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Sustainable Organization of A Lean Six Sigma Program: A Competing Values Perspective

By

Marilyn Jane Tom

A Dissertation Submitted in Partial Fulfillment of the Requirements for the Degree

Of

Doctorate in Business Administration

in the Robinson College of Business

Of

Georgia State University

GEORGIA STATE UNIVERSITY

ROBINSON COLLEGE OF BUSINESS

2020

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ACCEPTANCE

This dissertation was prepared under the direction of the MARILYN JANE TOM Dissertation Committee. It has been approved and accepted by all members of that committee, and it has been accepted in partial fulfillment of the requirements for the degree of Doctorate in Business Administration in the J. Mack Robinson College of Business of Georgia State University.

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ACKNOWLEDGEMENTS

“Shoot for the moon. Even if you miss, you’ll land among the stars.” – Les Brown

I would like to take this opportunity to thank my advisor and mentor, Lars, who has been a continual source of inspiration and guidance throughout my doctoral journey – thank you for your patience, steadfast support, and lifting me up to overcome the setbacks and challenges that came my way. I would also like to thank my esteemed committee members, Satish and Kris, for sharing your invaluable expertise and recommendations to continually strengthen and shape my dissertation. Thank you also to the wonderful DBA program staff members for making things as seamless as possible throughout our journey – Jorge, Stephanie, Lars, Louis, and Tracy.

I have been fortunate to be part of a phenomenal cohort of classmates (the DBA class of 2020) who I have learned so much from as we grew throughout our three years together, intellectually challenged each other, and demonstrated what true collaboration and peer support looks like. Thank you to Raj, Babu, Johnson, Sarah, Jung, Jimmy, Felipe, Courtney, Charles, Tireon, Henry, Shevon, Robin, Freeha, Jenn, Sean, Anna, Daphne, Darrell, BP, Denise, and Dania for making each residency so engaging and enriching – you are not only my classmates, but I’m grateful to also be able to call you my friends (and you’ll notice that our preferred seating order is now captured in perpetuity!). An extra shout-out to my group paper partner, Sarah, for your continual advice, inspiring collaboration, and shared love for social and economic justice. A thank you goes out to the many DBAs who have paved the way for us too – I especially would like to thank Laté for the multitude of conversations we’ve had as I contemplated the decision to kick-start my DBA endeavor. Our cohort’s journey would not have been possible without our incredible DBA professors as well, laying the foundations for our engaged scholarship, and sharing their wisdom and experiences with us – a big thank you to Dr. Arun Rai, Dr. Mark Keil, Dr. Todd

Maurer, Dr. Pam Ellen, Dr. Sub Samaddar, Dr. Mark Rider, Dr. Lars Mathiassen, Dr. Karen Loch, Dr. Louis Grabowski, and Dr. Richard Baskerville.

For the content needed to carry out this study, I am indebted to my previous colleagues at Johnson & Johnson Inc. who shared their valuable time participating in either the phone/video interviews or the email surveys. Your insights, perspectives, and recommendations brought true life to my research question – and I hope I have represented your experiences well. A special thank you goes out to those who spent additional time collaborating with me to shape the overall approach for the study and laying the necessary groundwork. Due to the anonymity associated with your participation in this study, I regret not being able to list your names here – but thank you so very much, and I am proud to have worked alongside you at J&J. I am thankful also to my managers at CARE USA (Annie, Jared, Anan, and Stacy), who have been supportive through my doctoral journey, giving me the flexibility needed to balance work- and school-life.

I would like to dedicate this dissertation to my husband and best friend, Vaughn – without your unrelenting love, encouragement, and support, I definitely would not have been able to complete this life-changing journey (and wouldn't have even started it without your much-needed friendly push). I am grateful for your inspiration, our lifelong adventures together, and making me laugh everyday. I would also like to dedicate this dissertation to my parents – you have always been so supportive of my endeavors, helping me chase my dreams since I was a little girl, no matter how simple or challenging they may be. A very big thank you to my brother and sister-in-law, Allan and Melissa, and my sweet nephews for your unwavering support and love. Tristan and Devon – “Mar Mar” can't wait to see where your dreams take you, and I promise to be there for you every step of the way. Finally, I would like to thank my extended family members and my dear friends for being my personal cheerleaders throughout my doctoral journey – I love you all.

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LIST OF ABBREVIATIONS

5S	Sort, Set in order, Shine, Standardize, Sustain
DMAIC	Define, Measure, Analyze, Improve, Control
ERP	Enterprise Resource Planning
FDA	Food and Drug Administration
J&J	Johnson & Johnson, Inc.
LSS	Lean Six Sigma
SOX	Sarbanes-Oxley Act

ABSTRACT

Sustainable Organization of a Lean Six Sigma Program: A Competing Values Perspective

By

Marilyn Jane Tom

July 2020

Committee Chair: *Dr. Lars Mathiassen*

Major Academic Unit: *Doctorate in Business Administration*

Lean Six Sigma has been adopted by tens of thousands of organizations as a process improvement methodology to cut costs, increase efficiencies, and drive shareholder value. However, the majority of organizations fail to reap the benefits intended by the methodology and experience challenges in sustaining the Lean Six Sigma program long-term. Although guidance exists for organizations to successfully implement Lean Six Sigma, there is a dearth of literature on the inner workings of large-scale organizations as they maintain and sustain long-term Lean Six Sigma programs. To address this gap, we provide a retrospective in-depth case study of a Fortune 500 organization, Johnson & Johnson Inc., which has been successful in both implementing and sustaining Lean Six Sigma for 13 years (from 2002 to 2015). We draw on the Competing Values Framework developed by Quinn and Rohrbaugh (1981) to analyze Johnson & Johnson's sustainment of its Lean Six Sigma program, referred to internally as the "Process Excellence" program. A balanced set of competing values signifies organizational effectiveness – and our findings provide a detailed account of how Johnson & Johnson managed the competing values of people versus organization, flexibility versus control, and means versus ends throughout each period of its Lean Six Sigma program lifecycle. We provide examples where the organization focused on particular competing values in alignment with general guiding principles for Lean Six

Sigma sustainment, in addition to examples focusing on particular competing values to address potential root causes of Lean Six Sigma failure. Opportunities for Johnson & Johnson to better balance each set of competing values are provided as recommendations for potential future revival of its Process Excellence program – in addition to guidance for leadership team members, practitioners, and stakeholders in Lean Six Sigma organizations outside of Johnson & Johnson. As a result, we offer a detailed empirical account of how an enterprise organized, managed, and sustained its Lean Six Sigma program over a significant period of time; we demonstrate the application of the Competing Values Framework in the study of a large-scale Lean Six Sigma organization; and we provide exemplary lessons for leaders and practitioners implementing and managing process improvement programs within their own organizations.

Keywords: Lean Six Sigma, process improvement, competing values, sustainable organization, Johnson & Johnson

I INTRODUCTION

Lean Six Sigma (LSS) is a business process improvement methodology that has been adopted by tens of thousands of organizations, saving Fortune 500 companies an estimated \$427 billion from 1987 to 2007¹. Organizations are constantly looking for ways to minimize costs, streamline their processes, and improve the quality of their products and services to increase customer satisfaction. How can an organization boost its “bottom line” organically, by re-engineering its internal and external processes, and not having to make a significant investment in research and development? What inefficiencies, bottlenecks, or errors are preventing the organization from performing at its highest capability and potential? LSS provides a framework and approach for organizations to address these questions, as well as a strategy for long-term success.

I.1 History of Lean and Six Sigma

Six Sigma was first initiated by Motorola in the 1980s and attributed to Bill Smith and Dr. Mikel J. Harry (both employees at Motorola) as co-founders². Smith and Harry developed the business process improvement methodology to address the extreme pressures that Motorola was facing in its pager business from overseas competition, particularly Japan (Antony, Snee, & Hoerl, 2017). The name “Six Sigma” was given to reflect the overall goal in reducing the variation in process metrics, such that acceptable product defects (or errors) are those limited to falling within six standard deviations (i.e. six “sigmas”) of the target (Harry & Schroeder, 2000), specifically three standard deviations above the mean, and three standard deviations below the mean. Stated

¹ SixSigma.com, *Six Sigma Quality* - <https://www.sixsigma.com/why-six-sigma/>

² Quality Digest, *Six Sigma Pioneer Mikel Harry Dies at 65* - <https://www.qualitydigest.com/inside/six-sigma-news/six-sigma-pioneer-mikel-harry-dies-65-042617.html>

another way, a Six Sigma process is one in which less than 3.4 defects occur for every one million opportunities.

Six Sigma projects follow a prescribed format, with specific tools applied throughout its five phases of Define, Measure, Analyze, Improve, and Control (also referred to as DMAIC as a whole). It is to be noted that Motorola had initially developed the methodology with only Measure, Analyze, Improve, and Control, but GE further developed the methodology in the early 2000s and introduced the important phase of Define (Hoerl, 2001). Within the Define phase, a project team outlines the problem at-hand, identifies the project goals and objectives, determines the key metrics to validate success, and outlines the roles and responsibilities of project team members and stakeholders. The Measure phase establishes the baseline performance of the process by defining the key metrics, collecting data on the key metrics, and documenting the current process. Within the Analyze phase, the project team identifies root causes of defects or variation, bottlenecks in the process, and opportunities for re-sequencing or re-engineering. Potential solutions to address the root causes and improvement opportunities are identified and tested within the Improve phase, and process controls are established within the Control phase to sustain the improvement. A summary of the objectives within each phase of DMAIC are shown below in Figure 1:

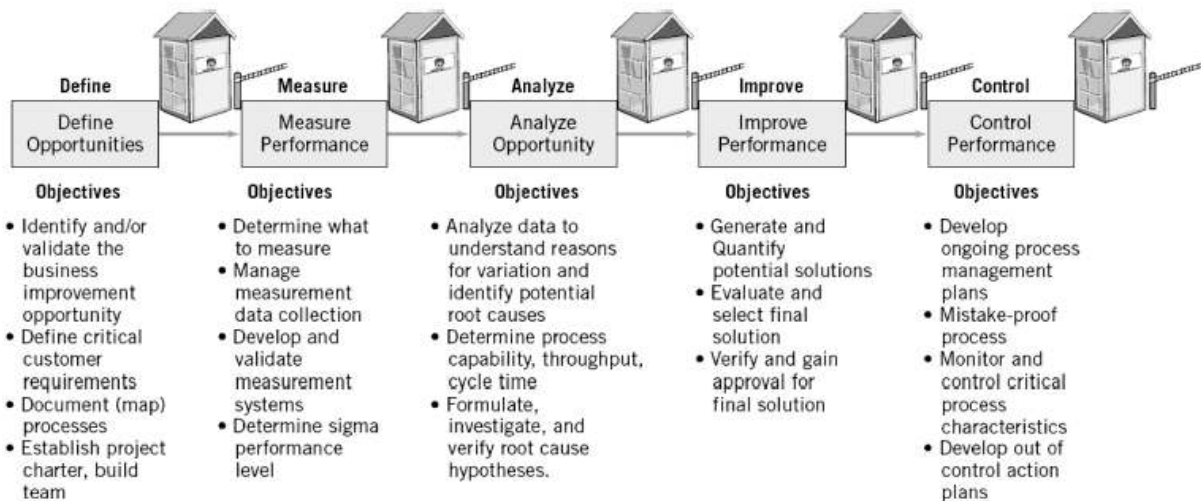


Figure 1: The DMAIC Process (Montgomery, 2008)

The DMAIC phases are not necessarily linear – a project team for example may reach the Analyze phase and find that the data they initially collected was not sufficient to clearly identify the root cause(s) of their underperforming process. The team may then need to return to the Measure phase to identify new metrics to collect data for, revise their data collection process, and update the overall project timelines based on the additional effort now needed. The DMAIC process often goes hand-in-hand with project management tools and methodology to ensure project success, and Six Sigma practitioners apply leadership skills when leading a DMAIC project.

Lean (or lean production) traces its roots to a “disciplined, process-focused production system”³ known as the Toyota Production System, developed by Eiji Toyoda, Taiichi Ohno, and Shingeo Shingo at the Toyota Motor Company. The Toyota Production System is also linked with Henry Ford’s monumental process improvement work in developing Ford Motor Company’s assembly line. Lean methodology focuses on the elimination of “waste” (i.e. any activity which

³ Engr. Anisul Hoque Ansari, *A Brief History of Lean Manufacturing* - <https://memberfiles.freewebs.com/82/66/45306682/documents/A%20Short%20Book%20on%20LEAN%20UNDER%20STANDING-Ansari.pdf>

absorbs resources but creates no value) and more knowledge- and experience-based principles than Six Sigma methodology (Antony et al., 2017). Waste in Lean methodology can be identified and categorized as follows (typically referred to as “the eight wastes”)⁴:

1. *Defects*: waste from a product or service failure to meet customer expectations
2. *Overproduction*: waste from making more product than customers demand
3. *Waiting*: waste from time spent waiting for the next process step to occur
4. *Unused Talent*: wastes due to underutilization of people’s talents, skills, and knowledge
5. *Transportation*: wasted time, resources, and costs when unnecessarily moving products and materials
6. *Inventory*: wastes resulting from excess products and materials that aren’t processed
7. *Motion*: wasted time and effort related to unnecessary movements by people
8. *Extra-Processing*: wastes related to more work or higher quality than is required

I.2 Application of Lean Six Sigma

Organizations implementing either Lean or Six Sigma methodology often employ individuals certified as Green Belts, Black Belts, or Master Black Belts to ensure successful deployment and consistent application of the business process improvement methodology (Brewer & Eighme, 2005). The varying Belt levels are often distinguished by the degree of training one receives, the scope and significance of a project led by the Belt for certification, and the level of knowledge and degree of application of LSS tools and methodology. Black Belts typically undergo four weeks of training while leading a large-scale high priority project within their organization. Green Belts undergo a minimum of one to two weeks of training, and lead small-to-medium-scale

⁴ Nawras Shkmot, *The 8 Wastes of Lean* (The Lean Way: August 5, 2017) - <https://theleanway.net/The-8-Wastes-of-Lean>

projects or provide support to Black Belts and Master Black Belts on larger projects. As part of their LSS infrastructure, most organizations instill Process Improvement Champions (also known as Project Sponsors), typically senior leaders within the organization who determine which projects the Belts should be working on, and remove roadblocks to ensure their success (Montgomery & Woodall, 2008). Unfortunately, a universal standard for Belt certification does not yet exist, and individuals can potentially complete an LSS course to obtain the certification, without having demonstrated application on an actual project (Laureani & Antony, 2011).

Most organizations now implement a combination of Lean and Six Sigma (hence the term “Lean Six Sigma”) as an overall approach. LSS “is a methodology that maximizes shareholder value by achieving the fastest rate of improvement in customer satisfaction, cost, quality, process speed and invested capital” (George, 2002 :iv), and the need for a hybrid methodology is due to “the endless pursuit of organizations to improve” (Bhuiyan & Baghel, 2005: 769). To explain the importance of combining Lean and Six Sigma, George (2002: iv-v) states that “Lean cannot bring a process under statistical control” and “Six Sigma alone cannot dramatically improve process speed or reduce invested capital”. The importance of the integration of Lean and Six Sigma solidifies its trajectory for continuous growth and evolution across the globe (Antony et al., 2017).

LSS has been implemented by both private sector and not-for-profit organizations as a way to increase revenue by “eliminating variability, defects, and waste that undermine customer loyalty”⁵. In 2004, the Chief Executive Officer of Bank of America reported savings of millions of dollars in expenses in fewer than three years as a direct result of implementing Six Sigma (Montgomery & Woodall, 2008). Snider Tire, Inc., one of the largest commercial tire and

⁵ iSixSigma, *Definition of Six Sigma* - <https://www.isixsigma.com/dictionary/six-sigma/>

retreading dealers in the United States, implemented LSS to reengineer their customer-store-plant production transportation network, resulting in annual savings of \$2 million USD (Ahire & Jensen, 2017). A qualitative analysis of 35 published case studies demonstrates the significant financial savings for hospitals as a result of LSS implementation to improve process performance in areas such as wait times and patient flow, subsequently resulting in increased patient satisfaction (Honda, Bernardo, Gerolamo, & Davis, 2018).

INGOs (International Non-Governmental Organizations) are also seeing the financial benefits of LSS implementation, with World Vision reducing annual expenses by \$1 million USD in East Africa through process improvement projects focused on achieving better outcomes with existing funding, people, and resources (Parris, 2013). The versatility of LSS methodology facilitates its application in a variety of different industries such as healthcare (Bhat, Antony, Gijo, & Cudney, 2020; Dileep, Rau, & Satish, 2014), banking (Wang & Chen, 2010; Vijaya Sunder, 2016), telecom services (Shamsuzzaman, Alzeraif, Alsyouf, & Khoo, 2018), information technology support services (Gijo, Antony, & Vijaya, 2019), and the public sector including higher education, police service, public hospital, and local government (Antony, Rodgers, & Cudney, 2016).

I.3 Challenges in Lean Six Sigma Sustainment

Although many organizations embracing LSS have been incredibly successful – for example, the United States Army realizing cost savings of over \$2 billion USD and Allied Signal (an American aerospace, automotive, and engineering company which later acquired Honeywell) saving \$800 million USD⁶ – the majority of all corporate Six Sigma initiatives (approximately 60

⁶ Six Sigma Daily, *Saving From the Start with Lean Six Sigma* - <https://www.sixsigmadaily.com/saving-start-lean-six-sigma/>

percent) fail to reap the benefits intended by the methodology (Angel & Pritchard, 2008). Managers in organizations implementing LSS have a plethora of tools available to them when it comes to DMAIC implementation and achieving process improvement (De Oliveira, Queiroz Schünemann, Zattar, & Seleme, 2018), with formalized training and education readily available either through internal or external support networks. However, there is a dearth of detailed guidance available in the literature on the long-term maintenance and sustainability of a successful Lean Six Sigma program within an organization – and hence this study seeks to answer the following research question:

How can an enterprise organize and manage its Lean Six Sigma program to successfully sustain it over time?

The study provides key insights to both researchers and practitioners into addressing the challenges of implementing and sustaining LSS in large-scale organizations. Practical guidelines and approaches are laid forth for managers and senior leadership to carve out a path within their large-scale organizations for long-term sustainment of the process improvement methodology. This novel and retrospective case study brings immense value by focusing on the perspective and internal insights of LSS managers and senior leadership and adds to the body of LSS sustainment literature. The key components of the study are summarized in Table 1 below:

Table 1: Research Design Summary (adapted from Mathiassen, 2017)

<i>Component</i>	<i>Definition</i>	<i>Specification</i>
Title	The title expresses the essence of the research design, with an emphasis on the contributions.	Sustainable Organization of a Lean Six Sigma Program: A Competing Values Perspective
RQ	The research question relates to the problem setting; it opens the research into the area of concern and helps ensure the research design is coherent and consistent.	How can an enterprise organize and manage its Lean Six Sigma program to successfully sustain it over time?
P	The problem setting represents people's concerns in a real-world problematic situation.	Organizations are keen in implementing LSS programs, but the majority experience challenges in achieving long-term sustainment and discontinue the program after a few years. LSS methodology provides a framework for managers to achieve process improvement, but lacks a framework for organizations to manage and effectively sustain their LSS programs.
A	The area of concern represents some body of knowledge within the literature that relates to the problem setting.	Managing competing values in organizational effectiveness to attain long-term sustainment of an LSS program.
F	The conceptual framing helps structure collection and analyses of data from the problem setting to answer the research question. F_A draws on concepts from the areas of concern, whereas F_I draws on concepts independent of the area of concern.	F_I : Competing Values Framework (Quinn & Rohrbaugh, 1981)
M	The method details the approach to empirical inquiry, specifically to data collection and analysis.	A retrospective case study of how Johnson & Johnson Inc. achieved long-term sustainment of its LSS program by managing competing values in

		organizational effectiveness.
C	The contributions to the problem setting and area of concern and possibly to the conceptual framework and method.	<p>C_P (Contribution to the Problem Setting): Lessons for how organizations can effectively manage competing values to effectively sustain their LSS program.</p> <p>C_A (Contribution to the Area of Concern): A detailed empirical account of a Fortune 500 organization which effectively achieved long-term sustainment of its LSS program.</p> <p>C_F (Contribution to the Framework): Application of the Competing Values Framework to an LSS program.</p>

II PROBLEM SETTING

II.1 Investment Needed for Lean Six Sigma Implementation

To implement an LSS program within a large-scale organization, a significant investment is required to establish organizational LSS infrastructure, provide LSS training to employees, and instill an LSS culture change in its daily processes and procedures. GE reported an investment of \$1.6 billion USD into Six Sigma (with investments increasing year-over-year) from 1996 to 1999 to realize cost savings of \$4.43 billion USD⁷. Organizational LSS infrastructure typically involves the recruitment of Master Black Belts from outside the organization who have had significant experience in leading and maintaining successful LSS programs in other organizations. Ford Motor Company's launch of Six Sigma in the early 2000s was led by the expertise of Master Black Belts from GE, West Point (the United States Military Academy), and other successful LSS organizations who provided training to Ford Motor Company managers who were selected to become certified as Black Belts and Green Belts.

Ford Motor Company's Black Belt training program involved four weeks of in-person training by Master Black Belts at their headquarters office in Dearborn, Michigan over a period of four months, with each Black Belt leading a large-scale project with a minimum cost savings or cost avoidance of \$100,000 USD (or providing assistance to a Master Black Belt on his/her project). The Green Belt training program involved one-and-a-half weeks of in-person training (usually at a location local to participants) and leading a medium-scale project with \$50,000 USD minimum savings (or providing assistance to Black Belts or Master Black Belts). Master Black Belts typically also provided training to LSS Process Improvement Champions and LSS project team members and stakeholders. As organizations often partner closely with third-party suppliers

⁷ Michael Cyger, *Six Sigma Costs and Savings* - <https://www.isixsigma.com/implementation/financial-analysis/six-sigma-costs-and-savings/>

or vendors who are critical to their success, staff members from third-party organizations may also be included in the Belt, Champion, team member, or stakeholder training classes.

LSS culture transformation within an organization involves the restructuring of organizational strategy and planning, program and project identification, program and project selection, program and project management, process improvement practices, performance measurement, and process sustainability practices and controls. Master Black Belts, Black Belts, and Green Belts must be empowered as project leaders to navigate the organization to obtain collaborative participation from cross-functional teams and departments, and be fully supported by Process Improvement Champions who assist in removing roadblocks and prioritizing resources. The human resources department also provides critical support in organizational design changes required for LSS implementation including staff recruitment, talent development, cultural transformation, and possibly change management and internal communications.

II.2 Guiding Principles for Lean Six Sigma Sustainment

One model that LSS managers and practitioners can consider in achieving and sustaining competitive advantage is the “Ten Commandments of Lean Six Sigma” (Antony, Gupta, Vijaya, & Gijo, 2018), based on several years of experience by the authors as researchers, LSS Master Black Belts, consultants, practitioners, and trainers on various topics of LSS, general quality management, and continuous improvement:

1. *Alignment of Lean Six Sigma initiative with organizational strategy*
2. *Lean Six Sigma project selection and prioritization*
3. *Selection of top talent for project execution*
4. *Leadership for Lean Six Sigma*
5. *Effective training and design of appropriate curriculum for different Lean Six Sigma roles*

6. *Development of reward and recognition system*
7. *Lean Six Sigma sustainability*
8. *Linking Lean Six Sigma with organizational learning and innovation*
9. *Linking Lean Six Sigma with environment management system standards*
10. *Lean Six Sigma and Big Data*

In a case study undertaken to explore and analyze an LSS implementation within an Irish university, O'Reilly, Healy, and O'Dubhghalil (2018) revealed several factors in addition to the fiscal environment that are critical to initiating and sustaining an LSS program. These include the need to respond to increasingly demanding stakeholders, aligning implementation with organizational strategy, understanding the role of internal and external specialists, and understanding the structured approach of LSS. Of particular importance is highlighting the key role and behaviors of the Project Champion, which is similarly a critical component in achieving success in project management implementations (Kloppenborg & Tesch, 2015).

In addition, one must also focus on the effectiveness of the LSS leadership team (which often includes Process Improvement Champions). An LSS leadership framework was proposed by Lu, Laux, and Antony (2017), focusing on service and the concepts of adaptive, rather than technical work, of leaders in higher education. Their model serves as a fundamental base to sustaining LSS improvements, and incorporates the key components of leadership, statistical thinking, continuous change, and improvement to achieve improved bottom line results and customer satisfaction in a wide range of industries.

II.3 Root Causes Behind Failures in Lean Six Sigma Sustainment

Home Depot and 3M are examples of large-scale organizations which have struggled with the sustainment of Six Sigma, with profits initially soaring but later plummeting⁸. Organizations often misunderstand the theory and concepts behind LSS (Drake, Sutterfield, & Ngassam, 2008), resulting in faulty application of the methodology and consequently lack of support within the organization for its continued sustainment. What are the root causes behind the majority of LSS initiatives failing to reap the benefits from implementation of the methodology?

An online survey involving 42 Six Sigma Master Black Belts, Black Belts, Green Belts, and Process Improvement Champions was conducted by Antony, Lizarelli, Fernandes, Dempsey, Brennan, and McFarlane (2019) which found the following ten factors to be the main causes for Six Sigma project failures (in descending order):

1. *There is employee's resistance to change*
2. *Lack of top management commitment in project planning (resource allocation)*
3. *Lack of top management commitment in project implementation (monitoring and controlling)*
4. *Lack of facilitators with key positions in the organization to ensure management commitment*
5. *The management does not understand the causes of employee's resistance of underperformance, and does not take immediate action*
6. *Lack of involvement of top management in conceptualization (goal setting and project selection)*
7. *Lack of project leadership skills necessary to lead the team*
8. *There are no strategies to convince resistant employees to maintain a positive attitude regarding process improvement projects*
9. *There is not enough time being allocated to data and information*

⁸ Destination CRM, *Six Sigma: What Went Wrong?* - <https://www.destinationcrm.com/Articles/ReadArticle.aspx?ArticleID=51394>

collection in order to deploy tools and techniques effectively

10. Lack of employee participation and involvement in problem solving

The study concluded that moderate failure rates were seen in manufacturing organizations' process improvement projects, with the failures most often occurring in the Measure, Analyze, Improve, and Control phases of the Six Sigma methodology (Antony et al., 2019), despite previous studies indicating the Define phase as being the critical one (Pyzdek and Keller, 2018; Voehl, Harrington, Mignosa, & Charron, 2014). Antony et al.'s (2019) study was also the first empirical one to demonstrate resistance to change (partial cooperation by employees) as being the main reason for process improvement project failure, bolstering previous findings by McLean and Antony (2014).

A key reason behind challenges in LSS sustainability is that an implementation model does not yet exist to guide organizations in successfully implementing the methodology (Fursule, Bansod, & Fursule, 2012). To understand LSS sustainability at the organizational level, Sony, Naik, and Therisa (2018) conducted a case study of two companies in India, one in manufacturing and the other from the service sector, which had discontinued their LSS programs within six years of implementation. They found the following to be emerging themes behind the failures in organizational LSS sustainability:

1. *Poor success rate*: LSS projects fail to deliver promised results within a given time, even with sufficient funding, training, and organizational support.
2. *Unrealistic expectations from LSS*: Goals and objectives are unfairly influenced by external parties such as consultants and the media, and LSS is seen as a "magic wand" to achieve the results.
3. *Unsustainable results*: LSS organizations fail to appreciate the importance of behavioral change (e.g. leadership, change management, organizational

- learning, and creativity), and only focus on the quantitative process improvement elements.
4. *Misuse of statistics*: LSS practitioners may sometimes misuse statistical tools or misinterpret the results. Assumptions may also be due to a “blind belief in statistics” (Sony et al., 2018) or perhaps an incorrect required sample size.
 5. *Large tool set*: The process improvement team may possibly use the wrong tool for the problem-at-hand based, and may not have sufficient experience with the multitude of LSS tools available.
 6. *Unsupportive and uncommitted top management*: Isolated teams which lack support from management to help prioritize resources and remove roadblocks often result in failed projects.
 7. *Lack of training and development*: LSS methodology can be complex and rigorous, especially with the application of statistical and process improvement tools which are new to the organization.
 8. *Lack of synergy of LSS and business strategy*: Alignment with business-critical priorities is key to an organization’s LSS sustainability.
 9. *Lack of link between LSS and customer needs*: In addition to business strategy alignment, LSS initiatives need to meet customers’ expectations.
 10. *Wrong project selection*: Organizations need to ensure the project selection process is rigorous, fact-based, and evaluated using the right criteria.
 11. *Premature discontinuation of LSS expert*: Without Master Black Belts, Black Belts, or Green Belts leading process improvement initiatives, it becomes more challenging for an organization to sustain its LSS program long-term.

II.4 A Long-Term Lean Six Sigma Sustainment Success Story

Despite the common challenges associated with long-term LSS sustainment, Johnson & Johnson Inc. (J&J) in Canada has implemented and sustained LSS within its organization for 13 years (from 2002 to 2015) via its “Process Excellence” program. The program was first implemented within McNeil Consumer Healthcare in 2002, and later incorporated into J&J (due to J&J’s merger with McNeil Consumer Healthcare and Pfizer Canada Inc. in 2007). J&J is a large-scale consumer health company and a member of the J&J Family of Companies which operates “in more than 60 countries, employing nearly 128,000 people across 275 operating companies”⁹. J&J has offices in Markham and Montreal and markets and sells “some of Canada’s leading brands in the Baby Care, Oral Health Care, Wound Care, Nicotine Replacement Therapy, Skin and Hair Care, Nutritionals, Non-Prescription Drugs and Eye Care categories”¹⁰. J&J’s brands include: Aveeno, Band-Aid, Benadryl, Benylin, Clean & Clear, Desitin, Imodium, Johnson & Johnson First Aid, Johnson’s Baby, Lactaid, Listerine, Lubriderm, Maui Moisture, Motrin, Neutrogena, Nicoderm, Nicorette, OGX, Penaten, Pepcid, Polysporin, Reactine, RoC, Rogaine, Sinutab, Sudafed, Tylenol, and Visine.

J&J’s LSS journey began in Montreal (the original location of their Canadian headquarters) with the training of a handful of Six Sigma Green Belts and Black Belts in the early 2000s. McNeil Consumer Healthcare, a manufacturing site in Guelph had officially launched their Process Excellence program around the same period (in 2002), with the training of 16 Six Sigma Black Belts. The merger between J&J, McNeil, and Pfizer resulted in the J&J headquarters office being moved from Montreal to Markham (and the post-merger Process Excellence team thus being based out of Markham). The Process Excellence team (consisting of a Director and two certified Six

⁹ Johnson & Johnson Inc., *Who We Are* - <https://www.jnjcanada.com/explore-our-company?show=cmpare>

¹⁰ Ibid

Sigma Black Belt managers) was responsible for identifying and leading large-scale strategic projects aimed at continuous improvement, cost reduction, innovation, and streamlining processes within J&J.

The team also provided LSS capacity building for staff members to obtain training and certification as Six Sigma Red Belts (J&J's internally developed program), Green Belts, and Black Belts. Additional training courses were developed and facilitated by the Process Excellence department in Lean methodology (including Kaizen facilitation, value-stream mapping, Lean culture, Lean standard work for leaders, Lean "5S"¹¹, and Lean mistake-proofing), systematic thinking/innovation techniques, change management, project management, lessons learned, conflict resolution profiles, communication behaviors, and risk management. A Process Excellence Leadership Team was also established to provide guidance, coaching, and mentoring to Belt candidates as they executed and implemented their projects. This support would often extend to other J&J affiliate companies operating in Canada, such as LifeScan Canada Ltd. (in Burnaby), Janssen Inc. (in Toronto), J&J Medical Products (in Markham), and J&J Vision Care Canada (in Markham).

Within the last decade, J&J has experienced several instances of significant organizational transformation, resulting in staff layoffs, changes in leadership, and changes in organizational structure. Other major events impacting the stability of the organization include mergers and acquisitions, product recalls, a consent decree issued by the U.S. Food and Drug Administration (FDA), and negative media coverage related to J&J affiliate activities in the U.S. (such as the opioid, baby powder, and Risperdal lawsuits). Coupling these organizational challenges with

¹¹ United States Environmental Protection Agency, *Lean Thinking and Methods – 5S* - [https://www.epa.gov/sustainability/lean-thinking-and-methods-5s#:~:text=The%205S%20pillars%2C%20Sort%20\(Seiri,sustaining%20a%20productive%20work%20environment.](https://www.epa.gov/sustainability/lean-thinking-and-methods-5s#:~:text=The%205S%20pillars%2C%20Sort%20(Seiri,sustaining%20a%20productive%20work%20environment.)

overall LSS sustainability challenges, it is certainly a remarkable success story to showcase and highlight J&J's long-term LSS journey.

III THEORETICAL FRAMEWORK

III.1 Organizational Effectiveness and the Competing Values Framework

How does an organization evaluate whether the implementation of LSS has been beneficial or detrimental to its way of doing business? What criteria or measures of effectiveness can be used to compare the relative performance of multiple organizations, knowing that significant differences may exist when it comes to the industry sector, revenue sources, supply chain systems, government regulations, brand reputation, financial management, stock performance, and countless other defining characteristics? Is the “bottom line” the best way to evaluate organizational effectiveness as a standardized measure? How does an organization ensure that its LSS projects contribute to improving its organizational effectiveness?

Although organizational effectiveness had been comprehensively discussed in the organizational behavior literature, a set of standards for measuring and validating organizational effectiveness did not yet exist in the early 1980s. Quinn and Rohrbaugh (1981) addressed this gap by conducting a multivariate analysis to identify dimensions of organizational effectiveness such that organizations could employ a unified set of indicators. The framework was developed to meet the following conditions (Quinn & Rohrbaugh, 1981):

1. a single level of analysis;
2. provide a more holistic view;
3. present a well-defined set of criteria;
4. assert relationships between criteria;
5. recognize the dynamic nature of organizations and variability across time;
6. allow for application in specific scenarios, but be generalizable across multiple scenarios; and
7. explicitly define effectiveness

The criteria for determining organizational effectiveness can be classified in three value dimensions, which Quinn and Rohrbaugh (1983: 369) identify as competing values, and whose relationship is shown in Figure 2 as the Competing Values Framework:

- *organizational focus*: “from an internal, micro emphasis on the well-being and development of people in the organization to an external, macro emphasis on the well-being and development of the organization itself”
- *organizational structure*: “from an emphasis on stability to an emphasis on flexibility”
- *organizational means and ends*: “from an emphasis on important processes (e.g., planning and goal setting) to an emphasis on final outcomes (e.g., productivity)”

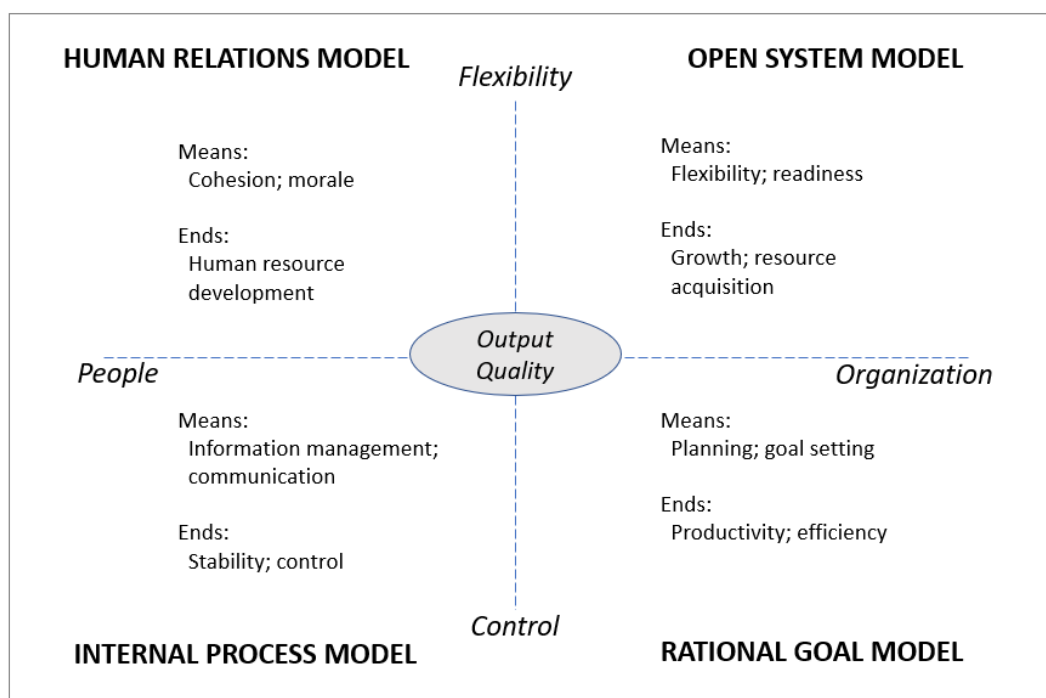


Figure 2: Competing Values Framework (Quinn & Rohrbaugh, 1981)

The first dimension (“organizational focus”, along the x-axis) represents the dilemma or tension that exists when making decisions between those that focus on the betterment of the

individual versus the organization as a whole. As an example, an organization focusing on the individual may choose to make an investment in LSS training for a select cadre of staff members to later become certified Black Belts or Master Black Belts, and hence be resident experts in the application of LSS methodology. Another organization focusing instead on the organization as a whole may invest in basic LSS training for all staff members, such that every individual employed by the organization has at least a minimum working knowledge of LSS tools and methodology.

The second dimension (“organizational structure”, along the y-axis) represents the dilemma or tension that an organization faces when making decisions between the need to be nimble and agile versus embracing the reliability and consistency that stability often brings. Should an organization accept the risk associated with investing in the latest cloud-based technology (i.e. be flexible), or continue with the tried-and-true physical servers that have been functionally effectively for the last decade (i.e. maintain control)? Should a consumer packaged goods organization focus its energy on incorporating newly discovered rainforest botanicals (i.e. be flexible), or continue investing in traditional ingredients such as aloe and soybean oil for its body lotions (i.e. maintain control)?

The third dimension (“organizational means and ends”, along the z-axis or depth axis) represents the dilemma or tension an organization faces in focusing on important processes (such as planning and goal setting) versus final outcomes (such as productivity). For example, a software organization focused on important processes may decide to undertake an extensively thorough quality assurance process to fully test all potential scenarios related to a software bug before releasing any software patches to the general public. This certainly takes a longer period of time in comparison to only testing a few potential scenarios, but the result should essentially be a higher quality solution. On the other hand, this same software organization may focus instead on final

outcomes and release an initial software patch immediately which they are certain can resolve specific scenarios. This has the advantage of being able to respond quickly to their customers, but may still involve additional problem solving and testing by the software organization after the initial release (as not all use cases were accounted for initially).

When the axes are juxtaposed, four models of organization are depicted, described by Quinn and Rohrbaugh (1981) as follows:

1. *The Human Relations Model*: which stresses the effectiveness criteria of cohesion and morale (as means) and human resource development (as an end).
2. *The Open System Model*: which stresses the effectiveness criteria of flexibility and readiness (as means) and growth and resource acquisition (as an end).
3. *The Internal Process Model*: which stresses the effectiveness criteria of information management and communication (as means) and stability and control (as an end).
4. *The Rational Goal Model*: which stresses the effectiveness criteria of planning and goal setting (as a means) and productivity and efficiency (as an end).

III.2 Competing Values Framework Application to Lean Six Sigma Sustainability

The Competing Values Framework has been applied in many different contexts in various industries to measure organizational effectiveness, such as hospital network performance in Italy (Bravi, Gibertoni, Marcon, Sicotte, Minvielle, Rucci, Angelastro, Carradori, & Fantini, 2013), workplace empowerment in the Indian banking sector (Sharma & Kaur, 2011), psychological

climates and turnover intention in Korean central government agencies (Jung, Chan, & Hsieh, 2017), performance appraisal systems (Ikramullah, Van Prooijen, Iqbal, & Ul-Hassan, 2015), managerial effectiveness in a KwaZulu-Natal public sector division (Parumasur & Govender, 2009), and cultural variation in software process improvement in Denmark (Müller, Kræmmergaard, & Mathiassen, 2009). In 2003, the Competing Values Framework was “recognized by the Financial Times as one of the 40 most important management frameworks in history” and “is now the foundation for consulting practices, executive education courses, and numerous leadership development programs”¹².

It has been proposed that the Competing Values Framework should be extended to include a fourth dimension: motivational trait, based on tensions observed between heart and head that were particularly relevant for improving organizational effectiveness in a voluntary organization serving the developmentally disabled (Grabowski, Neher, Crim, & Mathiassen, 2015). Grabowski et al. (2015) applied rigorous action research methodology to analyze the organizational effectiveness of Right in the Community, where challenges existed in staff resourcing, organizational structure and governance, and innovative capabilities. The “head-heart” dimension recognized “the important role played by the interdependent nature of cognition and affect in directing the attitudes and behaviors” (Grabowski et al., 2015: 911) within Right in the Community.

With its robustness in being applicable to a broad range of organization types and “its explicit depiction of organizational effectiveness as a paradoxical construct” (Arsenault & Faerman, 2014: 148), the Competing Values Framework is well suited as a framework to analyze

¹² Sanger Leadership Center, University of Michigan, *What is the Michigan Model of Leadership?* - <https://sanger.umich.edu/our-model/>

the various challenges (or tensions) an organization faces in the implementation and sustainability of its LSS program:

1. With the Competing Value Framework's first dimension related to *organizational focus*, is it more important for the organization to focus on individual development versus development of the organization as a whole, and how does its LSS program facilitate this?
2. With the Competing Value Framework's second dimension related to *organizational structure*, is it more important for the organization to be flexible or maintain stability and control, and how does its LSS program facilitate this?
3. With the Competing Value Framework's third dimension related to *organizational means and ends*, is it more important for the organization to focus on important processes versus final outcomes, and how does its LSS program facilitate this?

IV METHODOLOGY

IV.1 Case Study Design

This study involves a retrospective, in-depth case study of a Fortune 500 organization (J&J) which has been successful in both implementing and sustaining LSS for 13 years (from 2002 to 2015). Based on an interpretive research approach (Myers, 2013), we decided to adopt the case study method based on a number of considerations. First, the research question seeks to understand a “how” question in a real-world context (i.e. how an enterprise organizes and manages its LSS program to successfully sustain it over time), which is one of the key characteristics of a case study, “especially when the boundaries between phenomenon and context may not be clearly evident” (Yin, 2014: 2). Second, the case study is ideal in situations or scenarios where the researcher or author has little or no control over the events which occur, and any relevant behaviors cannot be manipulated (Yin, 2014), as is the case in this study. Third, this case study is an empirical inquiry relying on multiple sources of evidence, and investigates a contemporary phenomenon (versus an entirely historical phenomenon, which distinguishes the case study method from a history) (Yin, 2014).

Per Myers (2013: 12-13), “qualitative research is perhaps the best way for research in business and management to become both rigorous and relevant at the same time”, where “relevant research is usually defined as research that is of immediate relevance to business professionals”. Our research model takes the form of a process model, which “explains development in terms of the order in which things occur and the stage in the process at which they occur” (Van de Ven, 2007: 154). Our case study meets Van de Ven’s (2007: 154-158) characteristics of a process model as follows:

1. *“The world is made up of entities that participate in events. These entities may change over time as a result.”* – The unit of analysis (J&J’s implementation of its LSS program) may change through a number of processes such as downsizing, organizational re-structuring, company mergers, etc.
2. *“Final and formal causality, supplemented by efficient causality, is the basis for explanation.”* – J&J’s maintenance and sustainability of its LSS program may be affected by critical events, such as a lawsuit or product recall, which influence its direction and outcome.
3. *“The generality of explanations depends on their versatility.”* – The narrative explanations from this study may include events which are inherently complex, which is a defining feature of a process narrative.
4. *“The temporal sequence of events is critical.”* – The order in which events occur at J&J may potentially result in very different outcomes for its LSS program.
5. *“Explanations should incorporate layers of explanation ranging from immediate to distal.”* – The sequence of events for J&J’s LSS journey result in a unique causal history which causes the narrative to unfold in a particular way.
6. *“An entity, attribute, or event may change in meaning over time.”* – In addition to the J&J organization itself changing over time, the maintenance and sustainability of its LSS program would also change over time.

Quinn and Rohrbaugh's (1981) framework for organizational effectiveness guided the case study by using the concept of Competing Values to help shape the data collection and analysis. Finally, we adopted an engaged scholarship approach, which is "a participative form of research for obtaining the advice and perspectives of key stakeholders (researchers, users, clients, sponsors, and practitioners) to understand a complex social problem" (Van de Ven, 2007: ix). In particular, we undertake the collaborative basic research form of engaged scholarship, which involves the collaboration of both insiders and outsiders jointly sharing the research activities "to co-produce basic knowledge about a complex problem or phenomenon" (Van de Ven, 2007: 27). The author (the "insider") is a previous employee of J&J's Process Excellence team as a Certified Six Sigma Black Belt, and worked collaboratively in this study with her advisor (the "outsider") to take advantage of their complementary skills.

IV.2 Data Collection

As case studies rely on multiple sources of evidence to develop a comprehensive understanding of a real-world phenomenon (Yin, 2014), our data collection approach sought to capture information from various perspectives within J&J. Individual phone/video interviews and qualitative email surveys were conducted between February and July 2020 with 17 current or former staff members of J&J, with no compensation made to the participants. The potential interviewees and survey participants were selected based on their roles, involvement, expertise, and experience in the implementation of the Process Excellence program at J&J. Invitations to potential interviewees and survey participants were sent via email, LinkedIn messaging, or Facebook messaging.

To develop and validate the timeline for J&J's Process Excellence program, an initial set of questions focusing on the timeline were included as part of the first set of phone/video interviews. After a brief overview of Quinn and Rohrbaugh's (1981) Competing Values

Framework was provided, interviewees in this first group were then asked to provide examples of where J&J focused on individual competing values, reflections on the overall Process Excellence program, and recommendations for other LSS organizations. The full list of interview questions for this group (referred to as Part 1) are outlined in Table 2 below:

Table 2: List of Interview Questions (Part 1)

Section	Interview Questions (Part 1)
A. Interviewee Profile	<ol style="list-style-type: none"> 1. What is your name, current title, and place of employment? 2. What years were you employed at J&J? 3. What roles or positions have you had at J&J? 4. What training or certification (if any) do you have in Lean, Six Sigma, or process improvement in general? 5. Prior to J&J, did you have any experience in Lean, Six Sigma, or process improvement? Please describe. 6. Can you describe your involvement in J&J's Lean Six Sigma program, and your role as a leader, practitioner, or customer of the program?
B. Competing Values Focus Areas	<ol style="list-style-type: none"> 1. People vs. Organization: <ol style="list-style-type: none"> a. Can you share examples of how J&J has focused on the needs of the individual vs. the needs of the organization? b. Can you share examples of how J&J has focused on the needs of the organization vs. the needs of the individual? c. How does J&J's management of these competing values (i.e. people vs. organization) play into the ongoing maintenance and sustainment of its LSS program? 2. Flexibility vs. Control: <ol style="list-style-type: none"> a. Can you share examples of how J&J has focused on the need to be flexible vs. the need to maintain control? b. Can you share examples of how J&J has focused on the need to maintain control vs. the need to be flexible? c. How does J&J's management of these competing

	<p>values (i.e. flexibility vs. control) play into the ongoing maintenance and sustainment of its LSS program?</p> <p>3. Means vs. Ends:</p> <ol style="list-style-type: none"> a. Can you share examples of how J&J has focused on the importance of means (e.g. processes, planning, and goal setting) vs. ends (e.g. final outcomes and productivity)? b. Can you share examples of how J&J has focused on the importance of ends (e.g. final outcomes and productivity) vs. means (e.g. processes, planning, and goal setting)? c. How does J&J's management of these competing values (i.e. means vs. ends) play into the ongoing maintenance and sustainment of its LSS program?
C. Reflections and Recommendations	<ol style="list-style-type: none"> 1. In hindsight, what recommendations would you have for things that J&J could have done differently with their Lean Six Sigma program? 2. I understand that the Lean Six Sigma program is no longer in existence today as a formal program at J&J. What do you think led to this critical organizational decision? 3. What do you feel are the key success factors for J&J's ability to achieve long-term sustainment of its Lean Six Sigma program? 4. What recommendations do you have for other organizations who are currently implementing or maintaining their Lean Six Sigma program, and worried about its sustainability?

As a result of the input provided by the first group of phone/video interviewees, the timeline below in Figure 3 was developed, and included as part of the second set of phone/video interviews:

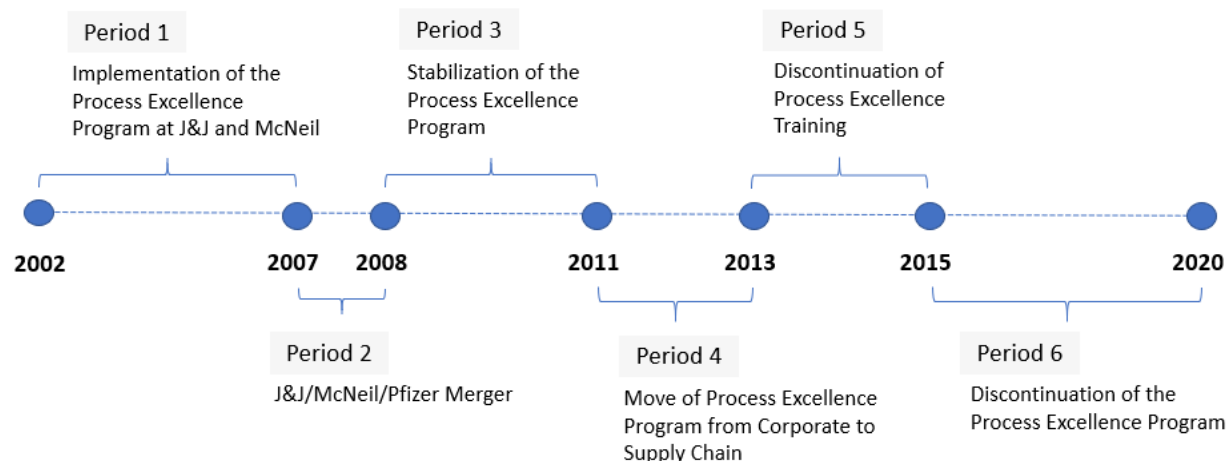


Figure 3: Timeline of J&J's Process Excellence Program

The three interviewees from the first group also participated in the second group of interviews, and were asked an additional set of questions (referred to as Part 2) focused on J&J's management of competing values through the various time periods of its Process Excellence program outlined in Table 3 below:

Table 3: List of Interview Questions (Part 2)

Section	Interview Questions (Part 2)
D. Competing Values within Process Excellence Timeline	<ol style="list-style-type: none"> 1. During the implementation of the Process Excellence program at J&J/McNeil (2002-2007): <ol style="list-style-type: none"> a. How did J&J/McNeil manage the competing values of People vs. Organization? b. How did J&J/McNeil manage the competing values of Flexibility vs. Control? c. How did J&J/McNeil manage the competing values of Means vs. Ends? 2. During the merger of J&J, McNeil, and Pfizer (2007-2008): <ol style="list-style-type: none"> a. How did J&J manage the competing values of People vs. Organization? b. How did J&J manage the competing values of Flexibility vs. Control? c. How did J&J manage the competing values of Means vs. Ends?

	<ol style="list-style-type: none"> 3. During the stabilization of the Process Excellence program (2008-2011): <ol style="list-style-type: none"> a. How did J&J manage the competing values of People vs. Organization? b. How did J&J manage the competing values of Flexibility vs. Control? c. How did J&J manage the competing values of Means vs. Ends? 4. During the move of the Process Excellence program from Corporate to Supply Chain (2011-2013): <ol style="list-style-type: none"> a. How did J&J manage the competing values of People vs. Organization? b. How did J&J manage the competing values of Flexibility vs. Control? c. How did J&J manage the competing values of Means vs. Ends? 5. During the discontinuation of the Process Excellence training (2013-2015): <ol style="list-style-type: none"> a. How did J&J manage the competing values of People vs. Organization? b. How did J&J manage the competing values of Flexibility vs. Control? c. How did J&J manage the competing values of Means vs. Ends? 6. During the discontinuation of the Process Excellence program (in 2015) and leading up to today: <ol style="list-style-type: none"> a. How did J&J manage the competing values of People vs. Organization? b. How did J&J manage the competing values of Flexibility vs. Control? c. How did J&J manage the competing values of Means vs. Ends?
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Four additional interviewees (different than the first three mentioned) were asked questions from Part 1 (specifically, Section A for the ‘Interviewee Profile’ questions and Section C for the ‘Reflections and Recommendations’ questions) and Part 2 (specifically, Section D for the ‘Competing Values within Process Excellence Timeline’ questions). Several other potential

interviewees were approached to determine their interest and availability in being included in this second group – but due to the complexities associated with the onset of the COVID-19 pandemic, some were unable to commit to a full-length phone/video interview. As an alternative, they were invited to respond to two survey questions via email (outlined in Table 4 below). As the survey questions could be answered by a broader set of individuals, the author invited several others to respond to the survey, and a total of 11 responses were received via email or phone/video interview.

Table 4: Survey Questions

<i>Section</i>	<i>Survey Questions</i>
Reflections and Recommendations	<p>What do you feel are the key strengths behind the sustainment of the Process Excellence program at J&J, and what value did it bring to you as a leader, practitioner, or stakeholder?</p> <p>In hindsight, what recommendations would you have for things that J&J could have done differently with the Process Excellence program?</p>

All confirmed participants were provided with a copy of the research protocol (Appendix A), interview protocol (Appendix B and/or C, dependent on the phone/video interview group they were in), and the informed consent form (Appendix E). For the phone/video interviews, brief handwritten notes were taken by the author, in addition to the interviews being digitally-recorded (with each interviewee's consent) to facilitate data collection and transcription. The interviews were conducted by either phone or internet (via Zoom video conferencing software), and were scheduled for 60 minutes in duration each. As some required additional time outside of the 60 minutes allotted, interviewees participated in an additional follow-up interview, lasting no more than 30 minutes. Each interviewee's participation in the study did not exceed two hours in total. All names and other identifying facts of the participants do not appear in the study or published

results. The findings have been summarized and reported in group form, with participants not being identified personally.

As seen in Tables 2 and 3 above, the format of our semi-structured interviews follows Quinn and Rohrbaugh's (1981) Competing Values Framework, with questions focusing on the three dimensions of the framework: organizational focus (i.e. people vs. organization), organizational structure (i.e. flexibility vs. control), and organizational means and ends (i.e. processes vs. final outcomes). All interview questions were open-ended, and aligned with the research protocol. As case studies rely on "multiple sources of evidence, with data needing to converge in a triangulating fashion" (Yin, 2014: 17), literal replication or "triangulation by data source" (Miles, Huberman, & Saldaña, 2014: 299) was used to strengthen the confidence in the findings. Triangulation provides the benefit of corroboration from multiple sources, and the opportunity to investigate further when inconsistent or conflicting findings arise (Miles et al., 2014).

Interview and survey responses were supplemented with publicly available materials such as annual reports, trade journal articles, and website information. Approval for the study was secured from the Institutional Review Board of Georgia State University on June 25, 2019 (IRB Number H19700, Reference Number 355596).

IV.3 Data Analysis

Our data analysis was guided by Miles, Huberman, and Saldaña's (2014) view of qualitative data analysis as three concurrent flows of activity: (1) data condensation, (2) data display, and (3) conclusion drawing/verification. Data condensation refers to "the process of selecting, focusing, simplifying, abstracting, and/or transforming the data that appear in the full corpus (body) of written-up field notes, interview transcripts, documents, and other empirical

materials” (Miles et al., 2014: 120). From the interview transcripts, findings and insights were summarized, with common themes identified along with categories for “data chunks” (i.e. portions of the transcribed data) for coding and further analysis. Data condensation is “a form of analysis that sharpens, sorts, focuses, discards, and organizes data in such a way that “final” conclusions can be drawn and verified” (Miles et al., 2014: 12).

A data display is “an organized, compressed assembly of information that allows conclusion drawing and action” (Miles et al., 2014: 12-13). As part of the analysis, summary tables were developed, guided by the three dimensions outlined in Quinn and Rohrbaugh’s (1981) Competing Values Framework. Data displays are “designed to assemble organized information into an immediately accessible, compact form so that the analyst can see what is happening and either draw justified conclusions or move on to the next step of analysis that the display suggests may be useful” (Miles et al., 2014: 13). NVivo software was used to condense, code, display, and interpret our data.

Conclusion drawing and verification involves the qualitative analyst “noting patterns, explanations, causal flows, and propositions” (Miles et al., 2014: 13), with conclusions being verified as the analyst proceeds. Further, “the meanings emerging from the data have to be tested for their plausibility, their sturdiness, their confirmability – that is, their validity” (Miles et al., 2014: 13-14). Preliminary conclusions were made cautiously, maintaining an open outlook until they could be thoroughly verified and validated by our data and findings.

IV.4 Coding Data

To prepare for the coding of our data, a coding scheme was developed with elements based on our theoretical framework – that is, Quinn and Rohrbaugh’s (1981) Competing Values Framework, with definitions for each concept or sub-concept. The questions from both sets of

phone/video interviews (i.e. Parts 1 and 2) were incorporated into the coding scheme as shown below in Table 5:

Table 5: Coding Scheme (Concepts, Sub-Concepts, and Definitions)

<i>Theme</i>	<i>Concept</i>	<i>Sub-Concept</i>	<i>Definition</i>
Interviewee Profile 1.0	LSS Education and Credentials 1.1	Training	‘Training’ describes the LSS training taken by the interviewee.
		Certification	‘Certification’ describes the LSS certification (e.g. Red Belt, Green Belt, Black Belt, Master Black Belt) attained by the interviewee.
	Involvement in J&J’s LSS Program 1.2	Leader	Involvement as a ‘leader’ includes departmental or organizational decisions relating to the direction of J&J’s LSS program.
		Practitioner	Involvement as a ‘practitioner’ includes leading or being part of an LSS project at J&J, taking LSS training classes/courses at J&J, or attaining LSS certification while at J&J.
		Customer	Involvement as a ‘customer’ includes being a project sponsor/champion or stakeholder for an LSS project at J&J.
Competing Values Focus Areas 2.0	Organization Focus 2.1	People/Individual	‘People/Individual’ includes examples where J&J focused on the needs of the individual.
		Organization	‘Organization’ includes examples where J&J focused on the needs of the organization.

		Organizational Focus with LSS	‘Organizational Focus with LSS’ describes how J&J managed the competing values of People vs. Organization with its LSS program.
	Organizational Structure 2.2	Flexibility Control Organizational Structure with LSS	‘Flexibility’ includes examples where J&J focused on the need to be flexible. ‘Control’ includes examples where J&J focused on the need to maintain control. ‘Organizational Structure with LSS’ describes how J&J managed the competing values of Flexibility vs. Control with its LSS program.
	Organizational Means and Ends 2.3	Means Ends Organizational Means and Ends with LSS	‘Means’ includes examples where J&J focused on the importance of means (e.g. processes, planning, and goal setting). ‘Ends’ includes examples where J&J focused on the importance of ends (e.g. final outcomes and productivity). ‘Organizational Means and Ends with LSS’ describes how J&J managed the competing values of Means vs. Ends with its LSS program.
Reflections and Recommendations 3.0	Do Differently 3.1	n/a	‘Do Differently’ includes recommendations for things that J&J could have done differently with their LSS program.
	LSS Program Discontinued 3.2	n/a	‘LSS Program Discontinued’ includes potential reasons for J&J discontinuing its LSS

			program.
	Key Success Factors 3.3	n/a	‘Key Success Factors’ includes key success factors for J&J’s ability to achieve LSS sustainability.
	Recommendations for Other Organizations 3.4	n/a	‘Recommendations for Other Organizations’ includes recommendations for other organizations with LSS programs.
Competing Values within Process Excellence Timeline 4.0	Period 1 (Implementation of the Process Excellence Program at J&J/McNeil) 4.1	People vs. Organization Flexibility vs. Control Means vs. Ends	‘People vs. Organization’ describes how this set of competing values was managed during this period. ‘Flexibility vs. Control’ describes how this set of competing values was managed during this period. ‘Means vs. Ends’ describes how this set of competing values was managed during this period.
	Period 2 (J&J/McNeil/Pfizer Merger) 4.2	People vs. Organization Flexibility vs. Control Means vs. Ends	(same as in 4.1, but for Period 2)
	Period 3 (Stabilization of the Process Excellence Program) 4.3	People vs. Organization Flexibility vs. Control Means vs. Ends	(same as in 4.1, but for Period 3)
	Period 4	People vs.	(same as in 4.1, but for Period

	(Move of Process Excellence Program from Corporate to Supply Chain) 4.4	Organization Flexibility vs. Control Means vs. Ends	4)
	Period 5 (Discontinuation of Process Excellence Training) 4.5	People vs. Organization Flexibility vs. Control Means vs. Ends	(same as in 4.1, but for Period 5)
	Period 6 (Discontinuation of the Process Excellence Program) 4.6	People vs. Organization Flexibility vs. Control Means vs. Ends	(same as in 4.1, but for Period 6)

Per Miles et al. (2014: 84), “Definitions become sharper when two researchers code the same data set and discuss their initial difficulties. A disagreement shows that a definition has to be expanded or otherwise amended... Team coding not only aids definitional clarity but also is a good reliability check.”. The inter-coder reliability exercise involved testing of the coding scheme by the author and an additional researcher to confirm both relevancy and a shared understanding of the definitions, concepts, and sub-concepts. Descriptions for each period of J&J’s Process Excellence program were also added to the coding scheme to facilitate the analysis within each time period.

To achieve an acceptable level of inter-coder reliability within the 85-90% recommended by Miles et al. (2014: 85), the finalized coding scheme was applied to the full-length transcriptions

of two phone/video interviews. To bring additional clarity to the concept of competing values, the author provided a brief overview of Quinn and Rohrbaugh's (1981) Competing Values Framework (as shown in Figure 2) to the other researcher and answered questions regarding the coding scheme and accompanying worksheet before beginning the inter-coder reliability exercise. After individually completing the coding of 101 transcribed statements, we achieved an inter-coder reliability of 100%, as outlined in Table 6 below:

Table 6: Inter-Coder Reliability Results

Theme (Section)	# of Statements to Code	# of Codes Matched	% Match
1.0 Interviewee Profile	4	4	100%
2.0 Competing Values Focus Areas	48	48	100%
3.0 Reflections and Recommendations	26	26	100%
4.0 Competing Values within PE Timeline	23	23	100%
Total % Match (Inter-Coder Reliability)	101	101	100%

As the coding scheme was now fully tested, with an inter-coder reliability score greater than the recommended 85-90% range, we were able to create the coding scheme in NVivo. Each of the phone/video interview transcripts were first manually edited using Temi software to correct any automatic transcription errors, and then individually loaded into Nvivo. Each transcribed statement was then coded in Nvivo according to the coding scheme, with summary charts exported to Excel for further analysis and synthesis.

V ANALYSIS AND RESULTS

V.1 J&J's Value Focus in General

In addition to J&J managing the competing values of people versus organization, flexibility versus control, and means versus ends throughout its Process Excellence program lifecycle, there are many examples where the organization specifically focused on one competing value versus another. We provide a contextual understanding of J&J as an organization, and how the organization as a whole focused on one competing value versus another in scenarios related to and outside of its Process Excellence program.

In the first set of competing values for the Competing Values Framework dimension of organizational focus, we share examples of where J&J focused on the competing value of 'people' versus the competing value of 'organization'. We then share examples of where J&J focused on the competing value of 'organization' versus the competing value of 'people'. We continue in a similar format with examples provided for the two additional Competing Values Framework dimensions of organizational structure (for the competing values of flexibility versus control) and organizational means and ends (for the competing values of means versus ends).

V.1.1 People versus Organization

J&J's Focus on 'People'

During the tenure of the Process Excellence program at J&J from 2002 to 2015, more than 200 staff members were trained and/or certified as Black Belts, Green Belts, or Red Belts. This constitutes a significant investment from J&J in the development of its people. As a comparison, most LSS organizations "average about one-percent of their workforce as Six Sigma Black Belts"¹³. At the initial onset of the Process Excellence program at McNeil Consumer Healthcare (which is now a division of J&J), 16 staff members were trained as Black Belts and 16 to 24 staff

¹³ Pyzdek Institute, *What is Six Sigma?* - <https://www.pyzdekstitute.com/blog/six-sigma/what-is-six-sigma.html>

members were trained as Green Belts, demonstrating both the importance of the program and the strong support from leadership. A leadership team member and practitioner from J&J comments on the investment made by J&J in its Six Sigma training program:

“I think in the end, we had probably 60% of the employees trained. So, you know, obviously you're taking a lot of resources out of the organization for the development and training of the people. So I think that's an example where they put a lot of emphasis on individuals versus the needs of the organization. Ultimately, you know, the payoff was that they would become practitioners, and help drive the organization.”

Outside of the Process Excellence program, a significant investment was also made by the organization in leadership development (including the development of management skills, communication skills, and change management), innovation, compliance (such as manufacturing and financial regulatory controls), and the personal health of its staff members. Training was conducted by either classroom training or e-learning modules. A practitioner from J&J comments on J&J's long-term investment in personal health:

“The company definitely cares about people and about development. Especially recently I think that they have [had] a lot of focus on health for people – personal health. So there is the physical health, healthy eating, mental health – so getting the employees to be at their best and [having] their energy for performance. So there is this program that has been there probably for eight years or so. They [have been] training employees to learn how to manage their energy throughout the day, how to gain energy, how to be more balanced, how to recharge throughout the day, and in general about being healthier, more balanced. So I think that part with people is really great – that's helping people.”

J&J's Focus on 'Organization'

J&J's selection process for candidate LSS projects is an example where the company's focus was on organization versus people. Potential ideas for projects to be led by Black Belts, Green Belts, and Red Belts were assessed by their alignment with the organizational strategy (in addition to other project success criteria). The individual preferences of the Belts to work on certain projects (perhaps due to personal interest and/or development needs) was outweighed by the

project “fit” with J&J’s organization-critical imperatives. A leadership team member and practitioner from J&J comments on the Process Excellence project selection process for Red Belts, Green Belts, and Black Belts:

“We basically wanted to make sure that the project ultimately supported the organization... We would pick projects or get them to pick projects that were typically in their area, but actually help drive the organization. So, you know, the ultimate goal is to drive the processes within the organization.”

One of the reasons behind J&J’s success as a consumer healthcare company is its ability to focus on its top organizational priorities: revenue (and revenue growth), profit (and achieving its target objectives), and quality (including patient safety). When quality issues arise, J&J’s global organization has been known and lauded for its swift and ethical actions to ensure patient safety is not compromised and product recalls are managed efficiently, as demonstrated in its handling of the Tylenol tampering issue in 1982¹⁴ and living out the commitments in its “Credo”¹⁵. A practitioner at J&J comments on the importance the organization placed on quality and patient safety:

“The organization definitely takes [quality and patient safety] matters seriously and it ensures that the patients are protected and that a safe product is available for customers and patients as needed... The organization is not shy about prioritizing what people should spend their time on or how money should be spent. And especially as the years went by, there was, in my opinion, a heightened focus on that to ensure that profit and revenue expectations are being satisfied.”

V.1.2 Flexibility versus Control

J&J’s Focus on ‘Flexibility’

Based on the nature of J&J being a consumer healthcare organization, it was necessary for the organization to focus mainly on control versus flexibility. Stringent controls are embedded

¹⁴ Dan Fletcher, *A Brief History of the Tylenol Poisonings* (Time: Feb. 9, 2009) - <http://content.time.com/time/nation/article/0,8599,1878063,00.html>

¹⁵ Johnson & Johnson, *Our Credo* - <https://www.jnj.com/credo/>

within each of its manufacturing, regulatory, compliance, and financial processes, among other areas. Although innovation is certainly a key proponent in facilitating product development and new ways of working, an agile culture did not yet exist during the time of the Process Excellence program – and thus flexibility was very rarely exerted when it came to foundational processes. Triggers for J&J needing to apply more flexibility versus control often emerged as a result of changes in customer expectations – for example, if the needs of J&J’s largest retail customers (Walmart, Shoppers Drug Mart, Loblaw, Costco, etc.) should change. A practitioner at J&J comments on J&J’s flexibility in response to changing customer expectations:

“[J&J] is not in a business that rewards flexibility. Consumer packaged goods is a business governed by very well-understood rules, very strict market dynamics... Customer expectations [changing] were the only cases where J&J would demonstrate flexibility in terms of trying to maintain a customer account... Quality-wise and finance-wise, it does not tolerate a lot of flexibility and agility.”

More recently, an emphasis has been placed on the importance of servant leadership, enabling decisions to be delegated at the team level (vs. only at the leadership level), and thus allowing teams to feel more empowered as they navigate their cross-functional relationships and break down their “silos”. Another example of flexibility is seen in J&J’s focus on team collaboration, partnering to achieve organizational goals, and shifting individual priorities to what is most important for the organization at the time. A leadership team member and practitioner at J&J comments on the collaborative nature in achieving organizational goals:

“We had a very good operational team and it was alright for me to miss a goal, to help somebody else achieve their goal. So I didn't get penalized because I missed my goal. I got credited because I helped them achieve their goal. Because as an organization, we deemed that goal more important than this goal... An organization chart is how you report, not how you work.”

J&J’s Focus on ‘Control’

Due to significant quality issues identified in its manufacturing facilities in Las Piedras (Puerto Rico), Fort Washington (Pennsylvania), and Lancaster (Pennsylvania), a consent decree

of permanent injunction was issued by the U.S. FDA to McNeil-PPC, Inc. (a subsidiary of J&J) in 2011¹⁶. Although the McNeil manufacturing plant in Guelph was not included as part of the consent decree, J&J was forced to conduct a thorough review of its quality processes and controls based on the severity of the consent decree and the need to win back the trust of both the FDA and the general public. Tried and true practices such as “5S” (a Lean thinking approach to Sort, Set in Order, Shine, Standardize, and Sustain a work environment¹⁷) could no longer be executed during the consent decree as significant effort would need to be invested in educating the FDA on the benefits of the 5S exercise. A practitioner at J&J comments on the constraints experienced by the organization as a result of the consent decree:

“You have the FDA in every one of your management meetings. And [for] every oversight decision, there was an FDA or their third-party representative overseeing all of that. So it's definitely a forced control environment.”

Notwithstanding the consent decree, the critical importance of controls was inherent throughout all of J&J’s processes, due to it being a highly regulated environment. A change from one manufacturing supplier to another may potentially bring expected efficiencies to certain processes in the plant, but strict rules and regulations mandated what specifically could be changed and how the controls would be maintained. J&J would often apply safety measures and protocols that were above and beyond the minimum requirements for certain products to ensure a standardized process was applied across all products. A practitioner at J&J comments on the standardization of product regulatory controls within the organization:

“Sometimes the standards that are needed for products that are classified as drugs are incorporated into the products that are cosmetic. They don't necessarily [need to] have the same standards or the same scrutiny because it's not needed by [the]

¹⁶ Johnson & Johnson, *McNeil-PPC Finalizes Terms of a Consent Decree with the US FDA: Perspective from J&J Chairman and CEO Bill Weldon* - <https://www.jnj.com/our-company/mcneil-ppc-finalizes-terms-of-a-consent-decree-with-the-us-fda-perspective-from-j-j-chairman-and-ceo-bill-weldon>

¹⁷ United States Environmental Protection Agency, *Lean Thinking and Methods – 5S* - [https://www.epa.gov/sustainability/lean-thinking-and-methods-5s#:~:text=The%205S%20pillars%2C%20Sort%20\(Seiri,sustaining%20a%20productive%20work%20environment.](https://www.epa.gov/sustainability/lean-thinking-and-methods-5s#:~:text=The%205S%20pillars%2C%20Sort%20(Seiri,sustaining%20a%20productive%20work%20environment.)

external environment, but everybody feels more comfortable using the same control internally and they end up being applied.”

V.1.3 Means versus Ends

J&J’s Focus on ‘Means’

J&J’s global organization has been recognized for the strength and powerful influence on its staff members of its Credo¹⁸, written in 1943 by Robert Wood Johnson, former chairman and member of the J&J global organization’s founding family, prior to the birth of “corporate social responsibility”¹⁹. The Credo serves as a guiding compass for the organization, providing an ethical framework to validate business decisions and working practices against. This strong culture of ethics coupled with the need to maintain a highly regulated environment at J&J meant that very detailed processes were often implemented to meet compliance and government regulatory requirements, thus demonstrating a strong focus on the importance of means versus ends. A practitioner at J&J comments on the comprehensive processes involved in J&J’s planning cycle:

“J&J has very rigorous management-by-objective planning processes in terms of stock purchase, fulfillment, and financial business planning processes. Those processes are extremely important and they have to be followed to a point where they become check-the-box regimes. But you have to do it in order to show that you're satisfying compliance requirements.”

One of the defining characteristics of LSS is the importance the methodology places on having consistent processes and using the appropriate quantity and quality of data to make decisions. Oftentimes, a significant data collection process is required to meet the minimum quantitative and qualitative requirements, followed by a rigorous data analysis process to identify root causes and trends. Each and every step of the process is analyzed to identify potential bottlenecks, inconsistencies, misinterpretations, and sources of defects – which is another example

¹⁸ Huff Post, *The J&J Credo – A Model for Corporate America That Would Make America Work* - https://www.huffpost.com/entry/responsible-capitalism_b_1125597

¹⁹ Johnson & Johnson, *Our Credo* - <https://www.jnj.com/credo/>

of J&J recognizing the importance of LSS and the need to focus on means versus ends. A leadership team member and practitioner at J&J comments on the guidance that was given to practitioners to ensure they invested time in understanding their processes:

“We kind of try to force people to get big picture improvements versus little tiny ones, and say there is a business case for doing this. But oftentimes we knew that they were doing this [where] the savings were nebulous. And so it was really the means weren't going to justify the ends in terms of the actual savings, but we knew that it was the right thing to do, even just understanding your processes in terms of where they start and where they stop and [what] the inputs [are].”

J&J's Focus on 'Ends'

J&J had a very complex and comprehensive business planning process in the late 2000s, and various inefficiencies were identified within its demand planning, financial planning, sales and operations planning, and manufacturing sub-processes within. For nearly two years, the departments were unable to come together to address the inefficiencies as they were “heads-down” within their own areas, focusing only on the means (i.e. their individual processes). Eventually, the pressures exerted by reduced headcount and organizational re-structuring were the wakeup call that J&J needed to shift its focus to the ends – that is, seeing the efficiencies they would gain in the end if they invested in the hard work to re-engineer the business planning process. A practitioner at J&J comments on the collaboration between teams while focusing on the ends:

“[They] said, ‘we're ready to talk about it now because we need to meet these productivity targets’. It really opened their minds in terms of being able to collaborate on a plan that was connected and not duplicate work. Because we honestly were duplicating effort between business planning and sales and operations planning. And by doing this work, I would say we took out 20% and more across Finance, Sales, Marketing, and even Supply Chain that made our lives easier by having that collaboration towards integrated business planning.”

As part of its performance management process, J&J shifted its focus in the late 2000s to evaluate individual objectives not only by “what” was achieved, but also “how” the objectives were achieved – thus applying a balanced approach to both means and ends. Sales and marketing

teams at J&J were often given aggressive monthly targets to meet, but the organization would never condone the circumventing of processes or the breaking of rules to meet those targets. Similarly, Finance teams had critical month-end, quarter-end, and year-end closing due dates to meet, but all processes needed to follow Generally Accepted Accounting Principles and SOX (Sarbanes-Oxley Act) requirements. A practitioner at J&J comments on J&J’s goal setting and performance management process, where the means and ends were balanced:

“There's always a big, big focus on achieving the objectives, but it's also because of the Credo, the way you do things... I've never seen the organization saying the 'what' is the only thing that matters, no matter what. There's a push to make it happen, I mean we have results to deliver like product launches to deliver on time. But [they would] never say that you don't have to do the right thing or that it doesn't matter if we impact others or the external environment – there is always a consideration.”

V.1.4 Summary of J&J’s Value Focus in General

A summary of the various examples where J&J generally focused on one competing value versus another (within each Competing Values Framework dimension) can be found in Table 7 below:

Table 7: Summary of J&J’s Value Focus in General

Competing Values Dimension	Examples of J&J’s Focus on Competing Value 1	Examples of J&J’s Focus on Competing Value 2
Organizational Focus (People vs. Organization)	People: <ul style="list-style-type: none"> • Customized LSS training and certification • Leadership development • Innovation, compliance, and personal health training 	Organization: <ul style="list-style-type: none"> • LSS project selection process • Alignment with organizational strategy and top priorities • Living out the responsibilities in the company “Credo”
Organizational Structure (Flexibility vs. Control)	Flexibility: <ul style="list-style-type: none"> • Changes in customer expectations • Importance of servant 	Control: <ul style="list-style-type: none"> • Changes required as a result of the consent decree issued by the U.S. FDA

	leadership <ul style="list-style-type: none"> • Team collaboration to achieve organizational goals 	<ul style="list-style-type: none"> • Highly regulated environment • Safety measures and protocols above and beyond minimum requirements
Organizational Means and Ends (Means vs. Ends)	Means: <ul style="list-style-type: none"> • Ethical framework in making business decisions • Need to maintain highly regulated environment to meet compliance and regulatory requirements • Value placed in LSS methodology • Rigorous data collection and analysis processes 	Ends: <ul style="list-style-type: none"> • Stepping out of “silos” to recognize potential in collaborating to achieve shared goals • Investing in hard work needed to achieve process efficiencies • Performance management process (balance between means and ends)

V.2 J&J’s Value Focus During the Process Excellence Program Lifecycle

We explore six distinct periods within J&J’s Process Excellence program lifecycle (as shown in Figure 3 and listed below) and obtain an understanding of how J&J was able to organize and manage competing values within each time period and successfully sustain its LSS program:

- **Period 1 (2002-2007):** Implementation of the Process Excellence Program at J&J/McNeil
- **Period 2 (2007-2008):** J&J/McNeil/Pfizer Merger
- **Period 3 (2008-2011):** Stabilization of the Process Excellence Program
- **Period 4 (2011-2013):** Move of Process Excellence Program from Corporate to Supply Chain
- **Period 5 (2013-2015):** Discontinuation of Process Excellence Training
- **Period 6 (2015-2020):** Discontinuation of the Process Excellence Program

V.2.1 Period 1 (2002-2007: Implementation of the Process Excellence Program at J&J/McNeil)

Prior to the J&J/McNeil/Pfizer merger in 2007, both J&J and McNeil had launched individual LSS programs within their own organizations – J&J’s in Montreal and McNeil’s in Guelph. Both LSS programs were referred to as “Process Excellence” internally and began with a significant investment in training of in-house Black Belts to lead large-scale LSS projects. The Process Excellence journey at McNeil began around 2002 after the arrival of a new company President (Jerry Norskog) who was a very strong proponent of the LSS methodology and culture. External consultants were utilized for the training of three waves of Black Belts over the next five years. The Process Excellence journey at J&J began around 2005 in a much smaller capacity compared to McNeil, with a dedicated Black Belt manager leading LSS projects and implementing a continuous improvement strategy for the Montreal site. It is to be noted that Pfizer did not have an LSS or continuous improvement program.

People vs. Organization

With both J&J’s and McNeil’s implementation of their individual Process Excellence programs, it was clear to see a stronger focus being made on people versus organization in terms of competing values as demonstrated by the significant investment that each organization made in their LSS training. Both organizations recognized the value in providing LSS training and capacity building to existing staff members, so they could function as expert LSS practitioners within their own departments. Within McNeil, the first wave of Black Belts consisted of the organization’s Vice Presidents in addition to staff members reporting to the Vice Presidents, most of whom were Directors. In addition to the significant time investment in this first wave of Black Belts, where the program required each participant to dedicate four weeks of their time to in-class training, it

was a significant resource investment with the 16 participants almost certainly commanding the largest salaries within the organization.

If J&J and McNeil were each instead focusing more on the competing value of organization versus people, an alternative approach of hiring external consultants to temporarily jump in and lead their LSS projects would most likely have been considered. Process improvement benefits perceivably would have been achieved within a shorter period of time, but the LSS knowledge and expertise gained during that short period would most likely disappear with the completion of the external consultant contracts with J&J or McNeil. Investing in the LSS training of direct staff members within J&J and McNeil as Black Belt leaders laid the foundation for a sustainable LSS program. A leadership team member and practitioner comments on the first wave of Black Belts trained at McNeil:

“So you got a fairly high-level, high-value group that you're taking out of the organization for four weeks. So there was certainly a huge investment. But the other thing too is it kind of created the cascade effect, because Jerry [Norskog] was very good at rewarding those people. And some people were actually bitter that they didn't get selected. And so, in the town hall meetings, there would be, ‘well, is there going to be a wave two [of Black Belts]?’”

Flexibility vs. Control

Another key decision that both J&J and McNeil had to make when implementing their Process Excellence programs was whether a centralized Process Excellence team would be established within each of their organizations. A centralized team would signify a stronger focus on the competing value of control versus flexibility, as all Process Excellence projects would be managed centrally by a small team of LSS-trained staff members. Greater controls on both LSS project selection and the standardized application of LSS methodology within the projects would also foreseeably be attained with the existence of a centralized Process Excellence team. Both J&J

and McNeil made the decision to establish dedicated Process Excellence teams within their organizations, staffed by LSS-trained Black Belts to coordinate all Process Excellence activities.

The alternate decision, focusing on flexibility versus control, would have meant each department within J&J and McNeil not being constrained by the organizational LSS project selection process. They could each decide to dedicate specific department resources directly to the LSS projects they chose to take on, and could either ramp up or slow down their LSS capacity building based on changing customer requirements, thus being more dynamic as a result. This alternate decision was viewed as being the long-term approach for the Process Excellence journey within both J&J and McNeil, as it wasn't possible at the time to provide LSS training to all staff members at the initial onset of the Process Excellence programs due to the significant time and resource investment required. A leadership team member comments on the dilemma in deciding whether a centralized Process Excellence team would be the best solution:

"I think that some of the tension was whether Process Excellence was a competency within every department or should [it] be a different department... For example, do you set up a digital marketing team or do you expect every marketer to be digitally savvy?... So the philosophy becomes: do you make it as an organizational resource? Or do you give the competency to everybody in the organization that would become the DNA of the organization? That is the conflict we had."

Means vs. Ends

For both J&J and McNeil, the main objective in implementing an LSS program was to improve process efficiencies and reduce costs within each of their organizations. To achieve these objectives while focusing more on the competing value of ends versus means, an organization may choose to forego the LSS program implementation entirely and instead look at re-structuring the organization to significantly reduce headcount and thus achieve immediate cost savings. However, a significant reduction in headcount would go against one of J&J's Credo commitments to its

employees: “[Our employees] must have a sense of security, fulfillment and purpose in their jobs.”²⁰.

As demonstrated by their decision in implementing a Process Excellence program within each of their organizations, both J&J and McNeil placed a greater focus on the competing value of means versus ends at the onset of their Process Excellence journeys. The approach and way forward to improve process efficiencies and reduce costs within each of their organizations must be grounded and validated by the appropriate data-based decisions, even though this would take a significantly longer period of time. With the multitude of examples where LSS had been successfully implemented in large-scale manufacturing environments within the last few decades, J&J and McNeil were confident that LSS could also be effective within their own manufacturing environments.

Management of Competing Values in Period 1

A summary of how J&J (per-merger) and McNeil managed the competing values of people versus organization, flexibility versus control, and means versus ends within Period 1 (the implementation of the Process Excellence program at J&J/McNeil) is found below in Figure 4:

²⁰ Johnson & Johnson, *Our Credo* - <https://www.jnj.com/credo/>

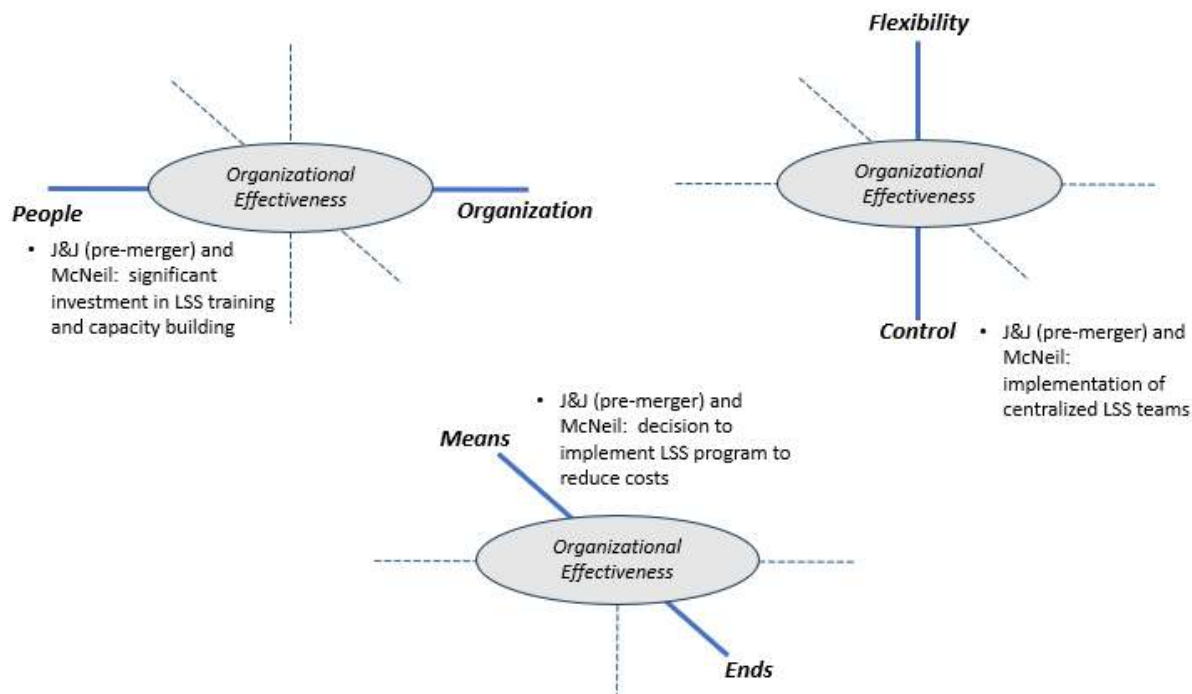


Figure 4: Management of Competing Values in Period 1

V.2.2 Period 2 (2007-2008: J&J/McNeil/Pfizer Merger)

This was a period of significant change with the merger of three large-scale organizations (J&J, McNeil, and Pfizer) into one (under J&J). J&J was originally based in Montreal, with its office operations managing brands such as J&J, Aveeno, Neutrogena, and Clean & Clear within Canada. As a result of the merger, all J&J Consumer Healthcare office operations roles (with the exception of one or two teleworking roles) were moved to J&J's new headquarters office in Markham. McNeil was based in Guelph, with its office operations managing brands such as Tylenol, Motrin, and Imodium within Canada. Some of McNeil Consumer Healthcare's office operations roles were moved to J&J's new headquarters office as a result of the merger, while other office operations roles remained in Guelph (due to their proximity to McNeil's plant operations). Pfizer was based in Markham, with its office operations managing brands such as

Listerine, Benadryl, and Reactine within Canada. Pfizer's office location became the new headquarters office for the three merged organizations, and thus their office operations roles would not require a physical move.

As a result of the merger, the individual Process Excellence programs within J&J (Montreal) and McNeil would now merge as a singular Process Excellence program under J&J in Markham. A dedicated Process Excellence team based at the new J&J headquarters office in Markham was now established, with a Director (originally from McNeil) and two Black Belt direct reports (both who were new to J&J). The reporting structure of the Process Excellence team was under the Corporate department of J&J, reporting to the Chief Financial Officer who was also a J&J board member.

People vs. Organization

As is typically expected with large-scale company mergers, a significant degree of turnover occurred as a result of the J&J/McNeil/Pfizer merger. The move of physical locations (from Montreal to Markham and Guelph to Markham) for certain roles was a key factor for many staff members in their decision to either stay or part ways with the merged organization. As many roles were now vacated due to staff members deciding not to stay on (either because of the physical move required or for other reasons), J&J focused on the competing value of people versus organization during this time period to hire a significant number of new employees. A practitioner at J&J comments on the multitude of personnel changes occurring during this time period:

"I would say the focus was very much on people versus organization because during that time, there was an enormous amount of turnover between bringing people together from different sites and then hiring. And there was a moment where they asked 'who's new at J&J?' and a third of the company put their hand up... And so 'people' is an enormous focus – they really were trying to work hard to maintain the talent that they had and not lose it."

When implementing an LSS program, an organization must make a decision between hiring external LSS-trained consultants to lead its Belt projects or investing in large-scale LSS capacity building efforts (assuming the organization does not yet have a sufficient number of LSS-trained staff members). J&J chose the latter option, hiring two Black Belts as full-time Process Excellence team members to manage and facilitate the LSS capacity-building efforts for the organization, including the training of Red Belts and Green Belts. This decision to use in-house training resources facilitated J&J's ability to train a large number of employees across the entire organization, and thus demonstrating its ability to scale the Process Excellence program. A leadership team member and practitioner comments on the benefits realized from the decision to invest in in-house trainers:

“If we had had to go outside and pay consultants fees every time we wanted to train, [the] number of individuals trained would have been greatly reduced. The large number of individuals trained was one of the reasons the program was successful. The flexibility to call upon dedicated internal trainers was key... It would have been not feasible to layer [Process Excellence] training onto someone's existing role and carry out the number of training sessions that were delivered.”

The focus for the merged organization also shifted to the importance of organization as a competing value versus people. The entire organizational culture was now immediately changing for each of these three organizations (J&J, McNeil, and Pfizer) as they melded into one. Which cultural aspects of the organization would remain, and which would dissipate or be molded into new ways of working? Which of the three organizations would take the lead in modeling and influencing norms and behaviors for the new organization? Leaders from each of the three individual organizations were “jockeying for position” in the new organization, as they went through their “forming-storming-norming-performing”²¹ experiences as a new peer group. The

²¹ Infed.org, Bruce W. Tuckman – *Forming, Storming, Norming and Performing in Groups* - <https://infed.org/mobi/bruce-w-tuckman-forming-storming-norming-and-performing-in-groups/>

influence from both J&J and McNeil in having successful Process Excellence programs within each of their organizations was an explicit factor in the merged organization's decision to continue having an LSS program, as Pfizer had not yet implemented an LSS program within their organization. A practitioner at J&J comments on the changing organizational culture at the onset of the merger:

“They were definitely more on the organizational [side] because it was really a juggernaut taking on a juggernaut. There were quite a few cultural elements that were also coming into play – people referring to ‘well, are you legacy J&J, or are you legacy Pfizer?’. So I think their strategy was more to be overly inclusive in working together to knit those two juggernauts into one... The other piece is that there [were] just so many processes to connect that it really did take a village.”

Flexibility vs. Control

With the merger of three large-scale organizations, a critical area of focus was the standardization of foundational business processes – and thus the importance of control versus flexibility in terms of competing values. To J&J's customers such as Shoppers Drug Mart, Costco, and Walmart, it would be unfair to expect them to embrace and manage three different “go-to-market” processes post-merger (i.e. maintaining the go-to-market pre-merger processes from J&J, McNeil, and Pfizer). Thus, a significant undertaking was led by the newly formed Process Excellence team in Markham to document, codify, assess, prioritize, and standardize over 40 foundational end-to-end business processes. A leadership team member comments on the large-scale process standardization project that was carried out:

“We were trying to merge three different companies into one company, and none of the processes that are understood are documented... We ranked them, we assessed the health of all the processes, and took 40 processes to work on... When your \$200 million company becomes an \$800 million company [with] three different cultures, three different processes, you had to have a lot more horsepower to work through so many processes because each company was very keen on their [own] process... If you have multiple processes, you can't automate.”

In addition to standardizing J&J's go-to-market processes, the importance of internal financial controls forced the merged organization to focus on control versus flexibility in terms of competing values. As a result of the three large-scale organizations each having different financial management processes, the merged J&J organization unfortunately failed its SOX audit as the internal controls were deemed inadequate. Shareholders' resources needed to be protected appropriately, with proper controls in place to manage organizational investments and spending while preventing the potential for fraud or wastage. In addition, J&J was a decentralized organization, and thus internal controls needed to be instituted to allow individuals managing the business the leeway to focus on strategic initiatives. A large-scale Process Excellence project focused on the implementation of SOX controls was immediately implemented as a result of the failed SOX audit. A leadership team member at J&J comments on the importance of internal controls, and how LSS tools and methodology played a valuable role in this area:

"If you don't have a really good control environment, the senior management and leadership cannot delegate... The CEO and CFO of the company were able to make decisions on brand and investments, whether to invest in Tylenol or Listerine... But once you don't have that kind of a framework or control, then you need to approve everything because you don't have the controls and checks and balances in the system and accountability... And that is how we establish the control through SOPs²², through policies, through procedures, and well-documented processes. And then also understanding what is the RACI²³ - what is the role and responsibility of each individual."

Means vs. Ends

At the onset of the J&J/McNeil/Pfizer merger, things were extremely hectic across the entire organization, with leadership teams focusing on business-critical foundational processes and internal financial controls, as mentioned previously. There unfortunately wasn't any bandwidth

²² SOP = Standard Operating Procedure

²³ RACI = Responsible, Accountable, Consulted, Informed. Project-Management.com, *Understanding Responsibility Assignment Matrix (RACI Matrix)* - <https://project-management.com/understanding-responsibility-assignment-matrix-raci-matrix/>

available at this time to conduct a deep-dive analysis on the detailed Sales and Marketing processes from each of the three organizations. Sales teams were simply being asked to achieve their monthly sales and profit targets, and given leeway around how to do so as long as they were managing to stay afloat within their markets. Thus, there was clearly a stronger focus on the ends versus the means in terms of competing values during this period. A leadership team member and practitioner from J&J comments on the potential for the Process Excellence program to later be applied to sales and marketing processes:

“There could have been huge savings in marketing and Jerry [Norskog] was one of these people that believed [Process Excellence] could be applied to everywhere. So that's why he included sales and marketing – it wasn't just for window dressing... There was an opportunity to be more efficient in how we spent money in terms of advertising and how we sold and all that. So people really believed that the ends were going to more than justify this time commitment of the senior people.”

Although the focus within Sales and Marketing was more on ends versus means during this time period, there was still a critical focus on the importance of values and ethics as guided by J&J's Credo. A significant factor in determining performance bonuses for Sales team members (similar to other Fortune 500 organizations) was whether they “hit their numbers” (i.e. achieved the ends). But it was just as important to look at the means (i.e. how the ends were achieved) to confirm that Credo practices were being followed, teams were working in collaboration, and employees were respecting their colleagues when carrying out their work. A leadership team member at J&J comments on the importance of both means and ends, and the influence of J&J's Credo and Process Excellence on ways of working:

“Means versus the ends – I think both are important... And you cannot just justify improper means to achieve good end results... So you need to enforce to people the values of the organization and that everybody has that Credo integrity in their DNA. And then they subscribe to it and think ‘If I can do this, what is the implication to the organization? Am I doing the right thing to get through this order?’. Also how leadership walks the talk – leadership can put some values and mission statements on the wall, but if they don't act like that, then everybody else will ignore

the values... So that's where the process was where PE²⁴ helped us to get to the right balance between means and ends.”

Management of Competing Values in Period 2

A summary of how J&J managed the competing values of people versus organization, flexibility versus control, and means versus ends within Period 2 (the J&J/McNeil/Pfizer merger) is found below in Figure 5:

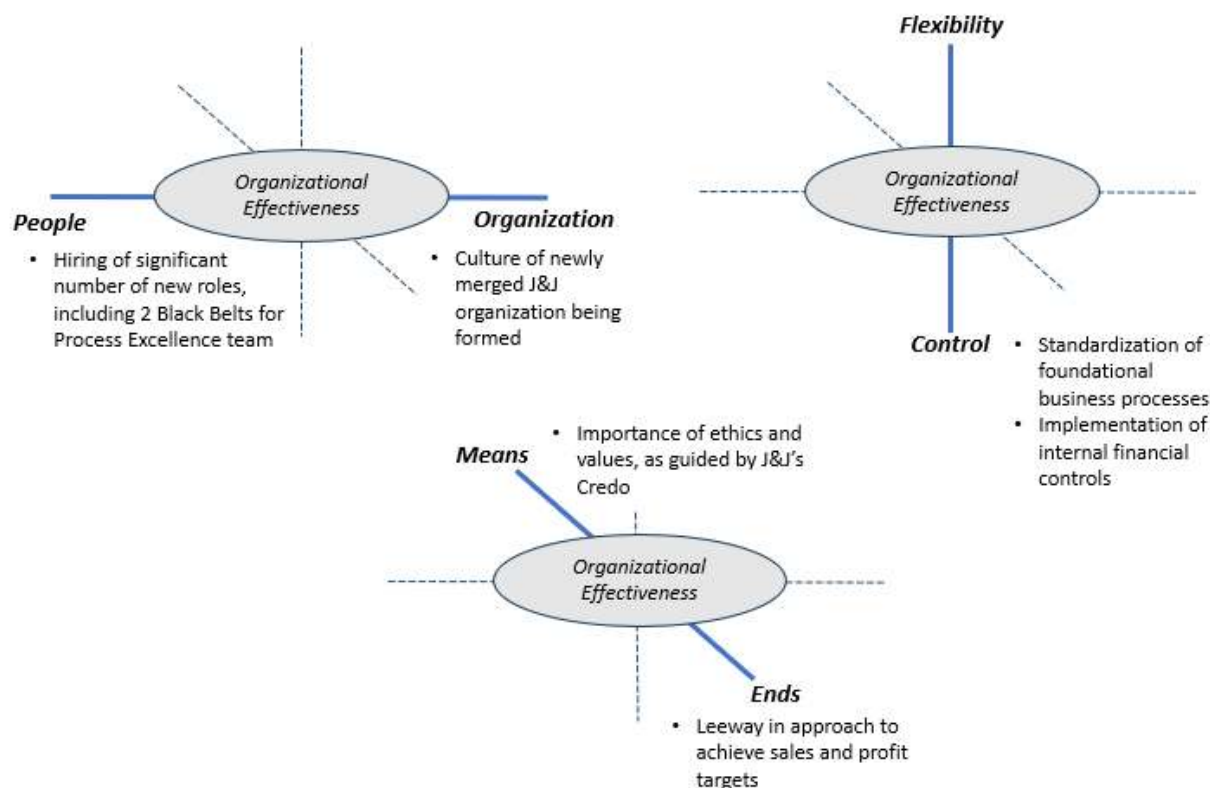


Figure 5: Management of Competing Values in Period 2

V.2.3 Period 3 (2008-2011: Stabilization of the Process Excellence Program)

During this period, both the Process Excellence program and the J&J organization as a whole were establishing a good rhythm in terms of their operations and ways of working. Staff members were now “settling in” and embracing the culture of the merged organization, no longer

²⁴ PE = Process Excellence

focusing on individual processes from pre-merger J&J, McNeil, and Pfizer days. As an organization, J&J had now successfully passed the “forming” and “storming” stages of group dynamics and was now moving to “norming” and “performing”²⁵. Customers and vendors were now experiencing single, standardized processes in working with the merged organization versus patchwork processes and workarounds experienced in earlier days.

The Process Excellence Team was now ready to fully launch their training program across the entire organization, eagerly welcoming staff members from any and all teams and departments to enroll in the training and join the Process Excellence community of practice. As Red Belt and Green Belt projects were launched, implemented, and completed, word was quickly spreading about the value the Process Excellence program was bringing to the organization. An annual “Process Excellence Oscars” event provided an opportunity to showcase various Belt projects that were either in-flight or completed, with a fun, peer-nominated award component to recognize standout accomplishments. A practitioner at J&J comments on the thriving LSS culture within the J&J organization during this period:

“In this time period, I recall many more communications around Process Excellence – much more education and training around Lean Six Sigma, Design Excellence, critical thinking. They were very open to making those trainings available to the organization as opposed to a select few. This is where they really allowed the methodologies to flourish as part of our way of doing things.”

People vs. Organization

The formation of a Process Excellence Leadership Team during this period was a key factor behind the successful stabilization of J&J’s Process Excellence program. The Chief Financial Officer (Sukumar Natarajan) and Chief Information Officer (Linda Champagne) were co-champions of the Process Excellence Leadership Team, and they leaned heavily on the leaders of

²⁵ Infed.org, Bruce W. Tuckman – *Forming, Storming, Norming and Performing in Groups* - <https://infed.org/mobi/bruce-w-tuckman-forming-storming-norming-and-performing-in-groups/>

each Global Business Unit (Baby & Beauty, Over-The-Counter, and Consumer Healthcare) to embrace the Process Excellence culture within each of their teams. The Process Excellence Leadership Team understood the value behind having a process view of the merged organization, listening to staff and customer feedback, and addressing integration pain points across the organization through LSS training and capacity-building. A brief training program for Process Champions was also developed at this time, and delivered by the Process Excellence team to leadership team members across the organization. A practitioner at J&J comments on how the strong support of the Process Excellence Leadership Team helped to facilitate the organization's focus on the competing value of people versus organization during this period:

"[The members of the Process Excellence Leadership Team] were interested in how we could take away the pain of the merged company. So that helped lead to stabilization... We can only run so fast if we train other people, so they can run too and you get more capabilities. They were very supportive of that with that context, so they had to go out and drive value quickly. So from that perspective, it was a focus on people because they were trying to listen to the pain the employees were having from the Credo survey from a customer perspective. And they realized that investment in people is going to help in that."

In addition to buying in to the overall approach of the Process Excellence program, the Process Excellence Leadership Team members were strong voices in advocating for their team members to enroll in and complete the Belt training provided by the Process Excellence in-house Black Belts. They played an active role in identifying potential Belt candidates to nominate, in addition to recommending specific pain points for the Belt candidates to address through their Red Belt or Green Belt projects in conjunction with their training. As committing to the completion of a Belt project would typically be above and beyond the Belts' original job responsibilities, the Process Excellence Leadership Team members would also play a role in removing potential roadblocks for their respective Belts and re-prioritizing existing workloads to free up time and re-allocate it for LSS work with their project teams. To increase accountability and demonstrate the

importance of these commitments, Belts were encouraged to document their Process Excellence training and project work as part of their individual goals and objectives. This was another example of the organization focusing more on people versus organization as a competing value during this time period. Staff members also had the option of pursuing Belt certification, which would be granted by the Process Excellence team upon validation of their project completion and appropriate application of the Belt's LSS knowledge, skills, and capabilities. In addition to the "Process Excellence Oscars" event mentioned previously, staff members with completed Belt projects had the opportunity to showcase their work with J&J board members and other leadership team members. A leadership team member and practitioner comments on the support from J&J leadership during this time period:

"So people were rewarded for doing it [taking on LSS training and working on a Belt project]... People put things on their objectives, so people would do it. Now, the downside is they often didn't finish the project, but certainly it was an expectation... It was on your objectives to do this – you had to if you wanted to be kind of seen in the organization – that is, somebody that can do more than just your day-to-day job. This was a skillset that they wanted you to have."

Flexibility vs. Control

When distinguishing between the various Belt designations within Lean or Six Sigma, it is usually the case that Green Belts and Black Belts are the ones responsible for leading Lean or Six Sigma projects²⁶. Individuals completing the Green Belt training program at J&J were required to participate in two weeks of in-class training, and would have the option to continue as a Black Belt and complete an additional four weeks of in-class training. To achieve significant scale within a relatively short period of time, it would not have been feasible to enroll all Belt candidates in Green Belt training based on the significant time investment required. Instead, a customized two-day Red

²⁶ ASQ, *Six Sigma Belts, Executives and Champions – What Does It All Mean?* - <https://asq.org/quality-resources/six-sigma/belts-executives-champions>

Belt training program focusing mainly on the process tools of the Green Belt training program (and excluding the more complex statistical tools) was a way to introduce both flexibility (versus control) and scaling potential to J&J's Process Excellence program. Offerings were usually scheduled with the second day of the training occurring one month after the first day (instead of as two consecutive days), and participants were provided the option of enrolling in different waves (i.e. starting day one with one wave and completing day two with another), thus maximizing the flexibility for scheduling and completion. A practitioner at J&J comments on the introduction of the Red Belt training program during this period of J&J's Process Excellence program:

“This is where they included Red Belt just to make it more accessible so that everyone had [an alternate path] to putting in the amount of time and attention in getting to a Green Belt certification level. So I think they were very open and flexible in their approach to how to bring the most good to the most amount of people in the organization through these methodologies.”

In terms of organizational processes and how J&J was functioning from a revenue and expense perspective, higher expectations were being made of J&J by its overarching global organization (based in New Brunswick, New Jersey), now that the merger was considered to be in stabilization mode. A significant change in the J&J leadership team occurred as a result – with each Global Business Unit leader now managing their own P&Ls versus J&J's President managing a singular P&L. Thus, a major shift resulted in Global Business Units now controlling their own brand and marketing expenses, with additional rigor and scrutiny at a deeper level within the organization. This demonstrated J&J's focus on control versus flexibility in terms of competing values, and strengthened the rationale for having more Red Belts trained to help maintain process controls. A practitioner at J&J comments on the shift to having more controls during this period of the Process Excellence lifecycle:

“They started to shift because they knew they were flying by the seat of their pants from a flexibility perspective. They started to shift more for control, but it wasn't

all the way there. And Corporate also was expecting more from JJI²⁷ in this timeframe. So they started to dive deeper into the P&L and control certain levers. And that's where you saw the leadership change from one leader to three leaders in JJI controlling the whole P&L... So it was more on the control side of things.”

Means vs. Ends

Although the ultimate goal of the Process Excellence program was to improve process efficiencies and reduce costs, the more important objective during this period was to bring awareness to the Process Excellence program in general. The LSS culture was rapidly evolving at this time, and there were still quite a few employees who hadn't yet been exposed to the LSS terminology, methodology, and tools. As part of its change management approach, it was critical for J&J to identify and secure early LSS “cheerleaders”, and continuously build out the program. “Lunch-and-Learn” drop-in sessions were now implemented and regularly made available by the Process Excellence team so that anyone could attend if they simply wanted to learn a new LSS tool or concept within a short period of time, without having to commit to a two-day Red Belt or ten-day Green Belt training program. This demonstrated the importance that J&J placed on the means versus the ends in terms of competing values, as achieving process improvements and cost reductions would not be immediately possible. A practitioner at J&J comments on the growth of the LSS culture during this period of the Process Excellence program:

“I think it was more on the means where it was more about training, making people aware, and giving people the tools... It was more focused on the level of awareness and breeding familiarity with Six Sigma in the organization versus the optimized and improved processes that would have come out of Green Belt certification projects or Black Belt certification projects.”

Related to the above, J&J's Process Excellence program lacked a standard process to ensure the completion of its Red Belt projects. Over half of the Red Belt projects initiated at J&J unfortunately did not meet their expected deadline date for completion, which was set at one year

²⁷ JJI = Johnson & Johnson Inc.

after the completion of day one of the Red Belt training. Some of the reasons behind this were to be expected though – such as changes in employees’ roles within the organization, departures of employees from the organization, and changing department or organizational priorities. This demonstrated the lack of focus on the ends versus the means in terms of competing values, as more of an emphasis was placed on building the Belt “pipeline” of candidates. A practitioner at J&J comments on some of the reasons behind the lower-than-anticipated Red Belt project completion rates:

“There were a lot of people that did the training, but didn’t do the project – or the project died or there wasn’t a system or a mechanism to ensure it was completed. I felt like it got off to a good start and then dropped off... There were numbers that needed to be met or it was something on a management goal and putting people on projects. And if they’re not super-interested, they’re going to do it to say they did it – but if there’s no consequences at the end or if there’s no real reward at the end, what’s in it for them to complete it?”

Management of Competing Values in Period 3

A summary of how J&J managed the competing values of people versus organization, flexibility versus control, and means versus ends within Period 3 (stabilization of the Process Excellence Program) is found below in Figure 6:

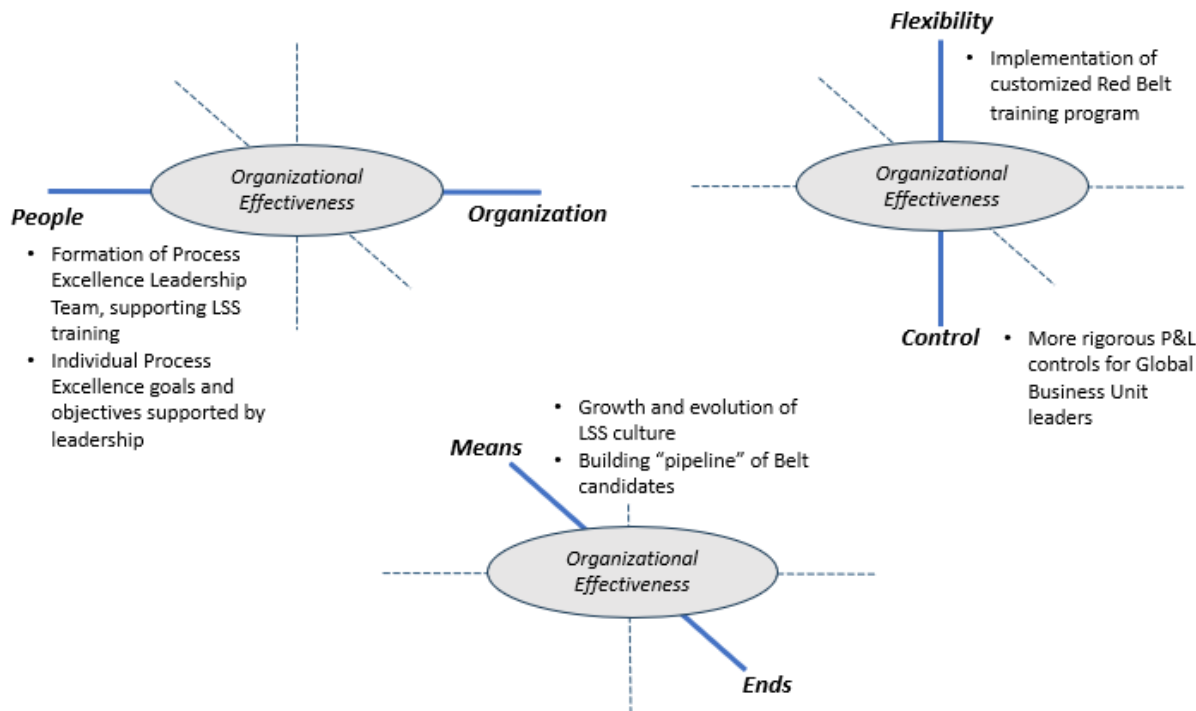


Figure 6: Management of Competing Values in Period 3

V.2.4 Period 4 (2011-2013: Move of Process Excellence Program from Corporate to Supply Chain)

J&J had now been a merged organization for four years, with its Process Excellence program considered to be fully stabilized during this period. Expectations from J&J's global Corporate office on its revenue performance continued to increase, as the J&J/McNeil/Pfizer merger was to have been fully executed by this time. The mandate of the Process Excellence team was to implement an LSS culture and provide capacity building to the integrated organization such that each department would have LSS-trained Belts within to be able to lead their own process improvement projects. This mandate, for the most part, was now considered by the global Corporate office to be complete, and thus it was difficult for the Chief Financial Officer to provide rationale for the Process Excellence team to continue functioning in its current capacity. There was, however, a strong need within the Supply Chain department to apply LSS methodology to

addressing pain points identified within its logistics, demand planning, and scheduling processes. Thus, the one remaining member of the Process Excellence team (one of the Black Belts) moved from supporting the entire J&J organization as a Corporate resource to now only supporting the Supply Chain department.

During this period of the Process Excellence program, J&J (mainly on the manufacturing side) was also grappling with the consent decree that had been issued by the U.S. FDA. This significantly slowed down much of the Process Excellence efforts within the McNeil plant, and J&J as a whole shifted its focus to improving reliability, customer service, and delivery performance – as these areas were negatively impacted as a result of the consent decree. Manufacturing sites outside of J&J were able to re-focus their efforts on LSS fairly quickly after the consent decree to address the root causes of compliance issues – but it took much longer for the McNeil plant to re-energize its LSS efforts.

People vs. Organization

J&J as a global organization was experiencing a significant shift in its operations being managed at a regional level (from its Corporate headquarters in New Brunswick) versus locally (for example, within J&J in Markham) during this time period. At the end of the 2000s, J&J's Supply Chain department had already shifted to being managed regionally, and the next departments to follow this approach were now its Finance and HR departments. This was a clear example of J&J was now focusing more on organization versus people as a competing value, being strongly governed by its global Corporate office. A practitioner at J&J comments on the impact of the global Corporate office's expectations on the Process Excellence program:

“So that was really where I think the Corporate pressure was becoming very granular and it was becoming overwhelming from a PE perspective... This was four years after merger and Corporate finally had enough and said ‘look, you're merged, it's done now – you don't need this resource doing what it's doing’. And

the flip really started to happen then where it moved from [being] less on the people side and the training investment [and more] into the organization side.”

Flexibility vs. Control

Prior to the move of the Process Excellence role from Corporate to Supply Chain, the projects led by the Black Belt team members covered all parts of the organization. For example, leaders from the Sales, Marketing, and Digital departments would regularly engage the Process Excellence team to implement large-scale LSS projects within their areas. With the Process Excellence function now being moved to Supply Chain, the majority of the projects (70-80%) were now Supply Chain LSS projects such as those focused on service availability and unit fill rates. The Process Excellence team no longer had direct involvement in J&J’s end-to-end processes, and thus a lack of flexibility in the types of projects they could take on. Customers of the Process Excellence team similarly now lacked the flexibility in managing their own processes with the shift to regionally managed functions. A practitioner at J&J comments on the changing dynamics within the organization, with J&J focusing more on control versus flexibility as a competing value during this period:

“Everything else was moving centrally during 2011 to 2013. So again, another element of control that meant that the customers of PE weren't given the flexibility to say, ‘Here's how I want to go to market’. They were told, ‘No, this is how you go to market. This is your new process now top-down from Corporate and [there's] no room for discussion about change management or process improvement – here it is, live with it.’”

Means vs. Ends

As a result of the consent decree issued by the U.S. FDA to McNeil, J&J was forced into changing its manufacturing work environment to be focused more on the ends (i.e. fulfilling the requirements of the consent decree) versus the means in terms of competing values. A majority of the Process Excellence Belt projects were immediately halted, and newer productivity projects were postponed for consideration until all requirements of the consent decree were met. All process

improvement work related to production, R&D, and quality within McNeil was immediately placed on hold as mandated by the external auditors. Any changes in process design or operation would require a lengthy and detailed screening approval by the local auditors before proceeding. A practitioner at J&J comments on the significant impact the consent decree had on the Process Excellence program:

“[The consent decree] forced big changes in the Lean Six Sigma program, especially in manufacturing sites. So a lot of the programs, like 5S²⁸ for example, a quick changeover was stopped because there was a perceived hurdle in educating the FDA about the benefits of that from a compliance perspective, and it was seen as a distraction from the compliance reading that was being enforced. At the time it was the right thing for the organization to do, but it set back the program probably by a decade.”

Management of Competing Values in Period 4

A summary of how J&J managed the competing values of people versus organization, flexibility versus control, and means versus ends within Period 4 (the move of the Process Excellence program from Corporate to Supply Chain) is found below in Figure 7:

²⁸ United States Environmental Protection Agency, *Lean Thinking and Methods – 5S* - [https://www.epa.gov/sustainability/lean-thinking-and-methods-5s#:~:text=The%205S%20pillars%2C%20Sort%20\(Seiri,sustaining%20a%20productive%20work%20environment.](https://www.epa.gov/sustainability/lean-thinking-and-methods-5s#:~:text=The%205S%20pillars%2C%20Sort%20(Seiri,sustaining%20a%20productive%20work%20environment.)

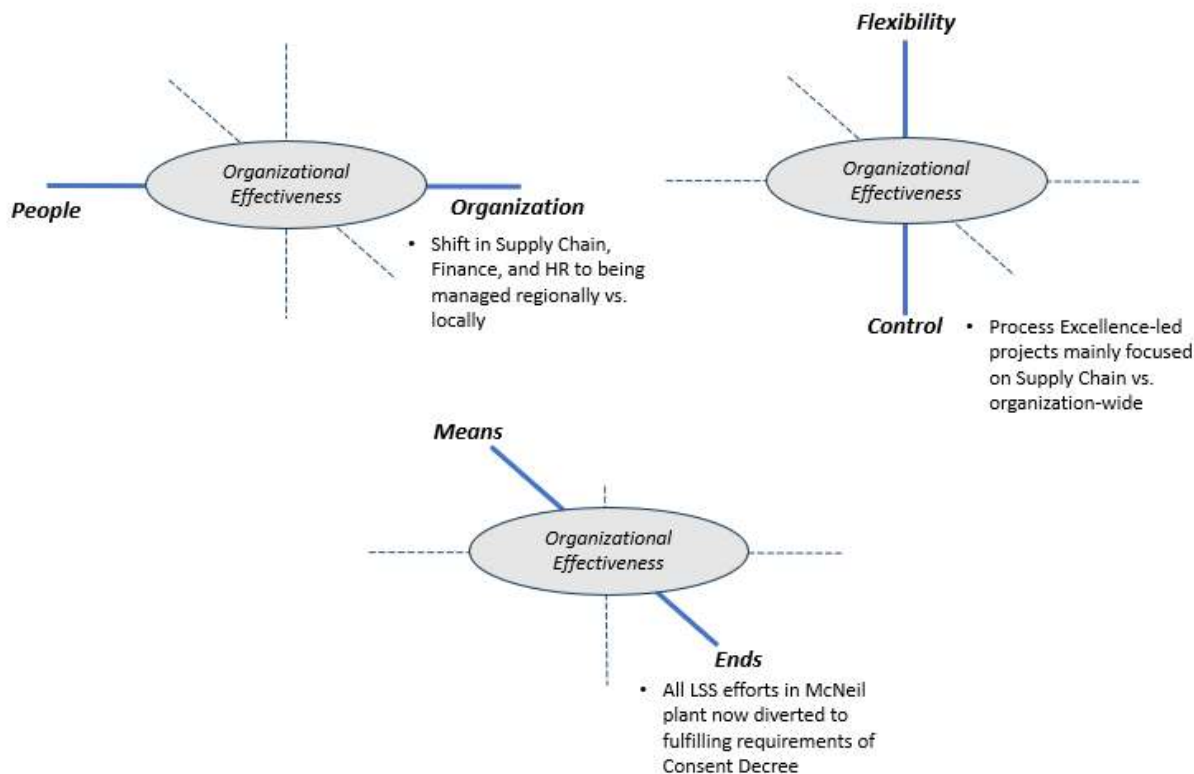


Figure 7: Management of Competing Values in Period 4

V.2.5 Period 5 (2013-2015: Discontinuation of Process Excellence Training)

With the continual pressures each department in J&J was experiencing in terms of managing their P&Ls, it wasn't surprising to see the lack of appetite from leaders in supporting Process Excellence training requests from their staff members during this time period. To fill the minimum number of seats within their Red Belt and Green Belt training programs leading up to this period, J&J had to reach out to other Johnson & Johnson affiliates (for example, in J&J Pharma and J&J Medical Devices). It took quite a bit of convincing by the Process Excellence team to garner support for the final training program that was completed – a Black Belt “bridge” program meant to prepare Green Belts for Black Belt certification. Within the Supply Chain department specifically, the department had achieved success in addressing the issues related to service

reliability, and were now shifting their focus to cost reduction and the exploration of offshoring and outsourcing opportunities.

The initiatives associated with the consent decree in the McNeil plant had now successfully wrapped up, and the production of Over-The-Counter products had now moved to the Consumer Healthcare division. Process Excellence projects at McNeil were fairly light during this period, due to project resources being deployed to work on a significant physical expansion at the plant that was to bring better segregation and controls as they related to production equipment and security protocols. The project took three years to complete (from 2012 to 2015).

People vs. Organization

The shift from locally-managed processes to regionally-managed ones was now ramping up significantly for the Finance and HR departments, managed by a large-scale project called Enterprise Standards and Productivity. Standardized processes at the organizational level were being mandated by J&J's global Corporate office in New Brunswick. The standardized processes laid the groundwork for a future ERP (enterprise resource planning) system to be implemented (the next version of SAP²⁹) which was globally led and required global standard templates to be utilized. This demonstrated J&J's focus on organization versus people in terms of competing values during this time period. A practitioner at J&J comments on the changes brought about by the Enterprise Standards and Productivity project:

“So that is where a lot of the leadership functions were stripped away in Canada, as they were centralized in the US. A lot of the process determinations were now set in from Corporate... So very much an even stronger focus on organization versus people. They were very willing and they did – they shed a lot of talent at JJI – very seasoned, very strong enterprise leaders, but they had no role for them in the future organization.”

²⁹ SAP is the name of an ERP system developed by the organization SAP - <https://www.sap.com/products.html>

Flexibility vs. Control

The Sales and Marketing departments were now also beginning their transformation from being locally-managed entities to regionally-managed ones. As a result, the P&Ls for the Global Business Units would now be fully controlled by J&J's global Corporate office in New Brunswick, signifying a strong focus on control versus flexibility in terms of competing values. J&J would previously develop all local content and local copy, including locally managed websites. With the shift to regional management, the bulk of this work would now move to J&J Corporate teams in the U.S., as all copy, brand artwork, and insights were now globally managed. The Sales and Marketing departments in J&J would now only manage the smaller localization portion of the process – for example, ensuring the French copy would work in Quebec and validating whether content would be appropriate in context for the audience in Canada. A practitioner at J&J comments on the impact of the various J&J departments shifting to a centralized, regional control:

“Canada was turning into a satellite office in name and spirit – the value was really focused on control. So basically, the central office could peer into every single aspect of the organization starting from a P&L lens... If it's centrally dictated, you're not doing any process work anymore – you're just lifting and applying, you're working through change management, which basically meant if they don't go along with it, we hope people will self-select out.”

Means vs. Ends

As a result of both the consent decree and the shift of control to regionally-managed functions, the McNeil plant was experiencing much more oversight and involvement from J&J's global Corporate offices in New Brunswick during this period. The global Corporate offices had recently launched a new large-scale program called “Make to Win”, which was focused on improving operational efficiencies within its manufacturing sites around the world. The McNeil plant was chosen as either the second or third plant within Johnson & Johnson for the program to be run, and thus this was still during the early stages of the program's global rollout. One of the

key metrics the program focused on was operational efficiency, which is defined as “the ability of an organization to reduce waste in time, effort and materials as much as possible, while still producing a high-quality service or product”³⁰. Due to a number of factors, the operational efficiency in the McNeil plant had dropped from 40% to 20% in the last few years, and the global Corporate office was now demanding an increase in operational efficiency to 70% through the Make to Win program. This was an example of the organization focusing more on ends versus means in terms of competing values, as the Make to Win program was unfortunately not fully applying the LSS methodology (the means) to capture sufficient data, analyze and understand the detailed process, heed the advice of resident experts, and determine the true capability of the process. A leadership team member and practitioner at J&J comments on the challenges experienced by the Make to Win program during this time period:

“When they implemented Make to Win, there was a lot of other reasons and implications. The efficiencies actually in Guelph deteriorated rapidly... They would come in and say, ‘Okay, well, your OE³¹’s going to go to 70%’. I go, ‘It’s not possible. Our run sizes are too small to do that.’... So they had these crazy end goals that were just so stretched – they weren’t really realistic... I’m all for stretch goals, but I’m also pragmatic and say if you set goals that are totally unachievable, you know that people are literally not going to try.”

Management of Competing Values in Period 5

A summary of how J&J managed the competing values of people versus organization, flexibility versus control, and means versus ends within Period 5 (the discontinuation of Process Excellence training) is found below in Figure 8:

³⁰ TechTarget, Search Business Analytics, *Definition – Operational Efficiency* - <https://searchbusinessanalytics.techtarget.com/definition/operational-efficiency#:~:text=Operational%20efficiency%20is%20the%20ability,high%2Dquality%20service%20or%20product.>

³¹ OE = Operational Efficiency

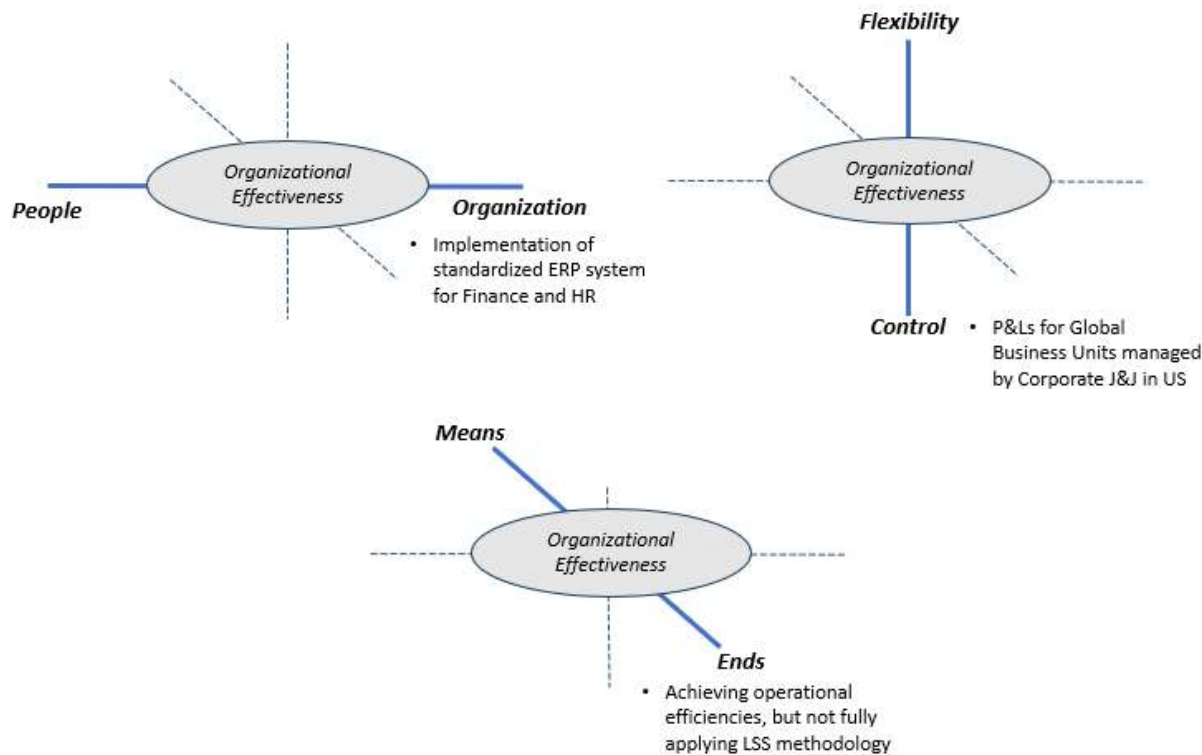


Figure 8: Management of Competing Values in Period 5

V.2.6 Period 6 (2015-2020: Discontinuation of the Process Excellence Program)

Although there were still some Process Excellence projects being carried out in the McNeil plant, there were no further transactional (i.e. non-manufacturing) Process Excellence projects in J&J. In fact, this was not only the case at J&J, but also across the Sales and Marketing organizations in all other Johnson & Johnson affiliate companies. The organization shifted its focus to other areas within the supply chain process during this time period, moving into the planning, sourcing, delivering, and enabling processes of the product lifecycle. In addition, the Process Excellence role within J&J's Supply Chain department had since transitioned to another staff member, but the Process Excellence function was no longer part of this role, signifying the end of the Process Excellence program at J&J.

On the manufacturing side, several new programs were being introduced during this time period (including the continuation of the Make to Win program mentioned during the prior period). Agile methodology was now added to the Make to Win program with the introduction of twice daily “stand-up meetings”³² in the McNeil plant and re-structuring their work to follow a “scrum” framework³³. In addition to the stand-up meetings (also referred to as “quick huddles”), staff members within the Consumer organization in the U.S. were encouraged to apply concepts such as co-location, iterative management, and empowering decision-making at the lowest level of the organization. Another program called “Manufacturing for the Future” was also introduced in the U.S. during this time period, looking at the intersection of innovation and technology “to address flexibility, agility, access, and affordability”³⁴. The Information Technology organization in the U.S. also rolled out a new program called “Rapid Value Realization”, which borrows heavily from Lean, Design Thinking, and Agile.

People vs. Organization

Although J&J’s Process Excellence program had been demonstrating value to the organization through the success of its completed Belt projects, continual pressure was being placed on each J&J affiliate organization to meet profit and revenue targets set by the global Corporate office. The decision to focus on organization versus people in terms of competing values meant that J&J’s Process Excellence program would officially be sunsetted, resulting in the discontinuation of LSS best practice-sharing among affiliates. The decision to discontinue J&J’s Process Excellence program was also the direct result of Process Excellence project demand on

³² Kanbanize, *Stand-up Meeting: The Definite Guide for Holding Effective Stand-ups* - <https://kanbanize.com/blog/running-a-better-stand-up-meeting/>

³³ Scrum.org, *What is Scrum?* - <https://www.scrum.org/resources/what-is-scrum>

³⁴ Pharma TechOps USA, *Case Study: Manufacturing for the Future* - <https://www.pharma-techops-usa.com/case-study-manufacturing-for-the-future-johnson-johnson>

the transactional side (i.e. outside of the manufacturing environment) drying up during this time period. A practitioner at J&J comments on the difficult decisions resulting in the discontinuation of the Process Excellence program:

“[The decision to sunset the Process Excellence program] showed that the organization truly did not believe that Lean Six Sigma could contribute to the bottom line in a positive way... The decision often comes down to ‘well, I can have someone in head office who’s working on developing talent or I can have a sales rep grabbing revenue’, and those pressures came to bear... And definitely the organizational pressure won out.”

Flexibility vs. Control

The new ERP system was now being deployed in J&J during this time period to standardize all Finance and HR processes, based on global templates developed by the global Corporate offices in the U.S. The Corporate Supply Chain organization in the U.S. was also continuing their efforts in standardizing their processes across the globe with the introduction of the J&J Production System, which later merged into the J&J Operating System. The various processes within these areas were aligned with the standards that had been put in place in the U.S. through the ES&P and transformation work that had happened previously, demonstrating a strong focus on control versus flexibility in terms of competing values. A practitioner at J&J comments on the completion of the process standardization work during this time period:

“It was at this point, a lot of standardization of processes, not just in JJI, but across all of Supply Chain, and across all of Finance for all of Canada... So that was the ‘bow on the ribbon’ kind of thing to say – now it’s ‘done done’. And a very strict control of resourcing, a strict control of how those companies are expected to operate and deliver results, and very, very regimented and controlled.”

Means vs. Ends

During this period, the Corporate Supply Chain organization in the U.S., referred to internally as the Supply Chain Academy, had now become the central governing body for J&J’s global Process Excellence program. The organization had previously created the J&J Production

System to standardize all global supply chain processes. The Supply Chain Academy is a relatively small group (approximately six employees) offering training and certification opportunities in the areas of Lean, Six Sigma, Design Excellence, and general supply chain processes. Specific training courses such as “Training Within Industry”, “Maintenance Scheduling & Execution”, and “Negotiating for Mutual Gains” are also offered. Through the support of the Supply Chain Academy, the McNeil plant has recently introduced a new LSS Yellow Belt program, with mentoring support being provided by local Black Belts. This re-energized interest in the application of LSS demonstrates J&J’s focus on means versus ends in terms of competing values during this period. A practitioner at J&J comments on the impact of the Supply Chain Academy’s management of the global Process Excellence program:

“The formation of the J&J Supply Chain Academy as the central governing body for the PE program has driven accountability for certification and has allowed for a high degree of standardization. The move from regional to centralized processes has increased the quality of the training and support structure around completion/certification. As a leader, it has allowed me to quickly build experts on my team... These new skillsets have driven better problem solving, analytics (especially in the areas of waste reduction) and improvements to reliability metrics.”

Management of Competing Values in Period 6

A summary of how J&J managed the competing values of people versus organization, flexibility versus control, and means versus ends within Period 6 (the discontinuation of the Process Excellence program) is found below in Figure 9:

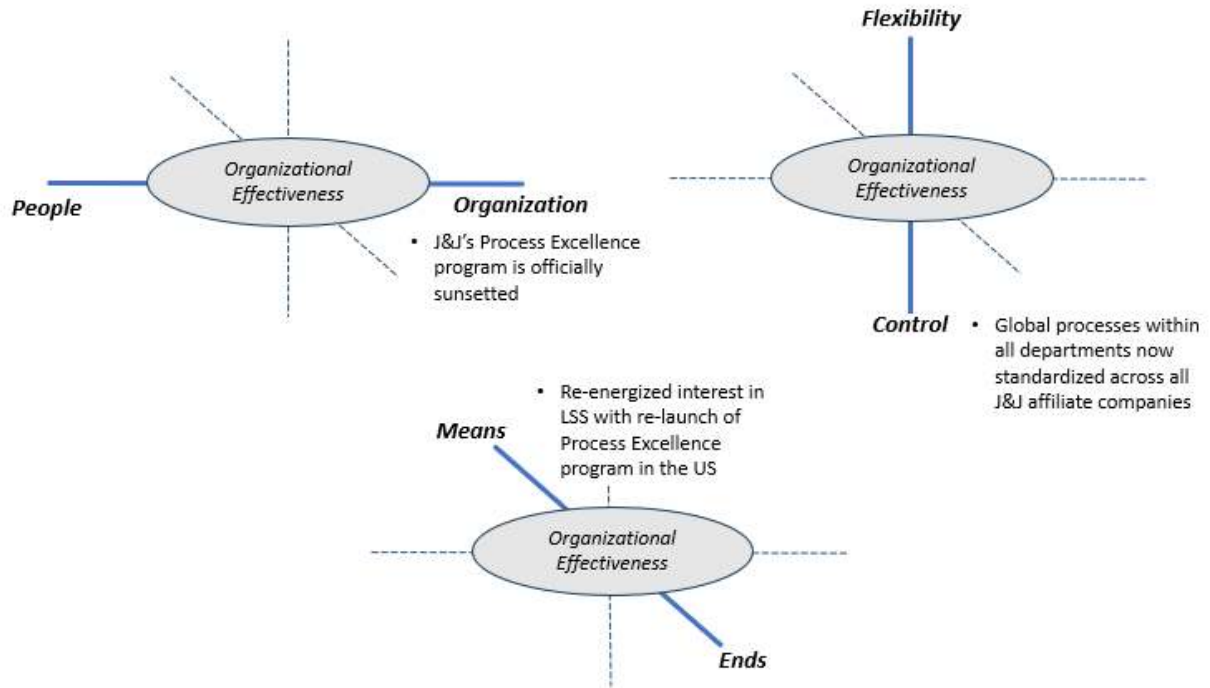


Figure 9: Management of Competing Values in Period 6

VI DISCUSSION AND CONTRIBUTIONS

Drawing upon Quinn and Rohrbaugh's (1981) Competing Values Framework as our theoretical framework, we carried out a retrospective, in-depth case study (Yin, 2014) of a Fortune 500 organization's implementation and sustainment of its LSS program. We gain a detailed understanding of how J&J organized and managed its LSS program to successfully sustain it over time. We trace J&J's changing focus on competing values through each phase of its Process Excellence program lifecycle to reveal how it successfully sustained the program, how certain activities and events played a role in the program's discontinuation, and we propose ideas and approaches for future revival of the program.

VI.1 Empirical Findings

We contribute to the existing literature by providing a detailed empirical account of how J&J implemented and sustained its Process Excellence program over a period of 13 years (from 2002 to 2015). Previous empirical studies have showcased the application of LSS in specific process improvement projects within both the private sector (Montgomery & Woodall, 2008; Ahire & Jensen, 2017; Honda et al., 2018) and the INGO sector (Parris, 2013), in addition to its versatility in specific projects within various industries (Bhat et al., 2020; Dileep et al., 2014; Wang & Chen, 2010; Vijaya Sunder, 2016; Shamsuzzaman et al., 2018; Gijo et al., 2019; Antony et al., 2016). However, there is a dearth of literature available on the long-term sustainment of an LSS program within an organization.

We provide an account of how J&J organized and managed its LSS program successfully over time through the application of Quinn and Rohrbaugh's (1981) Competing Values Framework, consisting of three dimensions: (1) organizational focus (people versus organization), (2) organizational structure (flexibility versus control), and (3) organizational means and ends

(means versus ends). Table 8 below provides a summary of the events and activities demonstrating J&J's focus on competing values through each period of its LSS program:

Table 8: J&J's Focus on Competing Values (Events and Activities)

<i>Period of Process Excellence Program</i>	<i>Organizational Focus</i>	<i>Organizational Structure</i>	<i>Organizational Means and Ends</i>
Period 1: Implementation of the Process Excellence Program at J&J/McNeil	People: J&J (pre-merger) and McNeil: significant investment in LSS training and capacity building	Control: J&J (pre-merger) and McNeil: implementation of centralized LSS teams	Means: J&J (pre-merger) and McNeil: decision to implement LSS program to reduce costs
Period 2: J&J/McNeil/ Pfizer Merger	People: Hiring of significant number of new roles, including 2 Black Belts for Process Excellence team Organization: Culture of newly merged J&J organization being formed	Control: Standardization of foundational business processes Control: Implementation of internal financial controls	Means: Importance of ethics and values, as guided by J&J's Credo Ends: Leeway in approach to achieve sales and profit targets
Period 3: Stabilization of the Process Excellence Program	People: Formation of Process Excellence Leadership Team, supporting LSS training People: Individual Process Excellence goals and objectives supported by leadership	Flexibility: Implementation of customized Red Belt training program Control: More rigorous P&L controls for Global Business Unit leaders	Means: Growth and evolution of LSS culture Means: Building "pipeline" of Belt candidates
Period 4: Move of Process Excellence Program from Corporate to	Organization: Shift in Supply Chain, Finance, and HR to being managed regionally vs. locally	Control: Process Excellence-led projects mainly focused on Supply Chain vs. organization-wide	Ends: All LSS efforts in McNeil plant now diverted to fulfilling requirements of

Supply Chain			consent decree
Period 5: Discontinuation of Process Excellence Training	Organization: Implementation of standardized ERP system for Finance and HR	Control: P&Ls for Global Business Units managed by Corporate J&J in US	Ends: Achieving operational efficiencies, but not fully applying LSS methodology
Period 6: Discontinuation of Process Excellence Program	Organization: J&J's Process Excellence program is officially sunsetting	Control: Global processes within all departments now standardized across all J&J affiliate companies	Means: Re- energized interest in LSS with re-launch of Process Excellence program in the US

VI.1.1 J&J's Application of LSS Sustainment Guiding Principles in its Process Excellence Program

Guiding principles for LSS sustainment have been presented in previous studies (Antony et al., 2018; O'Reilly et al., 2018; Kloppenborg & Tesch, 2015; Lu et al., Laux, 2017), and we share examples in Table 9 below where J&J demonstrated how it managed its LSS program and focused on a particular competing value to apply the guiding principle. Where an example is not referenced, we provide recommendations for how J&J may consider this with a future revival of the Process Excellence program, or explain why the guiding principle may not be applicable to J&J.

Table 9: LSS Sustainment Guiding Principles (and Application at J&J)

<i>Source</i>	<i>Guiding Principle</i>	<i>Demonstrated</i>	<i>Reference / Opportunity / Explanation at J&J?</i>
Antony et al., 2018	1. Alignment of Lean Six Sigma initiative with organizational strategy	Yes	<ul style="list-style-type: none"> Period 1 (focus on Means): J&J (pre-merger) and McNeil: decision to implement LSS program to reduce costs Period 2 (focus on Organization): Culture of newly merged J&J

			organization being formed
	2. Lean Six Sigma project selection and prioritization	Yes	<ul style="list-style-type: none"> Period 2 (focus on Organization): Culture of newly merged J&J organization being formed
	3. Selection of top talent for project execution	Yes	<ul style="list-style-type: none"> Period 1 (focus on Control): J&J (pre-merger) and McNeil – implementation of centralized LSS teams Period 2 (focus on People): Hiring of significant number of new roles, including 2 Black Belts for Process Excellence team Period 3 (focus on Means): Building “pipeline” of Belt candidates
	4. Leadership for Lean Six Sigma	Yes	<ul style="list-style-type: none"> Period 3 (focus on People): Formation of Process Excellence Leadership Team, supporting LSS training
	5. Effective training and design of appropriate curriculum for different Lean Six Sigma roles	Yes	<ul style="list-style-type: none"> Period 1 (focus on People): J&J (pre-merger) and McNeil – significant investment in LSS training and capacity building Period 3 (focus on Flexibility): Implementation of customized Red Belt training program
	6. Development of reward and recognition system	Yes	<ul style="list-style-type: none"> Period 3 (focus on People): Individual Process Excellence goals and objectives supported by leadership
	7. Lean Six Sigma sustainability	Yes	<ul style="list-style-type: none"> See Figure 3 (Timeline of J&J’s Process Excellence Program): LSS program sustained for 13 years (from 2002 to 2015)
	8. Linking Lean Six Sigma with	Yes (+No)	<ul style="list-style-type: none"> Period 1 (focus on People): J&J (pre-merger) and McNeil –

	organizational learning and innovation		<p>significant investment in LSS training and capacity building</p> <ul style="list-style-type: none"> • Period 3 (focus on Flexibility): Implementation of customized Red Belt training program • Opportunity to link LSS with innovation in future revival
	9. Linking Lean Six Sigma with environment management system standards	Yes	<ul style="list-style-type: none"> • Period 2 (focus on Control): Standardization of foundational business processes • Period 2 (focus on Control): Implementation of internal financial controls
	10. Lean Six Sigma and Big Data	No	<ul style="list-style-type: none"> • Opportunity to link LSS with big data in future revival
O'Reilly et al., 2018	1. Need to respond to increasingly demanding stakeholders	Yes (+No)	<ul style="list-style-type: none"> • General (focus on Flexibility): Adjusting foundational processes as a result of changes in customer expectations • Opportunity to respond to changing customer demands in a more agile way in future revival
	2. Aligning implementation with organizational strategy	Yes	<ul style="list-style-type: none"> • [see Antony et al.'s guiding principle #1 above]
	3. Understanding the role of internal and external specialists	Yes (+No)	<ul style="list-style-type: none"> • Period 2 (focus on People): Hiring of significant number of new roles, including 2 Black Belts for Process Excellence team • Period 3 (focus on Means): Building "pipeline" of Belt candidates • Opportunity to incorporate external LSS specialists in future

			revival
	4. Understanding the structured approach of LSS	Yes	<ul style="list-style-type: none"> • Period 1 (focus on Means): J&J (pre-merger) and McNeil: decision to implement LSS program to reduce costs • Period 2 (focus on Control): Standardization of foundational business processes
Kloppenborg & Tesch, 2015	Highlighting the key role and behaviors of the Project Champion	Yes	<ul style="list-style-type: none"> • Period 3 (focus on People): Formation of Process Excellence Leadership Team, supporting LSS training
Lu et al., 2017	Incorporating key components of leadership, statistical thinking, continuous change, and improvement	Yes	<ul style="list-style-type: none"> • Period 1 (focus on Means): J&J (pre-merger) and McNeil: decision to implement LSS program to reduce costs • Period 3 (focus on People): Formation of Process Excellence Leadership Team, supporting LSS training

VI.1.2 Potential Root Causes Behind the Discontinuation of J&J's Process Excellence Program

Potential root causes behind failures in LSS sustainment have also been presented in previous studies (Drake et al., 2008; Antony et al., 2019; McLean & Antony, 2014; Fursule et al., 2012; Sony et al., 2018), and we share examples in Table 10 below where J&J attempted to address the potential root cause, focusing on a particular competing value while managing its LSS program. Where an example is not referenced, we provide recommendations for how J&J may consider this with a future revival of the Process Excellence program, or explain why the potential root cause was not assessed as a part of this study.

Table 10: Root Causes Behind Failures in LSS Sustainment (and Actions by J&J)

<i>Source</i>	<i>Potential Root Cause</i>	<i>Root Cause Addressed by J&J?</i>	<i>Reference / Opportunity / Explanation</i>
Antony et al., 2019	1. There is employee's resistance to change	Yes (+No)	<ul style="list-style-type: none"> • Period 3 (focus on Means): Growth and evolution of LSS culture • Opportunity to enhance LSS change management approach in future revival
	2. Lack of top management commitment in project planning (resource allocation)	Yes	<ul style="list-style-type: none"> • Period 3 (focus on People): Formation of Process Excellence Leadership Team, supporting LSS training
	3. Lack of top management commitment in project implementation (monitoring and controlling)	Yes	<ul style="list-style-type: none"> • Period 3 (focus on People): Formation of Process Excellence Leadership Team, supporting LSS training • Period 3 (focus on People): Individual Process Excellence goals and objectives supported by leadership
	4. Lack of facilitators with key positions in the organization to ensure management commitment	Yes	<ul style="list-style-type: none"> • Period 2 (focus on People): Hiring of significant number of new roles, including 2 Black Belts (and Director) for Process Excellence team
	5. The management does not understand the causes of employee's resistance of underperformance, and does not take immediate action	Yes (+No)	<ul style="list-style-type: none"> • Period 3 (focus on Means): Growth and evolution of LSS culture • Opportunity to enhance LSS change management approach in future revival
	6. Lack of involvement of top management in	Yes	<ul style="list-style-type: none"> • Period 3 (focus on People): Formation of Process

	conceptualization (goal setting and project selection)		<p>Excellence Leadership Team, supporting LSS training</p> <ul style="list-style-type: none"> • Period 3 (focus on People): Individual Process Excellence goals and objectives supported by leadership
	7. Lack of project leadership skills necessary to lead the team	Yes	<ul style="list-style-type: none"> • Period 2 (focus on People): Hiring of significant number of new roles, including 2 Black Belts (and Director) for Process Excellence team
	8. There are no strategies to convince resistant employees to maintain a positive attitude regarding process improvement projects	Yes (+No)	<ul style="list-style-type: none"> • Period 3 (focus on Means): Growth and evolution of LSS culture • Opportunity to enhance LSS change management approach in future revival
	9. There is not enough time being allocated to data and information collection in order to deploy tools and techniques effectively	TBD	<ul style="list-style-type: none"> • Specific project performance was not included as part of the scope for this study. Further research is required.
	10. Lack of employee participation and involvement in problem solving	TBD	<ul style="list-style-type: none"> • Specific employee participation and involvement was not included as part of the scope for this study. Further research is required.
Fursule et al., 2012	An implementation model does not yet exist to guide organizations in successfully implementing the methodology	Yes (+No)	<ul style="list-style-type: none"> • Period 1 (Means): utilize models from J&J (pre-merger) and McNeil LSS implementations • Opportunity to enhance and better define implementation model in future revival

Sony et al., 2018	1. Poor success rate	TBD	<ul style="list-style-type: none"> • Specific project performance was not included as part of the scope for this study. Further research is required.
	2. Unrealistic expectations from LSS	Yes (+No)	<ul style="list-style-type: none"> • Period 3 (focus on People): Individual Process Excellence goals and objectives supported by leadership • Opportunity to ensure realistic LSS expectations in future revival
	3. Unsustainable results	TBD	<ul style="list-style-type: none"> • Specific project performance was not included as part of the scope for this study. Further research is required.
	4. Misuse of statistics	TBD	<ul style="list-style-type: none"> • Specific project performance was not included as part of the scope for this study. Further research is required.
	5. Large tool set	TBD	<ul style="list-style-type: none"> • Specific project performance was not included as part of the scope for this study. Further research is required.
	6. Unsupportive and uncommitted top management	Yes	<ul style="list-style-type: none"> • Period 3 (focus on People): Formation of Process Excellence Leadership Team, supporting LSS training • Period 3 (focus on People): Individual Process Excellence goals and objectives supported by leadership
	7. Lack of training and development	Yes	<ul style="list-style-type: none"> • Period 1 (focus on People): J&J (pre-merger) and McNeil – significant investment in

			<p>LSS training and capacity building</p> <ul style="list-style-type: none"> • Period 3 (focus on Flexibility): Implementation of customized Red Belt training program
	8. Lack of synergy of LSS and business strategy	Yes	<ul style="list-style-type: none"> • Period 1 (focus on Means): J&J (pre-merger) and McNeil – decision to implement LSS program to reduce costs
	9. Lack of link between LSS and customer needs	Yes (+No)	<ul style="list-style-type: none"> • General (focus on Flexibility): Adjusting foundational processes as a result of changes in customer expectations • Opportunity to improve response to changing customer needs in future revival
	10. Wrong project selection	TBD	<ul style="list-style-type: none"> • Specific project performance was not included as part of the scope for this study. Further research is required.
	11. Premature discontinuation of LSS expert	No	<ul style="list-style-type: none"> • Period 6 (focus on Organization): J&J's Process Excellence program is officially sunsetted

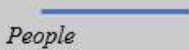





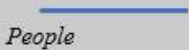


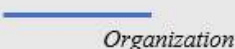


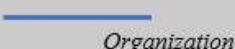


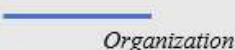


VI.2 Contributions to Theory

To understand how an enterprise organizes and manages its LSS program to successfully sustain it over time, we applied Quinn and Rohrbaugh's (1981) Competing Values Framework to explore J&J's Process Excellence lifecycle. Within each period of the lifecycle, we conducted a deep dive analysis within each Competing Values Framework dimension (organizational focus,

organizational structure, and organizational means and ends) to understand how J&J managed the competing values of people versus organization, flexibility versus control, and means versus ends. There is a dearth of literature available on the application of the Competing Values Framework to an LSS program.

We also applied the Competing Values Framework to understand changes in competing value focus areas over time. Table 11 below provides a visual summary of J&J's focus on competing values through each period of its LSS program. In terms of the organizational focus dimension, J&J placed a stronger focus on people versus organization in the earlier periods of its LSS lifecycle, and later shifted to organization versus people. In terms of the organizational structure dimension, J&J placed a stronger focus on control versus flexibility throughout its entire LSS lifecycle, with the introduction of flexibility only during the stabilization of the program. In terms of the organizational means and ends dimension, J&J placed a stronger focus on means versus ends in the earlier periods of its LSS lifecycle, and later shifted to ends versus means. However, re-energized interest in LSS through J&J's global Supply Chain Academy during the final period shifted J&J's focus back to means versus ends, which is a promising sign for a potential revival of the J&J Process Excellence program.

Table 11: J&J's Focus on Competing Values (Visual Summary)

Period of Process Excellence Program	Organizational Focus	Organizational Structure	Organizational Means and Ends
<i>Period 1: Implementation of the Process Excellence Program at J&J/McNeil</i>			
<i>Period 2: J&J/McNeil/Pfizer Merger</i>			
<i>Period 3: Stabilization of the Process Excellence Program</i>			
<i>Period 4: Move of Process Excellence Program from Corporate to Supply Chain</i>			
<i>Period 5: Discontinuation of Process Excellence Training</i>			
<i>Period 6: Discontinuation of Process Excellence Program</i>			

Application of the Competing Values Framework to the lifecycle of J&J's LSS program proved to be useful as it allowed us to compare and contrast the organization's management of competing values in a consistent manner through the various program periods. The visual mapping of the competing value focus areas in Table 11 allows for a descriptive "competing values profile" to be developed for each phase of J&J's Process Excellence journey. Our study demonstrates that application of the Competing Values Framework could be replicated to study other organizations' LSS programs, with the potential to compare and contrast "competing values profiles" between organizations.

Within this study, we have equated organizational effectiveness (and thus, successful sustainment of an LSS program) with the ability to balance each set of competing values. Gulosino, Franceschini III, and Hardman (2016: 7) state that the Competing Values Framework "emphasizes

that the pursuit of a single criteria of organizational effectiveness is less likely to become effective than is a broader and a more balanced approach”. Although J&J demonstrated the ability to successfully sustain its LSS program for a period of 13 years, one might argue that the program had now successfully run its course – and there may no longer be the same need or requirement for the program to now be revived. One could compare J&J’s Process Excellence program lifecycle to that of a product lifecycle, going through the typical stages of Product Development, Product Growth, Product Maturity, and Product Decline³⁵. That is, periods 1 and 2 of J&J’s LSS program lifecycle could be analogous to Product Development, period 3 to Product Growth, period 4 to Product Maturity, and periods 5 and 6 to Product Decline.

Another potential argument for J&J’s LSS program having now successfully run its course could be the fact that the LSS methodology is now fully ingrained within J&J’s day-to-day processes – that is, LSS is now the “way of working” for the organization. This describes the organizational culture of enterprises who have successfully sustained LSS for a significant period of time – such as Toyota, Motorola, GE, Ford Motor Company, Boeing, and Caterpillar – where LSS is no longer a separate “program”, but now a part of their organizational DNA. J&J could build on the foundational strength it has established with LSS, and introduce other methodologies to better balance its competing values – which it is already doing with the recent application of agile tools and methodology to introduce more flexibility into the organization’s processes.

Use of the Competing Values Framework within this study also provides us with a profile of J&J’s management of competing values which could potentially be used as a model to evaluate LSS sustainability in other organizations. Cameron and Quinn (2011) have developed a set of instruments for organizations to diagnose and change organizational culture based on the

³⁵ Smartsheet, *What is the Product Life Cycle?* - <https://www.smartsheet.com/product-life-cycle-management>

organization's "competing values profile", as measured by its Management Skills Assessment Instrument and Organizational Culture Assessment Instrument³⁶ tools. The Sanger Leadership Center at the University of Michigan has incorporated the Competing Values Framework into its "Michigan Model of Leadership", as it states that "navigating these fundamental tensions and achieving the appropriate balance is the stuff of leadership"³⁷. A similar set of instruments could be developed for an organization to evaluate the effectiveness of its ability in sustaining its LSS program, with tools and strategies for course correction if required.

VI.3 Contributions to Practice

Should J&J consider the potential for reviving the Process Excellence program within its organization, the visual mapping of the competing values focus areas over time (in Table 11 above) may be useful in identifying potential next steps. We outline recommendations below for better balancing the competing values of people versus organization in the organizational focus dimension, introducing more flexibility in the organizational structure dimension, and better balancing means versus ends in the organizational means and ends dimension.

A better balance in managing the competing values of people versus organization can potentially be attained in the approach taken for training staff members and the support provided towards the subsequent completion of Belt projects. Although a significant emphasis was placed on the importance of people in the earlier periods of the program (through the encouragement and support behind Process Excellence training), less of an emphasis was placed on the follow-through required for project completion and Belt certification. A better balance in managing people versus organization would involve the development of clear mechanisms to fully support Belts post-

³⁶ OCAI Online, *About the Organizational Culture Assessment Instrument (OCAI)* - <https://www.ocai-online.com/about-the-Organizational-Culture-Assessment-Instrument-OCAI#:~:text=The%20OCAI%20is%20a%20quick,four%20types%20of%20organizational%20culture.>

³⁷ Sanger Leadership Center, University of Michigan, *What is the Michigan Model of Leadership?* - <https://sanger.umich.edu/our-model/>

training as they work to complete their projects. J&J's Process Excellence team had previously facilitated regular "drop-in" sessions for Belts to bring questions and problems on their projects to resolve – but a more prescriptive process would involve a dedicated Green Belt or Black Belt to be assigned to each Red Belt project to provide direct consultation and guidance. Similarly, a dedicated Black Belt or Master Black Belt would be assigned to each Green Belt project – with active participation from Project Champions for all Belt projects. Formal milestone checkpoints³⁸ within the appropriate forums should also be established to ensure continual progress on all Belt projects, while driving accountability and removing potential roadblocks. Specific Process Excellence training and project deliverables should be documented within each Belts' individual goals and objectives throughout the lifecycle of the LSS program, with regular check-ins established with managers and leadership as appropriate.

To introduce more of a focus on the competing value of flexibility versus control, an opportunity exists in improving the design of the Process Excellence training program and certification requirements. J&J should develop a separate workstream for those staff members who are interested in completing the training, but perhaps not interested in continuing post-training to lead a project and/or seek Belt certification. This would eliminate the added pressure on training participants, some of whom may simply want to learn about the LSS culture and be able to apply the methodology and tools in their everyday work (versus taking on the significant initiative of leading a project). Another opportunity to introduce more of a focus on flexibility versus control would be the creation of a "Process Excellence Lite" version of the program, which would be catered to organizational processes which may not require the stringent regulatory measures necessary in the plant environment. That is, the "Process Excellence Lite" training program would

³⁸ I.T. Toolkit, *Using Project Checkpoints to Stay on Schedule (And On Plan)* - <https://www.ittoolkit.com/articles/project-checkpoints>

include a smaller subset of tools which are most beneficial to staff members working in the office environment (for example: Sales, Marketing, Demand Planning, Customer Service, Human Resources, and Information Technology), and include more transactional³⁹ (vs. manufacturing) working examples in the training curriculum and supporting materials.

To better balance the competing values of means versus ends at the organizational level, the push towards embracing the LSS culture should only be targeted to those departments in J&J which are conducive to the full application of LSS methodology. Thus, instead of mandating that all departments subscribe to LSS and strongly encouraging they each have a set of certified Red Belts and Green Belts (as was the case during the earlier periods of J&J's Process Excellence lifecycle), J&J should only implement the Process Excellence program as a mandatory one in those departments where it's more important to have control versus flexibility as a competing value (for example: Plant Production, Plant Processing, Quality Assurance, Engineering, Packaging, Regulatory, and Finance). This allows each "LSS-optional" department to self-select as to whether LSS will be the approach taken within their department (i.e. the means) to achieve their department objectives (i.e. the ends). As demonstrated by the challenges that 3M experienced with their implementation of Six Sigma in the early 2000s⁴⁰, departments which thrive on creativity and innovation (for example: R&D, Sales, and Marketing within J&J) should have the option of not having to apply full-scale LSS methodology to their processes.

Leadership team members and LSS practitioners outside of J&J may also find this study to be of value as they evaluate their own organization's LSS program. Which competing values have their organization been focusing on, and how can their LSS program better manage these

³⁹ iSixSigma: *Harvesting Value in Transactional Processes with Lean Six Sigma* –

<https://www.isixsigma.com/implementation/basics/harvesting-value-transactional-processes-lean-six-sigma/>

⁴⁰ Brian Hindo, BusinessWeek (June 11, 2007), *Inside Innovation – In Depth, At 3M, A Struggle Between Efficiency and Creativity*

competing values to increase sustainability in its LSS program? Is their organization experiencing challenges in LSS program sustainability which J&J's successful approaches can perhaps be applied to and tested on to try and resolve? For new LSS practitioners, this study provides a window to the inner workings of a large-scale organization in its journey through LSS implementation and sustainment, while managing competing values. Practitioners interested in completing Belt training, working on Belt projects, and seeking Belt certification may now have a better understanding of the value LSS brings to an organization, in addition to the personal growth and development opportunities it brings to the practitioner. Stakeholders and other employees within an LSS organization may also gain a better understanding of LSS culture, methodology, and competing values – so they can fully embrace their organization's LSS program and engage in LSS discussions with their leaders, peers, vendors, suppliers, and customers.

VI.4 Limitations and Future Research

Although this case study design explores the LSS journey of a single organization, the insights and detailed contextual information on J&J's implementation and sustainment of its Process Excellence program will bring value to leaders and practitioners of other LSS organizations. Application of the Competing Values Framework can be replicated to study how other LSS enterprises organize, manage, and successfully sustain their LSS programs over time. Diagnostic instruments and tools (as proposed in the 'Contributions to Theory' section) could be developed based on the replicated studies to generalize the LSS program approaches to other organizations.

With the onset of the COVID-19 pandemic during the data collection period of this study, many of the study participants had limited time available to engage in a full-length phone/video interview, and thus opted to complete a survey via email instead. Should additional availability arise from these and other study participants, a more comprehensive understanding of the detailed

events and activities within each of the Process Excellence program periods could perhaps be obtained. Further research could also include a return to this study in 10-15 years to extend the competing values analysis across additional periods of J&J's LSS journey, and evaluate whether the recommended approaches for revival of the program were successful. A deeper analysis could be conducted on specific LSS project performance within J&J's entire Process Excellence lifecycle, which could then be mapped against J&J's management of its competing values. J&J's LSS journey could also be explored through a different theoretical lens, such as Dynamic Capabilities Theory, Absorptive Capacity Theory, or Sensemaking Theory.

VII APPENDICES

Appendix A: Research Protocol

1. Summary

This study investigates how an organization manages competing values to continuously renew and effectively sustain its Lean Six Sigma program long-term. The study expects to produce the following results:

1. An analysis of Johnson & Johnson's sustainment of its Lean Six Sigma program through the lens of competing values
2. Practical advice for managers to apply the learnings from Johnson & Johnson to achieve long-term sustainment of Lean Six Sigma within their organizations
3. Advancement of competing values theory as a framework for assessing and guiding process improvement programs

We apply a case study methodology with targeted interviews (Miles, Huberman & Saldaña, 2014; Myers, 2013; Yin, 2014) with volunteers, who are either currently or have been previously involved in Johnson & Johnson's implementation of its Lean Six Sigma program. We will conduct qualitative analyses on the collected data to fulfil the study objectives (Miles et al., 2014; Myers, 2013; Yin, 2014).

2. Description

2.1. Rationale: The rationale of the study is to investigate how an organization manages competing values to continuously renew and effectively sustain its Lean Six Sigma program long-term. Organizations are keen in implementing Lean Six Sigma programs, but the majority experience challenges in achieving long-term sustainment and discontinue the program after a few short years. Lean Six Sigma methodology provides a framework for managers to achieve process improvement, but does not provide a framework for organizations to renew and effectively sustain their Lean Six Sigma programs.

2.2. Objectives: To analyze Johnson & Johnson's Lean Six Sigma organizational transformation via competing values. To generate practical advice for managers to apply the learnings from Johnson & Johnson to achieve long-term sustainment of Lean Six Sigma within their organizations. To advance competing values theory as a framework for assessing and guiding process improvement programs.

2.3. Methodology: A case study methodology will be used for the study (Miles et al., 2014; Myers, 2013; Yin, 2014). Qualitative analyses on the data will be conducted to fulfill study objectives (Miles et al., 2014; Myers, 2013; Yin, 2014).

Data Management and Analysis: Volunteers, who are either currently or previously involved in Johnson & Johnson's implementation of Lean Six Sigma programs. A total of 10 to 15 interviewees will be recruited for this study. Notes will be taken by the Principal Investigator during the interview. With the interviewee's consent, the interview will also

be digitally audio-recorded to facilitate data collection. The interviews will be conducted by phone. The interviews should take no more than one hour each. If necessary, interviewees may be asked to participate in up to two follow-up interviews. Each follow-up interview should last no more than 30 minutes. Each interviewee's participation in this study will not exceed two hours.

2.4. This study involves no compensation to the participants.

3. Ethical Considerations

Participation in this study is voluntary. If a participant decides to participate at first but changes his or her mind later, he or she has the right to drop out at any time. The interviewee may skip any question in the interview or stop answering questions at any time. Whatever the decision, the participants will not lose any benefits to which they are otherwise entitled. Participants of this study will not have any more risk than they would face in a normal day of life.

We will keep the records of the interviewees private to the extent allowed by law. Only the Principal Investigator will have access to the information provided. Information may also be shared with those who make sure the study is done correctly (GSU Institutional Review Board and the Office for Human Research Protection (OHRP)).

All electronic materials related to interviews (digital audio recordings, transcripts, etc.) will be stored as password-protected files on the Principal Investigator's computer. This computer is protected by a username, password, and firewall. All paper documents and digital audio recordings produced for this study will be stored for two years and then destroyed. The names and other identifying facts of the participants will not appear when we present this study or publish its results. The findings will be summarized and reported in group form. The participants will not be identified personally.

4. References

Miles, M., Huberman, A.M., and Saldaña, J. 2014. *Qualitative data analysis: A methods sourcebook* (3rd ed.). Thousand Oaks, CA: Sage Publications.

Myers, M.D. 2013. *Qualitative research in business and management* (2nd ed.). Thousand Oaks, CA: Sage Publications.

Yin, R.K. 2014. *Case study research design and methods* (5th ed.). Thousand Oaks, CA: Sage Publications.

Appendix B: Interview Protocol (Part 1)

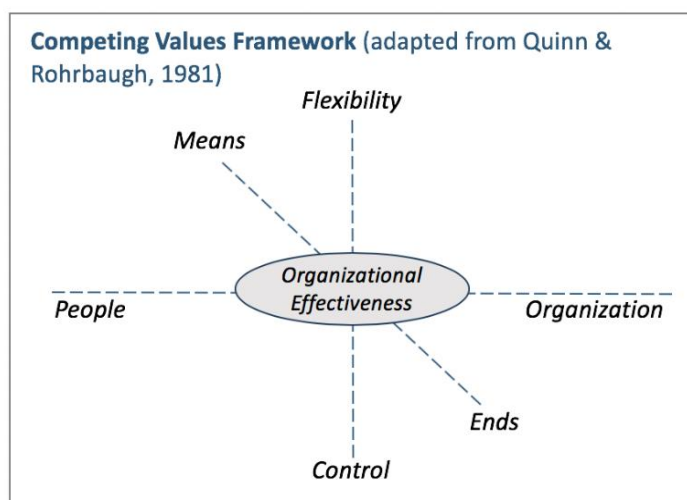
Interview guidelines: At the beginning of the interview, the participant will be informed about the study purpose and be reminded not to use any names or share information that can identify other people.

Research Question: *How can an enterprise organize and manage its Lean Six Sigma program to successfully sustain it over time?*

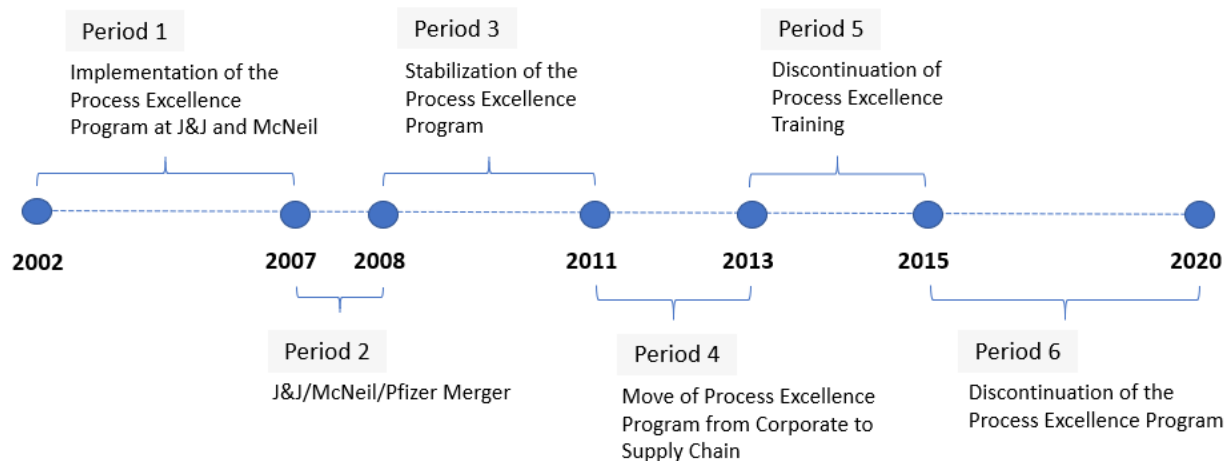
Note: The following table represents the planned universe of questions that may be asked. Not all of these questions are relevant for all the informants and therefore the actual questions asked during interviews will depend on the informant's role within the organization. Moreover, since this study involves semi-structured interviews, other relevant questions may be generated during the course of an interview based on the informant's responses.

<i>Section</i>	<i>Interview Questions</i>
A. Interviewee Profile	<ol style="list-style-type: none"> 1. What is your name, current title, and place of employment? 2. What years were you employed at J&J? 3. What roles or positions have you had at J&J ? 4. What training or certification (if any) do you have in Lean, Six Sigma, or process improvement in general? 5. Prior to J&J, did you have any experience in Lean, Six Sigma, or process improvement? Please describe. 6. Can you describe your involvement in J&J's Lean Six Sigma program, and your role as a leader, practitioner, or customer of the program?
B. Competing Values Focus Areas	<ol style="list-style-type: none"> 1. People vs. Organization: <ol style="list-style-type: none"> a. Can you share examples of how J&J has focused on the needs of the individual vs. the needs of the organization? b. Can you share examples of how J&J has focused on the needs of the organization vs. the needs of the individual? c. How does J&J's management of these competing values (i.e. people vs. organization) play into the ongoing maintenance and sustainment of its LSS program? 2. Flexibility vs. Control: <ol style="list-style-type: none"> a. Can you share examples of how J&J has focused on the need to be flexible vs. the need to maintain control? b. Can you share examples of how J&J has focused on

	<p>the need to maintain control vs. the need to be flexible?</p> <p>c. How does J&J's management of these competing values (i.e. flexibility vs. control) play into the ongoing maintenance and sustainment of its LSS program?</p> <p>3. Means vs. Ends:</p> <p>a. Can you share examples of how J&J has focused on the importance of means (e.g. processes, planning, and goal setting) vs. ends (e.g. final outcomes and productivity)?</p> <p>b. Can you share examples of how J&J has focused on the importance of ends (e.g. final outcomes and productivity) vs. means (e.g. processes, planning, and goal setting)?</p> <p>c. How does J&J's management of these competing values (i.e. means vs. ends) play into the ongoing maintenance and sustainment of its LSS program?</p>
C. Reflections and Recommendations	<p>1. In hindsight, what recommendations would you have for things that J&J could have done differently with their Lean Six Sigma program?</p> <p>2. I understand that the Lean Six Sigma program is no longer in existence today as a formal program at J&J. What do you think led to this critical organizational decision?</p> <p>3. What do you feel are the key success factors for J&J's ability to achieve long-term sustainment of its Lean Six Sigma program?</p> <p>4. What recommendations do you have for other organizations who are currently implementing or maintaining their Lean Six Sigma program, and worried about its sustainability?</p>



Appendix C: Interview Protocol (Part 2)



Section	Interview Questions (Part 2)
<p>D. Competing Values within Process Excellence Timeline</p>	<ol style="list-style-type: none"> 1. During the implementation of the Process Excellence program at J&J/McNeil (2002-2007): <ol style="list-style-type: none"> a. How did J&J/McNeil manage the competing values of People vs. Organization? b. How did J&J/McNeil manage the competing values of Flexibility vs. Control? c. How did J&J/McNeil manage the competing values of Means vs. Ends? 2. During the merger of J&J, McNeil, and Pfizer (2007-2008): <ol style="list-style-type: none"> a. How did J&J manage the competing values of People vs. Organization? b. How did J&J manage the competing values of Flexibility vs. Control? c. How did J&J manage the competing values of Means vs. Ends? 3. During the stabilization of the Process Excellence program (2008-2011): <ol style="list-style-type: none"> a. How did J&J manage the competing values of People vs. Organization? b. How did J&J manage the competing values of Flexibility vs. Control? c. How did J&J manage the competing values of Means vs. Ends? 4. During the move of the Process Excellence program from Corporate

	<p>to Supply Chain (2011-2013):</p> <ol style="list-style-type: none"> a. How did J&J manage the competing values of People vs. Organization? b. How did J&J manage the competing values of Flexibility vs. Control? c. How did J&J manage the competing values of Means vs. Ends? <p>5. During the discontinuation of the Process Excellence training (2013-2015):</p> <ol style="list-style-type: none"> a. How did J&J manage the competing values of People vs. Organization? b. How did J&J manage the competing values of Flexibility vs. Control? c. How did J&J manage the competing values of Means vs. Ends? <p>6. During the discontinuation of the Process Excellence program (in 2015) and leading up to today:</p> <ol style="list-style-type: none"> a. How did J&J manage the competing values of People vs. Organization? b. How did J&J manage the competing values of Flexibility vs. Control? c. How did J&J manage the competing values of Means vs. Ends?
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Appendix D: Survey Questions

1. What do you feel are the key strengths behind the sustainment of the Process Excellence program at J&J, and what value did it bring to you as a leader, practitioner, or stakeholder?
2. In hindsight, what recommendations would you have for things that J&J could have done differently with the Process Excellence program?

Appendix E: Informed Consent Form

Georgia State University Informed Consent

Title: Sustainable Organization of a Lean Six Sigma Program: A Competing Values Analysis

Principal Investigator: Dr. Lars Mathiassen

Student Principal Investigator: Marilyn Tom

Introduction and Key Information

You are invited to take part in a research study. It is up to you to decide if you would like to take part in the study. The purpose of this study is to investigate how organizations manage competing values to continuously renew and effectively sustain their Lean Six Sigma programs long-term.

Your role in the study will last less than two hours over two months. You will be asked to do the following: participate in an interview to be conducted over the phone or internet, asking questions about your current or previous experience in implementing or managing Johnson & Johnson, Inc.'s Lean Six Sigma Program. Participating in this study will not expose you to any more risks than you would experience in a typical day. This study is not designed to benefit you. Overall, we hope to gain information about how organizations manage competing values to continuously renew and effectively sustain their Lean Six Sigma programs long-term.

Purpose

The purpose of the study is to investigate how organizations manage competing values to continuously renew and effectively sustain their Lean Six Sigma programs long-term. You are invited to take part in this research study because you are either currently or have been previously involved in Johnson & Johnson Inc.'s implementation of its Lean Six Sigma program. A total of 10 to 15 people will be invited to take part in this study.

Procedures

If you decide to take part, you will be asked to participate in an interview. There are no right or wrong answers to questions asked in the interview. Please answer the questions honestly. Notes will be taken by the Student Principal Investigator during the interview. With your consent, your interview will also be digitally audio-recorded to facilitate data collection. The interview will be conducted by phone or internet. The interview should take no more than one hour of your time, to be scheduled within the next few weeks. If necessary, we may ask you to participate in up to two follow-up interviews, with each lasting no more than 30 minutes. This study involves no compensation to the participant.

Future Research

Researchers will remove information that may identify you and may use your data for future research. If we do this, we will not ask for any additional consent from you.

Risks

In this study, you will not have any more risks than you would in a normal day of life. No injury is expected from this study, but if you believe you have been harmed, contact the research team as soon as possible. Georgia State University and the research team have not set aside funds to compensate for any injury.

Benefits

This study is not designed to benefit you personally. Overall, we hope to gain information about how organizations manage competing values to continuously renew and effectively sustain their Lean Six Sigma programs long-term.

Alternatives

The alternative to taking part in this study is to not take part in the study.

Voluntary Participation and Withdrawal

You do not have to be in this study. If you decide to be in the study and change your mind, you have the right to drop out at any time. You may skip questions or stop participating at any time. You may refuse to take part in the study or stop at any time. This will not cause you to lose any benefits to which you are otherwise entitled.

Confidentiality

We will keep your records private to the extent allowed by law. The following people and entities will have access to the information you provide:

- Principal Investigator: Dr. Lars Mathiassen
- Student Principal Investigator: Marilyn Tom
- GSU Institutional Review Board
- Office for Human Research Protection (OHRP)

Each interview will be assigned a random identification number. We will use this study number rather than your name on study records. The information you provide will be stored as password-protected files on the Student Principal Investigator's computer. This computer is protected by a username, password, and firewall. A code sheet that links the study number with your name will be created and stored separately from the study data to protect your privacy. The Student Principal Investigator will be the only person who will have access to this code sheet. All paper documents (including the code sheet) and digital audio recordings produced for this research will be stored for two years and then destroyed. When we present or publish the results of this study, we will not use your name or other information that may identify you.

Contact Information

Contact Dr. Lars Mathiassen (404-413-7855, lars.mathiassen@ceprin.org) or Marilyn Tom (470-343-3835, mtom3@student.gsu.edu)

- If you have questions about the study or your part in it
- If you have questions, concerns, or complaints about the study

The IRB at Georgia State University reviews all research that involves human participants. You can contact the IRB if you would like to speak to someone who is not involved directly with the study. You can contact the IRB for questions, concerns, problems, information, input, or questions about your rights as a research participant. Contact the IRB at 404-413-3500 or irb@gsu.edu.

Consent

We will give you a copy of this consent form to keep.

If you are willing to volunteer for this research, please sign below.

Do you give consent for the researcher to audio-record the interview(s)? ____ Yes ____ No

Printed Name of Participant

Signature of Participant

Date

Principal Investigator or Researcher Obtaining Consent

Date

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VITA

Marilyn Jane Tom is a strategy execution and problem resolution expert, leading large-scale organizations to success via project/process governance, planning, accountability, collaboration, and capacity building. Her passion lies in helping individuals and teams think through potential approaches via problem solving techniques, and co-creating solid action plans to facilitate efficient delivery and execution. Marilyn's 20+ years of industry experience has primarily been in the private sector in Toronto (with TD Bank, Capital One, Johnson & Johnson, Rogers Communications, Ford Motor Company/Percepta, Andersen Consulting, and Clearnet), and has expanded to include INGO experience in Atlanta (at CARE USA's headquarters, working around the globe to save lives, defeat poverty, and achieve social justice).

In addition to being certified as a Six Sigma Black Belt (CSSBB), Project Management Professional (PMP), and Scrum Master (CSM), Marilyn holds a dual-degree international MBA from Georgia State University (J. Mack Robinson College of Business) and Institut d'Administration des Entreprises de Paris (Sorbonne Graduate Business School), a Master's Certificate from the Federal University of Rio de Janeiro (COPPEAD Graduate School of Business), and an Executive Doctorate Teaching Certificate from Georgia State University (J. Mack Robinson College of Business). Marilyn also holds an Honours B.Sc. in Neuroscience and Mathematics (Computer Science) from the University of Toronto.

Marilyn's previous research includes the study "Organizing and Orchestrating Microfinance Initiatives: A Contextualist Inquiry" (Kayongo, Tom & Mathiassen), under review by the International Journal of Social Economics at the time of writing – and a presentation of this dissertation in progress at both the Doctoral Consortium and Poster Session for the 2019 Engaged Management Scholarship (EMS) Conference hosted by the Antwerp Management School in

Antwerp, Belgium. Marilyn plans to continue applying engaged scholarship and conducting research to solve business-critical problems for organizations, in addition to now pursuing opportunities as a Doctor of Business Administration (DBA) to provide academic leadership as a university/college professor. Marilyn currently resides in Atlanta with her husband, Vaughn.