dealing with the "Why" of Safety
Identification and elimination of hazards is a foundation for safety. However, if your goal is to get the hearts as well as minds of employees to reinforce the concept of "safety is a value," we also need to address the "why" of safety with all employees on an adult level.

Let us look at a real-world situation in many companies. We know that some employees "take shortcuts" and bypass safety interlocks. The general belief is that employees do this to save time, and this is often true.

Typical organizational responses after someone is injured could include:
• Auditing the facility to assure that other bypassed interlocks are fixed
• Increasing training and safety awareness sessions
• Possibly changing to a better, more secure interlock
• Threatening discipline for future violations

Enlightened organizations might employ task-based risk assessment and identify the situations where the safeguard is bypassed because power was needed for SH&E trouble shooting and the machine design did not allow the work to be performed. Nonetheless, we must still confront

addressing the "why" of the other situations, most of them associated with "saving time." Other reasons for shortcuts could be linked to comfort.

We would all agree that wearing PPE is typically not as comfortable as not wearing PPE. Regardless of the many strides in safety eyewear, hearing protection and other devices, it still is not as comfortable as not wearing /using the equipment properly. How do we appeal to the hearts and minds of those whom we require to wear such protection to achieve an acceptable level of risk? Moreover, how can we get to zero if we cannot get 100% compliance?

Does your current system address the "why" for all employees?

Addressing "Why and Want to"
If your organizational culture is one that demands conformance to good safety practice, you are fortunate indeed. In such cultures, employees and peers will step up when they see something wrong. The value, "I care about you," is evident when someone points out that taking a shortcut is not the way "things are done around here."

However, not all companies are blessed with having that existing culture. For them, creating the "why of safety" is a "soft issue" that can be a formidable challenge. Stober discusses the importance of addressing attitudes and employees willingness to change behavior:

> Addressing internal processes among leaders and workers will help move a company closer to meeting the safety challenge. However, it is also important to recognize that becoming a person who thinks and behaves more safely involves personal change. As such, to be successful, any safety program will need to consider the specific internal processes involved at various points during the change process…. The stages include:
> 1. Precontemplation: the individual at this stage is not aware of, nor contemplating, the need for change
> 2. Contemplation: the individual has begun to think about the need for making change but has not committed to nor made change
> 3. Preparation: the individual has increased his or her commitment to change, with intention to make change in the near term, and may have begun making small changes
> 4. Action: the individual has begun engaging in new behaviors but has not yet cemented these changes over time
> 5. Maintenance: the individual has been consistently acting on the change made over a period of time
> 6. Relapse: many change efforts result in periods of relapse where the individual falls back into old behavior patterns

> Many efforts aimed at improving safety, including many BBS systems, focus primarily at the action stage. If our initiatives are aimed here, we are assuming that individuals are ready, willing, and able to make changes regarding their safety.

> Trying to modify behavior without awareness is unlikely to work in the long term. Overt action without insight is likely to lead to temporary change.

When it comes to the stages of change, diving right into behavioral change may not work. Until awareness of the need for change, evaluation of what that change is, commitment to making change, and preparations for effective action steps are all present, jumping straight into action will be unlikely to be successful in the long run."[11]

Listed below are suggested ground rules for "how" we safety pros should address the "why:"
- "Why" must be based upon respect for all employees as individuals and recognition that we are all human
    - If you do not approach adults on an adult level, dealing with real world issues that they can relate to, you will not get to first base on the issue of "why"
- "Why" can only be done as a complement to an existing excellent safety process
- Addressing "why" requires talking with employees in an open, honest manner
    - Management, as well as hourly workers, must be fully engaged in the process
- Safety must be 24/7
- Getting people to think about "why" they do things and becoming more accountable for their actions because they "want to" is not a silver bullet

We need to understand how leadership and culture enable what we want to happen.

Enabling Leadership and Employee Engagement

F. Edwards Deming, one of the forefathers of the modern quality movement, was known to say, "The most important things are unknown and unknowable."[12] This certainly applies to the current state of off-the-job safety.

Let us take the initiative to save lives by making the 96 percent of accidental deaths outside work both known and knowable in our companies and organizations. The beliefs that a combination of safety awareness, coupled with the practice of continuous improvement, form the basis for long-term sustainable growth.

We have already explored the facets of awareness. That comes from safety being a 24/7, family-based value. The continuous improvement aspect comes from the teachings of W. Edwards Deming.

In his 1982 book, *Out of the Crisis,*[13] Deming identifies 14 points or principles necessary for organizational transformation required for survival. Deming recognized the importance of "why" in his last principle

Summary of Dr W. Edward Deming's 14 Points (Principles)

1. **Constancy of purpose**: Create constancy of purpose for continual improvement of products and service to society, allocating resources to provide for long-range needs rather than only short-term profitability, with a plan to become competitive, to stay in business, and to provide jobs.

2. **Adopt the new philosophy**: We are in a new economic age, created in Japan. We can no longer live with commonly accepted levels of delays, mistakes, defective materials and

defective workmanship. Transformation of western management style is necessary to halt the continued decline of business and industry.

3. **Cease dependence on mass inspection**: Eliminate the need for mass inspection as the way of life to achieve quality by building quality into the product in the first place. Require statistical evidence of built in quality in both manufacturing and purchasing functions.

4. **End lowest-tender contracts**: End the practice of awarding business solely on the basis of price tag. Instead, require meaningful measures of quality along with price. Reduce the number of suppliers for the same item by eliminating those that do not qualify with statistical and other evidence of quality. The aim is to minimize total cost, not merely initial cost, by minimizing variation. This may be achieved by moving toward a single supplier for any one item on a long-term relationship of loyalty and trust. Purchasing managers have a new job, and must learn it.

5. **Improve every process:** Improve constantly and forever every process for planning, production, and service. Search continually for problems in order to improve every activity in the company, to improve quality and productivity, and thus to constantly decrease costs. Institute innovation and constant improvement of product, service, and process. It is management's job to work continually on the system (design, incoming materials, maintenance, improvement of machines, supervision, training, and retraining).

6. **Institute training on the job**: Institute modern methods of training on the job for all, including management, to make better use of every employee. New skills are required to keep up with changes in materials, methods, product and service design, machinery, techniques, and service.

7. **Institute leadership**: Adopt and institute leadership aimed at helping people do a better job. The responsibility of managers and supervisors must be changed from sheer numbers to quality. Improvement of quality will automatically improve productivity. Management must ensure that immediate action is taken on reports of inherited defects, maintenance requirements, poor tools, fuzzy operational definitions, and all conditions detrimental to quality.

8. **Drive out fear**: Encourage effective two-way communication and other means to drive out fear throughout the organization so that everybody may work effectively and more productively for the company.

9. **Break down barriers**: Break down barriers between departments and staff areas. People in different areas, such as leasing, maintenance, and administration, must work in teams to tackle problems that may be encountered with products or service.

10. **Eliminate exhortations**: Eliminate the use of slogans, posters and exhortations for the work force, demanding zero defects and new levels of productivity, without providing methods. Such exhortations only create adversarial relationships; the bulk of the causes of low quality and low productivity belong to the system, and thus lie beyond the power of the work force.

11. **Eliminate arbitrary numerical targets**: Eliminate work standards that prescribe quotas for the work force and numerical goals for people in management. Substitute aids and helpful leadership in order to achieve continual improvement of quality and productivity.

12. **Permit pride of workmanship**: Remove the barriers that rob hourly workers, and people in management, of their right to pride of workmanship. This implies, among other things,

abolition of the annual merit rating (appraisal of performance) and of management by objective. Again, the responsibility of managers, supervisors, and foremen must be changed from sheer numbers to quality.

13. **Encourage education**: Institute a vigorous program of education, and encourage self-improvement for everyone. What an organization needs is not just good people; it needs people that are improving with education. Advances in competitive position will have their roots in knowledge.

14. **Take action to accomplish the transformation**:

    1. Management in authority will struggle over every one of the above 13 points, the deadly diseases, and obstacles. They will agree on their meaning and on the direction to take. They will agree to carry out the new philosophy.

    2. Management will take pride in their adoption of the new philosophy and in their new responsibilities. They will have courage to break with tradition, even to the point of exile among their peers.

    3. Management will explain by seminars and other means to a critical mass of people in the company *why change is necessary*, (bold italics added for emphasis) and the change will involve everyone.

Deming's fourteen points can be summarized as enabling leadership that engages the entire workforce in organizational transformation. However, his philosophical approach did not provide the processes and systems to actually engage workers. Deming's philosophy is most often applied as part of the Plan-Do-Check-Act (PDCA) method of continuous improvement.[14] It is up to management to figure out how to develop the tools that allow workers to improve their workplace.

So what can we do about it? The first thing is to consider the integration of the concepts of lean and safe. Every organizational leader is faced with creating a culture that strives for continuous improvement, resulting in faster, better, and less expensive. Lean tools and thinking were created by Toyota and other Japanese companies following Deming's teachings. *Lean* as a term came into being in the 1991 book, *The Machine that Changed the World.*[15]

Being lean necessitates an organizational culture dedicated to the identifying and eliminating waste. Following Deming, lean also requires an integrated approach for key management functions. Safety is no longer in its silo. The same is true for engineering and production. All must work together, enabling workers to be able to do their jobs efficiently, producing quality parts for the least cost and in a safe manner. Using lean thinking and tools, leaders can continuously improve all facets of the business to drive long-term sustainable growth.

The challenge—and opportunity—is to answer the question, "How can leaders integrate seemingly diverse safety, health, and environmental (SH&E) challenges into their day-to-day business?" A model of how lean and safe ties daily performance to policy and strategic action is shown below.[16]

Figure 2: Tying lean and Safe Daily Performance to Policy and Strategic Action

Background on Lean and Safe
More and more organizations are participating in the sustainability or "lean and green" movement. However, the lean and safe strategy is a newer initiative. In the summer of 2007, ANSI B11 TR #7 was published.[17] This technical report built on TR#3 (risk assessment) and was a seminal work that integrated lean with occupational safety. TR #7 was initiated because of issues recognized by the safety community.

Too often, management would initiate Kaizen (continuous improvement) efforts without the involvement of safety. If safety is involved in the Kaizen event, it is often at the end when the machine or line must be altered to make the line safe or meet compliance standards. This resulted in additional waste because of the ensuing disagreements surrounding necessary safeguarding for OSHA compliance and/or necessary risk reduction. Conversely, some operations with acceptable risk had unacceptable waste due to too much safeguarding.

TR#7 successfully merged Toyota's identification of seven forms of operational waste with hazard identification. Concurrent with risk mitigation of identified hazards is the attempt to eliminate or reduce waste. The new goal defined by TR#7 is the attainment of "acceptable risk with minimized waste." This requires not only an integrated risk assessment process, but also active leadership leading a culture change.

Waste is the Key
The word *waste* is the hinge for integration. Folks in the environmental end of the business think of solid, air, water, energy and other forms of environmental waste. For safety personnel, injuries and illnesses are waste. The challenge is to connect that thinking to the typical management exhortation of "eliminate waste, get rid of non-value-added activity and cut costs."

If the organization does not understand that identifying and eliminating operational waste is the process by which they can achieve management's goals, there is no common foundation for integrating safety and environment into the process. Typically, each staff function operates in its own silo with its own goals, sub-optimizing overall performance.

Waste is the key to integration, but we have to step back a moment and understand why. Let's start by going back to the foundations of "lean."

Toyota's executive leadership describes lean by stating that it's all about: (1) the identification of waste, and (2) the elimination of waste.[18] Can you name the seven forms of operational waste? How can your organization "eliminate waste, get rid of non-value added activity and cut costs" if you can't identify waste?

The seven forms of waste are:
1. Correction
2. Over-production
3. Motion
4. Material movement
5. Waiting
6. Inventory
7. Process

Identifying and eliminating or reducing the seven forms of waste is the foundation for reducing operational wastes. Adding injury/illness along with air, solid, and water, energy and other environmental waste is the balanced approach for long-term sustainable growth. Waste is the key to integration which provides common ground for developing culture.

Leading the Cultural Journey

It is sometimes not recognized that "lean" does indeed apply to the entire organization. When top managers take on leading an organization to become lean, green, and safe, they are taking the first step in a cultural journey to continuous improvement. By leading the identification and elimination of waste in office and business systems, the leader can make any organization more efficient. Leaders soon find that SH&E integration is a foundation for improved performance.

Let's use a product design example to illustrate the need for integrated lean and SH&E. If engineers take cadmium surface treatment out of aluminum machine bodies, they reduce special plating, worker exposure, and waste. In this case, neither the SH&E nor the folks traditionally dealing with sustainability could make the decision to change the product design. Only top management, infusing a culture of waste elimination in all staffs, including engineering, could make this happen.

What about something as simple as machining lubricant? From a safety perspective, we're concerned about employee inhalation, and contact dermatitis, along with slips, trips and falls. From an environmental impact, we're concerned about emissions and possible leakage into the earth. From a lean perspective, we're concerned about product quality and using neither too much nor too little. So, is this an SH&E or a lean issue? The answer, of course, is both.

Striving for elimination or substitution should be first and foremost, but striking the proper balance for all issues is sound business. A change may involve SH&E, engineering, operations, and purchasing. Only integrated organizations can tackle complex issues efficiently.

Culture Change Isn't Easy

Sounds good, right? It can be, but it all comes back to leadership and starts on the leader's home turf—the office. Lean in the office is a dramatic culture change that will be resisted by many.[19] Regardless of the overall benefits, some like clutter and chaos, and others will find the necessary teamwork-developing standardized work to be an infringement on their personal domain. Leaders who dictate lean without respect for employees or the environment will soon find that "lean" is not producing the results they had hoped for. Like all superficial program-of-the-month efforts, employees will simply comply when forced, without changing the way they really work.

When working with skilled trade workers during my GMI cooperative engineering program, I witnessed firsthand the power of "malicious compliance." On more than one occasion, I observed supervisors ignoring the input of workers discussing how to repair a manufacturing operation. When the supervisor would resort to saying, "Do it my way," the skilled workers complied. My memory is quite vivid because it was a lasting lesson that remained with me. In every case of following orders that ignored worker input about the realities of the real problem, the machine did not function properly, sometimes shutting down the plant for lack of parts.

For leaders who want to do the right thing for the right reasons, leading "lean" can result in improved safety and sustainability. If you're ready for a new way of thinking and acting, then lean might be the leadership tool you've been looking for. At the heart of lean is respect for workers and explaining "why" safety is important on a 24/7 basis.

Improving Safety Awareness

We do not need a lot of words or complex measures to help increase safety awareness. We need something simple to help employees have a visual model of "how" to think about the "why" of safety. The natural human tendencies to save time and seek comfort that lead to unsafe actions must be offset by something that is more compelling. We seek to have everyone move from "I have to" do this because of rules and regulation to "I want to" do this because I value my family, and my personal safety has a major impact on their lives.[20]

Employees taking personal responsibility and accountability for their actions are the beginning of "safety is a value" within the organizational culture. Those baby steps lead to the desired interaction where people begin to address shortcuts and unsafe actions by their peers. Safety becomes part of "the way things are done around here."

Perhaps the challenge of each worker addressing the question of "why I want to be safe" is enabled by changing our views that the foundation for "safety is a value" is the worker's family. To understand why this is so, we need to step back into the personal behaviors in our lives. For the vast majority of people, we work and do things for our loved ones.

Imagine the impact on your own family if you were seriously or fatally injured in a car accident. The impact on your family is the same as if you were injured on the job. Respect for individuals means that we need to accommodate the different views of each worker. However, we don't need

research to understand that most people are concerned about the well-being of family and loved ones.

Overall Benefits
Imagine a culture where employees "wanted to" be safe on and off the job. Your organization might find:
- Healthy employees with families that also realize fewer injuries and illnesses because of the increased safety awareness
- Reduced costs, both direct and indirect
- The opportunity to bust organizational silos because medical, wellness, safety, ergonomics, workers' compensation, healthcare, restricted work, and other related activities all become focused on the same value (safety 24/7), which must ultimately drive new metrics on the quest for zero. Creation of new metrics (process or data) that attempt to measure performance for reducing risk off the job and while driving will only occur when safety makes the case that OSHA recordkeeping is not sufficient.
- Improved morale in a culture built around "I care"
- Closer alignment with all continuous improvement and quality activities where "zero" is also the goal

Summary

Sustainable growth (sustainability) and corporate social responsibility (CSR) have minimal focus on safety. However, both strategic initiatives have social concepts that are much broader than safety's traditional occupational focus. Social aspects of safety demand that safety be taken into the home and community. Concurrent with this challenge is the realization that many organizations have the traditional elements for accountability but are frustrated that injuries and illnesses are no longer declining, as desired by the organization. If we look at the traditional elements of excellent safety processes, we find that they address the issues of "what," "how," "when," and by "whom."

A culture where people want to be accountable will only occur when everyone understands fully and completely the "why" at a personal level. However, "why" people should be practicing safety at work, at home, and on the road is often overlooked in the tactics and strategies for driving to zero. Because we do not "how" to address the "why," we sometimes implement increased amounts of skills training in hopes that it will also foster increased awareness.

However, we are faced with numerous challenges to take on this increasingly important issue. Silos, paradigms, lack of data, no regulatory impetus, and lack of awareness all contribute to the current state of devoting few resources to off-the-job safety.

Those hurdles should not constrain us; we can do several things:
1. Use NSC's new "Safety, Health Resource for Employers" to guide our actions
    a. Create a business case for management ,using NSC data for off-the-job accidents/costs to estimate cost to your organization
2. Help management to understand the paradigm shift. In the plant, it is right and proper for leaders to define responsibility and demand accountability for safety performance from the entire organization. With off the job, safety must become a 24/7 value shared by all employees. This latter focus will also assist your in-plant efforts for improved safety awareness.
3. Carry the message to your industry and professional groups so that we create some energy around this important challenge

Endnotes

[1.] United Nations (UN) Brundtland Commission. 1987. "Report of the World Commission on Environment and Development: Our Common Future" (http://www.un-documents.net/wced-ocf.htm)
[2.] Global Reporting Initiative (GRI). "Sustainability Reporting Guidelines" (http://www.globalreporting.org/Home)
[3.] CSR Newswire, The Corporate Social Responsibility Newswire."Corporate Social Responsibility" (http://www.csrwire.com/)
[4.] Center for Health and Safety Sustainability (http://centershs.org)
[5.] National Safety Council. "Family Safety for Employers" (http://www.nsc.org/safety_home/FamilySafetyforEmployers/Pages/FamilySafetyforEmployers.aspx)
[6.] Executives Forum (http://www.keyexecutiveforum.com/news/What_are_organization_silos2.htm)
[7.] Bloomberg *Businessweek*, February 5, 2010. (http://www.businessweek.com/managing/content/feb2010/ca2010025_358633.htm)
[8.] Manuele, Fred A. "Reviewing Heinrich: Dislodging Two Myths from the Practice of Safety, *Professional Safety*, October 2011.
[9.] National Safety Council (NSC) "Safety at Home Fact Sheets" (http://www.nsc.org/news_resources/Resources/res_stats_services/Pages/FrequentlyAskedQuestions.aspx#question7)
[10.] Cesario, M.J. "Making Off-the-Jon Safety Pay—With Interest." *Journal of Occupational Medicine,* November 1966, Volume 8, Issue 11, 589-592 (http://journals.lww.com/joem/Citation/1966/11000/Making_Off_the_Job_Safety_Pay_with_Interest.6.aspx)
[11.] Stober, Dianne. "Cognitive-Behavioral Safety: How Stages of Change Influence Safety Behaviors" (http://www.ccconcepts.net/index.php?option=com_content&view=article&id=105&Itemid=121)
[12.] Unknown and Unknowable (http://mikeneiss.wordpress.com/2009/04/30/unknown-and-unknowable/)
[13.] Deming, W. Edwards. 1982. *Out of the Crisis.* Cambridge, MA: MIT Press.
[14.] Moen, Ronald and Clifford Norman. "Evolution of the PDCA Cycle" (http://pkpinc.com/files/NA01MoenNormanFullpaper.pdf)
[15.] Womack, James P., Daniel T. Jones and Daniel Roos. 1991. *The Machine that Changed the World.* NY: Simon & Schuster.
[16.] Lean & Safe Network, M. Taubitz, Co-chair. 2011.
[17.] American National Standards Institute (ANSI). 2007. ANSI B11, Technical Report #7,"Designing for Safety and Lean Manufacturing." Washington, D.C.
[18.] Interview with Fujio Cho, Business 2.0, 2004.
[19.] David Mann. 2010. *Creating a Lean Culture: Tools to Sustain Lean Conversions.* 2d Ed. Boca Raton, FL: Productivity Press.
[20.] Rine, Fred. "Getting to Zero Accidents" (http://www.fdrsafety.com/news/safe-lean-sustainable/)