

Organization Development Quality Improvement Process: Progress Energy's Continuous Business Excellence Initiative

V. E. McCuiston, University of South Florida, USA
A. DeLucenay, Progress Energy, St. Petersburg, Florida, USA

ABSTRACT

As the recession intensifies, many organizations are rethinking their work processes for both efficiency and quality enhancement. Even though executives describe the battle to contain costs, productivity and productivity confidence are reportedly on the rise. The most commonly cited factor was not downsizing; it was redesign of work process, followed by quality and/or continuous improvement efforts, strong leadership and employee engagement (Blanchard, 2007; i4cp, 2009, September; i4cp, 2009, January; Rigby & Bilodeau, 2009). Strategies that identify and remove blockages (Six Sigma) and excesses (lean work management initiatives) have become embedded in the public and private sectors. This study of Progress Energy's Continuous Business Excellence strategy summarizes the process documentation and improvement process utilizing an organizational development model of continuous quality improvement (CQI), resulting in a streamlined process, training manuals, new online process update procedures, and substantial cost savings and avoidance. Implications for managers are provided. (145 words)

Keywords: Total Quality Management (TQM); quality; cross-functional teams; problem solving; public utilities; cost-cutting initiatives; employee engagement; Six Sigma; lean work management; organization development; cost savings; continuous quality improvement tools

INTRODUCTION

As the recession intensifies, many organizations are rethinking their work processes for both efficiency and quality enhancement. Even though executives describe the battle to contain costs, productivity and productivity confidence are reportedly on the rise. The U.S. government's lean green and low cost data identifies the highest rate of increase of any quarter since 2003. The classic reason cited in a productivity confidence survey was downsizing, requiring more work to be done per employee. The most commonly cited factor; however, was redesign of work process, followed by quality and/or continuous improvement efforts, strong leadership, and employee engagement (Blanchard, 2007; i4cp, 2009, September; i4cp, 2009, January; Rigby & Bilodeau, 2009).

Quality and Lean Trends

Reflecting the quality and lean trends, the majority of surveyed organizations deployed quality or continuous-improvement strategies, placed more importance on quality programs in 2008 than three years earlier, and spent more than they did in 2007 on more diversified quality applications (i4cp, 2008; Industry News, 2007). Strategies that identify and remove blockages (Six Sigma) and excesses (lean work management initiatives) have become embedded in the public and private sectors. According to the 2007 Industry Week/Manufacturing Performance Institute (IW/MPI) Census of Manufacturers, almost 70% of all manufacturing plants are employing lean as a critical continuous-improvement strategy, signaling a "lean revolution," while 29% said they deployed Six Sigma. However prevalent its usage, lean is not primarily a quick solution for cost savings and avoidance according to James Womack, Lean Enterprise Institute founder. It is fundamentally different from traditional management,

requiring ability to inspire teamwork, strategic innovation, and a passion about the process (Blanchard, 2007; Gonzalez, 2003; Kleason, 2007; Maryland Department of Human Resources, 2009; Measuring..., 2006)

Continuous Business Excellence In Action

Progress Energy's Continuous Business Excellence (CBE) strategy is designed to address the new economic realities, including rising fuel and commodity prices and the need for substantial capital investments. The CBE strategy, representing a fundamental change in the way Progress Energy manages business, is an ongoing effort with each utility and business unit taking actions to ensure increased productivity and proper alignment to deliver operational excellence (Bank of America..., 2009; CBE update, 2009; Continuous Business Excellence, 2009; Florida Public Service Commission, 2007; San Francisco..., 2009).

This article reveals the one-year CBE initiative focusing on the accounting function for customer-requested construction projects. A growing accounts receivable balance triggered further examination and led to a cross-functional process-improvement initiative involving accounting, energy delivery, legal, customer service, and audit services. The article summarizes the process documentation and improvement process utilizing an organizational development model of continuous quality improvement (CQI), resulting in a streamlined process, training manual, new online process update procedures, and substantial cost savings and avoidance. The remainder of the article is divided into three sections. First is the current state of the industry with management tool trends; second, an overview of quality management development; and third, a summary of Progress Energy's Continuous Business Excellence initiative application for customer-requested construction projects resulting in substantial cost savings and avoidance. Finally the authors provide implications for management.

STATE OF THE INDUSTRY: MANAGEMENT TOOLS AND TRENDS

As executives rethink their strategic direction amid economic worries, they are changing the tools they use to manage their businesses. A large portion of organizations utilize quality or continuous-improvement strategies, however, the usage and satisfaction levels of specific quality tools vary according to multiple global surveys. Based on 231 responses to a 2008 Institute for Corporate Productivity survey, a majority of organizations (85.1%) deploy quality or continuous-improvement strategies with Total Quality Management (TQM) (41.5%) being the most used quality tool (i4cp, 2008; i4cp-Executive Summary, 2009). According to Bain & Company's top management tools surveys, based on 1,430 executives in 2008 and 1,221 in 2007 from North America, Latin America, Asia-Pacific, and Europe, usage of traditional quality management tools, such as lean Six Sigma (31%) and TQM (34%) dropped noticeably in 2008 from the 2006 levels. In contrast, satisfaction with lean Six Sigma rose, achieving one of the largest satisfaction-rate increases of the 25 tools ranked. Satisfaction levels for TQM were unchanged even though its ranking dropped from 6th to 16th. International executives used an average of 11 tools out of the 25 popular management tools, indicating a continuing downward trend from previous surveys for international executives. While overall tool use dropped in 2008, especially for long-term planning, usage is expected to change in 2009. Executives project a large increase, particularly among growth and innovation-related tools. As executives struggle through the worst downturn in their experience, many executives recognize the need to continue developing capabilities such as innovation and organizational effectiveness while they continue to trim their workforce (Rigby & Bilodeau, 2007; Rigby & Bilodeau, 2009; Rigby & Bilodeau, 2007). Table 1 illustrates usage and satisfaction levels for the 25 management tools.

Lean Management Strategies

Companies obtain the best results when they employ tools as part of a broad initiative, instead of on limited projects. Lean Six Sigma is the top-ranked tool in satisfaction when part of a major effort, but it ranks 24th when used on a limited basis. A total organizational culture shift is required for successful Six Sigma programs with change beginning at the top of the organization, spurred by executives who mandate quality strategies at every level of business operations. Prior to establishing a Six-Sigma culture, executives must grasp a company's core assets, vulnerabilities and challenges both internally and within their competitive environment. Six Sigma, a tool for statistical analysis and cost savings, is equally a strategy for leadership development. Concurrent with continuous training, cross-departmental teamwork and rewards programs, true quality leaders must develop quality

entrepreneurs who promote innovation in statistical analysis, product design, and customer relations (Feigenbaum, 2007; D'Amore, 2006; Gonzalez, 2003a; Gonzalez, 2003b; Neuhaus & Guarraia, 2008).

Table 1: Management Tool Usage and Satisfaction Rates 2008

Management Tool	Usage (mean=42%)	Satisfaction (mean=3.82)
Benchmarking	76%	3.82
Strategic Planning	67%	4.01
Mission and Vision Statements	65%	3.91
Customer Relationship Management	63%	3.83
Outsourcing	63%	3.79
Balanced Scorecard	53%	3.83
Customer Segmentation	53%	3.95
Business Process Reengineering	50%	3.85
Core Competencies	48%	3.82
Mergers and Acquisitions	46%	3.83
Strategic Alliances	44%	3.82
Supply Chain Management	43%	3.81
Scenario and Contingency Planning	42%	3.83
Knowledge Management	41%	3.66
Shared Service Centers	41%	3.68
Growth Strategy Tools	38%	3.87
Total Quality Management	34%	3.80
Downsizing	34%	3.59
Lean Six Sigma	31%	3.87
Voice of the Customer Innovation	27%	3.88
Online Communities	26%	3.69
Collaborative Innovation	24%	3.71
Price Optimization Models	24%	3.75
Loyalty Management Tools	17%	3.79
Decision Rights Tools	10%	3.68

Key: **Bold** = significantly above the overall mean; **Outline** = Significantly below the overall mean

Source: (Rigby & Bilodeau, *Management Tools and Trends 2009*, 2009, pp. 1, 11, 15, 18)

According to the IW/MPI, the almost 70% usage of lean as a critical continuous-improvement strategy signals a lean revolution. Reports linking lean/Six Sigma hybrids to efficiency and productivity achievements could be attributing to this trend. Lean is not primarily a quick solution for cost reduction, however popular its usage. It is a fundamentally different system from traditional management (Blanchard, 2007; De Mars, 2007). A shortage of executives versed in lean work management strategies indicates that companies may need to train high-potential in-house talent. Lean strategies, developed first by Toyota, are now designed to eliminate broader waste problems in both the service and manufacturing sectors. Lean strategies, which save on materials, money, time, and space, set the stage for the more finely-tuned quality strategies of Six Sigma (Measuring, 2006; George, 2005).

Sustaining a quality management process includes a chain or series of business operations that involve a circular progression in which continuance is the dominant concern. Business processes follow and lead into one another in an unending circular chain rather than being relegated to discrete action-units with distinct beginnings and endings. Throughout the process, values, tools, and techniques interrelate holistically and continue evolving, building on previous achievements and further developing in subsequent iterations. While the tools are similar across industries, use variance reflects different effects of the global downturn. By industry sector, the heaviest tool users are consumer products, pharmaceuticals and biotech, food and beverage, and chemicals and metals. The lightest users by industry sector are utilities and energy, construction and real estate, retail, and financial services (Svensson, 2006; Rigby & Bilodeau, 2009).

Optimism About Future Growth

One recurring theme is optimism about future growth. Confidence in productivity is confidence in the future of the economy. Results from the Productivity Confidence Index indicate an index increase from 20.3 in April to 22.1 in July. The study found that overall 62% of respondents expect productivity to rise in the next six months. U.S. government data has shown positive productivity news with the highest rate of increase of any quarter since 2003. Likewise, optimism about future growth is a recurring theme among executives (Vickers, 2009; i4cp, 2009; i4cp, 2008b; Rigby & Bilodeau, 2009).

Cost-Cutting is Key

A second recurring theme is cost-cutting. As the recession continues, executives increasingly focus on short-term cost-cutting goals. Executives' heavy use of benchmarking and business process reengineering cost-cutting tools is not uniformly supported by satisfaction with the results. Executives describe their attempts to contain costs by eliminating discretionary investments and using out-sourcing and off-shoring to maintain the lowest possible cost structure. All regions, however, are not focused on cost reductions. European and Asian executives are less concerned about meeting growth targets than their North and Latin American counterparts. Strategy is key for Latin American companies with the heaviest use of both strategic planning and growth strategy tools. In the Asia-Pacific region, however, Chinese executives are heavy users of cost-management and planning tools of benchmarking, strategic planning, supply chain management, and TQM.

QUALITY MANAGEMENT MOVEMENT

No discussion of the quality management movement would be complete without including Deming's 14 points or Juran's statistical formulations that led to Six Sigma and lean. According to Leadership Institute, Inc. analysts, W. Edward Deming's 14 points provide a philosophical framework for the quality management movement by hypothesizing that efficiency among employees is increased through self- and skill-improvement programs in an employee-morale-boosting work environment. He further identified numerical goals and short-term profits as impediments to sustained productivity, brand reputation, and long-term profits. Deming's plan was originally developed for Japan's automotive sector to make them more globally competitive. The plan emphasized an organizational commitment to a "constancy of purpose" in an ever-changing business environment. He believed that leaders, who can both model and drive quality strategies throughout an organization, are critical to quality success. Deming further emphasizes the benefits of quality by stating, the need for mass inspections can be eliminated by making quality control integral to innovation at every stage of product development (Leadership, 2008).

Joseph M. Juran first articulated his quality principles in 1928 in a pamphlet titled, "Statistical Methods Applied to Manufacturing Problems." Juran's statistical formulations aimed at reducing errors and waste in manufacturing and other business processes. Juran was among the first to stipulate customers' needs as critical to the design and marketing of products and services. He developed the Pareto principle (80-20 rule) which posits that 20%, or the "vital few," provide resources for 80%, or the "useful many." Juran's Six Sigma processes are diagramed by quality experts as a series of steps. The steps include a planning and design phase, an assessment of costs of poor quality and chronic waste phase, a development of improvement strategies phase, followed by new zones of quality control phase. Juran's Quality Control Handbook, published in 1951, remains the gold standard for quality managers today (Bunkley, 2008).

Some quality terms indicate statistical processes, which others have an international significance. Table 2 includes definitions of some of the most frequently used quality terms (isixsigma, 2008).

Conditions for Success

The call for effective quality management is considerably more urgent today than it was a quarter of a century ago. Six Sigma and lean strategies have become embedded in both the public and private sectors. Reports linking lean/Six Sigma hybrids to efficiency and productivity achievements are a source of stimulation for establishing the lean revolution. The chief barrier to Six Sigma success is the failure to promote a continuous

improvement mindset throughout an organization. Senior management will have a key supportive role in the process of blending Six Sigma strategies with an organization's unique culture, says Webber of the Hackett Group; piecemeal Six Sigma implementation spells likely failure (i4cp, 2009; Neuhaus & Guarraia, 2008; Six Sigma, 2007). Learning to diversify Six Sigma applications can help leaders gain a broader understanding of the overall workings of an organization and help drive better business results while they gain skill at discerning the relative value of some Six Sigma measurements (Pande, 2008).

Table 2 - Quality Term Definitions

Quality Term	Definition
Six Sigma	Statistical control process inspired by Juran's theories and fully developed at Motorola; reduces output fluctuations and errors through processes that define, measure, analyze, improve and control (DMAIC).
TQM	Generic perpetual improvement philosophy adopted by management and HR; may rely on a wide range of quality tools and training programs; many TQM programs based their quality standards on Malcolm Baldrige Quality Award criteria.
Lean manufacturing	Developed at MIT, strives to eliminate waste in production and business processes; goal is to optimize customer relations, as well as the quality of products and operations, which expending the least amount of time, workspace and human exertion.
Kaisen & Kaisen events	Japanese terms that refer, respectively, to Six Sigma continuous-improvement processes and the events that promote such processes.
JIT or Just-in-Time	Manufacturing limits inventories to the requirements of real-time orders, which prevents unnecessary accumulation of production outputs.
Kanban	A feature of JIT manufacturing; is a Japanese terms for the signal that regulates the flow of manufacturing from one step to the next

Source: isixsigma. (2008). Term Definitions.

Challenges and Barriers

Leaders need to be aware of Six Sigma's sacred cows of elevating processes over people, always accepting the customer's point of view, and assuming there is only one correct solution to a problem or the notion that the key to better decision making is always better data. A critical requirement of successful Six Sigma is to maintain a balanced and flexible approach to such business paradoxes. Managers who face organizational resistance to building a quality culture may first have to demonstrate the value of quality in a contained and controllable project that arrives at measurable quality processes and improvements that can be standardized. Diligence, patience, and sustained enthusiasm are required as it often takes more than one successful event to change an organizational mindset. Six Sigma partnered with lean can save companies billions when applied to finance, IT, procurement and HR shared services, say analysts from the Hackett Group. Taken alone, Six Sigma may be a good strategy for attaining step-by-step improvements, but it is not the best tool when the goal is making broad organizational change (Six Sigma, 2007; Logan, 2008).

Benefits: Productivity and Innovation

While Six Sigma is a methodical, structured process, it can still serve as a vehicle for innovation. The goal in applying the Six Sigma methodology to business processes is to reap the benefits of improvements in efficiencies, reductions of waste, fewer variations and defects and other operational gains. Eichel posits that these gains translate into measurable savings which can be invested in exploring innovative ideas by freeing up employees to channel their expertise, energy, and time to generate new ideas instead of firefighting recurring problems. Firms that use a lean Six Sigma hybrid approach achieve both broad-based innovation and superior financial performance. Hot spots of innovation develop within an organization that can combine the right environment, the right culture, and the right attitude with a point of ignition, according to research from Lynda Gratton of London Business School. While the organization does not direct the emergence of such hot spots, the organization's leaders play a pivotal role in establishing the culture in which the hot spots may be seeded. In addition, taking a diagnostic x-ray assessment of hidden quality issues in advance, beginning with value-stream mapping that identifies processes, costs and inefficiencies, can optimize the results of lean Six Sigma deployment (Eichel, 2008; Neuhaus & Guarraia, 2008; Byrne, Lubowe, & Blitz, 2007; Hay Group, 2007; Vickers, 2007; Mandel, Hamm, & Farrell, 2006; George, 2005).

CONTINUOUS BUSINESS EXCELLENCE: A PROGRESS ENERGY SUCCESS STORY

Electric Utility Industry Challenge

The electric utility industry represents the second most capital-intensive sector in the U.S.A., surpassed only by the railroad industry. Many of the industry's costs stem directly from investments in and maintenance of the power plants, transmission and distribution lines, equipment, and structures that are used to deliver electricity where it is needed (Chupka, et. al., 2009, Cannell, 2009). The U.S.A electric utility industry is facing the greatest challenge in its history. According to Edison Electric Institute, the demand for electric service is increasing, reserve margins are shrinking and input costs to build infrastructure for all types of electricity production are soaring. Global climate change and other environmental issues are directing the industry toward greater development and use of energy efficiency products and services and low-emissions supply sources, all of which come with costs (Electric, 2009; About, 2009). Progress Energy is addressing the challenge through a systematic lean initiative.

Progress Energy

Progress Energy (PE), headquartered in Raleigh, North Carolina, U.S.A., is a Fortune 500 energy company with more than 21,000 megawatts of generation capacity and \$9 billion in annual revenues. It consists of two high performing electric utilities with strong growth prospects - Progress Energy Carolinas (PEC) in Raleigh, North Carolina, and Progress Energy Florida (PEF) in St. Petersburg, Florida. PEC has 12,400 MW capabilities with 1.4 million customers; PEF has 9,400 MW capacities with 1.7 million customers (Johnson, 2008).

In February, 2009, Progress Energy initiated Continuous Business Excellence: Working together for a stronger future (CBE), described at the beginning of this article. The senior leadership team initiated the systematic lean effort even before the nation's financial crisis hit hard this fall. The CBE effort is to focus the entire organization on achieving sustainable efficiency and productivity gains every year - 3 percent to 5 percent annual improvement. CBE involves such things as streamlining work processes, taking advantage of new technology, and eliminating waste and low-value activities. It is about making structural changes so that PE can free up dollars to reinvest back into maintaining its current facilities, as well as fund the extensive capital projects critical to its future (CBE Update, 2009; Continuous, 2009).

CBE focuses on improvements in efficiency using lean tools. Lean focuses on eliminating waste in any process by establishing a forum for a systematic review of PE work processes. Each task is mapped so the team can evaluate the process in its entirety and identify inefficiencies. Employee involvement is essential, because our employees are the experts in our business processes, says Bill Johnson, Chairman, CEO, and President of PE (Continuous, 2009). According to the senior vice president leading the companywide CBE initiatives, the CBE program will focus on three areas; e.g, targeted lean deployment, business unit activities and projects, and employees ideas. The lead-and-implement charge of the CBE cross-departmental steering committee is to build a common understanding and alignment of CBE across business units; develop and tract metrics for measuring CBE progress; coordinate message communication; and strategically identify future process-improvement opportunities.

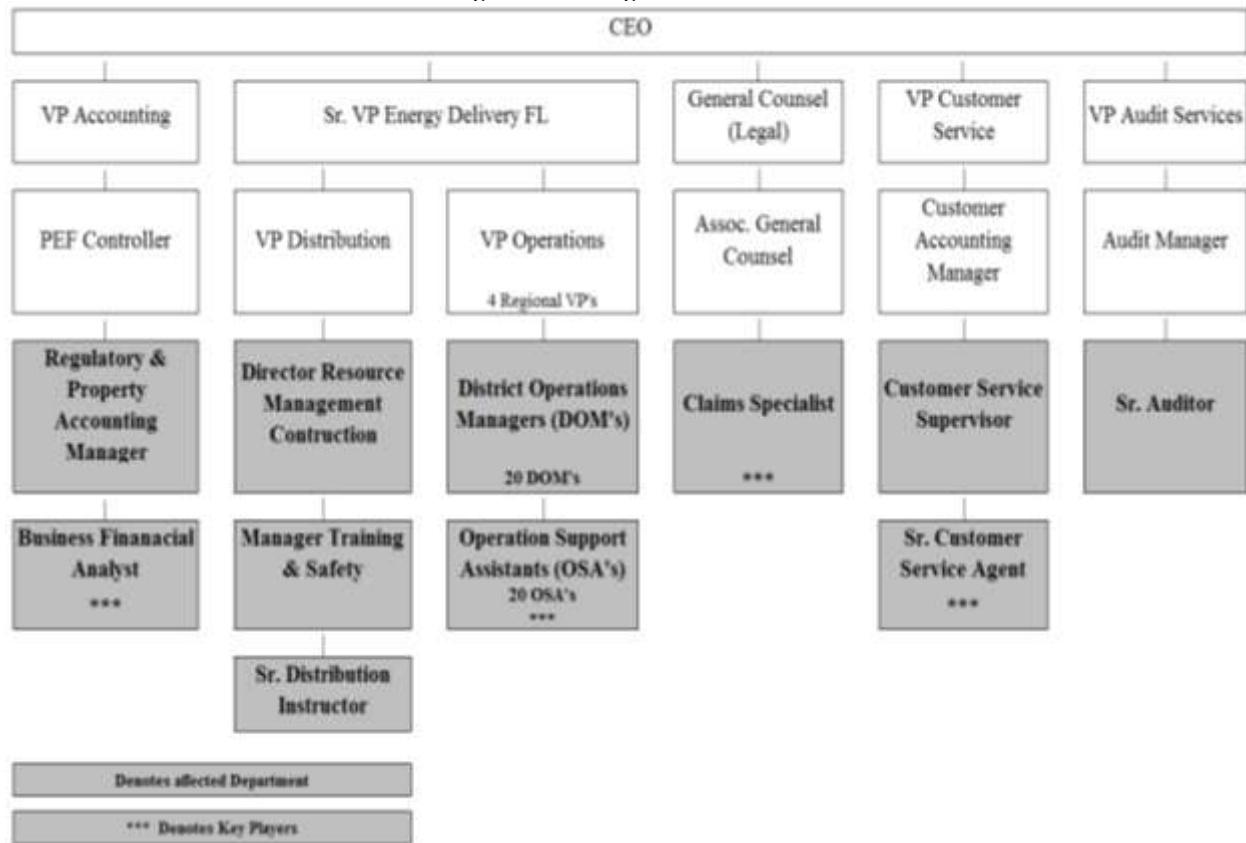
CBE in Action - CIAC

CIAC Defined. One of the CBE success stories at PEF is a cross-functional team that applied the lean tools to the contribution in aid of construction (CIAC) area. CIAC is a customer initiated request beyond the standard of service required by the Florida Public Service Commission. The standard of service in Florida is overhead power lines. If a PE residential or commercial customer requests that underground line be installed, the customer would have to pay for the difference in costs. Additionally, if a customer requests to have line lay beyond a maximum distance off of the main line, the customer will pay for the additional line. Per the Florida Public Service Commission Tariff, the PE is permitted to collect payment for these customer-initiated requests in advance of construction as the company is not allowed to terminate electric service for non-payment of this type of non-electric service account. Damage claim accounts are another type of non-electric service account.

Problem Identification. As there is no contract for customer initiated requests until the customer payment is received, the account information is setup at the time of payment receipt. When the payment is received, the Operation Support Assistant (OSA) sets up a non-service account and posts the charges. The payment is then set to Remittance Processing and posted to the account. Theoretically there should be accounts receivable for only the period between charges being posted and remittance being posted, approximately one week. The CIAC portion of non-electric service accounts should be only the accounts credited with the last week and would show up on the balance sheet only at an accounting period close. An unanswered question was the impetus for the CBE application. How can the accounts receivable balance for CIAC be over \$4 million for payments that were collected in advance?

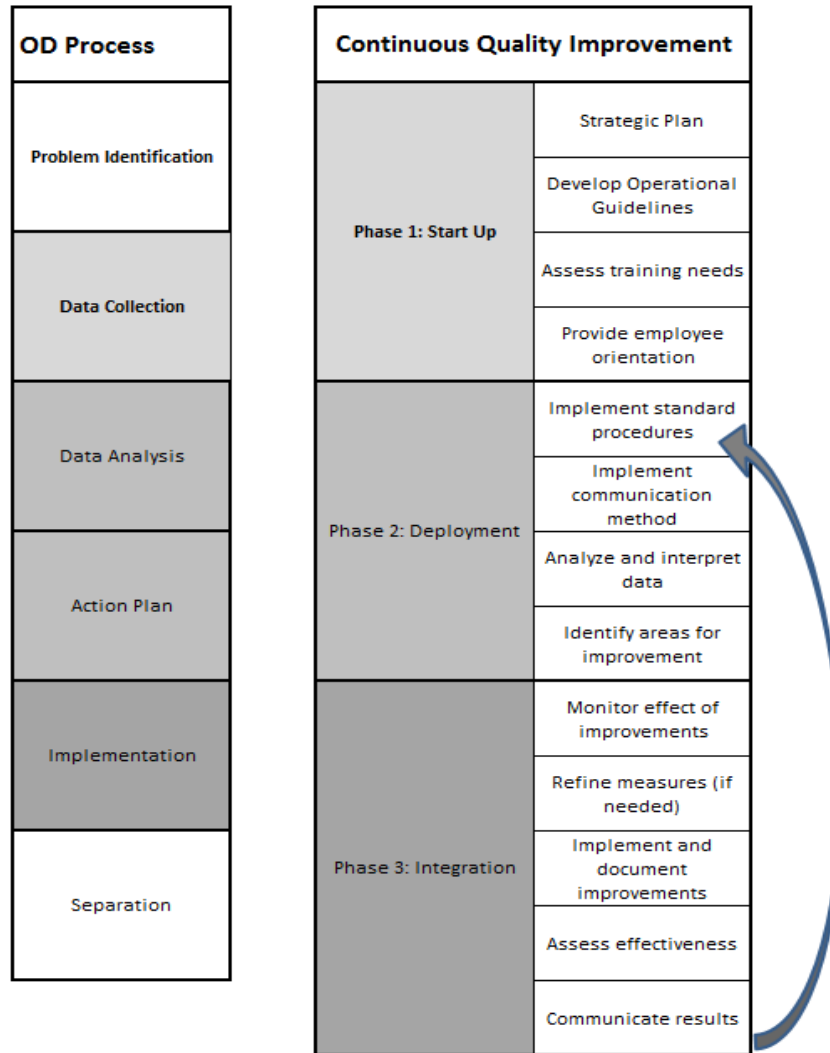
Participants. The senior business financial analyst in Regulatory and Property Accounting was selected to lead the CBE process focusing on the accounts receivable balance for CIAC projects. She had both experience and expertise in work process systems. A cross-functional team was established with representatives from each of the affected areas, Accounting, Distribution, Operations, Legal, and Customer Service. Figure 1 - PE Organization Chart identifies each of the functional areas and denotes key players.

Figure 1 - PE Organization Chart



Methodology: Continuous Quality Improvement Process. Utilizing an organization development (OD) action research approach (Cummings & Worley, 2009), a continuous quality improvement process (CQI) was implemented. The **distinct** phases of the OD approach were problem identification, data collection, data analysis, action plan, implementation, and separation. These phases were blended with the continuous quality improvement process into three phases; e.g, Phase 1: Start Up; Phase 2: Deployment; and Phase 3: Integration. Each of the phases had specific activities and guidance for the activities. **Figure 2 - Stages of OD Approach + Continuous Quality Improvement Model**, illustrates the blending of the OD approach with the CQI model and identifies the activities involved.

Figure 2 - Stages of OD Approach + Continuous Quality Improvement Model



Results. The results of the CBE study can be divided into four categories; e.g., monetary, process, training, and evaluation. The monetary results were significant. The accounts receivable balance for customer-initiated construction requests beyond the standard of service and damage claims decreased from \$4 million to under \$500,000 in less than five months. Process results produced a detailed documentation of the streamlined CIAC process, which is illustrated in **Figure 3: CIAC Process Flow**.

Training results consisted of an on-line CIAC process manual. The manual was designed to be a reference for coding and contacts and a step guide for new OSAs. The manual provided 1) a step-by-step process for anyone new to be able to complete the function without in-depth training, 2) a resource to those experienced in the position and as a source for newly-introduced processes; and 3) a reference for needed information. As the manual was in both printed and online format, it could be updated online. Training results also included four regional trainings that required participation of all OSAs and their managers. The training sessions were designed for both issues - identification and resolution, as well as CIAC work process education.

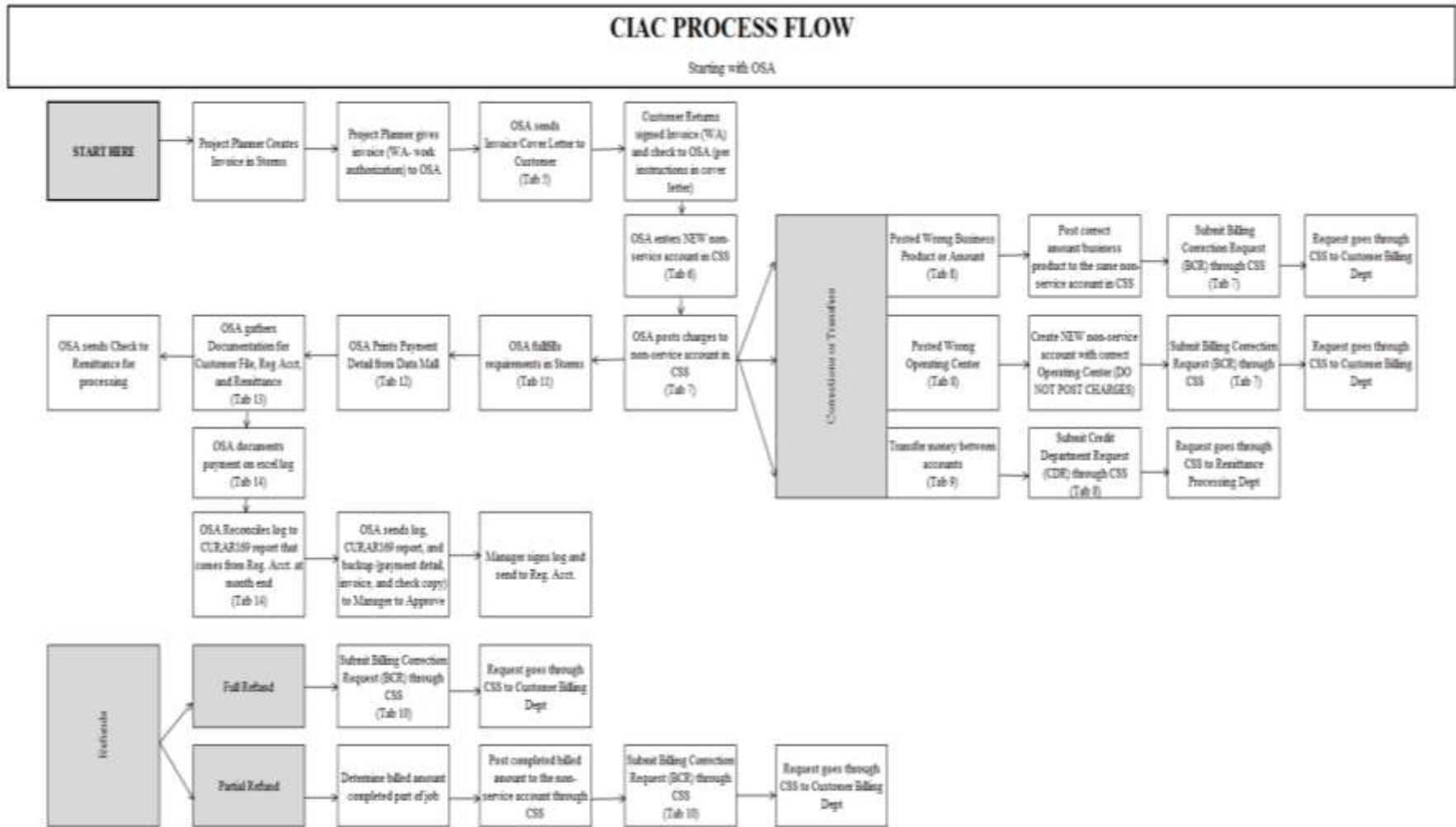


Figure 3 - CIAC Process Flow

Evaluation results included evaluating all the deliverables. Additionally, after the final training session, a monitoring/tracking process was initiated through system reporting that revealed the substantial reduction in accounts receivable from \$4 million to under \$500,000 in less than five months.

Implications for Management

Train in-house Talent. A shortage of executives versed in lean work management strategies suggests that organizations may need to train high-potential in-house talent in order to derive the benefits of lean work management strategies. Qualified candidates for lean management training must have the ability to inspire teamwork, strategic innovation, and a passion about the process. Look for candidates outside the organization's standard profile for continuous training and cross-departmental teamwork.

Change Corporate Culture: Establish a Top Management Support system that is engaged in any redesign efforts, as well as in achieving buy-in for those efforts from the employee population as a whole. Seek support at top management levels to change corporate culture. Implementation of Six Sigma or any other continuous process improvement method enables change by providing communication tools, success stories, software tools and measurement schemes. Senior management will have a key supportive role in the process of blending Six Sigma strategies with an organization's unique culture

Seek Lean Work Management Best Practices. Bone up on best practices. Learn from others' successes, but fine tune your continuous quality improvement process to your organization's goals, values, and strategic imperatives. Learning to diversify Six Sigma applications can help leaders gain a broader understanding of the overall workings of an organization and help drive better business results while they gain skill at discerning the relative value of some Six Sigma measurements. Set a long-range timeline for achieving results. Celebrate successes in innovation, monetary achievements, process improvements, behavioral changes and development, and cultural changes

Jump-Start the Transformation. Initial efforts include dedicated training time, resources and start-up projects. Once processes and capabilities are established, ensure that the innovation climate endures.

SUMMARY

Economic challenges are forcing organizations to rethink their work processes for both efficiency and quality enhancement. Even though executives are concerned with cost containment, productivity and productivity confidence are reportedly on the rise. The most commonly cited factors for strengthening the confidence are redesign of work process, quality and/or continuous improvement efforts, strong leadership, and employee engagement. Strategies that remove blockages and excesses have become embedded in the public and private sectors.

AUTHOR INFORMATION

Dr. Velma McCuiston earned her D.B.A. in organizational behavior and development at the George Washington University of Washington D.C. in 1985. She has over twenty-five years of international corporate and ten years of academic experience and serves on the editorial review board of the *Journal of Business Cases and Applications*. Her research/publication areas of expertise are leadership, teams, coaching, and strategic management.

Amber DeLucenay earned her M.B.A. from the University of South Florida in St. Petersburg, Florida in 2010. Her background is in accounting and accounting systems. She has extensive experience and expertise in work flow process and work flow process improvement.

REFERENCES

1. "About the Industry | History." *Edison Electric Institute*, Retrieved on 12/16/09 from <http://www.eei.org/whoware/AboutIndustry/Pages/History.aspx>

2. Bank of America Merrill Lynch. (10/27/2009). *Progress Energy Lowering Ratings on Regulatory Politicization*. New York, NY: Peter Quinn.
3. Blanchard, D. (2007, October 1). Census of U.S. manufacturers – Lean green and low cost. *Industry Week*. Retrieved from www.industryweek.com
4. Bunkley, N. (2008, March 3). Joseph Juran, 103, pioneer in quality control, dies. *New York Times*. Retrieved from www.nytimes.com
5. Byrne, George, Dave Lubowe and Amy Blitz. “Using a Lean Six Sigma Approach to Drive Innovation.” *Strategy & Leadership*, Vol. 35, No. 2, 2007, pp. 5-10.
6. CBE update from Paula Sims. (10/15/2009). ProgressNet News Homepage (Progress Energy Internal News Page). Article posted to http://progressnet/News/2009/Pages/InProgress_PaulaSimsCBEupdate.aspx.
7. Cannell, Julie. “The Financial Crisis and Its Impact on the Electric Utility Industry.” *Edison Electric Institute*, February 2009. Retrieved from http://www.eei.org/ourissues/finance/Documents/Financial_Crisis_and_Industry.pdf
8. Chupka, M., Earle, R., Fox-Penner, P., & Hledik, R. “Transforming America’s Power Industry: The Investment Challenge 2010-2030.” The Edison Foundation, November 2008. Retrieved from http://www.eei.org/ourissues/finance/Documents/Transforming_Americas_Power_Industry.pdf
9. Continuous Business Excellence: Working together for a stronger future. (2/2/2009). ProgressNet News Homepage (Progress Energy Internal News Page). Article posted to <http://progressnet/news/2009/Pages/101014.aspx>.
10. Cummings, T. & Worley, C., (2009). *Organization Development and Change*. 9th ed., Mason, OH: Cengage Learning.
11. D'Amore, N. (2006, February). "Six Sigma adds up at Pharma." *Med Ad News*, p. 18.
12. De Mars, L. (2007, April). Six stigma? Does Six Sigma really work? *CFO Asia*, Retrieved from www.cfoasia.com
13. Eichel, A. (2008, March 24). Six Sigma, innovation can co-exist. *Canadian HR Reporter*, 21(6), 23.
14. “Electric Utility Industry Financial Data and Trend Analysis.” *Electric Institute*, Retrieved on 12/16/09 from <http://www.eei.org/whatwedo/DataAnalysis/IndusFinanAnalysis/Pages/QtrlyFinancialUpdates.aspx>
15. Feigenbaum, A. V. (2007, February), The international growth of quality. *Quality Progress*, 36-40.
16. Florida Public Service Commission. (6/27/2007). Docket No. 070327-EI – Petition for approval of Contributions-in-aid-of-construction tariff revision, by Progress Energy Florida, Inc. Tallahassee, FL: Draper & Holley.
17. George, M. “Integrating Lean and Six Sigma” [www.isixsigma.com]. Obtained February 28, 2005.
18. Gonzalez, J. (2003a, May 23). Implementing Continuous Process Improvement: When Can Corporate Culture be Changed? Retrieved from <http://www.i4cp.com/strategic-insights/2003/05/23/implementing-continuous-process-improvement-when-can-corporate-culture-be-changed>.
19. Gonzalez, J. (2003b, January 17). Six Sigma: Blast From the Past or Next Best Thing? Retrieved from <http://www.i4cp.com/strategic-insights/2003/01/17/six-sigma-blast-from-the-past-or-next-best-thing>
20. Hay Group. Embracing Our Future, June 2007.
21. Industry news: Baldrige Awards presented. (2007, May 15). *Quality Magazine*. Retrieved from www.qualitymag.com
22. Institute for Corporate Productivity (i4cp). (2008a). ASTD/i4cp Talent Management Study. Unpublished data. Retrieved from www.i4cp.com.
23. Institute for Corporate Productivity (i4cp). (2008b). *Taking the pulse: Quality Management, 2008*. Retrieved from www.i4cp.com
24. Institute for Corporate Productivity (i4cp). *Executive Summary: Quality Management Resources*. Retrieved on 12/16/09 from <http://www.i4cp.com/strategy/quality-management/executive-summary>
25. Institute for Corporate Productivity (i4cp). (2009b, January). Taking the pulse: 2009 forecast. Retrieved from www.i4cp.com
26. isixsigma. (2008). Term definitions. Retrieved March 7, 2008 from www.isixsigma.com
27. Johnson, B. (2008). *Securing Our Energy Future*. Morgan Stanley Global Electricity & Energy Conference, Retrieved from <http://www.progress-energy.com/investors/4308.pdf>
28. Kleasen, Kim. “Building Human Resources Strategic Planning, Process and Measurement Capability: Using Six Sigma as a Foundation.” *Organization Development Journal*, Summer 2007, pp. 37-41.

29. Kuhn, T & Owens, D. "Electricity: Powering The Change That America Needs." *Edison Electric Institute*, February 12, 2009. Retrieved from http://www.eei.org/ourissues/finance/Documents/Wall_Street_Briefing_2009.pdf
30. Logan, T. E. (2008, January). Building a quality team. *Quality Progress*, 41(1), 96.
31. Leadership Institute, Inc. (2008). Who is Dr. W. Edwards Deming? Retrieved March 2008 from www.lli.net
32. Mandel, M., Steve H., & Farrell, C. "Why the Economy Is a Lot Stronger than You Think." *BusinessWeek*. ProQuest. February 13, 2006.
33. Maryland Department of Human Resources. (2009). *Department of Human Resources Organizational Development Guide*. Maryland: No Author.
34. "Measuring Your HR Expenditures Against 'Great Places to Work' Companies." *Best Practices in HR*, February 18, 2006, p. 5
35. Neuhaus, K., & Guarraia, P. (2008, January 7). Want more from lean Six Sigma? *BusinessMirror*. Retrieved from www.businessmirror.com
36. Pande, P. (2008, January 2). Six Sigma for leaders. *Quality Magazine*. Retrieved from www.qualitymag.com
37. Rigby, D., & Bilodeau, B. (2007). *Management tools and trends 2007*. Bain & Company. Retrieved from www.i4cp.com
38. Rigby, D., & Bilodeau, B. (2009). *Management tools and trends 2009*. Bain & Company. Retrieved from www.bain.com
39. San Francisco Public Utilities Commission. (3/16/2009). San Francisco Public Utilities Commission Water System Improvement Program Construction Management Business Processes. San Francisco, CA: No Author.
40. "Six Sigma Not a Silver Bullet for Back-Office Improvements." *CRMToday* [www.crm2day.com]. January 18, 2007.
41. Svensson, G. "Sustainable Quality Management: A Strategic Perspective." *The TQM Magazine*, Vol. 18, No. 1, 2006, pp. 22-29.
42. Vickers, M. (2009, September 18). Uncovering the Secrets to Higher Productivity. *Trendwatcher* 476. Retrieved from www.i4cp.com
43. Vickers, Mark. (2007, January 12) *Productivity in a New Century*. *I4CP*. Retrieved from <http://www.i4cp.com/trendwatchers/2007/01/12/productivity-in-a-new-century>