

Implementation of Total Employee Involvement as part of a Continuous Improvement
Program at a Fortune 500 Company

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Abstract

Over the last several decades, Continuous Improvement (CI) type initiatives have been implemented in companies across the United States to improve quality, reduce process variation, eliminate waste and ultimately reduce costs. Approximately five years ago, one particular Fortune 500 company implemented CI in its manufacturing facilities. A key driver in the success and long term sustainability of CI at this company is believed to be Total Employee Involvement (TEI). The CI team does not currently have a best way to put TEI into practice in its manufacturing facilities.

The purpose of the study is to investigate how TEI is best implemented and advanced at the manufacturing facilities of one specific Fortune 500 company. This grounded theory study proposes a continuum that defines TEI. Common practices that advance TEI are highlighted. Characteristics that support TEI implementation are discussed.

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CHAPTER ONE - INTRODUCTION

In June 2005, a Fortune 500 consumer products company launched a Continuous Improvement (CI) initiative to all of its U.S. based manufacturing locations. CI uses tools and concepts from Lean (Dennis, 2007; Pascal, 2007; Womack & Jones, 2003), Six Sigma (Basu, 2001; George, 2003; George, Rowlands, & Kastle, 2004), Total Quality Management (TQM) (Ishikawa, 1985; Sashkin & Kiser, 1993; Williams, 1996), and Total Productive Maintenance (TPM) (Nakajima, 1988; Ohno, 2007; Suzuki, 1994). CI is designed to eliminate waste and improve system reliability ultimately reducing costs and consequently delivering greater profit to the organization. Total Employee Involvement (TEI) is believed to be a key driver in the success and long term sustainability of CI.

This Investigation in the Context of Human Resource Development

The Human Resource Development (HRD) professional works to support the organization in achieving results through its people. Individual or group-based/team-based employee development activities are designed to increase work-based knowledge, skills, and/or expertise in employees for the benefit of the organization (Swanson & Holton, 1999). Those in the field of HRD are interested in understanding and implementing more efficient and effective ways to improve employee performance.

Employee involvement – the stated premise behind TEI is a complex construct and does not have one universally accepted definition (Cotton, 1993; Heller, 2003). Yet TEI is a foundational element of the CI initiative at the company in this study and believed by the leaders of the initiative to be critical to the long term success of the CI effort. Understanding what TEI is and how to obtain Total Employee Involvement is

critical to the successful implementation and long-term sustainability of the Continuous Improvement effort. Thus, this study was commissioned to investigate TEI for this particular Fortune 500 Company so as to understand TEI in the context of its manufacturing operations for the advancement of its CI initiative. This study uncovers the predominant forces that are coming together to advance TEI.

Prior work (Thun, Milling, & Schwellbach, 2001; Cotton, 1993; Nakajima, 1988) indicates that there are components of learning, technology, and culture (among others) that come together to make TEI most effective in advancing CI. This study seeks to uncover all the things that need to come together using TEI at this company to unleash the potential of its people. Knowledge of the components and how they best come together to advance TEI and ultimately CI for significant business results is of great interest to those in HRD as TEI is an opportunity for HRD professionals to have an impact on the organization.

CI at the Company Being Studied

The initial focus for CI at this company is on manufacturing systems. All 38 manufacturing facilities embarked upon the CI journey. Five years later it is clearly evident that some plants are reaping the intended benefits of CI as demonstrated by their significant improvements in measurable results e.g. cost per case, productivity metrics. The differentiation between the high performing plants versus the others is noteworthy. It is anticipated that much can be learned through further investigation.

CI at the specific Fortune 500 Company being studied is a business philosophy that utilizes a standardized set of tools and processes to reduce cost and eliminate waste.

Their model consists of eight pillars with 35 tools/processes distributed amongst the pillars and four foundational elements. The thought behind this company's model is that the 35 standardized tools and processes are used to solve problems and increase efficiencies. The eight pillars are simply a way to group the tools and processes so that they can be managed by a designated leader. The foundational elements of Zero Losses, TEI, Learn-Do-Teach, and Health Safety and Environment are believed to be necessary to ensure the success and long term sustainability of CI at this particular company.

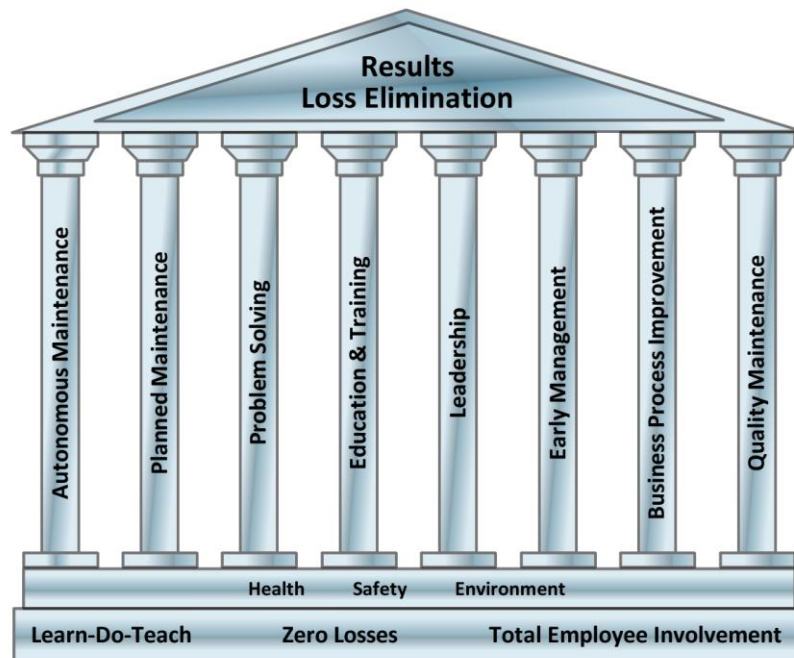


Figure 1.

Diagram of Fortune 500 Company's CI structure with 8 pillars.

Pillars and Tools

As illustrated in Figure 1, there are eight pillars and four foundational elements that make up the CI structure. Each pillar acts as a category and houses a number of processes and tools. The pillars are Autonomous Maintenance, Planned Maintenance, Problem Solving, Education and Training, Leadership, Early Management, Business Process Improvement, and Quality Maintenance. Further definition of each of these pillars can be found in the Definition section at the end of this chapter.

Total Employee Involvement – Initial Messaging

When CI training was first delivered to the plant managers in June, 2005, they were told “Tools are important...but not as important as the employee involvement and culture change that is required to adopt CI” (Continuous Improvement Kick-off Training, June 2005, p. 2). Further, the training material notes indicated the message to share was that the CI process is built on employee involvement and will allow the manufacturing function to leverage its people and work systems. Later in this kick-off training session, the plant managers were told that CI cannot be implemented without solidifying key components of their plant’s culture and “TEI is the key”. The final chapter in the introductory training session concluded with a list of potential pitfalls. The TEI related pitfall was stated as “believing that the tools are magic when the magic is in TEI. . .” The training team took many opportunities to drive home the general concept that TEI is critical to the success of CI. As well, comments indicating that TEI leveraged the people and work systems painted a general introduction to the concept of TEI.

As the CI team continued on the journey to implement CI, it was clear that a more specific definition of TEI was needed. In December 2008, “Renewal” training was

delivered to manufacturing leadership teams. One of the goals of this training was to provide guidance on TEI strategy. TEI was defined as employees being actively engaged in and contributing to CI efforts. As part of this “Renewal” effort a TEI survey was provided (see Appendix I) that could be used to assess the current state of TEI in an organization. The survey was offered to the plants as a way to better understand the state of TEI at their facility. The use and reporting of the survey results is not mandatory, however the plants are required to understand where their organization is in regard to TEI and develop a plan to improve TEI. The survey was provided as a tool that allowed the plants a quick snapshot of the state of TEI at their facility.

The CI organization attempted to accelerate TEI by establishing a TEI metric: number of people using CI tools. Theoretically, this would encourage increased use of the tools leading to more people educated and able to use the new tools. Still, there is not a recommended procedure for how to best implement and grow TEI. The concepts were clearly communicated. The TEI survey provided greater clarity, yet the process for delivering TEI remains loosely defined. It should be noted that although it would be desirable to have a step by step implementation plan for achieving TEI, it must be realized that a prescriptive process is not readily available. There is no one best way to implement TEI found in the literature. TEI is a complex construct and is interpreted in many different ways. Cotton (1993) displays a broad range of employee involvement options from participation, to project-based opportunities to employee ownership and gain-sharing programs.

Without a specific procedure for rolling out TEI, each team is implementing what they think is best and likely focusing on participation in order to meet the established metric. Participation may be a good place to start. However, TEI is intended to be much more than participation at the organization being studied.

TEI is Needed to Sustain CI

TEI is necessary for the long term sustainability of initiatives similar to CI (Heller, 2003; Kotter, 1995). If done incorrectly, these initiatives disappear and in the extreme case cause immense stress on the employees who have been taxed with delivering these processes (Mehri, 2006). Mann (2005) stated: “A lean management system sustains and extends the gains from implementing lean production. Lean cultures grow from robust lean management systems” (p.3). Liker (2004) took this concept one step further: “Training exceptional people and building individual work groups needs to be the backbone of your management approach that integrates your social system with your technical systems” (p. 390). Both a social system and a culture of continuous improvement using the specific (technical) tools are needed to sustain the gains.

Toyota understands that in order to get continuous improvement, it must have an organization in which everyone contributes to improvement (Liker & Hoseus, 2008). Thus, everyone in the organization must be trained, rewarded, and empowered to improve (Koenigsaecker, 2009). The Toyota Production System is designed to push team members to think and learn and grow (Liker & Meier, 2007). By relentlessly following TPM processes thousands of little lessons are learned by the employees (Liker, 2004). The goal is to continuously learn from mistakes, find the root cause of issues, and

empower people to implement the appropriate changes while transferring the new knowledge to the right people so that the entire organization learns (Liker & Hoseus, 2008). In this way TEI is leveraged to sustain TPM. It is believed that this concept of empowering people to implement the appropriate changes while transferring the new knowledge to the right people so that the entire organization learns holds true for the specific CI initiative being studied as well.

Problem Statement

TEI is important to the successful implementation and long term sustainability of CI (Liker, 2004; Liker & Hoseus, 2008). The CI team at this company does not currently have a best way to put TEI into practice at its manufacturing facilities. Furthermore, “[t]o date the human side of lean has been sorely neglected in the literature” (Jorgensen, 2008, p. 1270). TEI has several definitions and interpretations in the literature (Cotton, 1993; Heller, 2003), and once a definition is determined within an organization, how best to implement TEI will vary (Cotton, 1993).

Purpose of the Study

The purpose of the study is to develop a recommendation for how to best implement TEI at the manufacturing facilities of a specific Fortune 500 company. Since there is not a single definition offered in the literature and TEI is interpreted differently across groups, it is necessary to understand how TEI is interpreted and implemented at the manufacturing locations of this specific Fortune 500 Company. Grounded Theory will be used to develop a theory and corresponding model that clarifies how to advance TEI at

the manufacturing facilities of this company. Organizational processes and cultural characteristics that support TEI implementation at this company will also be discussed. Also, it is anticipated that since this is essentially a study of the best practices currently underway at the manufacturing locations of this company, it is assumed that TEI is most advanced at the locations interviewed and these findings should be shared across all plant locations to educate others on how to most effectively implement and advance TEI. In order to do this, the inquiry will explore TEI at facilities that are showing great progress on the CI journey.

Significance of the Problem

“Lean manufacturing is an idea whose time has come” (Mann, 2005, p.6).

Manufacturers recognize the advantages in lead time, productivity, quality, and reduced cost that come with lean manufacturing. As of 2009, 52 publicly traded organizations have company-wide, highly active deployments of Lean-Six Sigma. These 52 companies have outperformed the S&P, Dow, and NASDAQ by more than 300% over the past 10 years (Acceleren, 2009).

The company being studied realizes that the days of freely raising prices to obtain desired profits are over. The CEO of this company indicated to shareholders that

Cost is the key driver of profit growth . . . and supply chain is the single biggest cost driver. The business need for increased levels of productivity is enormous . . . and as you've seen . . . CI is a solid strategy for our team to embrace to not just get on the bus...but drive the bus to increased levels of performance. We live in a very lean world. We live in a culture of productivity. . . It's a culture of finding where is the waste, how can we do things better, how can we do things smarter, in order to deliver more value to our consumers at a lower cost. We absolutely have to, or we won't

survive . . . We think we have a lot to share with you on how to implement that (Local Newspaper Jan. 17, 2009).

The Senior Vice President of North American Supply Chain Operations who is closer to the CI effort provided even more detail with this synopsis at an investors meeting:

Continuous Improvement has been an important part of our HMM [holistic margin management] efforts. It's simply a structured approach and a set of tools that empower all of our employees to identify and eliminate waste. The concept is not unique to this company, but the way we use it - and our results - are. As transformative as CI has been for us in the past, I think it will play an even bigger role as we move forward. Our current area of focus is improving plant performance, allowing us to run longer and produce more cases. Running more efficiently creates capacity, allowing us to delay capital spending to support our growth (Investor Meeting Jan. 8, 2010).

This senior vice president went on to commit to billions of dollars of savings over the next several years. Clearly, the company has great expectations of the CI effort. Although TEI is not specifically mentioned, *empowering employees to identify and eliminate waste* is stated. Given the broad interpretations of TEI, it is reasonable to assume that these italicized words capture this executive's interpretation of TEI.

The public statements from these two executives instill significant pressure on the organization to deliver cost savings through CI. How to best implement TEI to spread the contribution of CI more quickly and effectively across the supply chain is necessary to support CI as a strategic imperative. The sooner this organization can figure out how to best implement and advance TEI and start using this knowledge to implement and advance TEI across all of the manufacturing locations, and then even more broadly

across all supply chain operations, the more likely it is that the organization will meet the billions of dollars in cost savings committed to the stockholders.

Research Question

The research question for this dissertation is: “What are the most important components to consider when implementing TEI at the manufacturing facilities of a specific Fortune 500 company on the CI journey?” In order to provide some clarity to this overarching research question, I will need to break it down to understand the following questions:

1. How is TEI defined and interpreted for manufacturing at this specific Fortune 500 Company?
 - a. How is TEI defined and interpreted by the individual groups in the sample set?
 - b. Is there a collective definition and interpretation that is the same across the sample set?
2. How was TEI implemented and/or advanced at each facility in the sample set?
 - a. Are there collective similarities in the processes used to implement, and/or advance TEI?
 - b. Is there a best TEI implementation and/or advancement process?
3. What other factors are present that impact (or perhaps even accelerate) the implementation and/or advancement of TEI?

Research Objective

Using qualitative research procedures and Grounded Theory methodology, I will develop a theory and model describing the components that come together to deliver TEI in manufacturing at the specific Fortune 500 Company being studied. In particular, emphasis will be placed on identifying the factors to consider that will ensure TEI is implemented and/or advanced correctly and in the best possible known way.

Potential Contributions

The single greatest contribution from this research is an understanding of what TEI is for the organization being studied and how best to implement and/or advance TEI for the manufacturing function being studied. This is necessary so that this specific organization can advance CI as efficiently and effectively as possible in order to gain the anticipated cost savings expected by the executives and even the stockholders of this company.

Since this study is specific to one organization, there is no expectation that what was learned here will be readily and directly transferable to other organizations. However, others can look at what was learned with this study and test whether or not the identified critical components to successful implementation of TEI hold true in their organization. Long term, the theory and models developed can be tested broadly and perhaps a model for how to best implement TEI in a continuous manufacturing operation in the United States could be validated.

Definitions

Autonomous Maintenance (AM): An operator-owned application of energy, attention and resources to maximize equipment/area success (Suzuki, 1994). Autonomous

Maintenance educates & energizes operators and mechanics and makes plant equipment and their operating areas simpler, safer, more standardized, and ultimately more successful (Liker, 2004). Autonomous Maintenance applies common sense tools such as visual controls (labeling equipment and storage areas) and 5S (an organization tool) to yield world-class results (Dennis, 2007).

Business Process Improvement: The Business Process Improvement pillar as defined by the company being studied connects the non-manufacturing functions and integrates them into the Continuous Improvement processes. This pillar includes tools that are used to identify and eliminate waste beyond the manufacturing systems. This pillar also includes project management processes.

Case Study: The case study is one type of social science research often used when the question is one of “how” or “why” (Yin, 2003). The case study is often used to understand more about individual, group, and organizations particularly when considering social phenomena (Silverman, 2006).

Continuous Improvement (CI): CI at the specific Fortune 500 Company being studied is a business philosophy that utilizes a standardized set of tools and processes to reduce cost and eliminate waste. Their model consists of eight pillars with 35 tools/processes distributed amongst the pillars and four foundational elements.

Early Management (EM): Early Management provides a systematic approach to implementing new product production through project design processes that include

operations involvement early in the process (Suzuki, 1994). As well, this pillar leverages tools that link the vendor to performance expectations (Womack & Jones, 2003). The end goal is to achieve quicker start-ups, improve reliability and maintainability, optimize overall life cycle costs, and establish basic operating conditions.

Education and Training Pillar (E&T): The Education and Training pillar as designed by the company in this study, provides the structure, processes and methods needed to develop the employees' skills, knowledge and abilities. The Education and Training pillar houses tools that assist in defining and developing training content as well as assessing employee progress toward learning and application of defined skills.

Focused Improvement Pillar (FI): The Focused Improvement pillar utilizes a methodical process for recording, prioritizing, and eliminating system losses (Suzuki, 1994). The purpose of focused improvement activities is to identify and permanently eliminate the root cause of failures (Morgan & Liker, 2006). Several troubleshooting and problem solving tools and processes are found under this pillar.

Grounded Theory: Grounded theory espouses to develop a theory *grounded* in data from the participants (Charmaz, 2006; Straus & Corbin, 1997). The theory evolves based on interviews, artifacts, and other observations. Thus the sample set is a theory-based sample that is designed to inform the theory.

Leadership Pillar: The Leadership pillar as established at the company being studied provides the organization with the people, cultural, and leadership capability necessary to

make CI an enduring priority that delivers superior business results. The tools in this pillar improve long term strategy setting, and day to day decision making. Leadership drives implementation of CI tools and delivery of breakthrough results through employee involvement. The Leadership Pillar also focuses the organization to work the right way on the right things, to deliver the business needs.

Lean: Lean is the shortened term used for lean manufacturing or lean production. Lean is a production practice that focuses on driving out waste with the customer in mind – always asking the question: “Would the customer see this activity or product attribute as value-added?” Much of the lean philosophy and processes are derived from the Toyota Production System (Womack & Jones, 2003; Pascal, 2007).

Planned Maintenance (PM): Planned maintenance is the proactive conduct of plant maintenance functions necessary to maintain and extend the service life of equipment (Suzuki, 1994). The purpose of Planned Maintenance is to provide maximum reliability and availability of physical assets at the lowest total cost (Womack, Mento, & Locke, 1987). Tools that educate manufacturing employees on how to eliminate equipment breakdowns and how to plan and schedule equipment maintenance most efficiently and effectively are included in this pillar.

Quality Maintenance Pillar: The Quality Maintenance Pillar will lead the journey toward 100% customer satisfaction through technical excellence and a process of continuous quality improvement (Sashkin & Kiser, 1993). The Quality Maintenance Pillar has tools

that are used to match manufacturing processes to customer requirements. Other Quality Maintenance tools are designed to help provide the system knowledge that can be used to eliminate defects and decrease system variation (Ishikawa, 1985).

Qualitative Research: Qualitative research relies on a socially constructed interpretation of reality (Denzin & Lincoln, 1998), thus the reality is subjective and conveyed as it is seen by the participants in the study (Guba & Lincoln, 1988). “The researcher is the data analysis tool” (Denzin & Lincoln, 2000, p. 386) – gathering information in the field, as close as possible to the natural setting of the subject under study and providing interpretation of the gathered data. Qualitative research procedures are “characterized as inductive, emerging, and shaped by the researcher” (Creswell, 2007, p. 19) as she or he gathers and interprets the data.

Six Sigma: Six Sigma is a management system that came from Motorola. Six Sigma uses statistical analysis of data to measure and improve operating performance by reducing variation in a system (Basu, 2001). Six Sigma is also used to identify and target the prevention and elimination of defects (George, Rowlands, & Kastle; 2004)

Total Employee Involvement (TEI): TEI is a complex construct and is interpreted in many different ways. Cotton (1993) displays a broad continuum of employee involvement from participation, to project-based opportunities to employee ownership and gain-sharing programs.

Total Productive Maintenance (TPM): TPM is a management system that focuses on maximizing the productivity of manufacturing equipment throughout its expected life (Suzuki, 1994). TPM requires a rigorous, systematic equipment maintenance program and involves employees at all levels to ensure optimum equipment output (Dennis, 2007; Womack, et al., 1990).

Total Quality Management (TQM): TQM is a management system based on the statistically based quality processes Deming put forth (Sashkin & Kiser, 1993; William, 1996). TQM is designed to reduce errors in production with a target of 1 error per 1 million units produced (William, 1996). Quality circles and Statistical Process Control are TQM principles.

Overview of the Following Chapters

The next chapter presents a review of the literature. Here I provide some background on the various Continuous Improvement type efforts the company utilized to develop its CI program including Lean, Six Sigma, and Total Quality Management. I then present currently available literature on employee involvement and the many motivation theories that could potentially play into the successful implementation of an employee involvement initiative. Since CI and its foundational element of TEI are new expectations for the employees at the company being investigated, I included a review of the literature on culture, organization design, and leadership principles. All of these areas can contribute to the successful implementation of a new initiative such as this that is essentially a culture change initiative.

Chapter Three describes the methodology used in this study including the rationale for using qualitative research and grounded theory methodology to investigate TEI at the Fortune 500 Company being studied. I then cover the sampling and design of the study: how the sampling will evolve as well as a rather comprehensive explanation of the data management, data analysis and coding processes used to analyze the information obtained. Chapter Three concludes with the research challenges presented by the study as well as ethical considerations.

In Chapter Four I describe what I found in doing the research. A continuum that further defines TEI is presented. A model is diagrammed in Chapter Four and the corresponding theory of how to implement TEI is presented. Several supporting statements from the interviews are presented to validate the conclusions drawn and the theory proposed.

Chapter Five concludes with a brief review of the study and a discussion of the major findings. The limitations of the research findings are discussed along with ideas for future research around employee involvement and employee engagement. Recommendations designed to assist the company in advancing TEI based on the research findings are also presented.

CHAPTER TWO – LITERATURE REVIEW

Overview

In grounded theory studies, it is unlikely that the researcher will know all the topics that will emerge as being significant to the investigation. This is because the theory is evolving gradually as the research progresses. Just what is needed to further clarify and inform the theory, will not be fully uncovered until the researcher begins to frame-up the possible explanations for what is being investigated. This literature review covers the areas that I anticipated would be necessary for this study based on what I had learned from investigating other continuous improvement type initiatives as well as TEI. The literature review includes information around Continuous Improvement type efforts and Total Employee Involvement. Within TEI, the following topics continued to emerge, thus further investigation into these was also undertaken: (a) High Performance Work Systems, (b) Motivation Theories, (c) Culture and Culture Change, and (d) Leadership.

This review starts with an investigation of the literature available on Continuous Improvement-type efforts that have historically played out in manufacturing operations. This information is important on two accounts. First the different Continuous Improvement initiatives albeit similar are all slightly different and none of them are quite like the CI effort being investigated here. What may have been learned from the other, similar initiatives may not be directly transferrable. Clarifying the differences is necessary in understanding the unique challenges the organization being researched faces.

Second, the different TEI practices that were part of these programs – what worked and what didn't, may inform the CI initiative being investigated here including potential TEI practices. Total Employee Involvement as mentioned in Chapter One, includes a range of possible interpretations. In this section, I will provide some history on TEI, bracket the range of TEI concepts that the organization intended, and uncover the best ways to implement or advance these practices as recommended in the literature.

In reviewing the CI and TEI literature, common topics began to emerge that were often discussed as being significant to TEI. So I took the opportunity to dig into those topics a bit more as part of the literature review anticipating that it may be worthwhile to have a deeper understanding. The areas that emerged were (a) High Performance Work Systems (HPWS), (b) motivation, (c) culture and organizational design/change, and (d) Leadership.

High Performance Work Systems have a natural and direct link to TEI. In this section HPWS will be further defined. What makes HPWSs unique and effective will also be presented.

There are several theories of motivation that may apply to TEI. Understanding what the theories are and how some of these have been leveraged to achieve TEI in other organizations may be helpful for this study as well.

Clearly the CI initiative is a culture change. Since culture is highlighted as a critical component to the success of CI-type initiatives (Hanna, 1988; Liker & Hoseus, 2008) it is important to understand the key components of culture and how to use organizational design to move the organization to its desired future state.

It takes an individual with specific characteristics to lead an organization through a culture change, particularly when the change is directly and quickly impacting the everyday lives of all of the employees. The old style leadership of command and control will not work in this new situation. Just what does work from a leadership perspective according to those who have studied this type of environment will be discussed.

Literature Review Search Criteria and Procedure

A variety of sources were accessed to obtain information applicable to the literature review. Because the company being investigated clearly developed their CI effort out of the specific programs of Six Sigma, TQM, and Lean/TPM, I requested information for each of these topics using these terms (in separate searches): Six Sigma, TQM, Lean, TPM in order to gain more clarity on each of these initiatives. Business Source Premier, Academic Search Premier, and U of MN online library catalog (MNCAT) were the databases searched. If too many pieces of literature came back, I would typically limit the article search using only peer reviewed journals and/or only documents where the research or information gathered was obtained from manufacturing or production settings. Because CI-type initiatives went through a phase of being a hot topic in business, and are experiencing a bit of a revival today, I was actually able to gather large amounts of relevant information from published books purchased from the Lean Enterprise Institute and Amazon.com. This same approach was used for the section on High Performance Work Systems using the searched terms of: High Performance Work Systems, HPWS, High Performance Organizations, and HPO. Again, I was able to purchase or borrow relevant books on HPWSs.

TEI required a broader reach in the terms used to search for useful information. Involvement, total employee involvement, employee involvement, employee ownership, employee participation, employee empowerment, EI, and TEI were all searched using Business Source Premier, Academic Search Premier and MNCAT. Again, peer-reviewed journals were preferred. The predominance of sociotechnical systems as foundational to this concept led me to investigate the history of sociotechnical systems and the Tavistock Institute.

When investigating motivation, I used the same databases mentioned above. I was able to effectively limit the search by using employee motivation and “not” rewards, and “not” health and requested only peer-reviewed articles. From there, I perused the list to obtain only manufacturing, and/or production settings to obtain reasonable and relevant literature.

Since culture and organizational design for culture change are common topics in Organizational Effectiveness literature, much of this information was obtained from text books and articles I had from prior courses in Organizational Design. Any other information on culture that was specific to CI-type initiatives was drawn from articles already obtained in the literature review when gathering information on CI-type initiatives. A separate search on culture and culture specific to CI-type initiatives was not undertaken.

Finally, in looking at leadership for CI-type initiatives, I used a General Search to take in many more databases and searched variations on the word “lead” paired with each of the following: Continuous Improvement, Lean, Six Sigma, TPM, TQM, and Total

Quality. Since only a handful of relevant articles were produced, I ended up using a very general review of Transformational Leadership and Leading Change to find material applicable for this section.

Continuous Improvement Type Efforts

As conveyed in Chapter One, CI at the company being studied uses tools and concepts from Lean, Six Sigma, Total Quality Management, and Total Productive Maintenance. The main concepts of each of these programs are summarized in Table 1. It is important to understand the significant similarities and differences between these efforts and to show clearly how some practices may be readily transferrable while other practices may not. The main similarities and differences of the programs compared to CI are briefly summarized here.

Six Sigma

Six Sigma focuses on reducing variation in processes and relies heavily on statistical analyses (Basu, 2001). This project-based effort uses experts e.g. Black Belts and Green Belts to assist in the analysis and improvement of identified opportunities. On the other hand, the CI effort uses only a few statistical tools i.e. design of experiment, capability studies, and the DMAIC (Define, Measure, Analyze, Improve, Control) process from the Six Sigma program (George, Rowlands, & Kastle, 2004). All of these are housed under the Quality pillar. As well FMEA (Failure Modes and Effects Analysis) and SIPOC (Suppliers, Inputs, Processes, Outputs, Customers) located in the Early Management pillar are tools in the CI program taken from Six Sigma.

Table 1

Programs that Contributed to Development of Continuous Improvement

	Six Sigma	Total Quality Management	Lean/TPM	Continuous Improvement
References:	George, Rowlands & Kastle, 2004; Basu, 2001	Sashkin & Kiser, 1993; Ishikawa, 1985; William, 1996	Dennis, 2007; Suzuki, 1994; Womack, et al. 1990	ALL of THESE
Manufacturing Use:	Specialized/Technical Manufacturing	Customer focus; product quality metrics (manuf. and service industry)	Discrete Manufacturing; Single piece flow	Continuous Process Mfg.
Format:	Formal - product quality improvement	Informal – Ad Hoc	Planned	Structured and Planned
Overall Focus:	Focus on Process Output Variation Reduction	Focus on Improving	Focus on Customer	Focus on Zero Losses Focus on Customer
System Focus:	Process Capability	System Capability	Total System Integration (customer focus/culture change)	System Reliability
Improvement Opportunity	Reduce variation	Reduce variation	Eliminate waste; reduce variation	Eliminate waste; stabilize systems
Implementation:	Specific process improvements	Short term fix; small focused initiatives	Long term; culture sustains	Phase Progression
Strategy:	Equipment/process/specific focus	Independent projects; Top Down	Supply Chain focus (customer pull)	Long term and broad strategy; Top Down and Bottom Up

Table 1 (Continued)

Programs that Contributed to Development of Continuous Improvement

	Six Sigma	Total Quality Management	Lean/TPM	Continuous Improvement
Tools:	Statistical tools	Statistical Tools; flow charts, fishbone, Nominal group technique	Jidoka (quality at the source); Autonomous workforce (employees drive/sustain)	Lean, 6 Sigma, TQM, TPM tools
Metrics:	Equipment/material/quality defects highlight losses	Quality defects highlight losses	Metrics – highlight losses	Standardize metrics to highlight losses
Outcome:	Reduce Variation/ minimize defects	Culture an outcome (not an initial focus)	Standardized process/ culture sustains change	Management drives change and sustaining changes; culture follows
Employee Involvement:	Focused improvement-technical experts	Quality Circles	Total company - all employees; customer; vendor	Everyone invited; Manufacturing required
Motivation Theories:	Goal Setting	Work Redesign Some say Goal Setting NOT pay for performance	Work redesign Goal Setting	To Be Determined
Business Focus:	Customer focus; management drives; cross functional teams; employees sustain	Customer focus; management drives; employees sustain	Autonomous workforce (wage folks drive and sustain; inverted triangle)	Management drives; workforce involved (typical triangle)
Foundation:	Motorola foundation	Deming foundation	Toyota Process Systems foundation	Total Productive Maintenance Foundation

One very significant difference between Six Sigma and the CI program is that the CI program at this company is not designed to have the infrastructure of experts available to solve identified problems that Six Sigma uses. CI at the company being studied, utilizes three individuals who are overall program consultants - one internal consultant for approximately 12 plants. The internal consultants are leveraged to help the plants learn and advance their programs. But there is not a pool of experts sent out to work a specific project. The internal consultants have a much broader consultative role. The concept of Learn-Do-Teach is leveraged to develop all manufacturing employees who learn about the tools and processes and then apply them on a priority basis. The expectation is that a number of employees will learn the tools and process and then use them with enough rigor and frequency that these employees can then teach others. This allows the organization to spread the learning more broadly and grows technical depth across all ranks in the manufacturing organization.

Total Quality Management

Like Six Sigma, TQM has its roots in statistical analysis. However TQM focuses on system capability (Sashkin & Kiser, 1993). Independent projects and quality circles are part of the TQM movement (Ishikawa, 1985). Culture is an outcome of the improvement efforts.

With the CI initiative at the company contracting the study, equipment maintenance, system reliability, and driving uptime through root cause issue elimination are the areas of focus as opposed to system capability. With the realization that this is a significantly different way of doing work and therefore a culture change - much effort has

been put into understanding the current culture, defining a future state culture and managing through the culture change at the company being studied.

Lean/TPM

The CI effort being investigated is most similar to Lean/TPM particularly in regard to its organization-wide and overarching planned approach, waste elimination focus, use of metrics, and Total Employee Involvement expectation. The most significant differences are the approach to culture change and the type of manufacturing being addressed. Lean/TPM leverages the culture to sustain the changes made, whereas the CI effort uses the change initiative to drive and instill a new culture. Lean/TPM concepts are based on discrete manufacturing whereas the organization being studied uses continuous processes.

The reason it is important to highlight the manufacturing differences is that with discrete manufacturing, the workers can see just what impact they are having on the finished product being produced. For example he or she can look at a car and identify the mirror that was his or her ultimate responsibility. This would be referred to as having high task identity: the degree to which the job involves completing a whole identifiable piece of work (Hackman & Oldham, 1980).

In a continuous system, this link to the finished product is not nearly as clear and would be defined as having low task identity. For instance mixing, processing, and bottling shampoo is a continuous process. The operator can say “I had a part in making that bottle of shampoo.” But she/he can’t point to a specific individual contribution to the finished product. Continuing with this example, one can surmise how it would be easy to

track number of defect-free mirror installations for each worker and likewise link these results to a reward system. It is not as clear how to link individual employee performance to results and ultimately a reward program in a continuous operation.

Total Employee Involvement

TEI History

The TEI concept (and its many variations) came out of the need to address productivity challenges in American business as the Scientific Management approach developed by Fredrick Taylor in the early part of the 20th century was losing its effectiveness (Emery, 1980). According to Taylorism, jobs were to be broken down into small tasks. The best method to complete the task was determined by scientifically studying the work to be completed. The work of every employee could then be clearly and completely assigned so that no mental input from the worker was needed (Trist, 1981). This method would prove to deliver most efficient use of labor for several years. This approach was detrimental to employee morale and became useless as customer requirements and technology changed – this method could not adapt quickly enough to change (Womack, Jones, Roos, & Carpenter, 1990). It became clear that a linear focus on the technical aspects of the job - reducing all work activities to rules and formulae was limited in its usefulness. Processes were becoming more complex and the needs of the customer were continually expanding. Consequently the organization needed to find a way to become much more flexible to respond to these ever changing needs.

In the 1940s, a social psychologist named Kurt Lewin, began to investigate the individual as a member of a group in one's everyday environment (Cotton, 1993). Some

of his further work, and the work he spurred on of others, showed that groups with a more democratic leader - one allowing for greater inputs from the team - were more productive when the leader was not present compared to teams with a more autocratic leader (Lewin, 1947). As well, Lewin showed that involving individuals with a group discussion and group decision was more effective than telling the group what they were going to do: by involving rather than lecturing individuals their attitudes were more easily changed (Lewin).

Emery and Trist applied Lewin's findings to improving organizations. They took a sociotechnical systems approach – combining the social part of *people* performing tasks and the technical part i.e. tools, techniques to performing tasks and expanded upon the joint relationship and interrelatedness between these two components of a job (Emery & Trist, 1965). The sociotechnical systems approach is likely the “most extensive body of scientific and applied work underlying Employee Involvement and innovative work designs” (Cummings & Worley, 2001, p.354). Through their work at the Tavistock Institute in London, the importance of ensuring that both the social and technical components of a job were attended to has gradually made itself to the forefront of organizational design work thus encouraging organizations to address the relationship between the two parts so that both have positive outcomes and both parts work well together. Edward Lawler is credited with picking up this concept and spreading the idea of Employee Involvement demonstrating its benefits and clarifying the complexities (Lawler, 1978; Lawler, 1999; Lawler, Mohrman & Benson, 2001). In addition, Lawler

(1999) has highlighted what works in regard to Employee Involvement, to deliver positive outcomes.

TEI - Definitions

The literature acknowledges that many definitions of Employee Involvement exist (Cotton, 1993; Helsey, 1993; Hill & Huq, 2004; Pastor, 1996). Varying degrees of involvement include participation, interaction, empowerment, and ownership (Cotton, 1993). The different approaches vary in the kind of organizational changes that are required, the amount of influence given to workers, and the expected results from such initiatives. The essence of Employee Involvement is moving decision-making power downward in the organization (Lawler, 1998). Further, employees have a higher degree of autonomy and therefore are more involved in running the production system. Autonomy is present when the production employees are “given the opportunity to make decisions over their day-to-day work operation” (Cotton, p. 173).

Dachler & Wilpert Employee Involvement Model

Dachler & Wilpert (1978) put forth a model to define the dimensions of Employee Involvement. There are four components to their model: a). contextual boundaries, b). properties of participation, c). values, assumptions, goals, and d). outcomes. Contextual boundaries address who is included in the involvement process and depends on the characteristics of society, what other similar organizations are doing, and the groups and individuals in the organization. The properties of participation define how participation happens e.g. formal vs. informal processes; direct vs. indirect involvement; importance of decisions or activities that receive participation. Values, assumptions and

goals focus on why Employee Involvement is being implemented e.g. to increase productivity; to increase employee satisfaction. Outcomes refer to the anticipated outcomes of having implemented Employee Involvement for the individuals, the group, the organization, and beyond.

Thun - Employee Involvement Factor Analysis

In a study performed by Thun, et al. (2001), the Employee Involvement concept was analyzed using factor analysis and delivered these five components: Autonomy (employees responsible for their own tasks); communication (includes interaction between worker and manager i.e. the manager considers employee's suggestions and provides employee feedback); information (enough knowledge received to understand the broader system on a daily basis); skills (to do their job); and training (to improve their job-related skill level).

The group found that these five components of Employee Involvement are each positively correlated with increased performance i.e. manufacturing production output. And when clustered as an Employee Involvement category, high Employee Involvement delivered high manufacturing results leading the authors to conclude that Employee Involvement is "the main driving force" to deliver effective manufacturing improvements (Thun, et al., p.142). They were also able to show that implementation of reduced cycle-time tools (like those of TPM and the CI initiative being studied) can "barely be done without Employee Involvement" (Thun, et al., p. 142).

TEI – Implementation

Worker Involvement

Sustained improvements in manufacturing performance require the full commitment and involvement of everyone in the organization, especially the employees who operate the equipment on a daily basis. “The heart of the system is involvement: flexible, motivated team members continually seeking a better way” (Dennis, 2007, p.18). Operators in particular are a source of considerable expertise, especially in the manufacturing settings of consumer packaged goods (CDC Factory, 2007). Successful organizations have shown that operators often have great cost savings ideas ready for implementation (Helsey, 1993). Conversely, CI programs that fail to involve the production line workers tend to experience poor results. Matt Davis, Operations Manager for Breyers Yogurts was quoted in CDC Factory (2007):

A continuous improvement program that lacks deep involvement from employees at every level of the organization, especially the operators, is bound to fail. You need buy-in at all levels, and you have to be honest and open about what you’re trying to accomplish; have a goal that is visible and measurable. Employees need to understand that you’re not trying to track their mistakes—you’re trying to help them improve their performance (p.2).

In the book, *Developing a Lean Workforce*, Harris and Harris (2008) state:

As your company implements lean you will come to value flexible employees because a flexible workforce allows your manufacturing system to react to customer demand. Flexible employees are those with the capability to perform at many different work stations. Jobs in a lean manufacturing environment, however, are much more complex and require a greater degree of efficiency, so employees need to be much better trained (p.9).

Leader Involvement

Helsey (1993) believes that the secret to a successful CI program is visible and sustained commitment to the effort by the leaders of the organization. From the CEO to

the division presidents and the plant managers – all must be engaged and working to move the program forward. In the kick-off meeting, the leaders clearly state their support for the initiative.

The actions of these leaders after the kick-off meeting must consistently support the changes going forward. The support must be evident in their goals and objectives, the agendas they set for subsequent meetings, the questions they ask of their people every day, and even being present on the operating floor to show their support and commitment where the largest and most obvious changes are happening (Dennis, 2007; Liker, 2004; Liker & Hoseus, 2008). Since this is indeed a change initiative, a change management plan must be in place to constantly monitor the pulse of the organization, address employee concerns, take bold action when necessary and appropriate, communicate openly and honestly, and acknowledge the challenges that the workers are enduring (CDC factory, 2007; Cummings & Worley, 2001).

Use of Metrics

The last major category I will highlight here is the need for visible, real-time, and accurate metrics displayed for all to see (CDC Factory, 2007; Dennis, 2007; Liker & Hoseus, 2008; Suzuki, 1994). This is important on several levels. First, it enables managers and highly involved employees to quickly identify issues and get to the root cause of these issues so that the problem can be completely eliminated. Second, it builds trust. The transparency of the numbers tells the workers that management has nothing to hide, and neither should the operator. Third, the metrics can be used to direct an all hands

on deck cry for help. If a system goes down or is struggling, the employees work together to resolve the issue. In this way, a culture of winning and working together evolves.

Finally, the ability to trend accurate data can readily convey progress made over time and prepare the organization for the future. Recording and reporting data allows organization to look back at recent past performance in order to more accurately predict how the system will run in the future thus impacting the ability to schedule future production needs more exactly.

Other TEI Implementation Suggestions

There are several additional tips and tricks in the literature conveying the right things to do to ensure successful implementation of CI-type initiatives e.g. have a suggestion box; fix what the operators request of you; start with easy wins. Many are opinions and many are lessons learned from implementing CI-type initiatives (some failed attempts and some successful). These statements all provide valuable insights into several of the key factors to consider when implementing CI-type initiatives. But let's turn now to material that outlines clear and specific step-by-step processes for setting up successful CI-type initiatives.

Similarities in Implementing CI-Type Initiatives

Each of the CI-type initiatives outlined in Table 1 start out their implementation programs in generally the same way. They all have a set of tools and/or processes that need to be used in the organization. They all start with planning and goal setting and a declaration by leadership that this initiative is important and supported by upper management. There is some attention given to the need for a training plan to educate the

affected employees on the forthcoming initiative and its associated processes. After that, the steps in the process are less prescriptive regarding how to gain momentum to keep the initiative alive, and how to sustain the change. However, the TPM initiative outlines a 12-step process that goes from preparation, to the kick-off, to clear and detailed actions to take in the implementation phase where stability in the systems is the main goal, and finally to sustain and continually improve upon established gains (Suzuki, 1994).

High Performance Work Systems

It has been argued that Employee Involvement is a key component in high performance organizations (Cotton, 1993; Lawler, Mohrman & Benson, 2001). A high performance workplace is made of self-managed work groups who are equipped with proper skills and technology focused on delivering customer needs as efficiently and effectively as possible (White, 1994). These workers perform their jobs with great autonomy and skill as a cohesive team resolving issues together to accomplish a worthwhile task prioritized by the organization with the customer in mind. For production workers HPWSs really comes down to a major shift in the degree to which these employees are empowered to make decisions (Boxall & Macky, 2007). HPWSs aim to find the best fit between information, technology, people, and work in order to maximize efficiency and effectiveness (Nadler & Gerstein, 1992). The emphasis is on a flat organizational structure with a strong customer focus (White, 1994). The employees continually examine their work; decide what needs to be done and how to do it faster and better (Varma, Beatty, Schneier & Ulrich, 1999).

Varma et al. (1999) found that HPWSs are an effective way to change how work is done. By implementing a properly designed initiative with involvement and commitment from all parts of the organization, financial and operational success can be advanced. HPWSs are characterized by collaboration, trust, and mutual support (Gephardt, 1995). Additionally, Varma et al. assert that clear communication and high Employee Involvement are key components of a HPWS.

Hanna (1988) argues that the overriding principles of HPWS are universal. The specific techniques used to ensure the success of HPWSs are less universal and more dependent on particular circumstances of each organization. Organizational units are designed around products, services, or processes – not functional expertise as is often the norm in typical hierarchical organizations. The structure of the HPWS facilitates customer focus, ownership, accountability, responsiveness, and problem solving. All of this is first and foremost tied to the organization's competitive strategy to meet customer needs as part of a larger open system espoused by Open Systems Theory (Hanna).

Motivation

Hackman and Oldham – Job Characteristics Model

According to the Job Characteristics Model put forth by Hackman and Oldham (1980), there are five core job dimensions: skill variety, task identity, task significance, autonomy and feedback. The Job Characteristics Model suggests that employees will experience intrinsic reward when they learn that they personally have performed well on a task that they care about. In a study of 300 employees by Nasurdin et al. (2005), it was

concluded that the extent of involvement in TPM had a positive and significant effect on all five of the core job dimensions (listed above) outlined by Hackman & Oldham.

Applying the Job Characteristics Model to CI-type initiatives, allows the organization to focus their efforts on the five core job dimensions outlined above. By improving employee skills, the workers will have the flexibility to work in different areas thus increasing skill variety. By linking the specific work to the result and the importance of that result both task identity and task significance will be enhanced. By developing employees so that they are capable of making decisions, autonomy will increase. And by establishing ongoing feedback from the manager to the worker and sustaining this interaction, the need for feedback should be addressed. By attending to each of these characteristics, general satisfaction and internal work motivation will increase (Hackman & Oldham, 1980).

Maslow's Hierarchy of Needs

Maslow (1943) posited a hierarchy of needs starting with basic extrinsic needs including physiological needs - e.g. food and warmth, followed by a need for security and feeling safe from harm, and finally the need for love - having others care about you. The next two levels are the higher-level needs of self-esteem - feeling good about yourself, and the highest level: self-actualization - striving to develop to your fullest potential. According to Maslow, the lower level need must be satisfied before moving to the next level. Otherwise,

the most prepotent goal will monopolize consciousness...but when a need is fairly well satisfied, the next prepotent ('higher') need emerges, in turn

to dominate the conscious life and to serve as the center of organization of behavior, since gratified needs are not active motivators (p. 394-395).

Applying this theory to employee motivation in HPWSs would require that the lower level needs of the employees are comfortably and confidently met so that growth toward self-actualization can be the focus. Liker (2004) maintains that the employees must have job security, safe working conditions, and adequate pay to address the lower level needs. Then, the workers must feel that they are part of a team, and the jobs must be challenging and provide the employees autonomy in improving their workplace. In this way, the self-actualization needs of the workers can be addressed. Becker and Gerhart (1996) contend that implementing HPWSs raises employee motivation. Further, the HPWS organization may satisfy the need for self-actualization because workers in a HPWS are participating more fully in the organization and therefore are more motivated.

Herzberg's Job Enrichment Theory

Herzberg's Two-Factor theory of Job Enrichment, (Herzberg, 1987) classified Maslow's lower level needs as hygiene factors – not having these needs met will cause dissatisfaction. However, increasing these will not further motivate employees. Herzberg classified Maslow's higher level needs as motivators. Motivators are the primary cause of satisfaction and include factors such as achievement, responsibility, the work itself, and personal growth among others. To operationalize this concept, a company would meet basic hygiene needs e.g. provide a clean and safe work environment, good pay, and reasonable eating arrangements for meal times and breaks. However, utilizing resources to provide a world-class cafeteria, or excessive security staffing may be nice to have, but

would not motivate the employees to perform better. Enriching jobs through continuous improvement type initiatives, job rotation, and autonomy are all ways to increase employee motivation and achieve greater outputs from the workers (Liker, 2004; Herzberg, 1987).

Goal-Setting Theory

Setting specific, measurable, achievable goals that show progress and are at the same time challenging is another recommended motivation technique used by Toyota (Suzuki, 1994; Liker, 2004) that is supported by Goal Setting Theory. Goal Setting Theory (Locke & Latham, 2002) espouses that goals affect performance through four mechanisms. First, goals serve a directive function by focusing the individual on activities that directly impact the goal. Second, high goals lead to greater effort than low goals. Third, goals affect persistence - hard goals prolong effort, and fourth, individuals will immediately use knowledge and skills they have to achieve a goal or learn what they need to in order to achieve the goal (Wood, Mento & Locke, 1987). Numerous studies have shown that setting a specific difficult goal leads to significant increases in employee productivity (Latham & Pinder, 2005). The only caveat from a motivation perspective is that the goal must be reasonably achievable (Liker, 2004; Wood, et al., 1990).

The efforts of workers in a HPWS are expected to deliver much higher results than those workers in a more traditional control-oriented organization (Tomer, 2001). However, building excellent people who deliver higher results is not as simple as applying motivational theories – like those discussed briefly above. Building a

continuous improvement culture takes years of applying consistent principles that include the foundational elements of motivation as outlined above.

Culture

Culture Defined

A generally accepted definition of culture is put forth by Edgar Schein (1985):

. . . basic assumptions and beliefs that are shared by members of an organization that operate unconsciously, and that define in a basic “taken-for-granted” fashion an organization’s view of itself and its environment. These assumptions and beliefs are learned responses to a group’s problems. They come to be taken for granted because they solve problems repeatedly and reliably. (pp. 6-7)

A model presented by Schein (1984) shows a three-level pyramid that further clarifies the components of culture. At the top of the pyramid are readily observable behaviors and artifacts. This level includes what can be seen in the environment, pictures, building condition, how people behave, etc. But to understand what is below the surface of what can be observed, we must understand the norms and values at the second level in the pyramid. These characteristics become apparent when interacting with the employees. If asked why things are the way they appear, the answers would convey the organization’s beliefs, philosophies and norms. At the deepest level of the cultural pyramid are the deep and underlying assumptions of the organization. The underlying assumptions include the unconscious, taken-for-granted beliefs about the work, the people, the rewards, etc.

Culture in CI-Type Initiatives

The success of a CI-type program requires building a culture and practice of involvement and responsibility in every person in the organization (Nakajima, 1988). The “human factor” is central to success in CI-type initiatives (Wilkinson & Yong, 1999). The organization must align HR policies and procedures with the efforts to ensure integration and ultimately obtain desired attitudes and culture (Wilkinson, 2004). Evidence over the past couple of decades indicates that TQM for example did not reach its objectives. The internal focus on conformance to requirements and its associated bureaucracy failed in large part because the culture change, attitudes, and HR processes necessary to support the TQM initiative were not addressed (Wilkinson & Yong; Harris & Harris, 2008).

Consumer products manufacturers that have successfully engendered a CI culture throughout their organizations recognized early on that effective change management was critical to the program’s success. To ensure that the investment in systems and people improved performance and delivered a positive return, these organizations purposely implemented change management initiatives alongside their continuous improvement efforts (CDC Factory, 2007).

Organization Design

An organization working to increase employee involvement as part of a continuous improvement-type effort must move from a traditional, command and control style of management to one that spreads power, knowledge, skills, and rewards broadly across the organization (Walton, 1985). This type of large-scale change requires an organizational intervention that looks at all of the components of the organization with

the expectation that most all of its design components will change (Hanna, 1988; Cummings & Feyerherm, 1995).

Organization design is a deliberate process of integrating the people, processes, and structure of an organization in order to achieve its organizational goals (Cummings & Feyerherm, 1995). By methodically stepping through the design process, organizations work to improve the probability that the collective efforts of its members will be successful in achieving the business strategy (Galbraith, 2002).

The Galbraith Star Model (Galbraith, 1995; Galbraith, 2002) is one of the most highly regarded processes for assessing and establishing organization design.

Organization design principles acknowledge that there is no one right organization (Cummings & Worley, 2003; Hodge, Anthony & Gales, 2003). The desired organization depends upon the business strategy: what the organization is trying to accomplish.

The Star Model takes a holistic approach to assessing and implementing organization design and looks at five components that all align with strategy. The five components are: (a) Organizational Capabilities – those attributes required for organizational success including interdependencies and alignment. (b) Structure – the formal reporting, authority, and power relationships of the organization. (c) Work Processes - the interdependencies within the organization and the activities that connect the organization and keep it aligned. Of particular interest in this category is how information moves across the organization and how groups collaborate. (d) Rewards – the rewards and recognition the organization uses to promote desired behaviors and results by individuals and groups. (e) People – the people category includes evaluating

the current staff and their skill sets against the new job expectations and skills needed. This category also includes establishing the hiring strategy, talent management plan and organization development model for the future organization to ensure the right people with the right talents and skills are in place to deliver on the business needs. All of the components must work together to achieve the desired business results.

Culture Change

Certainly the CI initiative is a culture change. New processes, new measurement tools, new planning and reporting procedures, a new way of looking at production (interjecting reliability technology), and an expectation that all the employees will learn and use these new tools and techniques will surely change how work is done at the manufacturing facilities of the organization being studied. Along with the changes in processes and procedures is an apparent increase in accountability for the employees. According to Hanna (1988, p. 159): “True culture change does not occur until several individuals – a critical mass – have examined and changed their basic assumptions about organizations.” These attitudes and changes generally evolve over a period of years and thus require a change strategy to ensure the culture change stays on track.

Leadership

The traditional model of leadership works to establish order, exercise control, and achieve efficiency in its work force. Developing leaders for the high performance workplace requires an individual who has “a conceptual understanding of the high performance workplace, the human instincts and empathy to help people through the required transitions, and the courage to take on the rough-and-tumble work of making

change at a prodigious rate” (White, 1994, p. 163). Characteristics of this type of leader include people who are entrepreneurial, accountable, process-focused, have a high bias for action, empowering of others, excellent communicators, technologically proficient and passionate about continuous improvement (White).

Leadership works to adapt the organization to significantly changing circumstances (Kotter, 1996). Leaders of change are charged with defining the future, aligning the workers with that future state vision and inspiring them to make the change happen despite inevitable challenges along the way (Kotter). When launching a CI-type initiative, the new methodologies must become part of the “living management system” (Jacobsen, 2008, p. 5). Leadership behaviors to support this require a leader who seeks hands-on accountability, provides clear, concrete feedback, and keeps the workers focused on the established goals designed to drive the change (Jacobsen). Miller (2002) believes that successful change initiatives require a strong leader who has built a high level of commitment and can maintain that high level of commitment and determination from the workers during the change. Commitment from the workers partnered with the discipline and structure to actively engage in the newly established processes as a leader and maintain these expectations of the workers, are critical in ensuring the change takes hold.

CHAPTER THREE – METHOD

This study was designed to deliver a comprehensive picture of the significant activities, efforts, communications, processes and other aspects that come together for a most effective TEI program. I selected qualitative research as the methodology for this study since the research question requires depth in understanding that could not be obtained through purely positivistic means of inquiry.

Qualitative Design

The research question for this dissertation is: “What are the most important components to consider when implementing TEI at the manufacturing facilities of a specific Fortune 500 company on the CI journey?” In order to understand deeply all of the things that come together, and how they come together to most effectively obtain TEI, I wanted to observe TEI in action at a number of manufacturing locations. I needed to go and talk to the people who were experiencing these phenomena as well as those directing the implementation activities. Therefore, I spoke with those who were working to implement TEI at the plants and those who were directing the implementation of TEI from a more strategic/corporate perspective.

Qualitative research relies on a socially constructed interpretation of reality (Denzin & Lincoln, 1998), thus the reality is subjective and conveyed as it is seen by the participants in the study (Guba & Lincoln, 1988) – in this case, the employees. “The researcher is the data analysis tool” (Denzin & Lincoln, 2000, p. 386) – gathering information in the field, as close as possible to the natural setting of the subject under study and providing interpretation of the gathered data. For the CI study, since the area of

interest is the work done at the manufacturing locations, I went to three manufacturing locations to gather the qualitative data. Interviews were the primary method I used to gather qualitative data. As prescribed in the literature (Denzin & Lincoln, 1998; Patton, 2002; Silverman, 2006), I also documented observations, gathered artifacts and processed my thoughts through journaling.

Qualitative methods allow for issues to be investigated in depth and with great detail (Patton, 2002). Qualitative research procedures are “characterized as inductive, emerging, and shaped by the researcher” (Creswell, 2007, p. 19) as she or he gathers and interprets the data. The logic followed by the qualitative researcher is inductive, from the ground up. Nicholls (2009a) illustrates inductive reasoning with an inverted pyramid (p. 532) where the bottom, tip of the triangle is a relatively discrete point of origin for the inquiry. The triangle expands out much like the multiple pathways that an idea may take with the formation of theory and finally the potentially broader application to other populations.

The goal of the research is to rely as much as possible on the participants’ views of the situation being studied (Creswell, 2009). The researcher’s intent is to make sense of the meanings others articulate about the world and from this articulation, develop a theory or pattern of meaning (rather than start with a theory as in positivistic research). Additionally, Crotty (1998) expressed that the meanings being conveyed are constructed by individuals who have engaged in their world based on their historical perspectives which have evolved within their established cultural norms and boundaries. Through qualitative study, it is the researcher’s job to observe and come to interpret and

understand these historical and culturally refined nuances. I believe that developing a pattern of meaning that brings clarity and understanding around the components and processes needed to execute an effective TEI program given the nuances of each group, is exactly the type of insight this company is looking to obtain from this study.

Grounded Theory

Grounded theory is a specific type of qualitative research and provides the procedures that were used for this research project. Grounded theory espouses to develop a theory *grounded* in data from the participants (Charmaz, 2008; Straus & Corbin, 1997). The theory is inductively derived from the investigation of the particular phenomenon (Strauss & Corbin). “Participants in the study would all have experienced the process and the development of the theory might help explain practice” (Creswell, 2007, p. 63).

Developed by Glaser and Strauss in the 1960s, grounded theory is based on the principles of symbolic interactionism: the symbolic interactions between individuals that give meaning to our world (Creswell, 2007). Grounded theory works to “establish robust, reasoned theory in places where sound theory is absent” (Nicholls, 2009b, p. 588). It is quite systematic and includes the following practices as outlined in Charmaz (2008).

1. Data collection is simultaneously involved with data analysis.
2. Codes and categories evolve from the data (not from preconceived hypotheses).
3. The process requires constantly comparing inputs i.e. new data with the evolving theory.
4. Yet the theory advances in each phase of data collection.

5. The sampling plan is designed so as to inform the theory (not to represent a population nor obtain some anticipated sample size).

Design of the Study - Sampling

The theory evolves based on interviews, artifacts, and other observations. Thus the sample set is a theory-based sample that evolves to inform the theory. Theoretical sampling prompts the researcher to retrace her/his steps or take a new path as tentative categories emerge that are intriguing but leave incomplete ideas (Charmaz, 2008). Theoretical sampling dictates sampling that will elaborate and refine the categories. Theoretical sampling allows the researcher to hone in so clearly on the categories that the researcher is able to develop a theory that perfectly encapsulates the data. Saturation is obtained and the data gathering stage is complete, when the categories are well developed and no new properties emerge with further data gathering. Thus, you have effectively saturated your categories with data (Charmaz).

“Initial sampling is where you start and theoretical sampling is where you go” (Charmaz, 2008, p. 100). The initial sampling for this study was purposeful – designed to provide interview responses that are rich with information and can be studied deeply because the information is highly relevant and informative to the research question (Patton, 2002). Initial sampling included interviewing employees from three manufacturing facilities. Each of these facilities was believed to be making great progress on the CI journey. The following criteria were used to select the plants that would participate in the study.

1. A team from the plant included in the study obtained a CI team of the year award recognition at one of the annual CI Championship Team of the Year ceremonies offered over the past four years.
2. The Vice President of CI for manufacturing acknowledged and confirmed that the plants selected were among those showing great progress on the CI Journey.
3. The Vice Presidents of Manufacturing that oversee the selected plants also agreed that the plants selected were lead plants in CI.
4. The internal CI consultants that work closely with the plants also agreed that the plants selected were the furthest ahead on the CI journey. And finally,
5. The plants selected showed great results in regard to plant metrics e.g. reduced cost per case, increased system usage, reduced stops (reduction in the number of times the system is stopped per day).

The Vice President of CI and the three Vice Presidents of manufacturing were interviewed for the study. With this group it would be important to determine how each one of them defines TEI and the expected implementation outcomes. I would also seek to understand what they believe are the key drivers to successful implementation of TEI. Finally, others who were intimately involved in rolling out CI and support the plant locations from corporate i.e. CI Internal Consultant, Directors of CI, and Human Resources support for CI were interviewed to obtain their perspectives as well.

Here is the list of the different groups interviewed for the study.

1. plant wage workers (3 or more per plant),

2. plant leadership teams (at least 3 per plant: Plant Manager, CI Leader and HR Manager), and
3. corporate manufacturing leaders (3 Manufacturing VP's, 1 VP of CI, 1 Director of Supply Chain Human resources, 3 CI Team Members).

A table detailing the interviewees can be found in Appendix C. Below is a summary.

Table 2

Summary of Interviewees

Years of Service	Number interviewed per location	Representation
<i>Range = 2.5 – 30 years</i> <i>Average = 12.3 years</i> <i>Median = 12.5 years</i>	Plant A = 7 Plant B = 7 Plant C = 8 Corporate = 8	Male = 23 Female = 7

It should be noted that in grounded theory, the sampling scheme is not meant to represent a population nor increase the potential to generalize the results. The sampling plan is designed to inform the theory and evolves to clarify the emerging theory.

The questions in the interviews were designed to understand and clarify cause i.e. what is causing success. Consistent with grounded theory studies, 7-8 people from each of these groups were interviewed for a total of 30 interviews (Creswell, 2007).

Throughout this investigation, a theory was developed outlining the TEI components that come together and the interactions that occur to drive success with CI. Theoretical sampling was used to bring clarity to the themes as they emerged.

After visiting the first plant, I decided to save for last, the plant that was perceived to be the most advanced. By doing this, I was able to confirm, deny and round out themes that had emerged after interviewing those from the other two plants. Essentially, after completing my visit with the first plant, some basic categories emerged that I needed to refine. I was able to expand much of my thinking with my visit to the second plant and probe more deeply on the categories and themes that emerged at the third plant. For the continuum that is presented in Chapter Four, it was these later plants that provided the detail giving me five categories as shown on page 73. Using this as an example of how the theory evolved, this continuum started out with two categories: Not involved and Involved; then went to three categories: Not Involved, Involved Majority; and Go-Getters, and finally became a continuum with five categories.

Likewise, I saved the interviews with the corporate CI Directors and the CI Internal Consultant for later anticipating that they were closer to CI implementation and would have some insight and add clarity to categories that were emerging. In particular, this group clarified the need and significance of 1). a clearly defined goal that links the individual to the business, 2). groups to engage on the journey e.g. a promotions team, and 3). why at least for now, TEI won't have 100% of the employees involved/engaged.

Once I had done enough cycling back to verify concepts and built on these with the subsequent plant interviews and later, with the CI team interviews, I discussed my preliminary findings with the VP of CI and separately discussed the findings with my mentor checker who has expertise in Organizational Effectiveness/Organization Design and was on the CI team (but not part of the interview process). Both individuals

supported my interview and data analysis processes. Both indicated that the model and theories I developed helped to clarify TEI and how to implement TEI.

I also presented the models and theories to the corporate manufacturing leaders in one session and to the plant leadership teams that were interviewed in a separate session. The intent with both meetings was to share my initial findings, and hear from these groups whether or not the results captured how they generally thought about TEI and what worked.

Interviews

Interviews were the primary method for gathering data for this study. With the research question in mind, I developed the interview protocol. The interview protocol consisted of a series of main questions designed to specifically address the research problem (Rubin & Rubin, 2005).

The responsive nature of the interview allows the interviewer to probe for depth and nuance, guide the conversation, and further investigate answers to the main questions (Warren, 2002). The qualitative interview has a beginning, middle, and end (F. Lawrenz, EPSY 8247 class notes, February 22, 2009). The beginning typically starts out somewhat formal with introductions. The interviewer's focus at this stage is to set the interviewee at ease: help the interviewee feel comfortable and confident in their ability to participate in the interview. Chit-chat and small talk may be used to break the ice. It is important to establish a comfortable rapport with the interviewee. Also in this beginning phase, the interviewer will give a bit of background information regarding their role and why the

interview is being conducted (F. Lawrenz). The interviewer may even convey how this individual was selected to participate (Rubin & Rubin, 2005).

The next stage of the interview is a progressive build to the heart of the research question. As the interviewer closes the introductions, she/he will ease into the discussion starting with questions that are pertinent to the research and relatively easy for the interviewee to answer. Ideally, these questions would also be designed to build confidence in the individual and set the stage for an open discussion (Warren, 2002). Gradually the questions build to greater depth and difficulty. When it becomes apparent that the interviewee is becoming exhausted, the interviewer will return to some less stressful questions easing toward the close (Rubin & Rubin, 2005). To end the interview on a positive note, questions should be designed to provoke a positive response. To accomplish this, the interviewer could ask the interviewee to convey a “favorite” or “best” story again relevant to the research e.g. Tell me your favorite TEI success story. In closing the interview, the researcher thanks the interviewee for the time given.

The interview protocol was tested with two individuals who are similar to the populations being studied, but not actually in the sample group. This is a valuable step to further hone the sequence of questions, potential probes, and to see whether or not the interview as currently structured actually starts to uncover useful information. The biggest learning from this step was that in my attempt to deemphasize my corporate presence by highlighting my graduate student status, I was in fact setting up a separate but equally intimidating persona. The introductory verbiage was then toned-down to deemphasize my graduate student status as well.

Interview Protocol – All employees

For all groups being interviewed, informed consent was obtained. See Appendix B for the Consent Form that was used. All interviews were audio recorded. Permission to record the interview is in the consent request. For data sorting purposes the following demographic data were gathered:

Male/Female

Years with the company

Current Position

Current Manufacturing Location Code

Here is the sequence of questions for the initial interviews:

The meetings started with cordial introductions, chit-chat and small talk. The next part was designed to eliminate the plant employees' anticipation of implications specific to them that go beyond the intent of the study (mostly they want to be seen in a positive light). To set the interviewee at ease and get the most candid inputs, I memorized the following statement so that it could be delivered sincerely using eye contact to gain trust with the individuals being interviewed [note: words in bold are what I was to say to the interviewee].

Before we get started, I want to give you a bit more information about me in regard to the study and what your company is trying to learn. First and foremost, I am a student who is working to understand very clearly what the plants are doing around CI and in particular TEI. I want to assure you that anything you say good, bad, or indifferent is held in the strictest of confidence between you and me. I will

not and cannot take anything you say outside of this room. What you say will absolutely be captured. But who said what, or even judgments of whether or not this was a “good interview” are just not appropriate for this study. I won’t be talking about who said what to anybody beyond generalizations like “the operators are saying....” But I will never say the plant’s name, your name or title when I start digging into the data to find the common threads. So, most importantly, I need your honest, candid responses. Please don’t try to impress me, don’t try to say what you think others may want you to say, or what you think I want to hear because that will only cloud the essence of what I am trying to learn. I really need straight up, what YOU think, see, feel, hear, and know. Does that work for you? [make sure the individual can commit to this before moving forward].

Interview Protocol – Plant-based Employees

- 1. So let’s get started. I would really appreciate it if you could help me understand your work at this plant. Could you describe your role for me?**
 - a. And what are some of the ways you or your plant are using CI?**

Transition to more specific TEI topic; work to further clarify the verbiage used for TEI and an understanding of the definition of TEI for each group at each location.

- 2. What about TEI? Have you heard of Total Employee Involvement or something like that?**
- 3. How would you describe TEI (use their words for TEI in the rest of the interview) at this plant? What does TEI look like?**

- a. **Can you give me an example or tell me a story where TEI is (or was) obviously present?**
 - b. **What is significant about what you told me? Is there something here that makes TEI special, important or something that seems unique going on here?**
4. **Was TEI new for your plant or have you always had TEI?**
 - a. If new, say: **Describe how things were without TEI versus how they are now.**
 - b. If not new, say: **Is it different now? Describe how it is different now.**
5. **How was TEI first started here? (If they have always had TEI ask: How were changes made to make TEI what it is today?)**
 - a. Be ready to probe on specifics of how TEI was started **e.g. Tell me more about your leaders in this process;** if projects mentioned get more information on the types of projects and why these worked. If they bring up culture, ask for details about the culture.
 - b. Other possible probes: **What about Team? Training? Leadership Expectation?**
6. **Are there specific things people here do to make sure TEI keeps going or keeps working? Please describe those activities.**
7. **Who owns TEI?**
 - a. Probing to understand the mechanism for sustaining it and getting buy-in on the concept.
 - b. **Who are these people? What behaviors did they exhibit?**

8. **If you had to sum it up, what things do you think have come together to make TEI work at your location?**
 - a. **Are any of these things critical?**
 - b. **Are any of these things sequential - - required at a particular time?**
9. **What is NOT working with TEI? What are some things that you think should be done differently to make TEI work better at your plant?**
 - a. **Do you think there is anything your facility could have done to accelerate the implementation of TEI? If yes, What are some of those things?**

To close the interview I said: **Knowing that what I am trying to do here is figure out what are the most important things to consider when implementing TEI at manufacturing locations for your company, is there anything else that you think I need to understand that we haven't covered?**

Thank you so much for taking the time to educate me on TEI at your plant. I truly appreciate it.

Interview Protocol – Corporate Employees

I was less concerned about the corporate leaders trying to impress me with their responses. Still, I wanted to be sure that they understood that this is a research study that required their honest inputs and I will protect their confidentiality. This part was generally memorized and stated to the corporate employees being interviewed for the study to get the most candid and honest responses. Again the intent of memorizing the opening statement was so that it could be delivered sincerely using eye contact to gain trust with the individuals being interviewed [note: words in bold are what I planned to

say to the interviewees]. Note that for the corporate group, it was suggested that I leave in the fact that this study is part of my graduate program. The corporate group would potentially see my graduate student status in a positive light.

Before we get started, I want to give you a bit more information about me in regard to the study and what your company is trying to learn. First and foremost, I am a *graduate* student who is working to understand very clearly what the plants are doing around CI and in particular TEI. I want to assure you that anything you say good, bad, or indifferent is held in the strictest of confidence between you and me. I will not and cannot take anything you say outside of this room. What you say will absolutely be captured. But who said what, or even judgments of whether or not this was a “good interview” are just not appropriate for this study. I won’t be talking about who said what to anybody beyond generalizations like “leadership is saying....” And I will never say the plant’s name, your name or title when I start digging into the data to find the common threads. So, most importantly, I need your honest, candid responses. Please don’t try to say what you think I want to hear because that will only cloud the essence of what I am trying to learn. I really need straight up, what YOU think, see, feel, hear, and know. Does that work for you?

[make sure the individual can commit to this before moving forward].

- 1. So let’s get started. I would really appreciate it if you could help me understand your work at corporate. Could you describe your role for me?**
 - a. And what are some of the ways you have seen the plants use CI?**

Transition to more specific TEI topic; work to further clarify the verbiage used for TEI and an understanding of the definition of TEI for each group.

2. What about TEI or Total Employee Involvement? How would you describe TEI

(use their words for TEI in the rest of the interview)? **What does TEI look like?**

a. Can you give me an example or tell me a story where TEI is (or was) obviously present?

b. What is significant about what you told me? Is there something here that makes TEI special, important or something that seems unique going on here?

3. What communications have you had with the plants regarding TEI?

a. Probe for directions they are giving to plants regarding TEI.

4. When you visit plants where TEI is really working – what does that look like, feel like, sound like?

a. Probe for detail on the observations presented.

b. How is this different from what you observe at other plants?

5. Think of the plants when they were implementing TEI. What do you remember about the implementation? What are the things you recall that were going on during implementation? (or for those who already had TEI in place, what changes were made to make TEI what it is today?)

a. Be ready to probe on specifics of how TEI was started **e.g. Tell me more about your leaders in this process**; if projects mentioned get more information on the types of projects and why these worked. If they bring up culture, ask for details about the culture.

b. Other possible probes: What about Team? Training? Leadership Expectation?

6. Are there specific things people are doing at the plants to make sure TEI keeps going or keeps working?

a. What do those things look like? Please describe what you have seen.

b. Have you provided any dictates, directions, expectations or other communication to the plants regarding TEI?

i. What are (or were) they?

ii. What actions or changes did you see as a result of your communications?

7. Who owns TEI?

a. Probing to understand the mechanism for sustaining it and getting buy-in on the concept.

b. Who are these people? What behaviors do they/did they exhibit

8. If you had to sum it up, what things do you think have come together to make TEI work?

a. Are any of these things critical?

b. Are any of these things sequential - - required at a particular time, in a particular order?

9. What is NOT working with TEI? What are some things that you think should be done differently to make TEI work at the plants?

- a. **Do you think there is anything corporate could have done to accelerate the implementation of TEI? If yes, what are some of those things?**
- b. **Do you think there are things the plants could do to accelerate the implementation of TEI? If yes, what are some of those things?**

To close the interview: **Knowing that what I am trying to do here is figure out what are the most important things to consider when implementing TEI at manufacturing locations for your company, is there anything else that you think I need to understand that we haven't covered?**

Thank you so much for taking the time to educate me on your perspectives regarding TEI. I truly appreciate it.

Data Management

Thirty employees were interviewed. Interviews ranged from approximately 30-60 minutes. The interviews were audio recorded. When talking to the interviewee, only their first name was used. The audio recordings were electronically delivered to an external firm through a confidential File Transfer Protocol (FTP) site. A coding system was developed to identify the individual, their location and job/position. One copy of this identification scheme was held by me. The external transcription firm signed a confidentiality agreement guaranteeing the anonymity of the individuals recorded. The agreement also would protect the company being studied from having this information shared with others. The same protocol required of medical transcriptionists through HIPAA (Health Insurance Portability and Accountability Act)

<http://www.hhs.gov/ocr/privacy/hipaa/administrative/privacyrule> was in place at the

transcription service for this research project. Any names that were used were changed – each interviewee was given a pseudonym. The pseudonyms are used in the findings report out in Chapter Four. Similarly, non-specific identifiers were used to further obscure the identity of the participants in the transcripts.

Data Analysis

As each recording was transcribed, the word file was sent back to me and transferred to a data management program - NVivo (www.qsrinternational.com) to assist in managing, coding, interpreting, and presenting the data gathered. From the 30 interviews, nearly 350 pages of single spaced transcription were analyzed.

Coding Process

I stepped through the three phases of coding the data as recommended by Creswell (2007) and Strauss and Corbin (1990). To illustrate how I used this process, I will step through the evolution of Figures 2 and 3 during each of the phases of coding.

In the first phase called open coding, categories are established from the interview text. During open coding, the data are broken into categories where the similarities and differences are made evident (Strauss & Corbin, 1990). The constant comparative approach is used where the labels and codes are refined several times. The researcher takes the information from the data and compares it to currently available categories then places the data in a new or existing category with the goal of clearly expressing the fundamental meaning of each category.

In this first phase, I started coding the interview text using NVIVO 9 after returning from interviewing the employees at the first plant. For the TEI continuum, I

started out with two categories or Parent Nodes that were originally called Involved and Not Involved. Within each category, I had several sub-categories (or Child Nodes) that described what the employees said about those in the Involved group and those in the Not Involved group. There were some specific things that individuals said that I needed to sort out further, so I added a note on the interview protocol to trigger an extended set of questions. The first point that I wanted to understand better was the belief that you would never have 100% of the employees involved or 100% TEI.

By probing into this further I was able to discern that there were currently employees in the company who weren't interested in contributing beyond a basic expectation – the clock punchers. Further probing into this as I asked people to describe these individuals, I learned about employees who had been around for a long time and people didn't know them very well. These people just came in, did their jobs and went home. Some of these people had some pretty extreme and contrary behaviors. The negative group seemed distinctly different than the clock-punchers. This allowed me to capture two categories of Not Involved employees.

The notion around not knowing them very well tuned me into statements future interviewees made about working with people for a long time. Probing around this uncovered the socializing and relationship building that ended up being quite significant. Since this was a best practices study, I turned this same line of questioning to the Involved group. What was different about those who chose to be involved? Why are you involved? Why is that important?

Again, I was able to capture specific behaviors and actions of those who were involved. But as I asked for greater clarity and detail, some finer differences emerged. There were some fundamental similarities among those in the Involved group: they cared, they wanted to do a good job, they wanted to do the job right, they respected others and wanted to be respected and have pride in their work. So I could see that this group showed up to work with a fundamentally different mindset than those that were in the Not Involved group. At first in the Involved group, I thought there were two types of employees – Educated Workers and Empowered Workers. But when I visited the third plant, I saw the Advocates (who I first called Ambassadors) whose primary concern was promoting the team, the plant, and the plant workers to anyone who would listen.

According to Crewell (2007), the researcher works to saturate the categories so that the text data no longer add further insight to the categories. During this stage, the categories are coded and further broken down into smaller sections that are given more specific codes that are very descriptive of the content in that category. During this process a central theme is identified from which the theory begins to build.

By the end of the last plant visit I was confident that I had three distinct groups in the involved category, and had reached saturation with most all of my research categories. With the research process, saturation was evident when I could almost anticipate the answers and nothing new was being said or observed. My categories at this point had several sub-categories that provided great detail as to what the main category contained.

The next phase of coding is axial coding. In open coding the data is broken down and taken apart. During axial coding the data is put back together by relating the concepts and making connections between the categories (Strauss & Corbin, 1990). As the categories are connected, they are made more elaborate and the connections are verified. The data is reviewed or new data may be collected to gather further insight into the specific categories (including the central theme). From here, an initial model is constructed that conveys a proposed theory.

This is exactly how the continuum in Figure 2 evolved. Once I started to look for connections, I could see that there was a build from one category to the next. Those on the right end of the continuum had all of the components of those on the left of the involved bracket and a few more differentiating characteristics. Note that landing on the single word to define each category took some effort bantering back and forth with my mentor checker. I also looked very carefully at each of the categories in the continuum to verify that they were indeed distinctly different.

Next, according to Strauss & Corbin (1990) the researcher starts by looking at the main theme and asking a series of question that are designed to get to the heart of the matter: (a) what caused this phenomenon to occur, (b) what strategies or actions were apparent (c) what specific and broad contexts influenced the strategies, and (d) what were the consequences or results of these actions and/or strategies. This process is precisely how Figure 3 came together. I had the continuum and now I needed to understand what else needed to be in place to promote the advancement of one's involvement – what

would facilitate higher involvement? What worked? What didn't work? What did I observe was in place at the plants with more highly involved employees?

Finally during the selective coding phase, potential explanations are generated that describe how the categories interrelate (Creswell, 2007). Selective coding includes selecting the main category, carefully relating the main category to the sub-categories and then confirming that those relationships or interconnections are real and relevant (Strauss & Corbin, 1990). Validating the connections requires careful review of the data, investigating other potential categories and connections and even eliminating those connections that are no longer relevant. The end result is a model or theory that clearly and succinctly defines the phenomenon under investigation.

By carefully going through the category details I was able to identify differences particularly in the way decisions were made, the communications, and the level of trust between employees, teams, and management. All of these items were pulled together to create Figure 3. Likewise, I came to understand how the "Why? Bubbles" – For Me, For My Team, and For My Leader all fit into advancing TEI and thus how they fit into the diagram. The biggest challenge I had here was in understanding what was and wasn't relevant. So for example, volunteerism was important at this company. But I was not able to find conclusively that this advanced TEI, so I left it off the diagram. Later I was able to validate that the research did not support this hypothesis either. The blue foundation items in Figure 3 were the items that were similar across all three plants. As much as possible, I sifted through the data to validate my thoughts. I showed the continuum to the manufacturing VPs, the CI team and those from the plants that I interviewed. The

continuum resonated across these groups. I did contact two of the plant managers to get their thoughts on Figure 3. Both ended up supporting the diagram. Both wanted to bring forward items that are *buried* in the categories (pride in the For Me and For the Team bubbles, and having a clear vision which is in the blue foundation of “Work with the business goal in mind.”

Validity and Reliability

Although validity and reliability in the traditional quantitative sense are not applicable to a grounded theory study, what should be evaluated is the quality of the research process and the quality of the results obtained in the study (Creswell, 2007; Denzin & Lincoln, 1998; Strauss & Corbin, 1990). Strauss and Corbin contend that grounded theory studies should be judged by how credible the theory is including its linkages, variation in theoretical concepts, and degree of specificity to highlight a few of their criteria. As well, Strauss and Corbin assert that the process itself that was used to ground the theory should be judged against seven criteria:

1. How was the original sample selected?
2. What major categories emerged?
3. What were some of the events that pointed to the main categories?
4. How did the theoretical sampling evolve?
5. What were some of the hypotheses used to test the categories?
6. How were discrepancies in the categories addressed?
7. How and why was the core category selected? (p. 253)

Others look at the process used to evaluate the data and propose the interconnections including the coding process and presentation of an overall theoretical model are the means for determining the quality of the study (Creswell, 2007). Lincoln and Guba (1985) offer criteria based on the traditional positivistic expectations where credibility would be the parallel to internal validity (a solid research process); transferability would be the parallel to external validity (the degree to which the theory applies outside of the specific sample investigated); dependability would be the parallel to reliability (repeatability of the results) and confirmability would be the parallel to objectivity (the degree to which the results are free from bias in interpretation).

To further strengthen the credibility of the results, as previously mentioned, an individual was identified who essentially checked my work. She reviewed the data, my processes and interpretations. She questioned my categories and challenged my conclusions. We discussed several items as the theory evolved. As an example, we went back and forth on defining and labeling the categories for the continuum. She is the one that suggested I find a single word to describe each level. So I identified single words (for nearly every category) and we went back through the coded information to ensure I grabbed the essence of what was being said. The step was helpful in strengthening my conviction for how I interpreted and presented the findings.

Although, there are not an agreed upon set of criteria for assessing the quality of a grounded theory study, clearly the process used to develop the theory must be rigorous and strictly follow established procedures. As well, the resultant theory must be

believable – that when challenged, the explanation is plausible and worthy of being trusted.

Research Challenges of the Study

There are several intrinsic challenges to this study in particular because of its interpretive nature and inherent difficulties associated with research involving people. First, as human beings we all come with our own history, interpretive lens and general biases toward what we see and absorb. Since the researcher is the interpretive instrument for a qualitative study, my ability to put these biases aside impacted the extent to which this challenge affected the study.

Every setting is immersed in its own culture. As an individual, I came to each setting with my own cultural knowledge and assumptions. Even with extensive time spent at the plant locations and several interviews completed at each site, it is still possible that the observations and statements were not correctly interpreted within the context of the sub-cultures present in each location. In this way, particular nuances may have been missed. Idiosyncrasies in particular may not have been properly interpreted.

Because of the interpretive nature of qualitative research, another challenge is that not everything can be discovered. Much of this was impacted by a restriction I put on myself – realizing that every minute of these interviews was lost time at the individuals' daily job, I was careful to watch the clock and tried to be very concise and directed in my line of questioning. The respondents were all very open and honest in their interviews. The time constraints are a reality of doing research in a business setting.

In two of the three facilities, I was required to have an escort with me when I walked around the facility to observe the operation. Again, with this restriction, I was careful to manage my time on the floor.

Another limitation is the experience level of the researcher – the ability to uncover pertinent information. As this is essentially my first grounded theory study, certainly lack of inherent skill with the research methodology is a limitation.

Ethical Considerations

There are several ethical considerations to keep in mind for this study. The following list from Silverman (2006) includes the goals that the researcher should aim to accomplish in ethical research:

Ensure that people participate voluntarily – follow guidelines for informed consent i.e. inform the participant of the nature of the research, and the right to withdraw at any time.

1. Make sure people's comments and behavior remain confidential – commit only to confidentiality and anonymity that can be honored.
2. Protect research participants from harm.
3. Ensure mutual trust and respect between the researcher and the interviewees.

To be certain that these ethical considerations were met, several steps were taken. First, to obtain informed and voluntary consent, each individual I spoke with was given the opportunity to read the consent form (Appendix B) prior to beginning the interview. When they finished reading, I asked if they had any questions. We would discuss any questions they had. I would ask again if they were comfortable participating in the

research with an audio recorded interview. All 30 employees agreed to be interviewed. Each signed the consent form, which I currently have in a file at my home.

In regard to confidentiality and anonymity, I committed to ensuring confidentiality of the individuals. As mentioned in the data management section, I developed a coding system to identify the individuals, their location and job/position, which is also on file in my home. The external transcription firm signed a confidentiality agreement to guarantee individual confidentiality as they already had HIPAA requirements in place. All employees were given a pseudonym. I also modified the transcriptions using brackets to show the modification, when individual's names or specifics of the operation were used. All of this was done to protect the confidentiality of the individuals and of the company.

There is no activity with this interview process that could create physical harm. Likewise, the line of questioning was not deeply personal and would not create mental distress. Finally, my actions to create mutual trust and respect were around actively listening to the individuals, clarifying any questions they had, being patient with their responses, and simply thanking them for taking the time.

Ethical guidelines for all research studies with human subjects through the University of Minnesota are governed by its Institutional Review Board (IRB). IRB guidelines are available online (<http://cflegacy.research.umn.edu/irb>). The IRB approved this study as study number 1009P90474 on October 4, 2010 and gave me clearance to interview up to 35 employees.

CHAPTER FOUR - FINDINGS

The first research question that needed to be answered as stated in Chapter One was: How is TEI defined and interpreted for manufacturing at this specific Fortune 500 Company? On the outset it seemed that I was not going to be able to clearly define TEI as each plant had a slightly different interpretation of TEI. Likewise the more visionary definition provided by corporate employees seemed a far stretch from what I was seeing and hearing from at least two of the three plant locations. But everyone talked about CI as a journey – it is a process that takes years to implement and TEI would likewise take years to incorporate into the plant culture. This led me to conclude that becoming a totally engaged employee was a process as well. And so the definition for Total Employee Involvement began to take on the shape of a journey – a process that builds.

Defining Total Employee Involvement

Within each plant the words used to define TEI were quite similar for that specific location. The plant employees spoke about TEI from their perspective which was indicative of where each location was on the CI journey. Reflecting on their current lived experience, each individual answered the questions with respect to their understanding given the existing culture, the activities happening in the plant at that time, and which CI tools each manufacturing site was currently using. The corporate employees provided examples from experiences they had in working with specific plant locations in this company and in benchmarking external companies on the Lean/CI journey.

When I looked across the input by job role, again there were similarities. The corporate team had the most similarities in how they described TEI as a collective group.

Their definition was much more visionary and focused on the future. The corporate group described TEI in the context of how it would impact the company and drive business results. Those who held leadership positions at the plants tended to focus on how they would implement and advance TEI and their interaction with the plant floor employees in making TEI happen. The plant floor workers reflected on how their level of interaction increased, how they were providing greater input and ultimately how this new way of working changed their view of and appreciation for the work. The plant floor operators did not talk at all about how things would look in the future other than to acknowledge that this increased level of involvement would continue.

TEI Continuum

Many of the employees I interviewed talked about those who were involved and those who were not involved. By continually probing, I was able to develop what I am proposing is a Continuum of TEI that is diagrammed in Figure 2. Consistent with the challenges in the literature around defining TEI – no one, clear, definition emerged. What did emerge can best be described as degrees or levels of involvement – not one static rendering of TEI. The Continuum evolved based on the inputs of those who were interviewed as they described the actions and behaviors of involved and uninvolved employees. The continuum has two categories that are not TEI: the first two categories on the left of the continuum in Figure 2. TEI evolves and is represented in the bracketed section of the diagram with the three categories on the right.

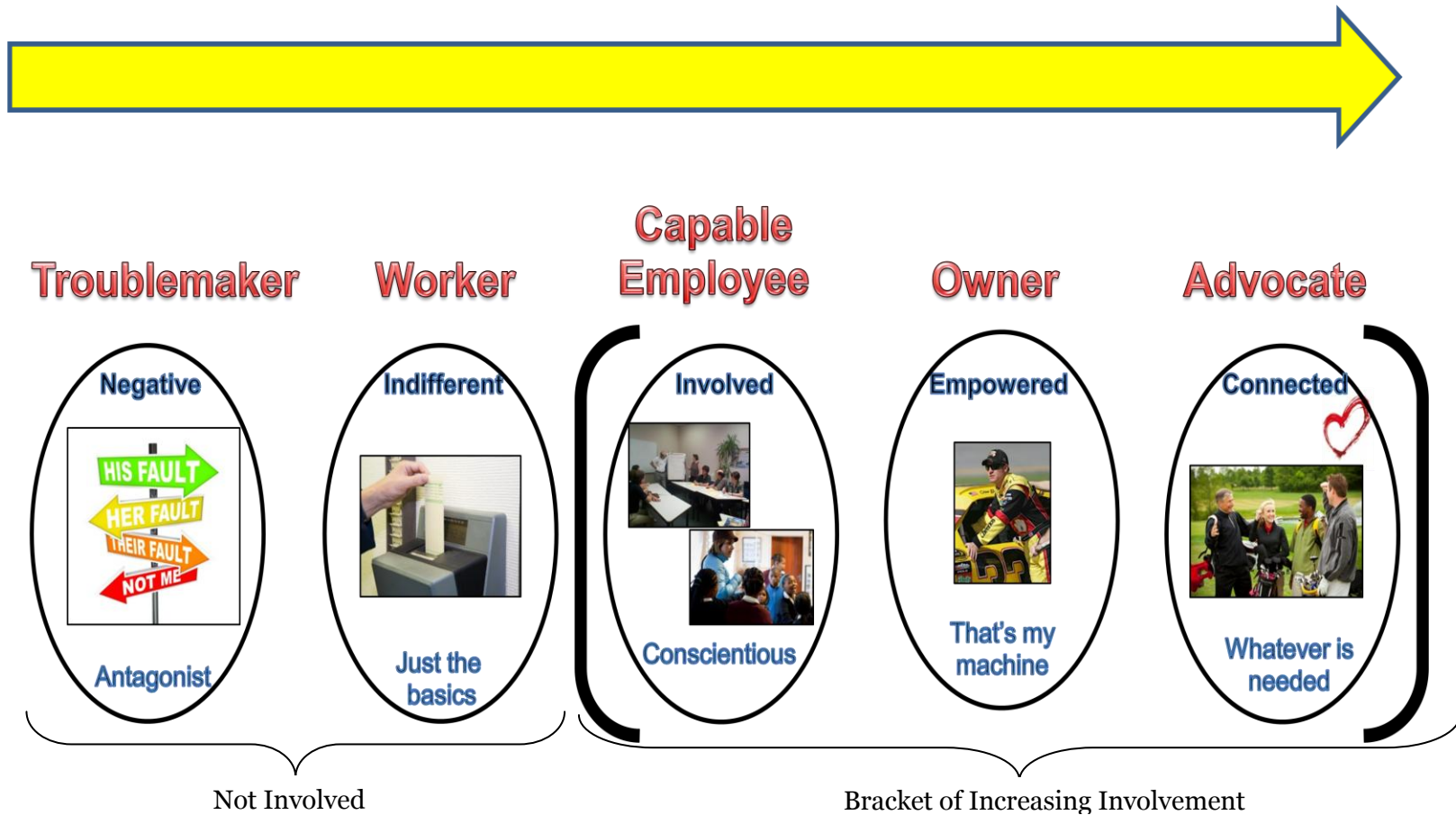


Figure 2. Continuum of Total Employee Involvement.

Troublemaker

That first category on the continuum I called the Troublemaker. This individual is generally negative, blames others for things that go wrong, is antagonistic, stirs things up, and is difficult to be around. Jon - a leader in one plant described these behaviors:

We had several issues in the past ya' know – it seemed like you just needed one person to take the charge and got everybody riled up. And things would get blown out of proportion. And then we had people who would quote on quote [making quote marks in the air with his fingers] 'work the FMLA [Family Medical Leave Act] system' to the point where you *know*, as managers [pause], but we couldn't really say they couldn't use FMLA. But it would cause struggles with other wage employees who would come back to us and say "well you're not doing anything about it so. . ." It was just a number of things. Anytime something would happen with one person it just took one person to take a mole hill and turn it into a mountain and it seemed like it would never go away.

A plant operator – Nick offered this example:

Well, back in the day when I was a young person back there, it used to be - I remember one time in particular, the old guys had a paper in-feed jam and I was getting over there to doin' it. They'd come over and say, "What the hell are you doing? Get the blank out of the way." They push me out of the way and that's where I said, "Look, if you think I jammed your paper, you're f'in crazy." It's just the bully mentality. That was kind of the deal. It was always somebody else's fault type deal.

Worker

The second category on the continuum I called the Worker. This individual is indifferent. She or he puts in a fair day's work doing what is required of the job meeting the basic expectations and covering just what is essential to the position. One plant leader – Mitch, described these employees in this way:

Now, we got other folks that they're here to kind of get a paycheck. And those are the folks that don't necessarily do as much of this yet – stepping up and taking some of the ownership and accountability. But what I've

found is that these people on the fence, that if you ask me to do it or if I knew what to do, I'd be a doer. But if you don't, I'm going to be a watcher. . . What I would say is those are the folks that will sit and won't necessarily be the people that will stand right up and say, "I'll go do it."

One plant production employee, Jon described the Worker this way:

All they want to do is come to work and do the job. From that mindset it meant – just run my line, we don't want to be bothered with all this other stuff you're trying to get us to do.

Capable Employee

That next category on the continuum is the first in the TEI bracket. This individual I called the Capable Employee. This employee understands the job that needs to be done and works independently and conscientiously to do the job well. She/he has pride in what she/he knows and what she/he can do and works to improve what she/he can in her/his production area. The Capable Employee will volunteer to be on plant committees and may even participate in volunteer opportunities that are sponsored by the company outside of the day-to-day work. One Capable Employee, Faith, talked about TEI in this way:

I feel that it means that they want us all to be involved in what we do not so much as just come to work and be robotic. Kind of just get involved in our culture and kind of make it more - I feel a happier place or content place to work.

For Faith, her job is a point of pride:

When I go home at the end of the day, I don't want to just go home from work and feel like I'm just working. I want to be able to say, "I did a good job". I want to know that I do a good job every day.

And again:

I really like what I do. It might not take a lot of education to you know a college degree or whatever, but I can do it good. And that's my pride.

Another Capable Employee, Jeff, talked about working independently and knowing his job:

There is a certain level of being smart. You have to be able to figure things out - there's a lot to it. You have to be very independent up there in the [specific work] room; you're kind of on your own. For me, that's a job I've always thrived on. I've worked at other companies where there was - I worked for a bottling company and they were like, "Go out to the store, stock it, and then come back." They come in and check on you every now and then, but, here, it's up to you to do your job. And that's a kind of job I thrive at.

Owner

The second category in the involvement bracket I called the Owner. This employee feels ownership for the equipment she/he runs; feels responsible and accountable for taking care of the work area and feels empowered to do all that is necessary to take care of the equipment and the work area. The Owner is a bit ahead of the Capable Employee in that she/he is looking for ways to improve the operation – doing things that set up the next crew; making the work area better. Although the Capable Employee likes to make work better, it is not a primary focus. Executing accurately on the job at hand is the focus for the Capable Employee. The difference between the Capable Employee and the Owner can be likened to one's personal responsibility for a place she or he rents – like staying in a hotel room versus owning a home. The accountability for taking care of the place comes with a very different mindset for most people when it is a rent versus own situation. One operator in the Owner category, Chris, described these behaviors:

So, we we're proud of what we've done and that kind of created some ownership and the fact that now, you know when we were done with our normal PMs [Planned Maintenance tasks] for the week or if we had some time during a change-over or time at the end of the week if we were done early, we would do a little extra cleaning just to help keep and make sure that the equipment was the way that it was when we got done with AM [Autonomous Maintenance] step three.

One operator, Nick, talked about the ownership he took in his work weaving a race car and pit crew analogy through as he used the example three separate times in the interview:

... talking about the job I do, it's kind of like the race car driver and they [the company] own the race car. If it's not working right, we all get kind of like a pit crew to make things run smoother for everybody. That's what I mean. I care about what happens too.

A second time:

I like my job. I like what I do. It's me and my little vehicle - *my* little car and I feel responsible for it.

Kathy: So what does that include 'being responsible for it'?

Nick: Maintaining, taking care of it, looking out for it . . .

Like I said, that's my machine back there. I know [company] owns it, but to me, that's *my* race car.

Advocate

The final category on the continuum I called the Advocate. Like the Capable Employee and the Owner on the continuum, the Advocates take great pride in their work. The Advocates are highly skilled in the daily operation. Those I talked with all held leadership roles within their teams. These individuals feel a real connection to the company, the work and/or other employees. The Advocate wants to tell others what a great place this is to work. The individuals in this category have coworkers who are friends that he or she spends time with socially. They talked about the company with

great energy, enthusiasm and accountability, like many parents talk about their children:

“Whatever is needed, I’ll be there”.

I talked to one plant employee, Barb, who came off her vacation just to come and speak with me. After thanking her profusely for taking the time off her vacation, I asked her why she would come in on her vacation day. This was Barb’s response:

Because they asked me to. Hey, if they need me here, I’ll be here. If someone comes in that could impact our future, you bet, I want to be the one they talk to because I can tell them all the great things we got goin’ here and why they should move more production to us.

She spoke with incredible enthusiasm and passion for the job, the company, and her co-workers. If she could help make “her plant” a better place to work, she would find a way to do it.

Another employee, Paul, spoke of his passion for the work and being involved:

For me personally, I think I actually it’s the same for other people too, it’s - I feel passionate for the stuff. When I find something that I have passion for, I volunteer for groups and committees, and it’s not anything that is, them telling you to go to your team and then you will do this certain thing.

So something that you’re passionate about, you just go after it and it really is just speaking up, “I’d like to be involved in this committee,” or, “I would like to volunteer to be on the emergency response team,” that it is not something that is required of everybody. So it really is just kind of a volunteer workforce doing a lot of extra stuff.

Paul also talked with great enthusiasm about opportunities to get in front of visitors including the Board of Directors. With these opportunities he is able to be an advocate for the plant and point out all the things he thinks are great about working at this facility.

He likes to point out how the team works with few boundaries – you can't *see* levels on the floor. He, also highlights that they are all working toward the same goal – (more) cases out the door and (low) cost. Paul said these words with great energy and excitement

One thing I *absolutely* like to point out to folks when they visit from other plants or when the Board of Directors visited, I love to - even new hires, when I say, “Look at everybody. We're all dressed the same. Can you pick out the plant manager and the slurry technician and the quality manager? Can you pick them out of the group?” And you can't! We're all the same! It's not we all - we look the same and we - having that common goal really helps because the finance manager isn't looking at just the numbers. And the reliability managers are not just looking at performance on the equipment. We're all looking at it together because it all ties to the - how many cases go out the door and at what cost.

To sum up the proposed Continuum in one or two statements for each category that capture the differentiating points in how the individuals in each category approach their job, I offer the following:

Table 3

TEI Categories and Behaviors/Mindsets

TEI/Not TEI	Category	Differentiating Behaviors/Mindsets
Not TEI	Troublemaker	I cause problems.
Not TEI	Worker	I do just what is required of me. I am indifferent.
TEI	Capable Employee	I do my job well and get involved where I can. I want to do a good job.
TEI	Owner	I am determined to make my line/the plant better. I care.
TEI	Advocate	I promote the plant whenever I can. I am passionate about my work.

This behavior-based continuum resonated with those I interviewed regardless of plant location and job role including the CI and Manufacturing Vice Presidents who commissioned the study. When I presented the research to this group, one VP said that this is exactly the progression she would expect. Within the involvement bracket she saw

the evolution as a focus from Hands: being capable and giving effort to do the work, to Head: thinking more about the work and how one can contribute on a higher level, to Heart: feeling a real connection to the company, the work and/or the people.

Is TEI or CI the enabler?

In trying to further understand just what TEI is, I would often ask this probe (or a similar probe): “Does TEI enable CI or does CI enable TEI?” The answers varied once again depending on the perspective of the individual being interviewed. Those that were able to easily use and implement CI tools or those that saw plants readily implement CI talked about how the CI tools – in particular AM and Driving SU provided a readily available mechanism for the plants to empower their people and advance TEI. Continually advancing TEI allows the plant to make greater progress on the CI journey giving greater accountability to the employees. So in essence, TEI can be used to enable CI and CI can be used to enable TEI. It really depends on where the organization is on the journey, how the CI tools are being used, and how the organization chooses to increase the involvement of its employees.

One plant employee, Lisa talked about how the CI process provided opportunities and a mechanism for people to get more involved and still, as diagrammed in Figure 1, TEI is foundational to CI and enables CI to advance:

You know it's kind of both. So CI has helped give the opportunity to get more people involved. So without CI we can't involve them in sort of everyday things but it gives them - I would say it doesn't necessarily enable TEI it helps us drive it. Just because - you know what I'm saying - like I said we detect lot tracking. Some of the department managers work with the quality manager to try to figure it out, now we're going to do a fishbone [a CI tool] to figure out lot tracking and we're like, oh we need to

invite some people to that. So we are going to invite all the utility and all of our [specific type] operators because they are the ones that catch anything with our ingredients.

So I think it helps you to think about it but really TEI definitely enables CI because, if people aren't more empowered and weren't getting involved, we would not get very far with CI. I don't know how we'd ever make any of the improvements we've ever made without the operator, without the right people being in a room.

One corporate leader – Bill used examples to argue that CI and TEI are intertwined. He

put it like this:

Well, it actually isn't separated. It's how we do work and so it's part of the fabric of how we operate. Total Employee Involvement would include - so as it pertains to CI, it would be a meeting and you would know what needs to happen and everybody in the meeting would understand what needs to move forward and how we move forward because they have the understanding and they would know their roles in making that happen, so that's small scale. Big scale is that you can have internally business company-wide meetings and have language and knowledge-based employees of how things work, and people would all understand it. Externally you could do an analyst report.

Kathy: So what would they see?

Bill: They would see people understanding that we operate on processes and understand that improving these processes with their expertise and engagement by all will drive results that differentiate us from other companies.

In summarizing the answers to the first research question, I submit that there are levels or degrees of involvement that can be described by the employee's mindset that he or she brings to work and the resulting behaviors and actions that are demonstrated.

These levels are diagrammed as a continuum shown in Figure 2 on page 75. The progression is a build and requires the employee to first understand how to effectively do the job. By understanding the job they can move to higher level contributions and think about how to make improvements to the system, the work area, or even the overall

facility. Finally, the employee combines their knowledge and skills with a heartfelt connection that drives him or her to promote the organization within and outside of the company itself. Efforts by this group are in the best interest of the plant and the company.

Beyond the continuum, it is helpful to know that the Continuous Improvement effort can be used to build TEI and at the same time TEI can be used to advance Continuous Improvement. The CI tools and processes require employees to understand their machinery, maintain it appropriately and track key performance indicators to ensure the equipment is sustaining any performance improvements that are made. Phase progression outlines the CI journey and more specifically how the operator will take increased responsibility for the system over time. Likewise, having a highly involved work force makes it easier for the organization to introduce new tools and processes to build skills, ownership, and accountability.

Implementing and Advancing TEI

The second research question being addressed is: How was TEI implemented and/or advanced at each facility in the sample set?

- a. Are there collective similarities in the processes used to implement, and/or advance TEI?
- b. Is there a best TEI implementation and/or advancement process?

Putting CI into Practice

Historically in this company, plants were recognized for implementing processes that improved their operation. Each plant operated quite independently from the others

finding opportunities that worked for them. Unique and different approaches that delivered results were touted as the way to advance a plant's operation often garnering recognition from corporate leaders. When CI was brought to this company as initially a Manufacturing and Supply Chain strategy, the individuality and unique contributions each plant had traditionally prided itself in were challenged. CI requires standardization. A twist or a shortcut developed to *enhance* a tool or process would no longer be seen as adding value. It was believed that following standard processes, using the same templates, implementing procedures in the same way, standardizing on metrics and measurement processes would deliver results more quickly and streamline discussions and decision making that goes along with evaluating system metrics. Likewise, managing the systems to support these new processes and tools could be done more efficiently having one set of continuous improvement tools, processes and measurement programs.

Because this movement toward standardization was a significant shift from how the operation historically functioned, the corporate CI team introduced the concept and the supporting tools and processes quite thoughtfully. The initial focus for the manufacturing facilities included the tools and processes "from leadership left". What this meant was that the plants should focus on implementing tools and processes from the first five pillars shown in Figure 1 – those including and to the left of Leadership: AM, PM, FI, E&T, and Leadership. Within each of these pillars, the tools and processes were also prioritized to give the plants the greatest impact and early wins with the intent that this would help sell-in the concept of Continuous Improvement and show its value.

The corporate team outlined six steps that need to be taken prior to implementation. These steps are part of Phase 0 and called the Preparation phase. These steps are listed in Table 4. Once the team is prepared they can move into implementation of the tools and processes from the pillars. The sequence of pillars to implement is also documented in Table 4 in steps seven through eleven - the Implementation phase.

Table 4

Steps to Preparation and Implementation of Continuous Improvement

Preparation – Phase 0	Implementation – Phase 1
1. Introduce the CI Process	7. Establish AM, PM, FI, E&T, and Leadership pillars
2. Provide introductory CI training	8. Establish Early Management pillar
3. Establish CI Resource and Promotion team	9. Establish Quality Maintenance system
4. Set objectives and targets	10. Implement TPM for the office and administrative departments
5. Create a Master Plan	11. Implement Safety, Health & Environment.
6. Have a formal Kick-off of the CI initiative	12. Steadily apply TPM and Lean principles and practices

Since the progression of Continuous Improvement depends on advancing TEI and TEI can be advanced as CI progresses, it is not surprising that the strategies used by all three plants were directed at building CI (not TEI). The corporate CI team laid out a clear plan for the plants to use in setting up and rolling out CI. Using the CI tools would deliver improved system performance – a tracked metric. TEI was captured in a broader overall organizational health and effectiveness category that included several inputs – many of which could impact TEI. The organization did not set out initially to advance TEI per se. It is difficult to quantify and therefore measure TEI either through numerical

tracking or even through observation. The CI tools and processes on the other hand could be seen and tracked. Thus, the strategic initiative was designed around implementing CI. Several of the CI tools would encourage or even require employees to get involved in plant activities in new and different ways. These new expectations would naturally increase TEI.

Overview of Implementation Sequence

There was a general sequence of events that the interview respondents conveyed in rolling out CI with the intent of advancing TEI. Many of these activities run concurrently. Most of the activities have a starting point, but don't necessarily have an end point as these initiatives continue to expand and become an ongoing part of the work. Thus the order indicates a starting point and more of a concentrated effort to get the new practice started and ingrained enough in the culture that it eventually becomes less arduous and more natural as it develops into the way work is done every day. Most all of the initiatives are ongoing and evolve over time. The general order of events that I will convey here is based on those items the interview respondents highlighted, or things I observed while spending time at the plant locations. This is not to say that this is an exhaustive list. These items are what the interviewees emphasized as being significant to them as individuals or to the organization overall in implementing and advancing TEI.

The items, implemented and executed in the stated order were essential to the successful implementation and advancement of CI and TEI. First and foremost, (1) the culture must be right: the employees needed to be somewhat open and willing to trying new and different ways of doing their work. Old paradigms would be challenged. New

expectations would require increased knowledge and skills of all manufacturing employees and a continually increasing level of accountability for system performance throughout the ranks. Once the culture was in order, the plant would want to work on (2) establishing the metrics to be used that would confirm or deny that the plant was on track. (3) Aligning the organization around a clear business need was imperative. Plants used the Compelling Business Need (CBN) to align the organization around the work that needed to be done. The Master Planning process was used to clearly specify the steps to be taken. (4) The plants needed to train their employees on the CI tools and processes – beyond the introductory training in step 2 of the Preparation Phase, and then start using these new tools and processes, focused on the pillars of “Leadership and left” as diagrammed in Figure 1. (5) A carefully crafted communication plan then becomes necessary as the program that was initially discussed in the Preparation Phase is now coming to fruition and employees start to see and experience something very different from how things used to be. Along with the communication plan, the (6) Rewards and Recognition program that was started by the promotion team in step 3 of the Preparation Phase must now be leveraged to acknowledge the good work the employees are doing and advertise the results these new tools and processes are delivering at each facility. The final activity that will be highlighted as part of the TEI implementation and advancement plan was what some plants are calling (7) “Real Time” – a planned and concerted effort for the management employees to spend time out on the production floor. These seven steps will be discussed here in greater detail.

(1) Culture first.

Recall that the interview group saw TEI and CI being intertwined – one enables the other really depending on where the organization is on the CI journey and where the organization is culturally – particularly how receptive the employees are to change and the level of involvement or engagement desired by the employees. In implementing the Continuous Improvement program, the organization is fundamentally changing the way that work is being done. CI requires the employees to use new problem solving techniques, manage their production equipment differently, and generally requires a higher level of accountability for the performance of the equipment. The CI program requires a deeper level of understanding in operating the equipment than most operators had. The CI program institutes new and different ways of maintaining the production systems. The employees would need to work together across rank, across shifts, and in some cases across operating lines e.g. packaging working with processing. Truly, the role of the operator would change significantly.

There was one plant in the sample set that started out with some significant cultural challenges that really stifled their ability to implement CI. There was no desire by the operators to do what they saw as extra work for them to the benefit of the company. There were workers in the plant who simply refused to do any work that they felt was beyond a basic level expectation. CI was perceived as being beyond a basic level expectation – CI was seen as extra work. One of the identified barriers in getting the operation to participate in CI was referred to by many as an “us versus them” or “we – they” mentality between the plant floor workers (hourly employees) and the front office

workers (salary employees). One of the employees from that facility described the situation like this:

It used to be it was more of an us versus them mentality. You know, we've been trying to tell people that we're all here for the same reason trying to do the same exact thing ya' know. It's not like when we have successes it's management's success and had nothing to do with the operators. And when we had failures – the operators had failures and not management. One of the things we've been really working on [is] the wage versus salary mentality.

There were some other cultural dynamics that those interviewed from this facility described as interfering with the plant's ability to progress on the CI Journey. To underscore just how challenging the culture was and I think to somewhat highlight how far they had come, many of those that I interviewed from this site talked about a time when wage employees would pass a salary employee on the stairs, say hello and the salary employee would not say hi back. The plant manager and others from the leadership team I talked with spoke with exasperation at this behavior. Interestingly, addressing these types of behaviors required significant and repeated effort. One of the leadership team members talked about an employee relations meeting where one of the production employees brought up the situation.

Here's one that—just absolutely stands out to me—was one of them [wage employee committee member] brought up: you guys talk about all these things, you talk about wanting all this stuff and ya' know we'll pass salary people on the steps, and say hi, and they don't even say hi back, or they look at us like we're below them and ya' know we don't get anything from them. So some something as simple as that respect of – I mean there is no excuse of [laughing nervously, uncomfortable] there is no excuse of not to be speaking with somebody. I mean you may have your mind on something but if somebody said, “Hey, tell me, how are you doing?”
“Oh, hey.”

But it wasn't even that. They were getting snubbed. And ya' know it just—they just built that wall, it just built that separation bigger and bigger.

Whatever caused this great divide seemed to be deeply engrained in some of the employees. The situation was brought to the attention of the administrative/salary team.

A position was taken by the plant leaders that this behavior was not acceptable.

And so, in a salary meeting we brought that up. Here's something that came out in our Employee Relations Committee. And we've called that out in meetings of course, and nobody said anything.

It didn't change a bit. So we brought it up again in another meeting and it's like, "Okay, here's what came up." Here are 13 people saying, "It happens, it happens." So let's just be real clear ya' know. We're going to start—you need to treat people the way you want to be treated and you need to be respectful of each other. Saying hello is—yeah, it's pretty basic.

The plant manager was new to the facility, and the behavior described above was not acceptable to the plant manager. The plant manager determined that respectful behavior would start with the salary/administrative team. Also, they would move forward with one voice. The salary group developed a code of conduct. One of the tenets was to act as one voice - work through any issues as a team, find a consensus, and go out and speak as one voice. The plant manager conveyed:

But what was happening is it was really passive aggressive behavior. They [members of the administrative team] wouldn't say anything [in the meeting] and then they go out on the floor and just throw me and/or their manager or other people on our administrative team under the bus. I would hear from other people, all different employees could see. So right away people decided that they liked where I was going or they didn't. It was really polar, I would say. There was nobody that was kind of in the middle. They're either like, this is awesome. I'm on the bus, or [this is] nuts and I'm not on the bus. And so the people that were on the bus became loyal really quickly.

And so then they were like, “Hey, you need to know that this was going on because I want -- I like where we’re going and I don’t want us to derail.” And we had people that are derailing us, so they would come and tell me. So then I would just sit down and talk to those people and say, “Let’s work through this. Why is this not working for you, and what can I do to help get you there?” And so yeah, a third of the administrative team either moved on moved out or moved over.

This transformation of the administrative team took about one year of focused discussions and effort. I asked what the reaction was of those who remained. The plant manager stated:

I think most would say that we hired new people and we’ve created a team that everybody is marching in the same direction now. And we’ve accomplished a lot, so they feel really good about it. The feedback I’ve gotten is you know some of the people just they needed to go. They just weren’t -- they weren’t happy and they were holding us back.

The operators acknowledge the change that was made as well:

So for one thing from when I started ‘til now, it’s people have total respect for everybody. Like sayin’ “How ya’ doin’? Can I help you with that?” People comin’ at us to help us. Ya’ know what I mean?

The work with the production staff was seen as a separate albeit parallel effort. Performance issues were addressed first by developing a handbook of basic performance standards and then holding the production employees accountable to those expectations. Behavioral issues were also addressed but were admittedly more difficult to tackle than the more tangible performance issues, because behavioral issues aren’t as easily measured and require more documentation and discussion. But eventually, according to those I interviewed, people changed or they left.

It was about six months into the job when the plant manager at this facility gained a heightened awareness of the challenges with the production staff. The plant manager

was speaking with an operator explaining a proposed initiative and according to the plant manager:

He [the operator] just looked at me and he said, “I hear you but the employees don’t trust you. There's no trust here. So I hear what you’re saying but you’ll never solve that because there's no trust.” That was kind of like almost like I was personally offended because you know I consider that to be like one of my core values is that people trust me. And I was just like, “What do you mean, they don’t trust me? I’m a very trustworthy person”.

Although this plant had a different starting point and needed to establish some basic tenets of operation and address some behavioral and performance issues, this trust component was prevalent across all three facilities and will be discussed further when I address question three of the research. To summarize getting the culture right first, here is how this leadership team went after the culture:

People ask me all the time, “How did you change [the plant]?” The number one thing -- there are three things I say. One is team optimization. It was finding the people that wanted to be here and needed to be here.

The second was one unified team in the administrative or salary team, that one voice. And then [third] just the constant reinforcement of our vision, mission, our strategies with small, daily examples of “I listen, I care, I respect you” [to keep building that trust].

Several specific actions were taken to establish a culture that allowed the plant to move forward in implementing CI and advancing TEI. Those actions and results are documented in Appendix D – Climate and Culture Actions.

Other corporate-based professionals that supported this plant emphasized that there was indeed a minimum cultural expectation that had to be in place in order to even get the operators to participate in CI. One corporate leader, Diane had some past

experience with Continuous Improvement type efforts at another company. She supported the concept that culture would impact the ability of the facility to move CI forward. Diane provided this perspective:

Even when you're in phase zero or phase one, you may have a culture where people are highly receptive. You can also have a culture where people are not particularly receptive. It will take you longer to move through the phases in order to change things. However, if you have a fairly open culture, how you move through those phases is faster depending on your organization.

Once a culture is in a place that is receptive to change and implementing new and better ways of getting work done, CI practices can begin to take hold.

(2) Metrics.

The Company spent significant effort setting up the measurement processes and the mechanisms for accurately tracking the metrics. I observed tracking charts, whiteboards, message boards, lighted tracking systems and computer-based tracking mechanisms throughout each plant. The employees always knew how the production system was running. At any time they could look at the real-time tracking devices for this information. There was pride in what had been accomplished to date from a system performance perspective.

Metrics and measurement systems were not spelled out as a necessary and significant step by those I interviewed. However, as I walked around and observed the attention to performance metrics throughout every facility, it was clear that performance metrics were important. It was also clear that communication of the performance metrics was designed for the production staff. Measurement charts, tracking boards, message

boards, etc. were placed throughout the facility. They were posted around every production line and in the break rooms. The production employees talked about their results – often keenly aware of how their systems were performing, whether or not they would meet the goals for the day and on occasion, whether or not they would break a performance record. The plant employees talked proudly and in great detail about the progress made since the implementation of CI often referencing specific performance numbers.

One employee Chris, explained the running message board hanging in a main walkway in the plant:

We walk into the plant and walk by to get to your room [work area] and you can see it's scrolling, and it tells you system performance and things like that--number of stops per day and we try and keep an eye on those important goals that we're working for our bonuses and for daily excellence just to make sure that we're--everyday [said with emphasis] making sure we're making those numbers.

This particular message board had been there for about a year according to Chris. It seemed to me that this constant attention to results was engrained as a normal part of everyday operations. Everyone talked about the good results they were getting. Nobody really talked about what it took to identify, track and display the right metrics. The corporate team did indicate that getting the metrics and tracking mechanisms right was a focus for the corporate group that previous year. Having the plants embrace and use the metrics to keep the goals in front of the operators had already become part of the normal day-to-day operation.

(3) Aligning the organization.

All the plants interviewed had gone through the Preparation Phase as outlined in steps one through six in Table 4. The Master Plan (step 5) and particular components of the Master Planning process were highlighted in the interviews as key actions to successful implementation of CI and TEI. The Master Plan outlines the goals and objectives for a one to three year period and the metrics to track the progress made. Activities are prioritized to address those issues that present the greatest financial pay-back for the business as well as those activities that will develop the employees – in an effort to advance the business. The Master Plan aligns the activities of the plant, clearly establishing the path and the steps to take in order to move the plant from its current operating performance to achieving future goals with improved performance results.

Each of the plant managers as well as several of the Corporate employees I talked with emphasized the importance of having alignment across their organization starting with the leadership team. Here is what one plant manager, Vern had to say:

I have a [leadership] team of 12. It's very difficult to have 12 people very aligned around that if we take this step, it will get us to point B. And so I think one of the critical things that I've seen is trying to have a very aligned senior leadership team; because the rest of the organization can see when they're not, and it becomes very distractful. And one of the things I've learned is it's a mistake to try and build consensus because you're almost setting yourself up for a failure. And the bigger your team is, the harder it is to reach consensus.

So I think what's important is to create alignment, you need to have openness. It's kind of this old saying that a functional team will look dysfunctional to an outsider. A functional team is very open with one another. They will debate and discuss things very ferociously sometimes. But that a truly aligned team will ultimately make a decision. Not everyone will agree with it, but they will all be accepting of it and outside of the room, they will be aligned to it.

Lori, a Human Resources Director believes that alignment around a goal is fundamental to having an involved workforce:

In a TEI organization, it's that everybody understands the end goal. The leader has been clear around this is our goal as a plant. And everybody understands that the work that I'm doing and how [with that work] I'm contributing to that goal.

One input to the Master Plan that several of those I talked to mentioned is the CBN – Compelling Business Need. The CBN is a plant level statement that articulates the plant's targeted metrics necessary for achieving the business strategy and objectives. It is a visual depiction of a desired future state that helps the individual worker understand how his/her specific work fits into the overall business plan. By tying the CBN to every individual's activities and even the rewards structure, ownership and accountability are created for each employee. This tool seemed to be quite powerful in enabling TEI. In the CBN training, the message was conveyed that as a site, if the goals are clearly understood and translated clearly to the individuals so that they know just what the goals mean to them, then everyone in the site should be aligned and working on the right things to move the business forward. Kevin, one of the plant managers, discussed the alignment the CBN brought to his organization:

Yes, CBN, we developed the master plan from the CBN. And then from the master plan, we develop tactics. And I think the thing that might be different about us is just how much time we spend on that. And just how much say the other functions have, and whether or not something needs to be a priority.

And so at the end of the day what we end up with is a plan that everyone has agreed to. And we agreed to the fact that if ever we need to make a change to that so say something comes up in QRO [quality and regulatory operations], [the quality manager] can go work on it, as long as it doesn't

pull resources . . . And so, what that leads to then is objectives that are built on the master plan and the tactics that we've all agreed to. And so you'll actually see on my leadership team, their objectives are broken down by the CBN [categories].

One team leader - Barb felt strongly that aligning around a common goal made a significant difference.

What was changed in the last five years is that common goal and I know I keep bringing it up. But it is -- it is helpful with the incentive because eight years ago, I couldn't tell you what cost per case was, I didn't know what overuse was. What I knew is my team had to deliver *this* [opening her right hand face up and moving her hand over to the right], whatever *this* [referring again to her hand] was. So my incentive now as a team leader, when I was a technician, when I was support staff, my incentive is the same as [the plant manager's] incentive and it is the same as a technician's incentive, and that is we're going to deliver on the big six. We're going to deliver on cost per case. We're going to deliver on usage.

. . . our CBN, our compelling business need is oh two four (0-2-4), you know zero risk, 2% [difference] and four stops. That still is a common goal for the plant, it's a common goal for [the plant manager], and it's a common goal for technicians.

Furthermore, the CBN provided a connection for the employees to the bigger picture of improving the business. Bill provided this perspective:

How you bring it to life? That's just one of the big reasons behind the CBN. If you think about Compelling Business Need, people want to be a part of a winning team. People want to be a part of a bigger picture. People want to generally know that they add value.

This perspective was confirmed by the plant employees. Here is what a Team Manager,

Todd had to say:

Something bigger, I mean -- I know how my work affects the company. If I do a good job, if I get no waste for the day -- we measure waste for equipment cases, so we do it by cents. I know if I have two cents or lower waste per day, that's cutting the cost of the cases that we're putting out

and that in essence helps us, the company and me as the stockholder make more money. That's my dividend.

And I understand the business side of making [product] rather than just the [product] side of making sure that I come to work and I put stuff in one end until it comes out the other end. I know a lot of the how and what I do affects the company as a whole, how it affects -- I guess it starts with me and how it affects the plant or how it affects my team, how it affects the plant, how it affects the company and what things are helpful and detrimental to making that whole team work together.

Kathy: So why is that important?

Todd: Why is that important? It makes me feel valuable rather than just being a cog in the wheel or a cog in a gear. I know that I'm bigger than that, that what I do on a daily basis makes this whole world [stretching his arms around to indicate the entire plant setting] go round.

Example CBNs are presented in Appendix F.

(4) Train on and start using the CI tools.

As plants began to roll out CI focusing on the pillars of "Leadership and left" the tool set that seemed to bring a great advantage to the plants was AM – Autonomous Maintenance and the AM process. AM was clearly the most talked about set of tools and processes and the one that most people acknowledged as useful in implementing and advancing TEI. All of the plants used the same process of selecting a group to be on an AM team and then training just that group on the AM tools and processes they would need to do the AM work.

AM uses a stepwise approach with a rigorous set of expectations around taking a piece of equipment back to basic conditions which is essentially the system's original operating conditions and parameters. AM teams are established that include operators, mechanics, plant leaders, and other machine specialists from across all operating shifts. The team works together to identify items that need to be corrected and decide together

how to best run and maintain the equipment. Often times the teams are allowed dedicated time and support to complete the initial steps and develop an action plan for improving and maintaining the equipment. The dedicated time ranged from 5-20 days and the groups would consciously choose to work across shifts. Along the way employees are learning in great detail the ins and outs of all the components and operating parameters of the system. Other tools and processes from CI are also used to help the AM teams succeed. Several of those interviewed talked about AM advancing TEI. Here, a CI Consultant, Bob explains how AM drives culture change and increased accountability:

Plants that have gone through this CI journey where primarily, autonomous maintenance [AM] has been the cultural change driver because by nature of the steps that you follow in that process, you are in a very structured fashion giving them accountability to be more -- you're raising their skills to have responsibility to keep machines in their basic condition to prevent deterioration or early breakdown.

And the deeper you go into those steps and raise your skill, naturally they start taking on more and more. So it's almost backing into total employee involvement instead of starting out and saying "This is how our work system is going to work."

The AM process had the added benefit of breaking down walls particularly between operators who do the same job across shifts. Chris talked about his experience as part of an AM team:

I have worked with those other people enough now to where they're more than just the guy that works on second shift, he's kind of a friend now. It's weird because it kind of breaks down some of the walls between the shifts when you're working with somebody for a couple of weeks like that. Then, you start to develop a little bit different relationship.

Clearly AM teams and the AM processes they were following helped to create connections across the department that did not previously exist. Properly executing the AM process delivered more than simply improving system performance.

(5) Communication plan.

What I appreciated most in going to each of the three sites was the uniqueness of how things were done. Each plant had its own unique culture even in how they communicated with one another and how information was exchanged. One plant was relatively new. Many of their communication vehicles seemed to utilize current technologies. Nothing was overdone. The style was current, crisp, and exuded a level of professionalism. One plant was very old and obviously on a tight budget. The facility was very large. To implement advanced communication technologies across this facility would be cost prohibitive. Most of the communications for this plant were printed on fliers and posted on bulletin boards throughout the facility – typically in or near break rooms. Dry erase boards were also a common daily tracking and communication mechanism. What looked like orange duct tape was printed with their plant's CBN and taped from one pole to another in the packaging area. Interestingly, it grabbed my attention. This casual, conventional mode of communicating seemed to fit in perfectly with the culture of that plant. Fancy boards and marble displays would seem overdone to this group and could lose its effectiveness as employees would likely scrutinize the exorbitance of the media mechanism. The third plant leveraged quantity and variety to get its message across. For one communication you would see several paper postings, banners, scrolling messages, posters, cafeteria announcements and other mechanisms to

convey the point. Clearly, the communication mechanisms were mostly dictated by current cultural norms at each facility.

The plants were thoughtful about their communication strategy and roll out. Depending on the situation and the communication that needed to be cast widely, the plant leadership team would get together and discuss the best way to get the facility to buy-in to a new concept or process; or how to bring appropriate awareness and focus. Kay described the commonly available communication mechanisms they used realizing that some were more effective for particular situations:

I think, a lot of times our kind of medium of communication is during those meetings, the Tuesday trainings, the Tuesday mandatory blocks and then also, the monthly support staff meetings that really helps. Usually, in both of those [the plant manager] takes 10 to 15 minutes to talk about what's going on. What are the rumors? What do we need to clarify?

The other nice thing about this group is everybody uses email. I would say probably maybe 100%, but I would be confident in saying 95% of people use email. And when we hire, we actually make it a criteria that people go to websites and apply online and that sort of thing. So we can also communicate and do a lot via email but know that that's not necessarily always the most effective way.

Mark talked about purposeful communications.

I think we come out and we do make very deliberate statements in some of the quarterly communications that [the plant manager] has. So every quarter our plant manager talks to all the employees and we're very purposeful around how this is not going to be an easy journey. But that we're going to need everyone to really bring their best foot forward and to learn a lot as well to do things in the future that they're not doing now. So we've been very purposeful in that regard.

It should be pointed out that leveraging the plant manager for key communications was a concerted part of the communication strategy for all three facilities.

Likewise, every plant I visited had a mechanism for exchanging information with the employees – a point in time with a given frequency typically quarterly or semi-annually where the production employees were given the opportunity to sit down with members of the leadership team and just talk about what was going on and raise any questions or concerns. Mark described the sessions at his facility – the Round Table discussion:

[The] Round Table process consists of the plant manager and the HR manager sitting down with groups of employees and every group in the entire plant - all employees in their own departments or groups of how they operate. Whether in a small team or in a large group, we get their feedback on what's going well and what are things that we need to get better at. And we address those issues that we need to get better at. So I think it's that constant listening to what folks have to say, fixing it and getting feedback on that again, getting better at that and just continually upping your game.

One plant employee, Lisa, talked about engaging the production employees to clarify and roll out a strategic communication – the plant CBN:

So a good example of how we did it here is when we rolled out our compelling business need and you know we have several examples already from a sub team that was involved that was salary. But then we went to our wage promotions committee and said, “Okay, do any of these make sense? Do you even like them? Do you like the look of it? Do you like what the words say? Do people relate to that?” Just trying anything we can think of like what makes sense to you guys.

And so just getting any kind of feedback they gave us but not only getting it but then using it. . . then not only that, but then involving them in how we're rolling out. How should we tell employees? How do you like to be told information? And so they said, the best way to do it is to put it in everyone's mailboxes and then roll it out in department meetings. And so that's how we did it.

Another facility used T-shirts handed out by the plant manager to ensure everyone knew about the CBN and what it meant. Here is how Kay described it:

Kay: And so even if it's making sure that people understand our CBN that people recognize what we're all trying to do, and that we're all on board kind of going in the same direction feels more like total employee involvement than someone using a CI tool.

Kathy: How have you guys worked to help people understand your CBN?

Kay: For one of the kind of things that comes to mind which seems pretty silly but it's, it's very tangible and it may have helped, is we actually ordered really pretty nice t-shirts and then [the Plant manager] would run around and individually asked people "What is our CBN?" So just the first point of recognition and if they got it wrong he said, "Sorry you got it wrong. I'll come back tomorrow." So he didn't give it away. He didn't help them. And so it became kind of a fun you know [the Plant Manager's] personality kind of helped that as well. So he would kind of razz people a little bit if they got it wrong.

Clearly the plant leaders are working hard to communicate, effectively leveraging currently available mechanisms as well as finding new and impactful ways of getting messages out to the employees. These actions are discussed and agreed upon amongst the leadership teams so as to ensure key messages are getting through to the employees during this significant change initiative.

(6) Rewards and recognition.

Rewards and recognition programs became appropriate levers to advance TEI as the plants started to realize successes from their work using the CI tools. The recipients of the rewards and recognition were proud and thankful. The plant leaders who had oversight in implementing some of the reward and recognition programs, talked about the value. Some of these leaders had a much clearer understanding of the impact than others.

Suffice it to say, the production employees who were recipients of the CI rewards and recognition programs found these programs to be extremely important.

One production employee, Tom, spoke of a trip he took to headquarters because he was part of a team at his plant that won the plant award for CI work they had done. Even though his team did not win a Corporate award at this event, the exposure to the other winners, the gift of a trip to the Corporate Center, and the special recognition, brought him greater appreciation for the company, and a heightened awareness of the possibilities a career with this company could bring.

Tom: Yes – well to make a long story short, I got invited to go to the CI awards in Minneapolis.

Kathy: You did?

Tom: Yea and so when I got up there and done that – it just changed my whole perspective. Because I was really thinkin' about leaving the company before that time. Because ya know, I wasn't seein' that there was going to be any advancement or stuff like that. But once I got up there and seen what was goin' on, I start understanding how important it really is with our facility. It just took me on a whole 'nother spin of what this could really be.

Kathy: What did you see up there that made you think that?

Tom: Just the involvement – meetin' people, talkin' to them about it and how the other facilities have changed in regard to savin' money, makin' money, just enthusiasm about it. It made it seem like that we need that here – that enthusiasm, that drive; that flash sometimes... And so I came back and I wanted to go to school and try to work *for* the company like as a Team Leader – I been trying to work my way into that.

Tom became highly engaged after having attended that CI awards event. He went back to the plant and took on greater leadership positions. He worked hard to learn what he needed to and was consequently promoted through the ranks to the highest level operator that plant has. Tom is working toward a bachelor's degree hoping that one day he can become a team leader with even greater influence on the organization. Clearly this

reward and recognition event was appropriately leveraged and increased Tom's level of involvement and engagement.

One employee, Chris who had been on the team that received a Corporate CI team of the Year Award discussed the team's presumed accountability that came with winning the award:

Also the fact that we were recognized on such a level we needed to make sure we maintain that. So that when people walk through to it, it could take -- we knew people were going to come through on tours and that that was going to be one of the spots where to stop because it makes sense. You have an award-winning group. You want to show off that part so we wanted to make sure they always stayed shiny and clean.

A couple of the plant leadership teams were keenly aware of the impact of rewards and recognition. They had several programs and events offered throughout the year that built a culture of recognizing and valuing its plant employees and special recognition for those who went above and beyond normal daily expectations. Barb, a Team Leader discussed the value of some extra cash at Christmas and acknowledged the work done by the support staff to get the checks out on time.

So getting a 75% incentive payout, in June and Christmas, the plant works really hard also at making sure that the incentive is paid, the paycheck before Christmas. So people get very excited about it because this incentive is going to happen to hit in the December 14 check. And the rest of the plant support staff: finance, HR actually jump through hoops to make sure people get their incentive on the December 14 check as opposed to the December 29 check.

Several of those I interviewed talked about the Christmas incentive check. It seemed to me that the plants that had the Christmas pay-out got what I will call "extra credit" for its impact. The only thing different about this payout was the timing. By linking the payout

to a holiday that often required some extra funding at home, the leadership team was seen as being caring and doing extra for the plant workers. One of the HR managers I spoke with acknowledged their awareness of the desire by the plant employees to get their incentive prior to Christmas and had recently changed their payout cycle to facilitate this need. This simple change in timing of the payout had a significant impact on how the production employees viewed the management group indicating that they listened, and they cared.

(7) Real time.

The final step highlighted by those I interviewed as being significant to them as individuals or to the organization overall in implementing and advancing TEI is often referred to as Real Time (although the title varies somewhat by plant). Real Time is a block of time – typically 2-3 hours in the morning when the employees from the salary/administrative team spend concentrated time on the production floor working with the production workers to resolve issues. The issues being addressed are part of a larger strategic initiative from the Master Plan that typically came out of the Glide Path process - a CI tool from the Focused Improvement pillar. Teams are formed to include production employees and front office/administrative employees. The issue being addressed is clearly identified. The team needs to work together to find a worthwhile solution. Attendance is typically tracked for Real Time – as it is tough to break away from the day-to-day duties of the normal job to go work out on the production floor. Also, this was new for many of the salary employees. Tracking and reporting an absence was useful in ensuring everyone attended.

What I saw with Real Time was truly significant. Just like the work of the AM teams, the manufacturing operations are being improved. But once again, something even more powerful was happening. Real Time broke down barriers between the production workers and the salary team. Here are some very honest and telling statements from the production employees. Merle, a plant floor operator talks about working with a salary employee:

Merle: And that's just like [name of salary employee]. He's been down here for 20 years and I didn't know him until he got on the same committee that I'm on. But he's a totally different guy than what I had pictured of him.

Kathy: So, tell me about that.

Merle: Well, it seemed to me he's always kind of -- he kind of acted like he was a little better than other people [slight pause. Merle shrugged his shoulder]. But when you get to know him, he's just as common as an old shoe. [Merle laughs. I also laugh].

Kathy: Is that right?

Merle: Yeah, he is, really he is. But what I am saying is once you get to know the salary people, everybody gets along better. And everybody understands where everybody is at. But before you didn't understand where they was at and they didn't understand where you was at.

This general sentiment was articulated by a production employee from another plant. Chris provided this perspective:

It's just one of those things that -- I don't know, I don't want to get profiling or anything but blue collar guys are always out there working and they're just physically working all day long and then there's the folks that are in the office and they say, "You know what? I'll bet you, you couldn't last 10 minutes out here doing what I'm doing." So, it's kind of neat to see them out there doing that and watch a few of them sweat once in a while.

I had the opportunity to observe Real Time in action at two of the plants that I visited. Both programs were quite structured in that there were assigned teams working

on addressing specific issues. For one of the Real Time teams, it was a member's birthday so the team took a minute at the beginning of the meeting to sing Happy Birthday and have cup cakes. There were probably 8 or 9 employees on this particular team and they had divided the tasks among 4 subgroups. As I listened to the smaller groups talk, two of the groups were down to business figuring out how they would resolve their piece of the issue. One group was having a debate over a job-related topic but not specific to the issue for the Real Time team. These two employees (one female salary employee and one male wage employee) agreed to settle their matter after work over a beer. I heard one group catching up on the health of another team member's child who had apparently gotten hurt earlier in the week. All groups soon got down to business and dispersed across the production line taking notes, discussing specifics of the machine components, and asking others for their insights on their observations.

Nothing specifically was resolved on this particular line that day. This was a work in progress and would take several such meetings. But what was happening here is that people were getting to know each other through their work and through things they had in common outside of work. This (initially forced) interaction, designed around solving a production-related issue seemed to be bringing all the employees together. Whether you were a wage employee or a salary employee really didn't matter. What was important is that people were finding common ground. They were building relationships - making connections around things important to them.

Summary of Implementation Sequence

Seven significant actions were highlighted here that are intertwined with the Preparation and Implementation steps outlined in Table 4. These seven items were identified by those I interviewed as beneficial steps in advancing TEI. To show where in the process these seven items come into play, I have overlaid them with the CI implementation steps in Table 5.

Other Implementation Actions

This next set of actions presented here was not provided as part of the sequence of important steps in executing CI and TEI. However, these suggestions offer significant insights that would likely impact the speed of CI and TEI implementation.

Exit or Leverage the Troublemakers

Referring back to the continuum in Figure 2, there was little tolerance for the behaviors exhibited by the Troublemaker across all groups interviewed. To increase TEI and improve plant performance with CI tools, the Troublemaker needed to be appropriately managed. One plant leader - Joan talked about how her plant handled the Troublemakers.

There are certain people here that were really holding the plant back. And they weren't happy being here and we weren't happy with them here because they were doing things that were really destructive to moving the plant forward. And so you know whether its performance improvement plans, whether it was the discipline process, there are different methods that we used to sit down with people and either helped them go away or they eventually just chose to go away on their own.

Table 5

Incorporating TEI Activities into the CI roll out steps

CI Steps	Items to build TEI	Comments
Prior to Implementation	(1) Get the Culture Right	Culture receptive to change.
1. Introduce the CI Process		
2. Provide introductory CI training		
3. Establish CI Resource and Promotion team		
4. Set objectives and targets	(2) Establish key metrics; put measurement systems in place; visually display metrics	Standardize metrics. Establish a tracking system. Get the numbers out to the floor personnel
5. Create a Master Plan	(3) Align around a clear business need	Use a visual like CBN –easy and relatable to all employees
6. Have a formal Kick-off of the CI initiative		
7. Establish AM, PM, FI, E&T, and Leadership	(4) Train employees and start using the CI tools	Most plants leveraged AM tools/processes for early system wins
	(5) Carefully craft communication plan	Leverage currently available communication mechanisms. Be playful about leader messaging
	(6) Leverage available CI rewards and recognition programs; create rewards and recognition that work for your plant	Corporate CI team of the year event had significant impact. Design pay-outs around times when employees could use the extra money e.g. Christmas
	(7) Institute Real Time	Give teams real problems to solve; build in time to interact.
8. Establish Early Management pillar		
9. Establish Quality Maintenance system		
10. Implement TPM for the office		
11. Implement Safety, Health and Environment		
12. Steadily apply TPM/Lean principles/practices		

One of the corporate leaders – Dean described addressing the Troublemakers this

way:

So I would say what you need to do is help folks see this is what we expect from that total employee engagement and total employee involvement. These are the benefits for you. We hope that this makes sense for you and if it doesn't, then we have to begin this conversation about well, if that doesn't fit for you and this is where we're going, we need to help you with different decisions.

And you know that's where I've been in the past, in organizations where we - I personally and as a leader I've had other managers coach people out to say "This probably isn't a good fit because this is what we expect" and if you're going to be fighting it all the time, you're not going to be happy with it and it's not going to be good for us overall as an organization.

On the flip-side, Dean cautioned about making assumptions about the Troublemakers:

I'd also say that the 10% to 20% that we assume today are the [making quote signs in the air] "bad apples" that need to be gone, that may *not* [said with emphasis] be the right 10% to 20%. What we may find is that our -- the vocal opponents are only vocal opponents because we haven't helped them, think through it correctly. And those may become very vocal proponents [emphasizing the *pro* in proponents]. And it may be a lot of these people we never hear from that frankly are the folks that we can't ever get engaged. So the only -- so the caution that I would have for the model is we shouldn't just assume now, well, boy, [providing an example] Dan is he's always complaining about everything, that guy is never going to fit in here, we have to get rid of him.

He may just be really a passionate person that *wants* to have some reason to believe, but he's never had that and Dan maybe he becomes a convert whereas Scott who never says anything we think well Scott he's part of the 80% he's probably fine. In reality he may not be, it's just he doesn't care, so he never brings anything up. He never talks about anything and he never gets engaged. So as we begin to convert the vocal folks, all of a sudden we begin to uncover the other folks that may be our biggest struggle for getting engaged.

So from an implementation perspective, it was clear that one of the actions was finding a way to address the Troublemakers: Help them change their ways, convert them into vocal proponents of CI, or help them exit the company.

Volunteer Opportunities

Philanthropy seems to be of great importance to this company. There is a very active corporate foundation and this corporate-supported foundation prides itself on being one of the largest contributors to some very prominent charities. Dollars contributed and number of volunteers throughout the company is reported. The company has an annual reward and recognition for volunteers that are nominated within the company for this special recognition. Several believed that offering volunteer opportunities for the employees particularly at an agency that was supported by the company could be a way to open the door for employees to become more involved. Drew, one of the Manufacturing VPs believed that one way to drive total employee involvement was to offer several volunteer opportunities in order to find something for everyone. As long as the activity provided value to the organization, it should be considered as a way to increase involvement.

...to drive total employee involvement, the opportunities have to be broad enough so that you have something that appeals to the individual. Not everyone wants to be involved in everything. Some people, they want to be involved but they don't want to be involved if all it comes down to is project work. There are some people that don't like projects...So, you have to be broad enough to get people the opportunity to be involved in something that they feel is value added for them.

Now, you've tapped into something that says, "Well, maybe I'll look at this other thing over here now." And now they're getting involved in that and then they like that, then they'll say "Maybe I want to get involved in

this thing.” And so, you have to start. What drives your involvement is finding what’s in it for that individual and that means you have to be broad. You have to provide opportunities that span a spectrum for people so that their interests bring them in. And then once they get in and they see other things, now they start broadening their willingness to be involved.

One of the facilities in the interview group leveraged this concept that Drew outlined. Several volunteer opportunities were offered. The employees would get extra points for participating in a charity event or donating to a charity to further encourage participation. Faith provided this perspective:

... they want you to volunteer. They put it out there so that you *can* make the choice. Some people don’t do it...

Kathy: Well what kind of volunteering – is it internal stuff or external?

Faith: A lot of stuff is internal [at the plant]. So a lot of stuff is easy. You can donate to this charity and you get a point. To me that’s easy--I mean, and you don’t even have to leave. You know what I mean? To me, I find it fun. I find it rewarding...I can donate money or I can donate my time versus not getting or having to stay for three hours or trying to get my community event some other way you don’t have to -- they make it where you don’t have to leave you can do it all here. Or you don’t have to ...So I feel like they give you a bunch of opportunities. So you can take that for what it’s worth. It’s a choice that you have that they *give* it to you. If you don’t want it then you don’t have to take it. But that’s going to be totally up to you.

The interesting thing is that with all of the encouragement and opportunities to volunteer, Faith still felt that volunteering was a choice. Many of the employees at this facility talked about the volunteer opportunities. None of them felt pushed to volunteer. In fact, their connection to the community with all of the volunteering this site provided was a point of pride.

One of the Manufacturing Vice Presidents I spoke with, Steve made an interesting point. He started this thought answering the question around what isn't working with TEI. As he highlighted the challenges at some plants due to real and artificial barriers, he then began to discuss a distinct advantage one of the plants in the interview set had:

Steve: I think the one thing and again, I don't mean to keep going back to [particular plant], but what's clear to me is the talent.

Kathy: Really?

Steve: I just see the work force talent level intellectually -- their intellectual capability, the skills they bring to the job. The starting point if you will that we work from is at a level that makes teaching concepts some complex, some not so simple and these people want for that. 97% of [particular plant's] workforce has secondary education of some amount.

Kathy: Really?

Steve: Yeah. So 40% of [particular plant's] managerial staff came from the floor, 40%. [said with emphasis – like isn't that incredible?]. So these factors I think make it easier. . . That's huge to me -- huge difference to really enabling TEI the way that I think it needs to.

Later Steve provided some specific examples of the advantage of an initially more highly educated workforce referring again to the particular plant in the sample set that has a more highly educated workforce amongst the production staff:

They're getting more done. They're just -- they're accomplishing more. They're going faster. The plans for TEI, they're going faster, they're going deeper, they're going better. That's the end results. It is because they are using all their employees and all of their skill and all their talent versus a mere slice of it. You can only go so fast and so far and so deep when all you ever go to is your SE [system engineer] or your project guy, or your electrician.

So clearly, I can see [specific plant] is going faster, farther, deeper and because of -- absolutely, because they have more resources there to bring to bear on the improvement or the change effort. So, no question for me that that one will -- that talent has a big impact on their speed.

Other Contributing Factors

The third and final research question being addressed is: What other factors are present that impact (or perhaps even accelerate) the implementation and/or advancement of TEI? The items presented in this section include leadership behaviors, cultural observations, strategies, and general practices that were present. These items were not part of the planned sequence in the roll out of CI and TEI but clearly contributed to the viability of the CI programs and advancing TEI.

Create and Sustain a Desired Culture

Each facility that I visited had its own distinct culture predicated on the tenets established for their operation. Consistent across all three plants was the belief that some basic fundamental values needed to be present. A safe work environment, treating each other with respect, being competent in our work, working toward a clear business goal, and a statement on interacting so as to help each other out were all common themes across the plants. In every case, creating and sustaining the tenets of operation (also referred to as plant norms or values) required acknowledging what was and wasn't present, then taking action to build those expectations into the day-to-day operation of the organization.

The concept of pride showed up in different forms. The plant manager at one facility felt strongly that pride was critical for success. The team was not proud of the plant. Having a sense of pride would need to be built into the culture moving forward. Joan, the plant manager, talked about pride:

First of all, I just have a philosophy - *my* philosophy that says, "That if you have pride, you have everything else." right? So, if you're proud, then you care. You want to work safely. You want to get more cases today

than you did yesterday. You want to work well with your co-workers. You want to have that one team mentality. You want the plant to be cleaned. I mean all the things that we're trying to accomplish; to me the basis is you have to have pride in the place you work and the work you do every day.

So that's just my belief. And then when I came here, three and a half years ago there was no pride... And I asked what we called at that time, the salary team. I said, "How many people here are proud of the plant?" And I had one -- out of 35, I had one or two people that raised their hand halfway up and kind of like this.[raising her hand sheepishly about half way, arm crooked] So I'm like, "Oh, oh, we have a problem here" because if you don't have that then how can you care about your production or your safety or your sanitation and all those other things too.

Joan then set out to instill pride in the organization. She took time to acknowledge all the things the plant had going for it and took actions to build pride.

So that's where we set out, to create pride because we have a lot to be proud of. We have all this history ... We're the third largest [facility of this type] in North America. We have great results. We have great employees -- so we just started reinforcing all the things that we have. We went injury free for a whole year. We've got our first 1.8 [highest possible plant rating].

So there were just lots of things to celebrate and focus on the positive because for years this plant had been really beaten down for a lot of reasons.

We kind of said, it's a new day. That was then, this is now, and we're going forward and we found the things we do really well and we're going to focus on those and we're going to feel good about it. And we're going to plant bushes and flowers out front, and paint the front of the building and clean up the locker room, so people just felt good about coming to work.

Sustaining the carefully crafted culture requires painstakingly managing day to day situations that arise. I did not have the recorder on when one of the plant managers shared a story. The culture they had worked so hard to create was one where all employees felt respected and valued regardless of their differences. It was during the

United Way campaign and the leadership team hosted a silent auction for some pretty interesting and expensive items. The two most coveted prizes were lunch with the Plant Manager and two tickets to an NFL football game. In the last seconds of the auction, two employees from the management team swooped in and bought out those two prizes. The plant manager became aware of the situation and intervened. The plant manager talked with the management team employees and reminded them of the work the leadership team had put in to build a culture of trust and respect regardless of position, age, gender, and race. The two managers both rescinded their prizes and both prizes went to employees from the manufacturing floor. The plant manager understood how fragile the culture was and took action to carefully manage behaviors to ensure the culture was sustained. Had the management team employees been left to purchase the two big prizes, their actions would likely have been interpreted as an acknowledgement that those on the management team ultimately had more power. They could get what they wanted simply because of their positions. Actions like those of the management team employees that would have been perfectly acceptable in the past, would have been a set-back to the new culture.

One of the plant locations started to grow pretty quickly, and for a while the facility was a training ground for management employees across the company. Employees would be sent to this particular location for one to two years to develop specific leadership skills. The operators started to feel like the things that they had come to expect from each other were no longer being withheld. So a group was formed including employees from across the facility to create a mechanism that would support and sustain the desired culture and expected behaviors of all the employees. A behaviors

document was the output from that effort. Several of the people that I interviewed from that facility talked about the behaviors document and how it had been extremely helpful in clarifying expectations. The employees readily referred to that document when they needed to address behaviors that were not in line with the expectations of that organization. Paul, a technician on the culture committee talked about the behaviors document:

And so, this behaviors document I think has helped us a lot because it helps to define what's expected of an employee, what's the right types of behaviors and -- so you've got to have some sort of documentation if you're going to make this thing last especially with as much transitions as we have in our plans [for the future of the plant].

The CI Leader from that facility, Don, further discussed being deliberate about the culture:

I think that was one of the mistakes we made in the past was we had no clear plan for on-boarding. And so, what happened was we diluted the work system. Over time you bring in outside people, they're used to getting results a certain way and they're going to continue to get results that way, which affects your culture. And so, I think that's something that wasn't working for us in the past that we've recognized and we're very, very deliberate about it now. I think we're deliberate about our culture.

This organization realized that even when a culture was positive, was pretty well established, and had been around for a while, outside factors, change, and unadjusted behaviors could alter what they worked so hard to build.

One of the plants I visited had a rather unique culture with operating norms that I had not seen before. The plant manager didn't have an office and shared a common space with those on the management team. The atmosphere was calm and pleasant – no tense situations, no hurried behaviors, no loud voices. At the same time, the culture was not

lazy - - people weren't sitting around with nothing to do. They all seemed busy doing their work.

There were conference rooms that could be used for private meetings, but mostly those rooms were not being used while I was there. I also observed frequent spontaneous meetings where a small group would gather in a common area – hallway, cafeteria, or outside the conference room areas. Soon the group would grow. I listened to discussions and found that real work was being done. Decisions were made by those who gathered. If someone happened by they may join the discussion on their own. Sometimes the group would ask the person to join in and give their thoughts. Never did I hear these groups indicate a need for further permission. A decision was made. The right people would be informed, and the group would disperse.

Similarly I observed a meeting that was obviously scheduled as the group waited for only a few minutes but were waiting for others to arrive. Again this was a stand up meeting in the hallway outside the office area where 20-25 people gathered. Someone started talking to inform the group of the upcoming schedule. A few clarifying questions were asked and the group disbanded. The group had gathered for about 8 minutes. One gentleman headed out the front exit and a few people thanked him for coming by even though he was sick. The gentleman told them thanks and that he hoped to be back in the next day or so.

These very informal yet important gatherings were different than anything I had ever seen in this company and in my past manufacturing experiences. Meetings in plant locations to discuss schedules and make decisions from my background were a much

more formal process. It became apparent to me as I spent more time with this group that these employees were truly empowered to manage their departments as they saw fit.

According to Barb:

In here [at this plant], the idea is -- the technician [determines if] I'm troubleshooting. I'm fixing this. I'm letting my team leader know. This is the issue and we need other support or I can do this myself or I need someone to watch my system while I'm doing this.

Resolving issues regardless of title, level or role was truly an expectation. Across the organization the trust level was very high. People trusted each other to do their job, to make good decisions, to inform people as necessary, and to reach out for input if they needed help.

Paul indicated that for bigger decisions that had implications beyond the immediate team, a broad group would work together to come to resolution:

Yeah. I mean in my mind that's the other piece around the high involvement work systems. You truly are involved. It's not just we say we're going to involve you but we really don't. When there's something important to be decided, we form committees and we get technician involvement. We get involvement from all levels.

Trust

As mentioned earlier in this chapter, trust was a common theme that I heard at all three plants. In particular, trusting the leader and trusting the other team members were important and necessary. Kevin talked about trust: as a two-way street and how setting and adhering to clear expectations helps drive that trust.

Kevin: I think trust is huge and it's hard.

Kathy: Yeah?

Kevin: And as a plant manager, I have to trust that those guys on the floor want to do the right thing and will do the right thing 100% of the time, if they had the skills and the capability and the knowledge to do it. And it's pretty easy when you see a mistake repeated multiple times to get kind of sucked into that. But you know that was something we kind of learned when we went to Toyota because there were very few things for them that were performance issues. There's a lot more processing issues.

But, anyway, so I think that trust is important. I think you have to set up consistent expectations to have it. And people have to know what you expect of them and you need to kind of reinforce it and kind of continue to build upon it and I don't think that you can personalize it. I think trust starts to breakdown when you personalize the feedback that you're getting.

Later Kevin talked about the work force embracing management team transferees.

It is important to the employees who have been at the facility for a long while and who will likely be there even longer, to feel that a transferee plans on making a contribution.

The trust component here is around being in the game for the larger group not just for self advancement.

Kevin: I also think that in this work system more than others. People have to feel like you're in it for to them.

Kathy: Tell me about that?

Kevin: You know, in [another specific plant location], they have had so many people flow through that they're just used to it. And they have very low expectations for anyone coming in the door.

Kathy: OK.

Kevin: You know here, I would say the expectations are very high and -- but the expectations are high that you help them move forward or you help do something good for plant. If ever they get the impression that you're here only to advance your career. I won't say you're dead to them but -- [Kevin Laughs], but not far off.

So they'll do little stuff, like they'll watch and see if you have a [local state] license plate on your car yet, or do you'll still have your [previous location] plates or wherever you come from. And if you haven't changed it, then you know they will think that obviously you're not invested in us.

You're just passing through. And so it's just kind of some little quirky stuff that's kind of important to them.

The operators were clear that following up and following through on commitments was important. To gain the trust of the operators, the leaders needed to do what they said they would do. Joan worked hard to develop trust with the operators:

And so I thought a lot about that. How do we gain that trust, because for years, for whatever reason there was no trust. So I think it just took time. It took those small examples we're getting of believing that when I said something, I delivered. Even if it wasn't the message that they liked, it was just that constant reinforcement of what I say I'm going to follow up on and what I'm going to say I'm going to do, I'm going to do it. So it just took time to -- for people to build that trust.

Along with following up and delivering on commitments, Bob believed providing more information on why decisions were made was also helpful in building trust.

Bob: In an environment that has a high level of involvement, there's a high level of trust between leadership and all of us involved.

Kathy: And how does that happen?

Bob: It's earned just like anything else, following up on commitments if something is stated. Just following up on general higher level of transparency of how and why decisions are made. But a lot of explaining the "why" and not just the "what", and then consistent follow through on the facts.

Mark agreed that trust is earned and built up over time through communicating the vision, providing job stability, and delivering some solid results.

I have no doubt and no reservation in my mind that all of the hourly employees to a person would have complete trust because I think that's been built up with [the plant manager's] tenure. I think they also need to know that there is a plan in place and that frankly the folks here have seen that plan come to fruition and how that's given them job stability. How they've seen growth in the plant for the last several years, and continued growth even this last year with us getting more volume and that's as the result of running much better.

And still, Mark understood that trust although earned over time, could be lost in an instant:

So the trust – trust is a funny-funny thing because you can have it one second and then lose it the next second right?

Choosing to Become Involved

In discerning why people would choose to become more highly involved, three categories emerged. People chose to become more involved for their leader, for themselves, and/or for their team. Within each category, there are specific drivers or levers that propel people to become more involved.

For My Leader

The three plant managers interviewed for this study had distinctly different personalities, styles, and approaches to how they managed and lead their employees. Having said that, there were some clear behaviors and values that all three of the leaders demonstrated that were valued by the subordinates. The employees talked about the important things their leader did that gave them reason to become more highly engaged and put forth extra effort for that leader.

First and foremost, the plant floor workers want to be heard. They are the people closest to the operations. Many of them have been working on the same system for years or even decades. These workers feel that they have some good ideas and those that are in charge of getting a system fixed or improved, should take the time to listen to the ideas of the everyday worker. Tom had this to say:

So they [the plant floor workers] feel like they have input now – they have say so. And maybe that's because ya' know they come and ask us.

Management - they come and ask ya' know- what do you think we should do? We thinkin' about doin' this – how do you think we should do that? And who has the best knowledge for that - - the people thas been working on it – the people who's been doin' it.

Once the idea has been heard, it should not be dropped. If the idea cannot be implemented, the leader should have the common courtesy to get back to the employee and explain why their idea will not go forward and if appropriate, what the intended solution will be. The DDS - daily direction setting board shows the work that needs to be done. The DDS system is designed to make sure everyone is aware of the issues that need to be addressed and how the resolution of each specific issue is progressing. Sue, a plant operator talks about the DDS board.

Sue: Well, if I have a problem I'm putting it on that [DDS] board. So you go make a work order and you put that on that board. The next day, six or seven people can make that happen, considering they're specialists or mechanics or a team leader, and start pushing that through to get that downtime to fix the problem. It's nice to know that.

Kathy: So whenever you identify a problem, you get to fix it.

Sue: Yes.

Kathy: Pretty much?

Sue: I'm not saying right at that minute but it does get fixed as soon as I get the downtime. It used to be we get it through [specific computer system] and it might sit in [the specific computer system] for a month or so. But now you've got [the specific computer system] *and* DDS going on. So you got more eyes around it, more people seeing what's going on instead of just having two or three people seeing what's going on in the work orders, you got the whole department seeing what's going on, so there are more eyes on it.

Kathy: Why is that a good idea?

Sue: Because you get more people involved in it, they're more apt to get it done. You know that somebody's always watching what's going on and it's more apt to get it done.

All three plant managers saw their employee base as being equal to them and their actions supported this belief. Here is Joan talking about her philosophy on plant floor workers:

Randy [pseudonym] who is our janitor, right, who had been here 37 years. And his job, I truly believe that his job is just as important as mine. But I've had different life experiences. I've made different choices in my life that has put me in a plant manager role where he's made different choices that have put him as the janitor for 37 years at [this] plant. But that's the only difference.

And I think that people -- they can really relate to that. I mean I think it makes them feel like, "Hey, I can be involved. I can be just as much a part of this plant. I can really make a difference here because I'm valued. I'm valued as the janitor". And yes, there's a Plant Manager and there's logistics manager, but again, it's just all different roles that we play, that all are important. And I think that's pretty engaging.

One of the consistent actions between all three plant managers is that none of them designated a special Plant Manager parking spot for themselves. Parking was a significant challenge in two of the three facilities. Parking their car amongst the rank and file, did not go unnoticed.

Jeff: Well, it's the small stuff that I notice and one thing that I noticed about the plant manager is -- he parks where we park. He does not have a special parking space. That's a big thing to us. [spoken with great emphasis/emotion – voice cracks]

Kathy: Really?

Jeff: You know, that says it. He doesn't say, "I'm better than you. I make more money than you and your job is not important." He goes in there and says, "Hey, we're all together in this." He knows that he needs us and it's the little things. And we're going to put trust in him knowing that that's the way he feels about us. I've worked at places before where the plant manager has a special [parking] spot, very disconnected to the employees. [This plant manager], he walks around the plant and he'll talk to you.

This desire for open communication and talking directly with the plant manager was prevalent across all three facilities. So it was good to see open and frequent communication between the plant floor workers, the management team, and the plant manager. Jon described how this evolved at his plant:

One of the things is our plant manager – she has a very open door policy. She's very easy to communicate with. I remember in times past, going to the plant manager's office and that door was closed. But she makes a point of going out to the floor and talking with the plant operators. The management team, now they rotate and they come in on the off shifts and walk around the plant and talk with the employees. In the past that was one of our barriers. We had the management staff that was up here in these offices and the manufacturing employees only saw the team leaders out on the floor. So [the plant manager] made it a point that everyone on the management team was going to go out on the floor, . . .now they [production floor employees] have no problems coming up talking to the plant manager or whoever they need to talk to with whatever problem they need to get addressed.

Creating the compelling business need was discussed at all three facilities along with their approach to ensuring the employees understood the vision and could link their work directly to the impact on the business and on the future. Vern talked about the importance of connecting the dots for the employees:

Well, I think at the end of the day, it's truly about every single person being engaged, every person understanding what their role in the organization is in respect to what their job is and respect to what following certain processes are. Whether understanding the criticality of why they do what they do is okay. Take center lines; being able to connect the dots and understanding that the value of center lines is - I will prevent premature failures which will enable the line to perform better which will help the plant, which will help [the company] and kind of this whole chain.

All of the manufacturing VPs had at one point in their careers been plant managers. Jack does a nice job of summarizing a common sentiment from the plant employees.

As a leader they need to know that I care about them beyond just the fact that they kicked out a hundred cases last hour. So you know I think about that environment you and I worked in where you could walk down the hall and nobody would even say hello. Well guess what, I'm going to say hello for starters and we're going to start engaging people in some really simple human interfaces because if we can't engage them in that, how are we going to engage them in learning more and taking initiative and developing skills, they're going to extend far beyond what they do today? We're not. I think there is a human energy that we create today, a mutual respect, a willingness to have dialogue and from that, a willingness to have uncomfortable dialogue or opportunistic dialogue about what's next or what you could do.

For Me

Within the For Me category there are a number of subcategories.

- a. Pride - People want to be part of something good.
- b. Workers appreciate the rewards and incentives.
- c. Workers want to contribute in a meaningful way.
- d. Workers want to get better at their job (learn) and advance.
- e. The work should benefit the employee's family as well.

a. Pride - People Want to be Part of Something Good

The company that commissioned this study has an excellent reputation as an employer and for the quality products it makes. The people I talked to are proud to work for this company and are proud to let others know they work for this company. Walking around one of the plants, I spoke with an operator who told me he likes to take his wife to a few select stores and show her the other brands competing for buyers of the product

he produces. He likes to pick up *his* product and point out to his wife why his product is better. The connection employees have to specific brands that could be found in stores enable the employees to recognize that they are part of something big and good. This connection to something good was important according to those I interviewed.

Tom: I mean who doesn't want to feel like they's part of something? I mean ya' know, especially in a company like this...

Kathy: OK. And you said especially a company like this.

Tom: Well, we still work here. There's people out there that would give an arm and a leg for this job – and we still grindin' it out. We still got *our* [said with emphasis] jobs. So the company must be doin something right – we still workin'. Nobody got laid off.

Don had a similar perspective:

...people need to know where you're taking them or they need to know where they're going, what they are working for, what that stands for, I guess. And I think that's -- I think people want to be a part of something and they want their lives to mean something...I call it intrinsic motivation, how do they feel like -- what's their contribution to society or what have they really accomplished for the day. At the end of the day, do they go home and say, "I stamped the widgets for 12 hours" or do they say, "I've put out 32,000 cases." So I think it's more important for them to be able to contribute to something beyond themselves or larger than themselves. If they're working with people, alongside people who are doing the same thing, then together they're creating something bigger than any of them could create individually. I think that gives people meaning in their lives.

b. Workers Appreciate the Rewards and Incentives

Although rewards and incentives were not a primary driver – not the first answer anyone gave in regard to why they would increase their involvement, several employees talked about how they appreciated the reward and recognition programs as discussed previously in the implementation section. Jeff knew in great deal how the incentive

program worked at his facility and appreciated that the company does so many good things to recognize what the employees do.

I think the fact that the company recognizes what we do... the fact that they do so many good things for you. If you do the things you need to do to get through the month and for our fiscal year, we have gift cards that they give to us. If our safety is good and our usage is good, and our system performance is good, we get a hundred bucks.

c. Workers Want to Contribute in a Meaningful Way

Several of the plant employees that I interviewed stated that one of the reasons they liked CI is because it made their job easier. I didn't understand how increasing their knowledge and skills around running a piece of equipment would necessarily make the job easier. In fact, I suspected that in some ways the job would be more difficult in that the operators were expected to know more and consequently do more albeit different work, it seemed that the work could be significantly more challenging. Todd, a Team Manager at one of the plants explained that when things don't run so well, the day can be rather chaotic. Making the job easier simply meant bringing order to the operation so that the work being done was adding value, not "chasing your tail". Todd tells it like this:

It's a difference of having a good day and having a horrible day. It's not necessarily I'm sitting down doing nothing but I can get everything that I need to get done, done and not have to worry about 10,000 other things. Whereas if I don't run my system well, then they [the other operators] are having to run around, do 10,000 extra other things. By the end of the day, they may have missed something, something may - - it creates chaos... So that's the difference between a good and a bad day. On a good day, you have time to do those extra things to keep good days good. On bad days, you don't. You end up trying to put out fires... chasing your tail.

Chris appreciated that working on a system that was running better, gave him time to work on things that mattered, things that made a real difference and gave him a sense of accomplishment instead of fire fighting.

I'll tell you, a single pack line that we were on when I first started that process was making 600 or 700 cases a shift and now, they're doing like 1400. So, the downtime is significantly less than what it used to be. I'm not getting called out there on a regular basis [to fix things]. I'm able to concentrate on doing other things. Heck it's running so good that I can actually take one of the baggers down and work on it during the week and they won't lose a significant enough of the product that we would drop a little performance. And it's a good feeling to accomplish that.

What the operators were really saying when they said CI made their job easier is that the CI tools worked to improve system performance. The lines ran better and kicked out often record levels of cases. By stabilizing the systems (using the CI tools), the operators were able to use their energy to do work that to them had a greater impact. The work, in their minds, would prove to be more significant than fighting a machine that wasn't operating properly.

d. Workers Want to get Better at their Job (Learn) and Advance

One key component to ensuring CI is successful is educating the employees on the CI tools and processes. There are some fundamentals of manufacturing and equipment maintenance that all operators and mechanics are given. These training topics include workplace physics, foundational math, and 8 Technologies. The 8 Technologies include basic theory and application of equipment operations including topics such as lubrication, fasteners, drive systems and motion systems. Along with these basics of operation, employees are trained on CI tools including problem solving, AM, and PM.

Several of those I spoke with acknowledged the extensive training that the CI program required. Many saw this as an investment in the employees. The operators and mechanics talked about how much they learned:

Mike: I want to be challenged so that I know that when I come in, I'm adding some value to the place and that's important. You must feel like you're adding some sort of value.

Kathy: Why?

Mike: Well that comes down to your personal values. For me it's important because if I'm adding value, usually people see it and that means that -- for me I guess I don't really have a good explanation for it [nervous Laughs]. If you're adding value you have job security for sure and that feels good. But there's also if you're adding value you just feel *good* about yourself. You don't want to come in and feel like you're sort of a charity. You don't want that you know? [Laughs] And that's probably the only way I can really explain it.

e. The Work Should Benefit the Employee's Family as Well

An extension of the For Me category is "For my family". One corporate leader, Bill understood the link employees make between job security and the employees' families:

They [the employees] understand the bigger picture, meaning they are business owners in those processes because in reality, if they can tie that or link that to job security which is high on many people's list, it can help them be business owners. They can tie the job security to the betterment of their family. At the end of the day, that's why they come to work.

One operator, Sue, discussed the potential impact lack of ownership (her definition of TEI) for the equipment could have on her family.

Sue: When I'm talking about owning [the equipment] it's that when it comes to repair days, they got to understand that they need to get certain things done on this equipment to make it run good. Greasing, inspections, that's employee -- that's ownership of the machine, it's knowing that this machine isn't running the best it can run. That could affect you in many ways, just production wise because if you're not running good, you might

have to come around the holidays. You might have to run the extra day during the holidays instead of taking the day off to be with their family.

And if your machines are running good, you get production out the doors and you get more time off. So instead of running seven days production and you might run six days production. That's just saying if you get machines runnin' good, you're going to get time off and you're not working all the time.

Kathy: And that's important to you?

Sue: Yes.

Kathy: How come?

Sue: Family. I have family. It's not always work. I've lost a lot of things in my life and as I'm getting older, I realize that yes, you do have to have work and you do have to have family.

Another operator, Tom from a different facility also talked about the importance of his job for his family:

I work for my family. I mean I work for [the company] of course, they's writin' my paycheck. But when it's all said and done, I gotta take care of my family... To see my family smiling that means the world to me. To see my wife, my kids getting what they want, what they need – *that's* [said with emphasis] my life.

The leadership team from one of the facilities understood and appreciated this connection the employees have to their families. Twice a year they held large events where the employees were invited to bring family. The winter, snowball event Zane called "Prom for grownups" was for the employee and his or her spouse or other significant life partner. The summer event (complete with fireworks and a petting zoo) allowed the employees to bring six others and encouraged the employees to bring their children, nieces, and nephews. Zane provided some great detail that I won't include here but he clearly conveyed that significant effort and cost went into these events.

Zane: This facility is very big on trying to provide some visual awards to people. Whether it's the -- twice a year we do pretty big events. Family appreciation fair and then obviously our snowball event, two very big visual events. . .

Kathy: What's a snowball event?

Zane: We rent out a pretty large catering hall and everyone here at the facility is invited to attend and bring their spouse or significant other. Of course the appreciation fair is basically a large carnival that we did during the summer and you can bring, not just your spouse with that one but we'd expect you bring your kids as well.

Later I asked him why they set up these activities to include the families.

We want their family to see some of what they're doing. . . Here's what they're doing at work, here's why they have to spend that extra hour in overtime last week, why they were late for dinner. But we also want to make sure that they understand we *care* [said with emphasis] about their family as well and it's not just we want you here making [a specific product] everyday, but we care about you as individuals and as a family as well.

When I walked around this facility in particular, there was a rather long hallway with pictures from past years of these big events. These events were very well attended and the candid photos on the walls from these events plainly showed that the employees enjoyed the events and participated whole-heartedly – dancing, singing, smiling, laughing and just generally celebrating. While I stood there looking at the pictures, one employee walked by and said, “It was a good time.”

For the Team

The last category or reason that seems to be driving people to choose to get involved or engage more deeply is for the team. Employees from every facility talked about setting up the next shift for success, not letting down the others from their immediate shift team or even their extended line team.

Nick: Now, it's like I'm going to set the next person up, make sure the cardboard is full, the mandrels are clean so they would have smooth transition for their day. Hopefully that would be passed on to the third shift or the following guy. There's just more respect.

Kathy: How did that happen?

Nick: Everybody's been trained.

Kathy: Tell me about that.

Nick: Well, we all get the story about this is what we try to do for the next guy and you should come in the next day expecting this type of same treatment. This is part of the job, we find the respect factor that's the attitudes changed.

Beyond operating in the best interest of the teammates at work, these teams are starting to create friendships and the employees are socializing outside of work. Chris talks about regular social events he has with his work friends:

But, Al, Rob[these are pseudonyms for the names Chris used] and I have created a pretty good friendship--I mean we don't hang out every weekend or anything but I usually have a pig roast every summer for my wife, our anniversary. Rob usually has a fish fry about this time of the year, this weekend actually. And Al,-- we always end up going over to his house and watching UFC fights or hangout with his family and kids. So, I think that bonding part of it is just a little bit beyond just co-workers bonding, we're friends so I'm not going to let them down. That's just, again, human nature. You're not going to let your friends down.

Sue also talks about her workplace friendships and now it feels good to come to work.

Sue: Because we're a lot closer now. I feel like we're a lot closer now.

Kathy: What do you mean closer?

Sue: This is not just work. It's just being friends, too.

Kathy: Being friends?

Sue: Yes. I see that a lot more in a lot of people.

Kathy: So how come now you can be friends when before you weren't friends?

Sue: Well, a lot of times, it was -- I don't know what's changed. The stress level is not like it used to be either. A lot of times, you get up early and you don't want to see anybody. Now, it's a lot better. It feels good.

Mike indicated that having the team interact more, gets the team members to know each other more and then they trust each other more which is important in ensuring the function of and success of the team.

Mike: So they get those people together and usually once they get to know each other a little bit on a personal basis, they trust each other more.

They're able to say, "Okay, that's not just that upstream guy who is sending me all this junk all day. That's a real person he's trying, he's trying to do something, he's giving a good effort. So that trust level is important. If you don't have that, you don't have much on a team. So you have to be able to trust the people that are willing to do the best they can.

Kathy: Why do you think it's important to have trust?

Mike: Well, and I'll say if I didn't have any more interactions and I choose just not even to try by not trusting, what would happen is that he would definitely feel it. He wouldn't come to me anymore. So if he didn't come to me anymore, he wouldn't be able to learn his position anymore and he wouldn't be able to help his teammates out more...and you need everybody out there to be able to keep growing their skills so that the teams can get better.

These categories: For My Leader; For Me; and For My Team were developed based on why people were motivated to become more involved. A strategic and planned approach to leveraging each of these areas could impact advancing TEI. Further expansion of the TEI continuum using these added inputs from research participants is diagrammed in Figure 3.

Theory of How to Obtain TEI - Explanation of the Model

Figure 3 is an expansion of the TEI continuum first proposed in Figure 2. Here I have included what was learned about all of the components that come together to advance TEI. The blue bars in the middle of the diagram are the common tenets of operation that the three plants expressed. This is the starting point for establishing the behavioral expectations of the employees.

The yellow arrows on the bottom of the figure show the progression of Trust, Autonomous Decision Making, and Communication as the involvement level of the employee base increases. Communication moves from formal mechanisms for conveying information, to more informal mechanisms i.e. Scheduled, lengthy sit-down meetings with a printed agenda (formal) to spontaneously formed groups in the hallway who make a decision and verbally disperse the information (informal). There is a higher level of trust amongst the Advocates compared to the others. The trust is expressed within groups, between groups, and from workers to leaders i.e. Advocates trust their peers, other work groups in the plant, and their bosses more than the others on the continuum. Finally, decision-making is dispersed throughout the operation. Individuals to the right of the continuum are expected to make decisions and have the capability to do so.

The “Why get involved” bubbles in the upper right of the continuum are proposed leverage points. Given what I learned about the priorities of the individuals in each of the categories on the continuum, I am proposing that these “Why” bubbles can be leveraged at specific times to further solidify the involvement position of the employees or to potentially move the employee further right on the involvement continuum. The leader can be leveraged in all stages of the TEI bracket. What the leader does and says - the messaging, visiting with employees, listening to employees, participating on AM teams, etc. can all positively increase employee involvement at anytime and anywhere along the TEI bracket, as relationships are built and trust expands.

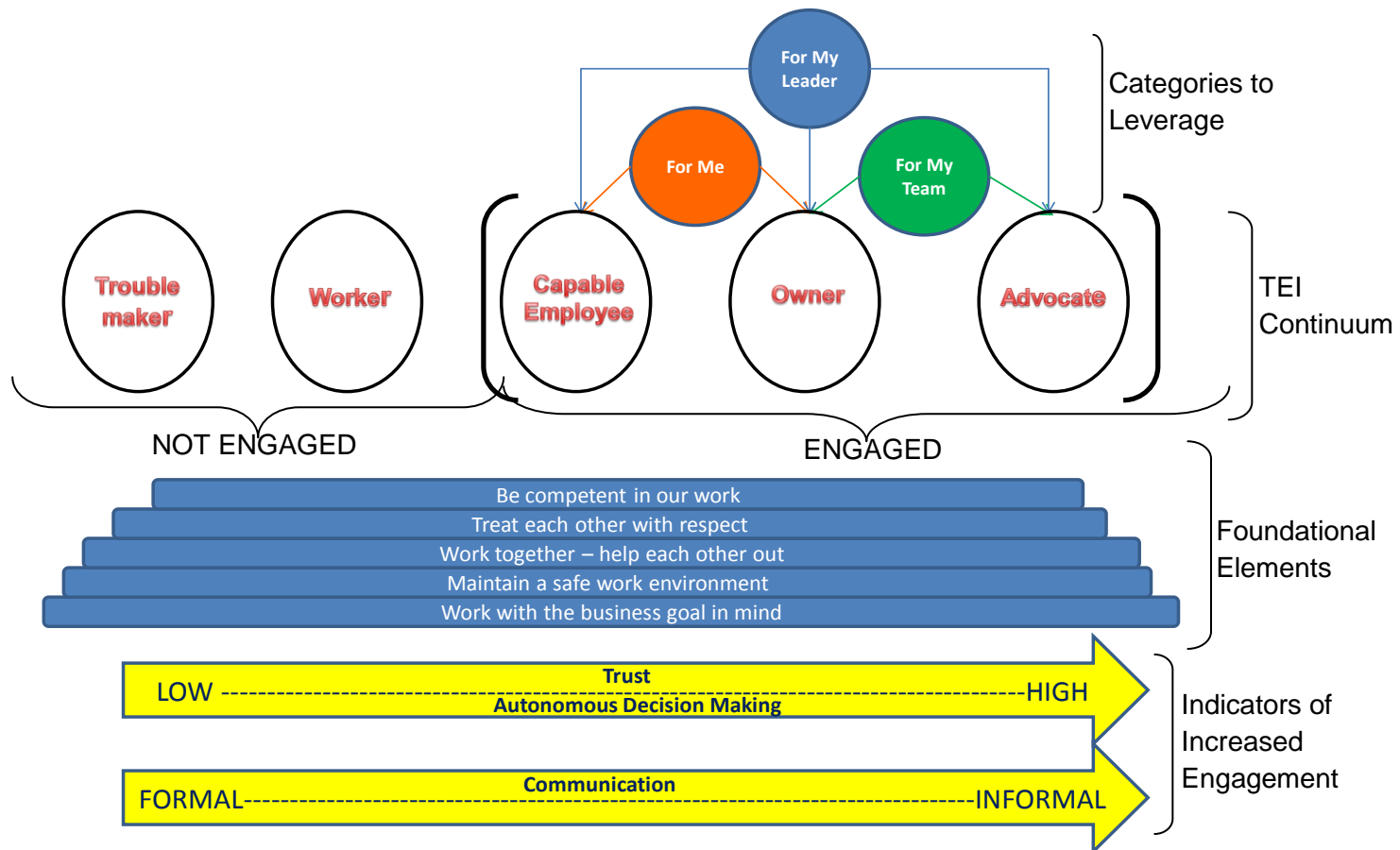


Figure 3. TEI Implementation Model

The “For Me” and “For My Team” bubbles could be leveraged anywhere along the TEI bracket but I believe would be most impactful as diagrammed where activities, rewards, communications, etc. directed at the individual for him or her and their families are most impactful earlier in the continuum. Recall that the Capable Employee is focused on doing a good job. This employee wants to do the right things, gets involved and likes to go home and tell their family the good news about work.

As employees advance along the continuum, the focus turns to interacting with team members and doing good work for the team. Recall that the owner is interested in setting up the line team and the next shift for success. The Advocate feels a connection to the company, the plant and/or the employees. The Advocate interacts with other employees on a social basis and wants to tell others what a great organization this is (not what a great employee he or she is). So I think that further fostering team interaction, rewarding teams (as opposed to or along with individual reward programs) could further solidify this tendency to be an Advocate.

CHAPTER FIVE DISCUSSION AND IMPLICATIONS

The purpose of the study was to investigate how TEI is best implemented and advanced at the manufacturing facilities of a specific Fortune 500 company. TEI is a complex construct and as such, a specific, universally accepted definition does not exist. What this company wanted to understand is how TEI is being interpreted, implemented and advanced across its manufacturing locations. Aside from this, were there other prevalent factors to consider when implementing and advancing TEI that could impact or otherwise accelerate the implementation and/or advancement of TEI?

To answer these questions, a qualitative study ensued in which 30 employees were interviewed. Leadership team members and plant floor workers from three of the company's manufacturing facilities were interviewed. The selected facilities had very advanced TEI programs and/or the facility had moved its organization along quickly in incorporating TEI into its organization. Leaders from the corporate manufacturing group – including directors and vice presidents, who worked closely with the plants to implement TEI were also interviewed. The TEI initiative was part of a broad manufacturing Continuous Improvement Initiative. TEI is believed to be a foundational component of CI, and necessary in order to sustain practices that deliver results using the CI tools and processes.

By answering these questions outlined above, the organization hopes to transfer their new found wisdom broadly across the organization in order to assist those facilities that are finding the TEI journey more challenging. Likewise, any actions the corporate

leaders can take to expedite the advancement of TEI across the manufacturing organization will be considered. Although there are differences in implementation procedures, since the manufacturing sites I visited are all part of the same company, this is the best opportunity for finding similarities and best practices to potentially transfer to the other locations.

Grounded theory methodology was used to analyze the interviews of 30 employees from this Fortune 500 Company. Based on the research, a proposed continuum was developed that serves as the definition of TEI. A stepwise implementation process is outlined that parallels the CI implementation process. Foundational elements that are necessary to ensure TEI takes hold within an organization are captured. Potential levers that could be used to advance and potentially accelerate TEI are discussed.

This chapter will highlight the major findings from this study and how these discoveries align with or do not align with current literature on TEI and its implementation. As I discuss the findings, it will become apparent that there are many potential components that could be further researched to confirm the findings more broadly, clarify suppositions, and provide even further insight into how organizations can increase the involvement and engagement of their employees.

Discussion of Major Findings

TEI is a Complex Construct

In reviewing the literature, I fully expected to create a singular definition of TEI that would clearly enlighten the organization on what exactly was trying to be achieved. Several authors and groups of authors have created definitions that seem to enhance our

understanding of TEI although they are all still rather complex concepts. Recall that Thun, et al. (2001), created a five component definition of Employee Involvement that includes: autonomy (employees responsible for their own tasks); communication (includes interaction between worker and manager i.e. the manager considers employee's suggestions and provides employee feedback); information (enough knowledge received to understand the broader system on a daily basis); skills (to do their job); and training (to improve their job-related skill level). The group found that these five components of Employee Involvement are each positively correlated with increased performance i.e. manufacturing production output. And when clustered, were classified as "the main driving force" to deliver effective manufacturing improvements (Thun, et al., p. 142). The other Employee Involvement definitions that were highlighted in Chapter Two include varying degrees of activities like participation, decision-making, and interaction.

Although these activities were indeed present as I observed and heard people describe TEI, the things the individuals I interviewed focused on were more of a mind-set and showed up as behaviors in how the employees described and approached their jobs. Their descriptions often had "feelings" or emotion attached to the distinct behaviors. There also was a clear progression just in how people even looked at or approached their job. It was much more comprehensive than the definitions from the employee involvement literature (Cotton, 1993; Helsey, 1993; Hill & Huq, 2004; Pastor, 1996; Thun, et al., 2001) which focuses more on levels of participation and participating in different, broader or more business-related activities. What I observed was also different than the employee commitment literature (Bardwick, 2010; Meyer & Allen, 1997) which

emphasizes a three component model: identification with the organization; a sense of loyalty or obligation to the organization; and an attachment such that employees are reluctant to leave weighing the challenges that come with finding different employment.

TEI is Most Similar to Employee Engagement Literature

The area that more clearly aligns with the findings of this study is from employee engagement literature (Axelrod, R., 2000; Fleck & Inceoglu, 2010; Gibbons, 2000; Meyer, Gagne, & Parfyonova, 2010). Similar to employee involvement, an agreed upon definition has not yet been established for employee engagement. However, the key items emphasized in the literature on employee engagement are quite similar to what I found in this study. Some of the definitions put forward that resonate with the findings in this study are presented here.

One definition that loosely aligns with the findings from this study is described by Ruyle, Eichinger, & DeMeuse (2009): “Employee engagement is a mindset in which employees take personal stakeholder responsibility for the success of the organization and apply discretionary efforts aligned with its goals” (p.3). The concepts of a mindset (defined by Webster’s online dictionary as a mental attitude or inclination) that directs how people approach their work; taking personal responsibility and choosing to put forth effort aligned with the goals of the plant are all components of the definition I proposed. The general concepts are there but admittedly are loosely aligned.

A report submitted by the U.S. Merit Systems Protection Board (2008) put forward this definition: “Employee engagement is a heightened connection between employees and their work, their organization, or the people they work for or with” (p.5).

This definition captures the connection that I found with the most engaged employees and talks about why people are engaged: for the work, the organization or the people (team or leader).

The definition that most closely aligns with what was uncovered in the research study comes from Gibbons. Gibbons (2006) provided this definition to initially capture and summarize what he discovered based on a meta-analysis and review of current research and literature on employee engagement: “Employee engagement is the conceptual framework around which we think about the particular form of connection between employees and their companies that involves minds, hearts and hands” (p. 5). Further enhancement to this definition by Gibbons included this: “Employee engagement is a heightened emotional and intellectual connection that an employee has for his/her job, organization, manager, or co-workers that, in turn, influences him/her to apply additional discretionary effort to his/her work” (p.5).

Teasing apart this definition essentially covers the findings presented in this research study. Starting with the summary definition Gibbons talks about the connection and then lays out “minds, hearts, and hands”. The model I presented in Figure 2 could be summarized as hands, then mind, then heart. Using the enhanced definition, the comparison would indicate that the model I have offered proposes that the decision to put forth extra effort comes first (Capable Employee) as employees learn how to run their system and they choose to do a good job - the best job they can to run the system correctly. At this point the employees volunteer for extra internal assignments and for volunteer opportunities inside and/or outside of the plant. The intellectual connection

comes next as employees think about how to make work better (Owner). Finally we see this heightened emotional connection from the Advocate. Even the categories of Why be engaged from this definition are captured in the research study. The model presented in Figure 3 divides this into three bubbles - For Me, For My Leader, and For the Team where the For Me category includes the work itself along with advancing in the job and being associated with or part of something good - - in particular the specific plant, the company and it's great brands. What I did not find was a drive to act specifically for the company itself. The link was to the plant as "the organization" and then personal pride in working for a great company - - not necessarily making that connection to the company as the organization per se.

In the study produced by the US Merit Systems Protection Board (2008), six categories were presented to describe things that drove engagement. These categories are:

1. Pride in one's work or workplace,
2. Satisfaction with leadership,
3. Opportunity to perform well at work,
4. Satisfaction with the recognition received,
5. Prospect for future personal and professional growth, and
6. A positive work environment with some focus on teamwork.

The categories from my study included:

1. For My Leader
2. For Me

Within the For Me category there are a number of subcategories.

- a. Pride - People want to be part of something good.
- b. Rewards and incentives.
- c. Workers want to contribute in a meaningful way.
- d. Workers want to get better at their job (learn) and advance.
- e. The work should benefit the employee's family as well.

3. For My Team

The findings from these two studies are really quite similar. The only category from my study that is not represented in the government study is the link to the employee's family (under the For Me category). On the other hand, the government study included as part of the teamwork category – positive work environment. All of the plant employees I talked with indicated their satisfaction with their work and the environment. There was one facility that talked about prior challenges they had when the work environment was not positive. Recall that addressing the culture was the first thing the plant manager at that facility needed to do in order to even consider implementing CI and leveraging TEI. So I wouldn't call the environment a driver that could be leveraged, I think the positive environment is a prerequisite – you can't advance the culture and grow employee engagement without a positive work environment.

Some earlier work on employee engagement provided definitions that tended to emphasize one or two of the hands, mind, and heart components. The Corporate Leadership Council (2004), and BlessingWhite (2005), highlighted the cognitive (head) concepts of satisfaction and commitment and how hard an employee is willing to work.

A second set of researchers Bates (2004) and Gubman (2004) both focused on the emotional attachments referring to engagement as a heightened emotional attachment to the work, the organization, the manager, and/or co-workers. Baumruk (2004) combined the cognitive and emotional in defining engagement as “the state in which individuals are emotionally and intellectually committed.” Finally, Towers Perrin (2003) and Shaffer (2004) focused primarily on the behavioral outcomes defining engagement as the employee’s willingness to expend discretionary effort on the job. It is interesting to note that the later definitions discussed above, combined the three components of hands, mind and heart.

One group of authors (Meyer, Gagne, & Parfyonova, 2010) did propose a continuum for employee engagement by combining readily accepted academic definitions of employee engagement with theories on motivation and commitment. I will present several (but not all) of the key points they took into consideration in developing this model.

First, they started with Kahn’s (1990) definition of employee engagement wherein “people employ and express themselves physically, cognitively, and emotionally during role performance” (p. 694). They then wrapped in Schaufeli et al.’s (2002) definition of employee engagement where employee engagement is a “positive, fulfilling work-related state of mind that is characterized by vigor, dedication, and absorption” (p. 74). Next, they incorporated Deci and Ryan’s (1985) Self Determination Theory (SDT) and the Gagne and Deci (2005) application of SDT to workplace motivation highlighting the components of intrinsic and extrinsic motivation overlapped with the concepts of

autonomous regulation and controlled regulation. It is highlighted that the keys to autonomous regulation include 1). Competence, 2).Autonomy, and 3).relatedness. The model (see Meyer, Gagne, & Parfyonova, p. 68) runs left to right with an arrow on the bottom showing the progression. This arrow is labeled: “movement toward full engagement”. Below the arrow are the three categories of need satisfaction including relatedness, competence, and autonomy (positioned in that order from left to right under the arrow). Above the arrow are two continuum categories: One that affects the organization and one that affects the individual activity. The organization level of the diagram submits three categories (again progressing from left to right) of 1). Disengagement, 2). Contingent Engagement and 3). Full engagement. (p. 68). Initially, the model had just two main organizational components - Disengagement and Full Engagement. These were later evaluated and a third category was put in between these two categories so that what was assumed to be a large majority could fit in the middle classification of Contingent Engagement.

At first, the continuum seems to align quite nicely with what I have proposed as a TEI Continuum. Although the needs satisfaction components of relatedness, competence and autonomy align with the continuum, I would contend that the right order would be competence, autonomy and then relatedness. I have not made a distinction to differentiate the individual activity inputs from the Organization inputs. Probably the greatest conceptual disconnect between that in Figure 2 with the Three-factor continuum from Meyer et al. (2010), is the belief that the Contingent Engagement group is the majority and that the employees in that group see their tasks as being “necessary for continued

employment” (p. 68). It is also proposed that this group does not enjoy their jobs nor see the work as meaningful. The group that I interviewed that most closely aligns with the contingent engagement group is the Capable Employee, But the Capable Employee and all those in the engaged domain clearly indicated that they indeed liked their work. None of them talked about working for a paycheck. That approach occurred with the disengaged employees outside and to the left of the TEI bracket. Likewise, these authors reported that the middle group’s efforts “may be restricted to meeting minimum performance requirements” (p. 68). What I observed was that the Capable Employee started to volunteer for activities inside and outside of work. In no way were they looking to barely meet basic or minimum operating requirements. That mindset was reserved for those on the left of my proposed continuum – the Troublemakers and the Worker.

The fully engaged group in the Meyer et al. model is autonomously regulated and typically finds the performance of their duties enjoyable. If the work is not enjoyable, or intrinsically motivating, this group is still able to find the work meaningful. This fully engaged group is also said to have a strong commitment to the organization but potentially out of a moral duty to remain and contribute to the success of the organization. For this point Meyer et al. reference a workplace commitment study by Meyer & Allen (1997). In my study, I did not look at work place commitment or intent to stay. The characteristics presented here of the fully engaged group from the Meyer et al. continuum portray characteristics from the engaged group in my continuum. All three of the engaged groups enjoy their work or are able to accept the duty as a necessary component of the work for the team or for the organization. Thus, the most significant

parallel between the Meyer group's work and my study is the concept of engagement as a continuum. Clearly there are differences in how we classify the employees along the continuum.

Implementation Process

The steps outlined by the company in Table 4 describing the implementation process for the CI effort were taken right from Suzuki's (1994) TPM in Process Industries book (pages 8-20). The expanded detail presented in Table 5 starts with getting the culture right. Indeed, culture is a significant determinant in the success of a Continuous Improvement effort. Liker and Hoseus (2008) wrote an entire book on the Toyota culture and stress that the culture is what ensures long-term sustained differentiation of Toyota versus its competitors. Recall that much of the philosophy and expectations being put into place at the company in this study are based on Toyota's TPM processes and the Toyota Way.

Get the Culture Right

One of the facilities in the study spent a significant amount of time working to get their organization to a point where the employees were open to using the standardized CI processes and working in a fundamentally different way – identifying and resolving issues to root cause; becoming experts on the systems; working as a team – relying on one another to determine the best way to run and then sustain that way of running; teaching others along the way, all in the interest of helping the plant and ultimately the company succeed. Certainly this organization would not have been able to take any steps

on the CI journey had the plant employees decided not to participate in any of the CI activities.

Researchers have investigated readiness for change in organizations (Armenakis, Harris, & Mossholder, 1993; Holt, Armenakis, Harris, & Field, 2007) and developed instruments for organizations to use in assessing whether or not they are ready for change (Holt, et al., 2007; Bouckennooghe, Devos, & Broeck, 2009). When an organization is ready for change, they are essentially prepared to embrace the change and resistance to the change is reduced (Bouckennooghe, et al.). If the organization is not ready for change, the employees may display destructive behaviors that further impede the change initiative e.g. sabotage, absenteeism (Armenakis et al.). So the leader in the interview group who worked to get the culture right before diving into the CI initiative was right to take this approach in order to avoid the potentially destructive behaviors that would likely have increased the time and effort needed to implement the change in the long run. Essentially this leader was really addressing that organization's readiness for change. It is likely that insights from the authors referenced in this paragraph could have provided clearer direction and steps to take to assess and address that organization's readiness for change.

The challenge that the company in this study may not have fully embraced is that the Toyota culture that they are trying to emulate first and foremost originates from Japan where the Japanese employees have "an unusually strong identification with the company" (Cole, 1979, p. 231). Likewise, Japanese work ethic has deep roots in Japanese culture and so commitment prevails in the Japanese workforce because hard work and devotion to the company are key Japanese values (Lincoln & Kalleberg, 1992) that are

linked to the Japanese value of individuals contributing as part of a greater collective group verified by a high collectivism score in Hofstede (1994). Whereas, individualism and flexibility are more highly valued in the U.S. (Hofstede, & McCrae, 2004).

Additionally, Toyota took decades to get to where they are today – understanding the tools and processes to put in place and how to develop its employees to support and sustain these productivity advancements. This sort of culture change is monumental and will take decades to develop and sustain. When Toyota came into the U.S., they studied the local cultures at great length to determine how best to implement the Toyota culture in that environment (Liker & Hoseus, 2008).

Even then, creating the desired culture took about 15 years at the Georgetown, KY facility, and the President of that operation believes that it takes at least ten years for leaders to fully enculturate so that even under stress, they behave appropriately i.e. consistently applying step-by-step problem solving and not reverting to micro-managing (Liker & Hoseus). So as much as the organization being studied realizes the significant cultural component and changes that are underway, the culture will indeed need to be painstakingly managed as several of the underlying cultural requirements for successfully implementing CI and TEI are counter to the culture of the country and there are likely local and company cultural implications that make the new tools and processes difficult to implement and sustain.

Metrics

Step four in the implementation process requires establishing objectives and targets. Suzuki (1992) dedicated an entire chapter to metrics laying out specific

performance indicators to track along with the target the organization should ultimately aim towards as well as how frequently the indicator should be reviewed. Several of the items in this metrics chapter were being tracked and displayed in the plants. This company was not new to metrics – this is a very successful company that has measured many of the right things in the past. What was different was the corporate-wide initiative to standardize the metrics across the company determining exactly what would be measured, how it would be measured, and tracked versus goals.

Also new for the organization was the visual display of metrics at the production lines and in some facilities across the plant - - in the hallways and break rooms. What I observed on the plant floor and in the meeting rooms and hallways was constant displays of real time results and regular communication of how the organizations were tracking versus their goals. This constant display of results made the operators keenly aware of system performance for their own lines as well as for the entire plant. This whole concept around visual displays of results versus goals provided a constant reminder to the employees of how their system was performing and often linked these results to show the impact of the line performance to the goals of the entire facility. By putting the right metrics in place and making these available to all employees in the facility, individuals and teams can mobilize to impact the results for the plant (Miller & Israel, 2002; Franco-Santos & Bourne, 2005).

Align Around a Clear Business Goal

Prior research on role clarity (Jackson and Schuler, 1985) and meaningful work (Hackman and Oldham, 1975) suggests that employees want to see how they contribute

to the organization. Boswell and Boudreau (2001) discuss how creating a clear “line of sight” defined as “the employees understanding of the organization’s objectives and how to contribute to those objectives” (p. 851) can potentially impact organizational performance and results.

The Compelling Business Need (CBN) was the mechanism all three facilities used to get their message out and align the entire facility around specific goals. The CBN is a one page visual representation of where the plant is headed. There are only a few (three to five) things the plant is trying to achieve as depicted in the CBN. The idea around the CBN is to provide a clear and simple message that all plant employees can remember and rally around. From here, the managers work to further educate the plant floor employees on how they can personally impact the goals outlined in the CBN.

Haudan (2008) encourages leaders to connect employees to the big picture using images and stories to help them understand the link between strategies and their day-to-day activities – much like the CBN. Kotter (1996) emphasizes the need to communicate the vision in a clear and simple way using several modes of delivery, in multiple forums, delivered by the leader whenever possible, and repeated multiple times.

On Communication

One area that the employees across the interview set were cognizant of was the importance of clear, relevant and timely communications. Several of those from the plant leadership teams that I spoke with talked about the time and effort they put into carefully crafting communications including who should receive what information; when they

should receive the information; what were the best modes of communicating the information; and who should deliver the message.

This attention to the communication plan and strategy is supported in the literature as a significant and necessary step particularly when working to engage employees (Ewing, 2005; Langley, 2006; Shaffer, 2004;) as well as during a change initiative (Kitchen & Daly, 2002; Kotter, 1995; Lipitt, 1997). Shaffer (2004) supports the need for careful attention to communication when working to improve performance through employee engagement. Shaffer also sees communication as a process, not simply a speech or video tape. Communication must be carefully managed to engage employees in a way that improves performance. These four components are recommended as ways to link engagement with high performance.

1. Communication strategies must be designed to connect the dots from what the employees do at work every day to the performance and output of the organization.
2. Find ways to increase employee involvement in decision making.
3. Facilitate fast information exchange particularly when it can impact decision-making.
4. Leverage both intrinsic and extrinsic reward and recognition. Link the employee's actions and performance to the business outcomes. Show the employees "what's in it for me".

Presented next are several of the tactical steps that Ewing (2005) recommends when communicating to increase employee engagement:

1. First determine the relevant and necessary pieces of information the employees need to hear and want to hear.
2. Arrange the communication so that as much as possible, the floor employees

receive the communication from their Team Leader (Supervisor or Front Line manager).

3. If at all possible, put employees in the same room for a face-to-face discussion when messages are being delivered by senior leaders (this is more effective than a memo from the boss).

4. Be consistent in the form and style of the communications regardless of the mode of delivery.

Although none of those I interviewed went into this level of detail when describing their efforts behind developing and executing the communication strategy, it was evident as I explored the facilities and sat in on a number of communication meetings that the plants adhered to most all of these recommendations and steps.

One of the consistent and relevant actions taken by the plant leadership teams was to have communication exchange opportunities with the plant floor employees. Each plant had a slightly different format (e.g. the Round Table discussion) but the idea was to hear first-hand the issues and challenges the employees were having and find ways to improve their work conditions, work processes, and fix system performance issues. The management teams also used these communication exchange opportunities to discuss the best way to communicate new and important information. Whatever mode of delivery was recommended by the employees is the way information was typically transferred to the broader employee base.

Bates (2004) emphasized that organizations must find a way to hear from and talk to their employees. Surveys, small group, large group discussions, and regular employee communication meetings can all be workable options. Leaders must realize that this communication exchange requires a significant commitment on the part of the

management team because the issues that are raised must be addressed. Pete Gritton, a vice president at Toyota Manufacturing in Georgetown, KY confirms this position in Bates' article. Gritton states:

Every day is a constant struggle to win trust and establish credibility. You can have all of the programs in the world – all of it can be lost in a heartbeat if management does something to destroy the credibility it has built – for example, if an employee suggestion sits on my desk for a month (p. 49).

The Role of Rewards and Recognition

Once the CI initiative is effectively launched using the tools and processes from the AM, PM, FI, E&T, and Leadership pillars along with a communication plan that emphasizes the vision and plan to implement CI, the plant will start to experience some small wins. As this happens, it is important to communicate those wins broadly. The CI initiative is a long journey. The ultimate pay-back and benefits to the employees and the company are years in the making. The leaders who brought the CI concept to the company understand the long term implications. But for the majority of the employees, skepticism will prevail for the moment because a change this large is difficult, disruptive, and initially requires a lot of extra effort. Most employees won't see nor understand the long term benefits ahead. So promoting the benefits the new tools and processes are bringing is necessary to ensure buy-in from the broader audience (Kotter, 1996). Using the established metrics to show the progression can lend credibility to the results that are being obtained (Kotter, 2007). Likewise, showcasing the new skills of the plant floor operators can go a long way in gaining buy-in from the broader population as they see the

personal advantage these employees receive by immersing themselves in the change initiative.

Note that in the implementation process presented in table 5, establishing the promotions committee was done before the new tools and processes were to be implemented. The reason for this is so that the promotions team can have ideas ready to implement that promote the wins and recognize the achievements obtained by the individuals and the teams in implementing the tools and processes. If done correctly, rewards and recognition can have a significant positive impact on the change effort, but getting rewards and recognition right is tricky and requires attention to what has been learned from theory, and what has been shown to work in practice.

Herzberg's Two-Factor theory of Job Enrichment, (Herzberg, 1987) classified Maslow's lower level needs as hygiene factors – not having these needs met will cause dissatisfaction. However, increasing these will not further motivate employees. Herzberg classified Maslow's higher level needs as motivators. Motivators are the primary cause of satisfaction and include factors such as achievement, responsibility, the work itself, and personal growth among others. Thus in theory, money is only a motivator when an employee doesn't earn enough to cover his or her basic needs. If the employee is financially well established, then money as a reward would need to be tied to some sort of achievement or recognition program to be a motivator. This would then align the reward with the higher level needs.

Process theory focuses on the process by which behavior is initiated and sustained. Motivation, according to process theory would then be extrinsically driven

indicating that pay or incentives could act as motivators as well. Still, there are some key guidelines listed here that must be considered when setting up any reward and incentive program as presented in Glassman, Glassman, Champagne, & Zugelder (2010).

1. Employees must believe the rewards are allocated fairly following equity theory as described by Adams (1965).
2. The rewards must be valued.
3. Performance expectations must be perceived as reasonable.
4. The reward must be given when the performance goal is reached, following principles of expectancy theory as presented by Vroom & MacCrimmon (1968).

Additionally, Mehrotra, Sorbero, and Damberg (2010) offer these suggestions:

1. Divide a large lump sum into a series of smaller incentive payouts.
2. Use tiered and absolute thresholds.
3. Shorten lag time to as short as possible.
4. Consider using bonus payments.
5. Minimize uncertainty with the program – keep it simple.

Real Time – Developing Friends at Work

One of the unexpected outcomes of Real Time is the friendships that develop. Sias, & Cahill (1998) found that peer friendships at work move through phases from coworker/acquaintance to friends to close friends and then to almost best friends. The table below summarizes the transitions that drive the progression in friendships. This table was created based on the findings from the qualitative study by Sias and Cahill. The progression of communication is also supported by Planalp and Benson (1992).

Table 6

Friendship Transitions, Drivers, and Communication

Transition	Driver	Communications
Coworker to Friend	Working together Sharing common ground Socializing outside the organization	Topics beyond work Somewhat cautious
Friend to Close Friend	Problems with work Problems outside of work Life events/challenges Vacation together	Even Broader topics Less Cautious
Close Friend to Almost Best Friend	Frequently socialize Problems with work Life events Common interests	Broad and Deep topics Free sharing

The Gallup organization (2010) found that friendships help employees love their job. Likewise, Rath (2006) reports that friends at work are essential to the happiness, engagement, and productivity of employees. Lengnick-Hall and Lengnick-Hall, (2003) further state that organizations would benefit from HR taking an active role in encouraging peer to peer friendships. Certainly friendships cannot be forced. However, relationships can be encouraged by creating an environment that supports interaction among peers, and friendships will likely be nudged in the right direction (Cohen, & Prusak, 2001).

Volunteer Opportunities

In Chapter Four I highlighted the belief raised by one of the Manufacturing VPs around leveraging volunteer opportunities for the employees as a way to open the door for employees to become more involved. This VP believed that one way to drive total employee involvement was to offer several volunteer opportunities in order to find

something for everyone. Once the individual participated in some volunteer opportunities, it was believed that he or she may be more willing to get involved in other areas across the plant.

I was not able to find research that directly supported this position. However, there is some interesting information in the literature that indicates potential links may exist as proposed by the Manufacturing VP. Peterson (2004) did find benefits in an exploratory study with corporate volunteer programs. Employees viewed volunteering as an effective way to develop job-related skills. The results also showed higher commitment to the company that supported the volunteer efforts and greater job satisfaction among female employees who participated in company-sponsored volunteer efforts.

According to Parker (1997), people volunteer for many different reasons i.e. altruistic reasons, expectation of future rewards (there may be a later benefit), serving a cause (political, moral, religious, etc.), or just as a leisure-time activity. So offering many opportunities to volunteer would be the right approach to drive involvement through volunteerism. In a separate best practices case study by Barnes and Sharpe (2009), a key driver for volunteering highlighted in this study was the ability to integrate the volunteer opportunity with the volunteer's personal life, interests, or job. Finding an activity that would benefit the individual as well as the recipients of the volunteer activity, enhanced people's likelihood to volunteer (Barnes & Sharpe). Furthermore, (Houghton, Gabel, & Williams, 2009) found that employer-sponsored volunteerism is strongly associated with a positive organizational identity by the employees to the sponsoring company. But I was

not able to find in the literature that final link the VP wanted to make around participation in corporate-sponsored volunteerism encouraging broader involvement or participation back at the plant. Certainly this is an area worthy of further investigation.

TEI Implementation Model – Figure 3

Interestingly, the core values upon which the Toyota Way are predicated do not fully align with the core values set forth by the production facilities in the study (see the blue bars – Common Tenets of operation in Figure 3). The core Toyota Way values are: Challenge your people and partners; *Kaizen* - Continuously improve – your people, your processes and your organization; Respect; Teamwork; and *Genchi Genbutsu* - Go see for yourself so that you learn and can teach others (Liker, 2004). Essentially, the first three tenets shown in the blue bars in Figure 3 including the concepts of Competence, Respect, and Teamwork are aligned with the Toyota Way values. The lower two bars including the concepts of maintaining a safe work environment and working with the business goal in mind that are part of the common tenets of operation for those in the study are not called out as part of the core values for Toyota. However, these concepts are included in the *continuously improve* value statement for Toyota.

Toyota also follows a set of 14 principles that are organized in four categories: 1). Use a Long-Term Philosophy, 2). Use the Right Process to Produce the Right Results, 3). Develop your People and Partners, and 4). Solve Problems to Root Cause Promoting Organizational Learning (Liker, 2004). Some of the most significant and fundamental differences in values and principles brought forth by this originally Japanese company compared to the company being studied include 1). Base your management decisions on

long-term philosophy at the expense of short-term financial goals. 2). Build a culture of stopping to fix problems, to get it right the first time (which is a significant focus for the organization in the study and is clearly a culture change for all three plants). 3). Make decisions slowly by consensus, considering all options, and 4). Become a learning organization through relentless reflection (Liker, 2004).

This comparison of a company that has been on the CI journey for decades versus a company just starting the CI journey certainly highlights how different the two organizations are and how much is still ahead for this company to learn, grow and change. The current common tenets of operation established by the company in this study are likely right for the time. These will certainly evolve as the CI tools and processes are implemented and the foundational concepts of TEI, Learn-Do-Teach, and Zero Loss mindset take hold.

At the bottom of figure three are three arrows: Trust, Autonomous Decision Making, and Communication. The arrows indicate that Trust is low for the Troublemaker and is at its highest for the Advocate. Likewise, the Troublemakers are not making many, if any, decisions on their own. The communication arrow indicates that communications are predominantly formal on the left of the continuum and there are more informal communications moving to the right of the continuum. Essentially, these three arrows align with the literature on the progression of self-directed work teams in high performance work systems (HPWS). HPWSs are characterized by trust, mutual support, and collaboration (Gephardt, 1995). So it is not surprising to anticipate that trust increases as the group moves toward a more high performance model which is exactly

what the CI initiative is creating. Likewise, Gallup (1999) points out that when there is strong engagement in a workgroup; employees believe that their coworkers will help them during times of stress and challenge.

The idea behind self-directed work teams is that they have been developed to the point where they can operate autonomously – coordinating their own activities and making decisions that impact the team, the process, and ultimately impact the broader goals of the overall organization (Attaran & Nguyen, 1999; Sexton, 1994). Cohen and Bailey (1997) further affirm that in the end, self-managed teams will evolve to make most of the decisions previously held by functional managers and operation's supervisors. This is where the change in communication processes comes into play. Initially in traditional organizations, communications are more formal wherein the organizational structure and hierarchy determines who will provide and deliver official information, and determine just what information needs to be shared (Johnson, Donaohue, Atkin, & Johnson, 1994). Thus the communication structure follows a top down process aligned with the structure of the organization (Monge & Eisenberg, 1987).

By nature and by design, the self-directed work group will need less intervention after the team is up and running. In fact, the more management intervenes, the slower the process will be to get the team operating truly autonomously (Felts, 1995). The manager must move from a position of control in his/her communications to one where the communication is more collaborative and interactive in nature (Douglas, Martin, & Krapels, 2006). In this way the communication moves from one of more formal delivery and interaction to one that is less formal in nature. Note that informal communication

approaches support a variety of organizational needs and typically do not follow a structured hierarchy like that of formal communications (Johnson, et al., 1994). Informal communications are a more natural fit for self-directed work teams and high performance organizations in that the informal structure facilitates communication in a way that promotes autonomy and cohesiveness across the team (Johnson, 1993).

Pride

Pride came up in several ways during the interviews. Recall that one of the plant managers found pride to be a basic necessity and sought out to instill pride in her organization. Eventually, instilling pride became part of that plant's cultural initiatives, CBN, and vision: "Being proud of the place we work and the work we do everyday". Likewise pride was something several of the plant workers talked about when they discussed why they chose to engage at work particularly in regard to being part of something good and bringing that goodness back to their family – the good work helped their family and they could talk about their work with pride.

The literature supports these findings. Gibbons (2006) conveyed that among other things, engaged employees find personal meaning in their work and take pride in what they do and where they do it. Positive pride comes out of having self-esteem and self-respect that are free of arrogance (Verbeke, Belschak, & Bagozzi, 2004). Organizations try to instill pride in their employees (Katzenbach & Santamaria, 1998) because pride can be a source of motivation in employees and can be used to drive goal attainment (Brown, Cron, and Slocum 1997; Fredrickson 2002).

It should be noted that pride is not highlighted in Figure 3 where the components of the study come together. Pride is in the For Me bubble and seemed to be a necessary component of the engaged employee. If an employee could not be proud of the place they work, I don't think that they could be highly engaged. There were also components of pride in the For the Team bubble as the team made progress and together they wanted to maintain that advanced operating state to showcase their work for others. Pride was a consistent underlying factor in the engaged employee group.

Trust

Trust came up frequently in the interviews as a necessary component of one's willingness to engage fully at work. Hurley (2006) defined trust as "a confident reliance on someone when you are in a position of vulnerability" (p. 55). Hurley puts forth seven factors that can be used to gain trust. 1). Security – "the higher the stakes, the less likely the employee will be willing to trust" (p.58). 2). Similarities between the supervisor and the employee – we tend to trust those who are more similar to us. 3). Aligned interests – does the leader have my best interests in mind? 4). Benevolent concern – the leader demonstrates a greater concern for the employee than for himself or herself. 5). Capability – is the leader competent? 6). Predictability and Integrity – does the leader respond consistently? 7). Communication that is open and honest.

The trust triangle developed by Dr. John Carter at the Gestalt Institute shows how trust is built. On the bottom are the foundational components of straight talk, listening for understanding, and making commitments. The bridge from this foundation to a relationship of trust rests on the reliability of the individual to keep the commitments that

were made. Schneider, Macey, Barbera, & Young (2010) see trust as a “critical antecedent” (p. 159) to engagement, without which, employees cannot begin to participate wholeheartedly at work.

The basic fundamental request from employees was for leaders to follow up and follow through on commitments. If an employee brought an idea or repair request forward, those items needed to be addressed. This was essential in building trust. Being truthful and transparent – the straight talk and listening for understanding spelled out in the literature were all necessary components of building trust. Trust is on the diagram in Figure 3 because those I interviewed were able to articulate trust as a basic need and convey that trust grew over time and with increased accountability.

Implications for Future Research

Given that the Engagement Continuum I proposed in Figure 2 is different than other definitions of employee involvement or engagement currently available in the literature, further research to validate this model would be of great interest. Particularly since this was developed based on interviews from one company, the breadth of possibilities would not be conveyed. Still, I think the continuum provides a compelling starting point particularly when placed alongside other definitions of employee engagement in the literature.

In sharing the continuum with the company that commissioned the study, many more questions arose. Managers wondered if we could develop a tool that would tell us where each individual is along the engagement continuum. Would employees stay in one place or could they regress along the continuum and for whatever reasons become less

engaged? What would drive a person to become less engaged? How long would the employee stay in a less engaged place before becoming more engaged? Likewise, there was interest in confirming that there are five categories. Although I am confident with the three categories in the engagement bracket, I too am interested in the group that is not engaged and wonder if there are more than two categories. Unengaged employees were not the focus of my research, so that block is in need of further investigation.

The definition I proposed is in terms of the mindset and observed behaviors that present themselves with each mindset for employees at different stages along the continuum. Surely there are other components of work that could be correlated with each stage along the continuum. Is there a correlation for each category along the continuum with leader characteristics, number of or hours participating in a volunteer organization or types of volunteerism, number of friends at work, number of committees one participates on, education level, individual propensity to trust, or other indicators that would be of interest? And then what is the most insightful way, and what is the easiest way to determine individuals' level of engagement. Also of interest would be an overall organizational level determination of engagement. Managers would find an organizational engagement index useful particularly if it identified strengths and opportunities for the organization to improve the level of engagement across the employee population.

Likewise, the levers for increasing engagement and just how effective each lever is in advancing someone along the continuum are of great interest. Also, the three bubbles I have proposed can be divided in many ways. So for example, the For Me

bubble had an additional six sub-categories. There may be reasons that support bucketing these levers differently and eliminating the sub-categories. I am not certain that the levers are exhaustive. What I presented is what the employees in the sample set told me. There are likely some taken-for-granted actions the plants have in place that are necessary for engagement but are so fundamental to the operation, that they would not necessarily be highlighted – much like the concept of a positive work environment as a driver to increased engagement (Mehrotra, Sorbero, & Damberg, 2010). Since all three places I visited promoted a positive work environment, it would be difficult to determine the impact of a negative work environment.

Similarly, in Figure 3, I captured the five principles that were consistent across the three plants. It was highlighted in the discussion that these principles are different than Toyota's although there was some overlap. Is there a set of principles that make sense for a company that utilizes CI or Lean processes requiring a highly engaged workforce that are universal or that are critical to success?

Since developing friendships at work was an unexpected outcome of the Real Time practices in the plants, this is a rich area for further investigation. Now that we understand that Real Time produces friendships, and friendships can bring significant advantages to the workplace (Gallup, 2010; Rath, 2006), what can the plants be doing to foster these relationships and appropriately leverage opportunities to solidify friendships?

I was surprised to find the impact of volunteering and how/why people select volunteer opportunities to be supported in the literature (Peterson, 2004; Parker, 1997; Barnes & Sharpe, 2009). Does the link suggested by the manufacturing VP from

participating in work-sponsored volunteer opportunities to finding more opportunities to participate in at work really exist? And if so, is there a best way to present, partner with, or otherwise offer volunteer opportunities for the longer term benefit of the company?

One area that is of great interest that was out of scope for my study is hiring practices. The plants in the study were all well established. The CI initiative required a change in how employees operate and how the company developed these employees for the future given the need for highly engaged employees to make the CI effort succeed and sustain in the long run. Now that the company has this vision of the future, are there new and different characteristics they need to be looking for in hiring employees? Should the company be screening for particular characteristics that are more typical of or show propensity toward a more highly engaged employee?

Finally, it would be of great value to understand the impact and role of the employees' direct manager in advancing TEI. Interestingly the leader came up as a lever in advancing TEI – the employees referred to the plant manager. But what about the direct manager? Certainly there is a role for the manager in advancing TEI. What can the manager do to support and promote TEI? Also, how are these expectations different than the role of the leader and why do employees see these as being different?

Recommendations for the Company

Since this was a best practices study within one company, the company can share these findings broadly and implement actions to advance TEI in their facilities. By understanding where their employees are along the TEI continuum, and where the employees need to be, specific actions can be taken to move employees along the

continuum and create a more highly engaged workforce. For example, if it becomes apparent that you are dealing with a Capable Employee, consider rewards and incentives that align with the “For Me” category. Find opportunities to educate the employee’s family on the great work the employee has accomplished or even to reiterate for the family the things that make this company great and how to leverage that message amongst the individual’s family and friends.

Implementing the CI steps is a tried and true process that Toyota and other large companies have used to improve performance. Interjecting mechanisms to enable and more quickly advance TEI in support of CI should produce the desired business results more quickly i.e. performance indicators.

Having identified the seven key steps that support the 12 step preparation and implementation process presented in Table 5, these steps and the best practices found at the plants in this study can be communicated to all the manufacturing facilities for this company. Likewise, some very clear steps and considerations for implementation have now been documented from those interviewed as well as from experts in the literature e.g. communication steps and processes (Ewing, 2005; Kotter, 1995; Langley, 2006; Shaffer, 2004), and reward program considerations (Glassman, et al., 2010; Mehrotra, et al., 2010). These findings will lend a much more robust approach to the CI and TEI implementation process.

I believe that there are some under-leveraged opportunities that the company can go after, now that we have a better understanding of the implications of some of the actions being taken at the plants. When I talked to the employees about Real Time, those

in the interview pool talked about increasing the knowledge and skills of the operators and the administrative team through working with the manufacturing equipment, using the CI tools and processes, and finding solutions to problems. Certainly this is happening with Real Time. The unexpected benefit is the friendships that develop and the desire to do good work to support the team, or to leave the system in good condition for the next team members. Finding ways to facilitate friendships and then holding the team members accountable to one another is an opportunity to increase engagement of the employees.

In looking at the leverage bubbles (For Me, For My Team, and For My Leader), I believe that the heartfelt tug to contribute for the team seemed to be under leveraged. There were significant efforts underway to consciously take actions that would impact the individuals and their families (the For Me category). In the For My Leader category, the leaders worked hard to be good leaders - carefully crafting their messaging, making a concerted effort to spend time with the operators, insisting on a clear compelling vision and then connecting the dots for the employees from their work to their impact on the vision and future of the plant.

But there was not a focused effort to leverage the power of the emotional connection created from being a part of and bonding with others from the team. One easy opportunity would be to leverage the current reward events to increase team interaction. As long as so many people are coming together to celebrate, the plants could interject some activities that ensure people are interacting and getting to know one another better. In fact, I suspect that if the leadership teams that planned these events became aware of the additional impact these events could provide toward building that camaraderie, they

would start leveraging those events for increased team interaction. The “prom for adults” could have an impromptu group dance; or perhaps they could institute a team dance-off or games at the family appreciation event could be designed to get coworkers and even their families talking to one another. This area seemed to be an opportunity to further cement high engagement across the workforce by thoughtfully and purposefully leveraging current activities to encourage team interactions.

All three plants had opportunities for the plant floor employees to talk to the plant leaders – plant manager and other leadership team members. Now that we understand the value of this practice and what the experts say in this regard (Ewing, 2005; Kotter, 1995), all plants at this company should be educated on the necessity of this sort of interaction, its value, and different ways this process is working by sharing the practices from the three plants in the interview group. Finally, the plants that are struggling with advancing CI and TEI should take a look at the foundational elements, and the recommended actions in the implementation sequence and check themselves with where they are and the programs they have in place to support each of these items. Are their programs robust and truly impacting the development of a more engaged work group?

At this point, the company in the study has formed a team that is investigating the best practices identified in this study and the recommendations found in the literature from experts in these areas. That team is identifying best practices and making recommendations for how to instill and advance employee engagement throughout the manufacturing facilities.

Limitations

The most significant limitation of the study is that it is one company and the input of only 30 employees from three manufacturing sites and from headquarters. This is also a manufacturing company with continuous production processes. The AM process was highlighted as a significant contributor to engaging employees. Although it is likely AM would be highlighted in discontinuous processes or other manufacturing settings, it is unclear whether or not other tools would have been more applicable for those types of settings and not highlighted here e.g. Kanban (a scheduling system for just-in-time production). The plants are relatively early in the CI journey compared to a company like Toyota who has been on the journey for decades. The findings from the study are likely most applicable to an organization that is early in the implementation of their Continuous Improvement type initiative. It is believed that the information obtained is sound and significant and worthy of further investigation to understand how these findings apply to other types of organizations who are in different places on a CI-type journey.

The study interviews were conducted October through December 2010. This was a period of tough economic times where the unemployment rates were at historical highs and people saw their friends, family, and neighbors struggling to keep their homes and find work. Given this unusual situation, it is possible that people were more willing to change and be open to new ways of doing work since so many around them were struggling. Were some of their comments more heartfelt due to their gratitude for being employed at a relatively stable company during these tough economic times? And if so, did that bias the areas that received attention from me in my analysis e.g. is Pride as large a factor as expressed? Did employees find common ground more easily because the

tough economic world around them touched many of their friends and families becoming a quick and relevant connection point? Did employees choose to put forth greater effort to learn the necessary skills to advance with the CI program in order to stay employed? Would this have looked any different (i.e. high turnover, low worker satisfaction, less people stepping up to volunteer) such that the levers I found would be muted or even different?

Conclusion

This study resulted in a continuum that defines how employee engagement mindsets and behaviors toward work present themselves in a production environment at a Fortune 500 company. Grounded theory methodology revealed that employees can be in an unengaged state and show up as Troublemakers or create challenges and angst for the managers and co-workers or indifferent Workers who punch the clock and cover just the basics not bothering to get involved beyond their normal day-to-day operations. There are then three levels of progressively more engaged employees that can be captured as hands, head, heart meaning that first in the engaged bracket of the continuum we have the Capable Employee who is trained and works hard (using their hands) to do a good job. Next in the continuum is the Owner who also understands his or her job and works hard to do a good job, but this employee approaches the work from the perspective of being the owner of the equipment and consequently considers ways to improve (using his or her head/brain) the operation to make things easier, or to make the system run better. Finally in the engagement block of the continuum is the Advocate who has a heartfelt connection

to the employees, the company and/or the plant and advocates (using his or her heart in their approach) for the facility and the team.

We also learned that a change initiative like CI is well-suited to increase the engagement level of the employees by providing tools and processes that the employees can use to improve their systems. Since the tools work and require employees to come together to find the best way to run the systems, employee engagement becomes a natural part of the process and a more highly engaged employee becomes a natural output of working together and accomplishing good things together. This “forced” togetherness encourages and delivers friendships that play a significant role in driving caring for one another that only strengthens the desire to do all the right things in the interest of the employees’ friends – the team.

There are specific steps to take in implementing CI and additional complementary steps to take to encourage TEI. First and foremost, (1) a culture that is receptive to CI – learning new tools and processes to improve the performance of the systems, must be in place. The key complementary steps then include (2) establishing the metrics to be used, (3) aligning the organization around a clear business need, (4) training the employees on the CI tools and processes, (5) developing a carefully crafted communication plan, (6) developing a Rewards and Recognition program to acknowledge the good work the employees are doing and advertise the results these new tools and processes are delivering at each facility, and finally (7) implementing “Real Time” – a planned and concerted effort for the management employees to spend time out on the production

floor. These TEI steps that are complementary to the implementation steps of the CI process have a specific place in the implementation sequence that is outlined in Table 5.

Additional drivers that advance TEI were also identified. The presence of teamwork, pride, and respect for one another were key foundational principles. As people become more engaged, decision-making becomes more autonomous; communications become more interactive, and collaborative – less formal; and the trust level increases across the environment. The concepts of Transformational Leadership, High Performing Work Systems, and Change Management theories all apply to and support the findings from this study.

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Appendix A: TEI Survey

Total Employee Involvement Survey				
DATE				
Thank you for taking the time to complete this survey on Total Employee Involvement (TEI). Your input is greatly appreciated. Please know that your responses are completely confidential. Summary information will be used to help guide your plant's future activities in ensuring success on the Continuous Improvement - TEI journey. If you have any trouble with the survey or have any questions, feel free to contact your Team Leader. This survey takes about 10 minutes to finish. Simply fill in the circle ● indicating your answer for each question. Again, thank you for your time.				
SECTION 1: Expert Worker				
Indicate which of these best describes where you are with becoming an expert in your work.				
		Not trained	Have been trained	Quite Skilled
				Expert: Can teach others
1a.	Following workplace standards (like Clean, Inspect, Lubricate).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1b.	Understanding why equipment or process system improvement is important.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1c.	Recognizing problems with the equipment.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1d.	Understanding how the equipment interacts with different materials (like packing materials or ingredients)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1e.	Using visual controls for collecting data in my work area.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1f.	Analyzing equipment or process data to improve the reliability of the system.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
SECTION 2: Employee Ownership				
Do you agree or disagree with the following statements?				
		Disagree	Tend to Disagree	Tend to Agree
				Agree
2a.	I am involved in making decisions that impact daily operation of equipment in my work area.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2b.	I am involved in making decisions that affect HOW the work gets done in my work area.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2c.	I am involved in addressing big problems (things that might need a lot of time or money to fix).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2d.	I am responsible for how well my system runs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2e.	I am expected to drive improvements in my work area.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2f.	Employees at all levels contribute ideas to drive improvements	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

SECTION 3: Innovation/Use of Technology					
Do you agree or disagree with the following statements?					
		Disagree	Tend to Disagree	Tend to Agree	Agree
3a.	I have the correct level of computer skills to complete my job.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3b.	At my plant, new technologies are put in place to help get my job done better.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3c.	My team leader expects me to drive new technology ideas for my department or the plant.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
SECTION 4: Leadership					
Do you agree or disagree with the following statements?					
		Disagree	Tend to Disagree	Tend to Agree	Agree
4a.	The Plant Leadership team understands the importance of Continuous Improvement.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4b.	My Team Leader demonstrates the foundational element of CI: Learn-Do-Teach.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4c.	My Team Leader demonstrates the foundational element of CI: Zero Loss.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4d.	My Team Leader demonstrates the foundational element of CI: Total Employee Involvement	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4e.	I am recognized for making improvements to my equipment or work area.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
SECTION 5: Information Sharing					
Do you agree or disagree with the following statements?					
		Disagree	Tend to Disagree	Tend to Agree	Agree
5a.	I get the right amount of communication on how my work area is impacting Big 6 results (Cost, system performance, quality, safety, customer service)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5b.	I can easily access information about my work area.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5c.	Many types of communication (fliers, posters, electronic, etc) are used so that employees are well informed.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5d.	Information is available to me on how I can get involved in CI activities.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5e.	Which of the following best describes your plant. Choose ONE.				
	<input type="radio"/>	Information is primarily shared at the management level.			
	<input type="radio"/>	Information is provided at some levels in the plant.			
	<input type="radio"/>	Information is shared at many levels in the plant.			
	<input type="radio"/>	Information is shared at all levels in the plant.			
	<input type="radio"/>	Information flow is a strength of this organization.			

SECTION 6: CI Process Usage/Knowledge

Fill in the circle that best describes where you are with each CI process or tool.

	Not trained	Have been trained	Used it a few times	Quite Skilled	Expert: Can teach it
Autonomous Maintenance	1	2	3	4	5
5S	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AM Process	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Quick Change Over	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Planned Maintenance	1	2	3	4	5
Specialized Maintenance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Problem Solving	1	2	3	4	5
DMAIC	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fishbone	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Focused Improvement	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Why Why	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Education and Training	1	2	3	4	5
Assessment/Hands on Demonstration	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Job Task Analysis (DACUM)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
One Point Lessons (OPLs)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Leadership	1	2	3	4	5
Daily Management Systems	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Leader Standard Work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Plan Brief Execute Debrief (PBED)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
System Change Management (SCM)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Early Management	1	2	3	4	5
AM for EM	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Failure Mode Effects Analysis (FMEA)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Supplier Input Outputs Customer (SIPOC)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Business Processes	1	2	3	4	5
Value Stream Mapping (VSM)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Quality Management	1	2	3	4	5
Capability Studies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Design of Experiment (DOE)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Quality Mapping	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Statistical Process Control (SPC)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

SECTION 7 : Personal Information

7a. How many years have you worked for this company?
 _____ **years**

7b. What shift do you work MOST OFTEN?

- 1st shift
- 2nd shift
- 3rd shift
- split shift
- Rotating shifts

7c. What is your department and job?

Thank You for completing the survey!

Appendix B: Consent Form

Implementation of Total Employee Involvement as part of a Continuous Improvement Program at a Fortune 500 Company

You are invited to participate in a research study investigating the key components of the TEI program at your company. You were selected as a possible participant because the organization believes that you have had significant input and/or impact on the implementation of TEI for the Continuous Improvement initiative. Also, you can clearly articulate your views on TEI and its implementation. Please read this form and ask any questions you may have before agreeing to be in the study.

This study is being conducted by Kathy Carlson, a doctoral candidate in the Department of Work and Human Resources at the University of Minnesota.

Background Information

The purpose of this study is to identify the most important components to consider when implementing TEI – what works well and what doesn't work.

If you agree to be in this study, we would ask you to participate in an initial interview that will last 30 to 60 minutes. The interview will be audio recorded and transcribed so that Kathy can analyze the data along with what others in the study have to say. In this way, the research is designed to help your company understand what needs to happen to effectively implement TEI. The researcher will be using a sampling scheme that may require her to talk to you again at a later date, to gather very specific detail around a few questions. This second interview will likely require much less time and may be conducted over the phone or via e-mail.

Risks and Benefits of being in the Study

This study has minimal risk since there is only one researcher investigating a broad and non-personal topic. It is anticipated that both positive and negative comments may be made about TEI and how it was implemented. To minimize the risks and protect your welfare, the following steps will be taken: (a) ensure my field notes and transcripts do not contain personal identifiers; (b) keep raw and processed data locked securely and password protected; (c) protect the data and identifiers; and (d) make every effort to report results in a way that protects your identity.

The benefits to participation include having the opportunity to contribute your valuable insights into how your company can best implement and advance TEI. You have the opportunity to contribute to your company's understanding and future implementation programs for TEI.

Compensation:

You will receive no additional payment for your participation in the study.

Confidentiality:

The records of this study will be kept confidential. In any sort of published report no information that could identify you would be included. Research records will be stored securely and only Kathy Carlson and her research committee will have access to the records.

The audio recordings will be handled as if they contained medical information following the strict guidelines of HIPAA (Health Insurance Portability and Accountability Act).

All audio-recorded tapes and hand written notes will be destroyed upon completion of the study.

Voluntary Nature of the Study:

Participation in this study is voluntary. Your decision whether or not to participate will not affect your current or future relations with your company nor the University of Minnesota. If you decide to participate, you are free to *not* answer any question or withdraw at any time without affecting those relationships.

Contacts and Questions:

The researcher conducting this study is: Kathy Carlson. You may ask any questions you have now. If you have questions later, you are encouraged to contact Kathy at 763-293-2387, carl0073@umn.edu, or Dr. Jim Brown, doctoral adviser, 612-624-7754; brown014@umn.edu.

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher(s), you are encouraged to contact the Research Subjects' Advocate Line, D528 Mayo, 420 Delaware St. Southeast, Minneapolis, Minnesota 55455; (612) 625-1650.

You will be given a copy of this information to keep for your records.

Statement of Consent:

I have read the above information. I have asked questions and have received answers. I consent to participate in the study.

Signature: _____ Date: _____

Signature of Investigator: _____ Date: _____

Appendix C: Study Participants

Pseudonym	Location	Role	Yrs in Company	Male/Fem
Don	Plant A	CI Leader	18 yrs	Male
Mike	Plant A	Start Up Technician	10 yrs	Male
Todd	Plant A	Team Manager	12 yrs	Male
Barb	Plant A	Team Leader	8 yrs	Female
Paul	Plant A	Packaging Technician	18 yrs	Male
Kay	Plant A	Human Resources Mgr	3 yrs	Female
Kevin	Plant A	Plant Manager	19.5 yrs	Male
Chris	Plant B	1 st shift Trainer	8 yrs	Female
Zane	Plant B	CI Leader	7 yrs	Male
Jeff	Plant B	3 rd shift floor Technician	5 yrs	Male
Faith	Plant B	1 st shift Pkg Operator	4 yrs	Female
Mark	Plant B	Human Resources Mgr	5.5 yrs	Male
Mitch	Plant B	Operations Manager	9 yrs	Male
Vern	Plant B	Plant Manager	20 yrs	Male
Chuck	Plant C	Human Resources Mgr	4 yrs	Male
Joan	Plant C	Plant Manager	24 yrs	Female
Sue	Plant C	Operator	13 yrs	Female
Nick	Plant C	Operator	14 yrs	Male
Merle	Plant C	Packaging Operator	20 yrs	Male
Lisa	Plant C	CI Leader	2.5 yrs	Female
Tom	Plant C	Operator	9 yrs	Male
Jon	Plant C	Team Leader	3 yrs	Male
Bill	Corporate	CI Director	19 yrs	Male
Steve	Corporate	Manufacturing VP	20.5 yrs	Male
Diane	Corporate	CI VP	14 yrs	Female
Jack	Corporate	Manufacturing VP	30 yrs	Male
Drew	Corporate	Manufacturing VP	13 yrs	Male
Lori	Corporate	Human Resources Director	18 yrs	Female
Bob	Corporate	CI Internal Consultant	16 yrs	Male
Dean	Corporate	CI Director	2 yrs	Male

Appendix D: Climate and Culture Actions

EXPECTATIONS & ACCOUNTABILITY	INCLUSION & APPRECIATION	TRUST & RESPECT	PRIDE
<ul style="list-style-type: none"> • Holding everyone accountable to performance expectations • “Team Optimization” • Handbook including new discipline procedures • Consistency Team • Code of Conduct • “Follow up” • “Diversity training created expectations on how to treat each other with respect” 	<ul style="list-style-type: none"> • No more [Us vs. Company] - we will be one team and “say hello to each other” • Employee Relations Committee • Celebrations & recognition • People of Color on Admin Team • CI (EM, Promotions Committee, CBN, SAFE Score FMEA) 	<ul style="list-style-type: none"> • Open communication with regular business updates • Town Hall meetings with Plant Manager • “Managers on back shifts and weekends” • Limited turnover on Admin Team • Apologize to plant employees if wrong • “Leadership is down to earth, open minded, listens, and doesn’t rule with iron fist. They care.” 	<ul style="list-style-type: none"> • Created our vision: <i>Being proud of the place we work and the work we do everyday</i> • 3rd largest [facility of this type] in North America • [Corporate leadership] visits and recognition • Building and equipment upgrades • Family Day • Community volunteerism • “Glad to have a job with a good company in this economy” • Good results (injury free, first perfect plant rating, from highest cost to lowest cost)

Appendix E: Plant Operating Guidelines -1

COMPANY
The Albuquerque Plant will be a safe, environmentally sound, reliable, efficient and cost-effective energy source for the state. The plant will produce and store electricity responsibly.

MANAGEMENT
We produce a high quality, cost-effective, safe, reliable, and efficient energy source for the state. We are committed to continuous improvement in our operations, our safety, our environment, and our customer service. We are committed to providing the highest quality products and services to our customers.

JOBS
We will create jobs for the people of New Mexico. We will provide a safe, secure, and stable work environment. We will provide a fair and equitable wage and benefits package. We will provide a safe and healthy work environment.

PEOPLE
We provide equal employment opportunities to all qualified people who want to work for us. We provide a safe, secure, and stable work environment. We provide a fair and equitable wage and benefits package. We provide a safe and healthy work environment.

TRAINING AND DEVELOPMENT
We provide training and development opportunities to all qualified people who want to work for us. We provide a safe, secure, and stable work environment. We provide a fair and equitable wage and benefits package. We provide a safe and healthy work environment.

REWARDS
We provide a fair and equitable wage and benefits package to all qualified people who want to work for us. We provide a safe, secure, and stable work environment. We provide a fair and equitable wage and benefits package. We provide a safe and healthy work environment.

CUSTOMERS
We provide a safe, secure, and stable work environment to all qualified people who want to work for us. We provide a fair and equitable wage and benefits package. We provide a safe and healthy work environment.

SUPPLIERS
We provide a safe, secure, and stable work environment to all qualified people who want to work for us. We provide a fair and equitable wage and benefits package. We provide a safe and healthy work environment.

FAMILY
We provide a safe, secure, and stable work environment to all qualified people who want to work for us. We provide a fair and equitable wage and benefits package. We provide a safe and healthy work environment.

COMMUNITY
We provide a safe, secure, and stable work environment to all qualified people who want to work for us. We provide a fair and equitable wage and benefits package. We provide a safe and healthy work environment.

SAFE
We provide a safe, secure, and stable work environment to all qualified people who want to work for us. We provide a fair and equitable wage and benefits package. We provide a safe and healthy work environment.

A TEAM PLAYER
We provide a safe, secure, and stable work environment to all qualified people who want to work for us. We provide a fair and equitable wage and benefits package. We provide a safe and healthy work environment.

PROFESSIONAL
We provide a safe, secure, and stable work environment to all qualified people who want to work for us. We provide a fair and equitable wage and benefits package. We provide a safe and healthy work environment.

A LEADER
We provide a safe, secure, and stable work environment to all qualified people who want to work for us. We provide a fair and equitable wage and benefits package. We provide a safe and healthy work environment.

TECHNICALLY & OPERATIONALLY COMPETENT/SKILLED
We provide a safe, secure, and stable work environment to all qualified people who want to work for us. We provide a fair and equitable wage and benefits package. We provide a safe and healthy work environment.

A PROBLEM-SOLVER
We provide a safe, secure, and stable work environment to all qualified people who want to work for us. We provide a fair and equitable wage and benefits package. We provide a safe and healthy work environment.

COMMITTED TO QUALITY
We provide a safe, secure, and stable work environment to all qualified people who want to work for us. We provide a fair and equitable wage and benefits package. We provide a safe and healthy work environment.

VALUES

TEAM MEMBER IS

Appendix E: Plant Operating Guidelines -2

[PLANT] NORMS

- *We will Properly follow [Plant's] Conflict Resolution Continuum.*
- *We will treat and talk to each other with respect, patience and courtesy.*
- *We will work together as a team, helping and encouraging each other to Contribute and Develop to their Full Potential.*
- *We will treat each other as equals While Managing Differences and Similarities with Maturity and Skill.*
- *We will give and receive feedback responsibly with open and honest communication.*
- *We will Strive to have positive attitudes.*
- *We own the responsibility of expressing our feelings in a mature manner or accepting circumstances as they stand.*
- *We will hold Ourselves and each other accountable for following the Plant Norms.*

Appendix F: Plant Compelling Business Need Statements

Compelling Business Need (CBN)

Trusted Partners

0 - 2 - 4

Zero Risk to: [% Difference] Stops
Our Consumers

MAKING LOSSES DISAPPEAR



