Transactional Process Improvement
Client Examples and Case Studies

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Introduction

The following examples and case studies provide a reference for strategic improvement opportunities in organizations. The common terms used to describe these opportunities include strategic business improvement, transactional process improvement, or knowledge process improvement. These case studies include (but are not limited to) the following key process areas:

- Strategic Planning
- Customer and Market Research
- Product and Market Strategy
- Product Management
- New Product Concept Development
- New Product Development
- Global Commercialization
- Warranty and Returns
- Invoicing and Billing Errors
- Excess/Obsolete Inventory
- Request for Quotations (RFQs)
- Customer Service
- Global Sourcing and Outsourcing
- Outsourcing Rationalization
- Advertising and Promotions
- Sales and Operations Planning
- Supply Chain Planning and Logistics
- Distribution, Transportation, and Logistics
- Supplier Development and Management
- Marketing and Selling Process
- Organizational Development and Human Resource Management
- Global Real Estate and Space Management
- Strategic Maintenance and Facilities Management
- Financial Management
- Information Technology
- Acquisition and Integration Process

When executives think about improvement, their first notion is to think about Manufacturing and Operations. It is a fact that Manufacturing improvements, particularly in offshore suppliers and contractors, still remain a priority in the supply chain. However, over the tenure of our firm’s existence (particularly in the last 5-8 years), there has been a major shift in improvement focus from Manufacturing to strategic business processes. As of recent, the new economy is continuing to redefine the strategic priorities of improvement for most organizations to a more transactional enterprise and extra-enterprise perspective. Organizations now have two critical challenges: transactional and knowledge process improvement, and improving how they improve as an integral part of daily work. Strategic business improvement focuses on these opportunity-rich transactional business processes.

Executive White Paper Series
We refer to this new focus as Improvement Excellence™ which is defined as follows:

“Improvement Excellence is the mastery of developing and implementing successful strategic and continuous business improvement initiatives, transforming culture, and enabling organizations to improve how they improve. Improvement Excellence integrates all improvement methodologies (e.g., Kaizen, Lean, Six Sigma, IT, etc.) into a uniform initiative, and targets the largest strategic transactional opportunities across the total enterprise.”

Today, The Center for Excellence in Operations, Inc. (CEO) specializes in defining and implementing improvements in these transactional areas. There is undoubtedly no question that this is the future of business improvement, and our client results demonstrate this fact. It has been CEO’s experience that organizations have the ability to achieve annualized improvements that are equivalent to 3% to 10% of revenues by targeting their improvement efforts on 3-5 vital strategic initiatives. These breakthrough results are based on actual experiences with most of our clients.

We would be happy to discuss these opportunities in more detail, or perhaps introduce your organization to one of our previous clients. We encourage this interaction with perspective clients; Beyond the confirmation of CEO’s expertise and experiences, it is often enlightening to talk directly or visit with another peer executive team and discuss their decision process and experiences with strategic business improvement and cultural transformation.

Enjoy this reference, and please feel free to contact me directly if you have any further questions.

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Strategic Planning

The traditional annual strategic planning exercise has become both inadequate and ineffective for many organizations. The emerging windows of opportunity and windows of change are much shorter than the normal one-to-five year planning horizon of strategic planning. The stagnant update the binder approach to strategic planning tends to be more of a financial and numbers exercise, and doesn’t integrate the rapidly emerging challenges and opportunities of the new economy. Current practices often eliminate the rigorous analysis necessary to better understand strategic opportunities, and tend to view business strategy as a discrete (Annual) vs. continuous process.

In this economy, the annual strategic planning process becomes obsolete quickly, and most organizations are missing the formal mechanisms to keep strategic plans current and up to date. Several organizations have modified their strategic planning horizon by applying Lean Six Sigma (e.g. Pareto analysis, value stream mapping, regression analysis, etc.) to their strategic planning process. Forward thinking organizations we are familiar with have shifted to a 1-3 year strategic plan with quarterly planning updates on an exception basis (e.g., the tall pole opportunities). Lean Six Sigma helps executives better understand the strategic levers of their business and how to best influence strategic and financial success. Strategic planning processes must become more flexible and evolving, and guided or influenced by strategic improvement initiatives. The new economy is driving the convergence of an organization’s strategic planning and annual operating plan activities.

Customer and Market Research

This involves the application of Lean Six Sigma and other data-driven analytics to ongoing processes to better understand the multiple Voices of the Customer. The new economy is driving the need to conduct more segmented and targeted customer analysis (e.g. size, region, sales history and trends, solution solving opportunities, etc.), real time point-of-sale (POS) analysis, and other ongoing analytics that enable a better understanding of customers, customer segments, and their unique requirements. Organizations are using Lean Six Sigma to transition from an all things to all customers business model to a more focused and targeted customer relationship management model driven by differing segments with different requirements. Several independent improvement opportunities exist in this area to develop more robust customer and market analysis processes that provide additional facts about specific data-driven requirements, competitive profiles and offerings, customers and market share, drivers of customer and market loyalty, and future business opportunities. Many organizations are literally inundated with customer and market research data and related information, but they do not have standardized methodologies and processes to synthesize this information and draw the right data-driven conclusions about market and new products and services opportunities.

Product and Market Strategy

There are several high impact transactional opportunities in this area. Organizations are challenged about defining the right new products and their associated features, functions, and other specification data. Too many of these decisions are based on emotion and gotta have it mindset of the Sales and Engineering organizations. In many cases, product definition and compromises are left up to interpretation by individuals downstream in the development process where time and cost grow exponentially. Other weaknesses typically include the failure to analyze and directly relate the importance of product features and functions to time to market impact, incremental costs, quality and reliability risks, supplier capabilities, incremental market share, and the updated P&L impact. Product and Market Strategy can benefit greatly by having a disciplined and formal fact-driven process, standardization of product definition and evaluation activities, front-loaded risk assessment, pro forma financials and modeling, and metrics for these activities.
Product Management

This involves a formal life cycle management process for the product portfolio. Many organizations have no problem adding new products and SKU variations to their product portfolio, but it becomes a major emotional process of discontinuing old products from the portfolio. The Sales organization wants anything they can possibly sell to remain in the portfolio. They are also the first to point out the risk of potential lost revenue if SKUs are not available. The problem with this thinking is that over time, old products generate maintenance, selling, and service costs that far exceed gross margins. A fully loaded cost analysis demonstrates that many of these products may have negative margins that subtract from total profitability. Additionally, turning the organization on its head to build and ship the trivial many dilutes its capabilities to nurture and grow the core business. Several benchmarking studies have pointed out that over 80% of an organization’s resources are focused on the trivial space of the Pareto analysis. Many organizations have the ability to grow by achieving superior value and service performance with their premier segment of customers and high selling SKUs. There is always the emotional arguments that go like, *What if this small customer grows,* or *We can’t sell X unless we have Y.* There is a wealth of opportunities here by taking care of the legitimate exceptions, and routinely rationalizing the entire product portfolio with facts rather than emotions.

**Example:** One $250 million organization in a shrinking industry pressured their sales organization to get whatever orders they can, no matter what they have to do. The sales organization decided to promote a mass customization strategy, giving customers a choice of their own color and other features without even showing them the current product line. This seemed to make sense because once they landed new business, the company would be the sole source supplier for repeat business. The sales organization also allowed customers to order products in much smaller lot sizes without any regard to the implications on their business. It was the right thing to do, right? The reality was that the differences between customer products were so minute that it did not make a difference from a form-fit-function-features perspective. Although their Burger King: Have it your way strategy was unique in their industry, there were good reasons why the rest of the industry had not transitioned in this direction. At the same time, customers were demanding smaller lot quantities because they did not want to carry the inventory. This organization was set up to run large lot sizes because the equipment was large and capital intensive. So the dilemma unfolded: The more sales sold of their 3800 mass customized SKUs, the less capable manufacturing became at delivery performance. Warehouses began to overflow with raw materials and the wrong mix of finished product. Like always, the first strategy was to scream at manufacturing who was already running 24-7. A Lean Six Sigma project was kicked off to solve the problem. The team came up with a few recommendations to reduce scrap and set-up times, but not enough to fix the problem. Next they did a profit contribution analysis on the entire product line. The company found itself involved in many new low volume products that they were in effect, wrapping hundred dollar bills around them with every order. Over 90% of their revenues and profitability was derived from just 118 products. Worse yet, servicing these customers became a severe drain on their ability to take care of their premier customers and markets. Customer service suffered and left premier customers searching for secondary sources of supply. So the net-net was a continued shrinking in both revenues and profits. The team recommended how to reconfigure the business into standard and custom products, and pruned many of the negative margin product offerings. The standard offerings were offered at competitive prices with smaller lot quantities. The custom products were offered at premium prices with larger minimum quantity lot sizes. The number of SKUs was reduced by almost 36% and the company became the market leader within two years. There were also residual improvements from improved forecast accuracy to higher yields to reductions in premium freight.
**New Product Concept Development**

This refers to the translation of an idea into a workable design concept and eventually a solid product specification. The detracting dynamic here are the decisions that result in continuous churning and changing of new product specifications and feature creep well into the development process. This causes significant hidden engineering waste and costs, delays in time to market, or huge risks in quality and reliability by pushing and expediting designs through the shrinking time horizons in the development process. These activities are often improved via many quick strike improvements that include standardized templates, guidelines, and information required in a product functional specification. These must be specific, and informal. Make it like the last design and we don’t need that information right now. Comments are not acceptable. These informal practices cause things to fall through the cracks or force scarce engineering resources to do things over. The goal is to freeze the specification early on in the development process to prevent feature, cost, and time creep later in the development cycle. Granted, the World is not perfect. However, when an engineering organization routinely practices “drive-by engineering” and adding features as the product is due to be released, there is definitely something broken upstream. Improvement requires the removal of egos and emotions, and looking at the facts about these knowledge processes.

**Example:** One organization has implemented a structured New Product Identification process with great results. Prior to this improvement initiative, the development of new product ideas was an emotional and informal process, driven by people with the most political clout in the organization. Their prior process was jokingly nicknamed “Opus I Marketing,” referring to an informal process over dinner with a bottle of nice wine, scribbling and sketching new product ideas on a few napkins. The improvement initiative created a new standardized process, practices, and information templates that did not exist previously. This new process has been designed to be more disciplined and data driven, relying less on the emotions and pleas of the sales organization. The process allows the larger group of new product people to evaluate the feasibility of new product ideas and proposed functions and features relative to market potential, technical feasibility, development cost, target cost, and time to market considerations. This technical and business case information is carried through the development process and used to reaffirm market opportunities, hold people accountable for projected assumptions, and re-prioritize projects in the development pipeline. The organization has transitioned itself from developing an endless parade of questionable SKUs to a more strategic product development organization using portfolio and product platform thinking. This transition has produced residual improvements outside of the immediate area such as supplier quality and less development inefficiencies.

**New Product Development**

This refers to the typical 5 step stage gate product development process found in most organizations (e.g., Idea or Concept, Functional Specification and Business Case, Product and Process Development, Validation and Test, and New Product Launch). Every organization claims to have a formal product development process, but the reality is that many organizations do not follow a formal and disciplined process (based on data and facts) on a daily basis. There are literally dozens of improvement opportunities in this lengthy and complicated set of technical business processes. Therefore, organizations should avoid trying to improve product development by defining it as a single boil the ocean project. Instead, product development improvements must be scoped and prioritized based on total impact (e.g., Where are the top Pareto improvement opportunities in product development? What are the greatest pain points?). One example might be reducing the cycle time and cost of design verification, which could cost $10K to $100K per spin in some organizations. Another example might be to reduce time to market by 50% - 75% by eliminating non value-added elapsed time, wait times, and hidden waste of resources. Yet another might be reducing the cost of engineering changes and development after product release, which adds up to millions of hidden dollars and lost/wasted
engineering capacity in many development projects. New product development is not much different than a production flow: It has specific tasks and flows, bottlenecks, resource constraints, scheduling and priority issues, quality and rework issues, measurable and hidden costs, cycle times, performance criteria, and many other similar factors. The big difference is that equipment is replaced by very talented engineering and technical people. Intelligent people are less likely to follow standardized processes because they are smart enough to work around them to get things done. Often process and standardization is viewed as deterrents to creativity and innovation. The challenge with new product development is to install standardization and data driven development that actually enables more creativity and innovation. There are usually dozens of individual improvement opportunities in new product development, yet many organizations attempt to improve product development with a single poorly defined project.

Example: A $500 million organization was experiencing many challenges in their new product development process. Products were always released late, over budget, and requiring significant engineering resources and time to resolve quality and manufacturability issues after product release. Their Lean Six Sigma initiative began by identifying several specific improvement projects in new product development: Specification and Scope Creep, Design for Manufacturability, Design Validation, and Post Release improvement. These were not all of the opportunities, but four high priority opportunities out of dozens of improvements that they have made to their new product development process. Using the DMAIC methodology the teams were able to identify root causes in these areas. For example:

- The hidden cost of specification changes amounted to millions of dollars in engineering time, material, and capital costs. The team developed a series of new product identification templates outlining the required information needed to spec a new product effectively, and saved over a million dollars and months of non value-added development time. The number and magnitude of specification changes were not totally eliminated, but they were tamed to the tune of $4 million in benefits.

- Design engineers were measured on their ability to meet target unit cost for new products. This encouraged them to select less expensive through hole components over SMT components, and other mechanical and hardware compromises. They also selected the least expensive vendors on the bet that they could develop their capabilities prior to new product release. This team documented the hidden costs of non-reproducibility in the form of missing components, shorts, blowholes, and other post wave solder defects, misaligned holes in covers, stripping hardware, and other cost of quality items. The team recommended and implemented changes that produced over $4 million in savings.

- Another team peeled back the onion of design verification (DV). They quantified the hidden cost of a DV spin to be $24K to $86K depending on what was involved. They also identified that every new product required somewhere between 1.7 and 3.9 DVs during the product development cycle. The team also identified and prioritized the root causes of DV spins, and conducted a very thorough 5Why analysis to get deep enough into the DV story. Surprisingly, they also documented several recurring root causes of DVs and were able to isolate root causes all the way back to specific failure categories and design engineers. Based on the number of new products released over a year, these costs add up quickly. Moreover, DVs add time to the development cycle because in effect, it is a process of doing things over because they did not work the first time. This team developed and implemented recommendations upstream in product design to reduce the number of DV spins. The benefits of this project were the elimination of over $2.2 million in non value-added development costs, and an improvement in time to market. In product development, speed is very dependent upon throughput and quality, just like manufacturing.

- The fourth team tackled the problem of ECNs after release of products to manufacturing. Most organizations have this process in place, but they have no idea how much cost and waste is involved
The team recreated the last five new product releases as a representative sample of the process. Next they analyzed the type and level of engineering support for various ECNs after release. These activities were grouped into categories (e.g., electrical, mechanical, software, test, vendor, etc.) and analyzed across the five product releases. The team identified specific root causes, and quantified the Cost of Development After Release. For the five releases, these hidden costs ranged from $24K to $364K. Again, this is the equivalent of not having time to do things right, but finding time to do things over. Beyond the costs, the disruptions, and customer confidence, these activities take away valuable engineering time for developing new products . . . And stretch out the development cycle . . . Or squish the development cycle into the remaining time causing more ECN issues. The team developed and implemented recommendations upstream in the development process, and the amount of ECN activity after release was reduced dramatically. The benefits of this project were estimated to be over $2.6 million/year.

The combined benefits of these five initial product development improvement teams yielded around $13 million in benefits, at a time when they were just getting warmed up with Lean Six Sigma.

Global Commercialization

This is an afterthought with many organizations. Commercialization includes all the necessary activities that will create a smooth new product launch and a smoother post launch evaluation. As products reach the launch phase, organizations discover that they don’t have the packaging ready, or the packaging was produced with an older die cut spec, or the Asian color and corrugated specs are different than the U.S. specs, or operator manuals are not printed in all the required international languages, or one of the languages are either incomplete, misspelled, or insulting to potential customers, or the manuals are printed in all the correct internal languages but it doesn’t fit into the box without causing packaging damage, or the software is full of bugs and not ready for release, or the service, supplies, and spare parts have not been planned and staged in distribution centers, or the mix between domestic and international power requirements is off - And the list goes on and on. There are many improvement opportunities in this area, ranging from data and fact based decision making, to prevention of these events with well defined proactive processes. Many of these problems can be avoided by the creation of standard templates and decision matrices that are embedded in the development process. The cost of preventing these problems in the first place is much lower than the cost and lost customer goodwill of dealing with these problems after they are out there and visible.

Warranty and Returns

This is a complicated but significant improvement opportunity for many organizations. The way most organizations deal with warranty and returns is to allocate financial reserves to cover the cost. Does this uncover root causes? No. Does this solve the problem? No. But this is the generally accepted financial means of dealing with this problem. Some organizations do not even view warranty and returns as a problem or improvement opportunity, but as an accepted cost of being in their business. Another problem with warranty and returns is that these processes are weak. Most warranty data is recorded based on non standardized customer comments or a technician’s opinion, and many warranty and return transactions are posted with a No Problem Found. This type of sketchy feedback to engineering doesn’t improve much of anything. This makes it increasingly difficult to conduct effective root cause problem solving in this area of the business without accurate and timely data. One method of root cause analysis is to audit trace the individual return transactions and categorize non standardized data into standardized root cause categories. This can be augmented with a few phone calls to the customer to learn more about their particular customer experience and reason for the return. “Five Why” thinking is very useful in these types of transactional projects. Remember, we do not need to explain the universe. All it takes is a relevant sample that tells the story about what is going on inside the process with data and facts.
Example: A large apparel organization became interested in Lean Six Sigma to improve financial performance and develop their people’s problem solving skills. This organization outsourced all of its manufacturing: They were more of a design, sales, and supply chain organization. Upon reviewing the financials, the Returns (Millions of dollars) jumped off the page. When we asked the executive team about their Returns, they replied, “We just benchmarked ourselves against our competition and we’re actually better that all but one company. It’s the cost of being in this business.” Further discussions convinced them to open the door because most of the Returns were workmanship issues (wrong SKU, wrong size, wrong color, wrong quantity, misspelled or incorrect custom embroidery, etc.). Their Lean Six Sigma initiative began with 10 out of 22 teams focused on Returns problems across their entire business. Many of the root causes were attributable to simple fixes like poorly designed web pages for internet orders, truncation of characters on warehouse pick lists, incorrect SKU identification and/or stock locations, size variation between various suppliers, incorrect order entry, incorrect order fill, etc. The 10 Returns projects reduced the Returns rate by over $18 million.

Invoicing and Billing Errors

This is an area that often generates cash flow improvements. Many organizations overlook the invoicing process because their % of billing errors are low. A good root cause analysis reveals several interesting conclusions in this area – Conclusions that have surfaced multiple times in different client deployments. First, there are significant waste and hidden costs associated with invoicing and billing errors that can easily be in the six figures range. Second, the customer does not proactively call and tell an organization about an invoicing issue so they can pay their bill on time. Third, invoicing errors include both over-billing and under-billing, and customers are also not proactive at telling an organization that they were under-billed. Fourth, both under-billing and over-billing require discovery and resolution on the part of the organization. Fifth, these issues create significant and snow-balling cash flow problems in terms of collections and days/dollars of accounts receivable in the pipeline.

Example: One company debated the benefits of looking at their Invoicing process. The percentage of invoices with problems was very low, so why should they entertain a Lean Six Sigma project in this area? A team was assigned to review the invoice process. Although the percentage of billing errors was low, they quantified the hidden cost and effort to fix billing errors to be $168K/year. They also found a few instances in their sample where customers were under-billed. Customers are not proactive in pointing this out because it produces a favorable purchase price variance (PPV) for them which flow directly to their bottom line. Even though it is dead wrong, it also sets the expectation for what customers want to pay for products and services, and the correction is perceived to be almost the equivalent of a price increase. The team developed and implemented many simple recommendations such as templates, cross-checks, and other basic controls to prevent billing errors. In this particular organization, billing errors have been reduced by over 96%.

Excess/Obsolete Inventory

This issue is usually handled similarly to Warranty and Returns. Rather than discovering and eliminating root causes, organizations tend to allocate reserves to cover the write-down cost of their excess/obsolete inventory. On the excess side, this practice might be paired with stock promotions and fire sales to move finished goods inventory, or possible vendor returns for raw materials. None of these practices fix the problem, because organizations go through these motions cycle after cycle. The hidden cost of these administrative motions is usually in the millions of dollars (e.g., Inventory and management resource costs). In several client situations, many of the root cause of excess/obsolete inventory are assignable and might be pegged to continued optimistic forecasts for new products, an optimistic region’s sales forecast, buyers under pressure to manipulate PPV, and dozens of other causals. The data and the right
analysis always tell a story, and a large amount of excess/obsolete inventory is assignable to specific root causes and can be eliminated. Successful projects in this area are able to reduce the reserve rate and significantly improve profitability.

Requests for Quotations (RFQs)

One of the most interesting efforts is value stream mapping the request for quotation or RFQ process. Several common findings usually surface. It should not be a surprise that 80% to 90% of the elapsed time is wait time and waste. Many organizations attempt to treat every RFQ as a unique quote and fail to leverage off the knowledge base of previous quotes. In many situations the confidence limit on the quote might be 60% to 70% despite 2-4 weeks of sales, applications, engineering, and financial analysis. When everything needs to be quoted, the RFQ lead time stretches out. By the time organizations turn the quote around, the customer has placed a purchase order with a competitor.

**Example:** One organization had an interesting character in their order entry organization who always complained openly about all the unnecessary RFQ activity, quotes taking too much time to turn around, and that they should be able to give a quote over the phone and ask for the order. His vision was right on the money. A team was assembled with this person as the leader. Now that he was placed in a position of more visibility and influence, he and his team were the “doers” of the RFQ process. They demonstrated how to redesign the quotation process using a series of attribute and features tables. The team created an order entry matrix of product and service attributes such as material, size, color, quantity, finishes, packaging, etc.. Their design was a menu driven approach, and the goal was to generate quotes in real time for 70% to 80% of the RFQs. They would allow for deeper analysis on the remainder of the quotes, based on the uniqueness of the requirements. One of the team members was an internet GUI junkie who designed websites as a sideline. The team implemented and piloted this new RFQ application. Sure enough – When a customer called it was as simple as pick one of these, one of these, one of these, and one of these. Bingo! A quote and a new order in real time. For the skeptics, the team also proved with data and facts that the new instant RFQ process produced more accurate quotes than the previous analysis paralysis approach.

Customer Service

Many best-in-class customer service organizations are beginning to resemble the floor on Wall Street. For others, it is a frustrating customer experience as calls are tossed around the organization and people become increasingly frustrated with the number of transfers, the automated greetings, and the inconsistent information. The key to great customer service is knowledge and talent development, access to the right information, and attention to the right details. Some of these include standardization of best practices, raising visibility and awareness of call handling volumes, call wait time, length of calls, time to solve the customer’s problem, ability to solve the customer’s problem on the spot, and integration of help desk processes. We have all experienced the frustration of talking to Jessica in India while she completely ignores the problem and begins reading ridiculous instructions (Like Is the unit on and plugged in?) from a manual. Then we are transferred again to another representative who proceeds to read the same diagnostics from the same manual. The hidden costs might include a return, no further purchases, and bad publicity to other potential customers. On the other hand, it is a pleasurable experience to call about a product or service problem, reach the right responsible representative or technician, and have it fixed on the spot in a few minutes. A few years ago I purchased a medicine cabinet and the brackets for the glass shelves were missing. I called this company and mentioned my problem. The representative mentioned that a few other customers reported the same problem. Then she said, “The brackets are in stock, I’ve placed your order, it will be picked by this afternoon and you will receive the brackets by 10:30AM tomorrow.” The brackets arrived at 10:30AM the next day via FedEx, just as she promised.
Unfortunately, this seems to be the exception rather than the rule, so there are major opportunities for every organization to improve the customer experience.

**Global Sourcing and Outsourcing**

Executives are constantly faced with achieving goals at less cost. During the past several years, outsourcing has become the latest movement to reduce operating costs, and reduce internal manufacturing complexity and content. There has been a reluctance to further analyze outsourcing decisions because these decisions were already made, and analysis would only disrupt or slow down the transition. Outsourcing is one of those phenomena that must be right, because everyone else is doing it. However, when one looks at the assumptions and numbers, there are gaping holes in several outsourcing decisions. The hidden costs of acquisition, ownership, and problem resolution are often much larger than the labor savings alone. The upside revenue potential of outsourcing to local markets in China, India, and other emerging markets is too enormous not to be there. However, there is a substantial opportunity to reduce costs (e.g., quality, reliability, premium freight, pipeline inventory costs, hidden administration costs, etc.) because these across the board outsourcing decisions are clearly not feasible and profitable at serving all markets around the globe. Every organization involved in outsourcing has significant opportunities to reduce supply chain costs and grow revenues.

**Example:** One organization experienced serious and recurring problems with new products. New products were shipped late to distribution long after the announcement to the marketplace. Product delivery and availability was a constant issue, resulting in schedule changes, premium freight, and cancelled orders. Many new products were rushed to market and experienced costly reliability and quality problems. Sections of several warehouses filled up with staged defective products while engineering was busy preparing for the next new product launches.

A closer look revealed that this was an engineering problem, motivated by unreasonable time pressures, shifts in priorities, and performance criteria. Engineering was always provided with vague and moving specifications, and optimistic revenue projections for new products. Then they were given fixed and non-negotiable design target cost goals. Design teams created shortcuts because they did not have the time and resources to follow the formal development process. They also made design decisions (e.g., the use of through-hole vs. SMT components, end of life components, etc. based on unit price). The offshore contractor was also sourced and selected based on lowest price. This was clearly beyond an “over the wall” development process. It was an “over the ocean” development process. Months into the release of new products, they would learn that their offshore supplier did not have the capacity or process capability to meet their requirements. Further, products were damaged during shipment due to low cost packaging decisions. The target design cost was always favorable, but the supply chain costs further down the pipeline (and the lost sales opportunities) were in the millions of dollars for almost every new product released to the market.

This was not an easily correctable problem. The organization initiated ten strategic improvement initiatives focused on new product development. These projects included targeted issues such as new product concept development, software development, business case standardization, specification development, product and process design standardization, design validation and test, data-driven contractor sourcing and selection standards, standard packaging guidelines, commercialization planning, supply chain planning and integration, and daily post release Quick Strike” discussions. The long term benefits of these ten successful projects is estimated to be over $200 million.
Outsourcing Rationalization (Improvement, Reshoring)

CEO has conducted several improvement projects in the area of outsourcing strategy and operations. Outsourcing is a dynamic process; many of the assumptions behind these initial decisions were either incomplete and have definitely changed, or could never have been predicted up front. Today, over 50% of outsourcing decisions need significant improvement to maintain profitability and achieve valid long-term feasibility. When an organization looks at their total cost of ownership it typically falls somewhere between 14% to 60% of purchase price. In some isolated situations, the hidden costs are in excess of over 2X to 3X the purchase price. Outsourcing rationalization is all about velocity improvement, quality improvement, cost reduction, resource and logistics optimization, eliminating waste, reducing global supply chain complexity and risk, and improving the overall customer experience to present outsourcing approaches - and also the feasibility and business case for modifying offshoring decisions, either to a different country and emerging market, or reshoring manufacturing back to the U.S.

Example: One client with a high content of their high complexity/low volume manufacturing in China experienced a catastrophic situations. A supplier of one of their products called one day and said that they were no longer in business. All of the tooling, specifications, and manufacturing know-how disappeared with the supplier. We created a disaster recovery team to look for alternate suppliers and decide how best to proceed forward. When the total cost of ownership including the opportunity loss was calculated, the answer was a no-brainer. The team learned that 80% of the world demand was in the mid-West and greater Los Angeles area, and the parent corporation was located in Indiana. The team created sub-teams of engineers that quickly reverse-engineered and improved the design of the product, eliminated the need for most of the tooling, and the decision was made to manufacture the product in Indiana. They were up and running in three months. Between cost reduction, cash flow, and new revenue - this was a $70 million home run.

Advertising and Promotions

This area is a high ticket cost in many organizations, especially within consumer products companies. Many organizations do not have formal processes for identifying and developing advertising strategies, designing and running promotions, and measuring the effectiveness of these efforts. Often these activities are driven by opinions and perceived needs. Many people who work in this field are creative types who view process and measurement as foreign concepts that do not apply to their operations. Instead, things are often done without any order, out of order, with missing information, many changes, and rework swirls - All in the name of creativity. Sometimes campaigns might be driven by other people like the VP of Sales or VP of Engineering, who may have the influence and convincing opinions about knowing what we need to promote with customers. The effectiveness of advertising and promotions is not formally measured, so organizations never know if their campaigns succeeded or met the initial objectives. Most people do not think about the hidden costs of an ad campaign or a direct mail catalog or a failed promotional program. Often the analysis reveals that it requires 2X or 3X the effort to produce and execute on a particular advertising or promotional plan, which could easily generate non value-adding costs in the range in the six or seven figures. Often the answer to this area includes development and standardization of processes, with formal milestones and measurement criteria. It is not about pass or fail like product quality. It is more about solid program management, objective feedback, and knowledge development. Since the advertising budget is committed, these projects are usually not about traditional cost reduction or reducing advertising budgets. Rather, these projects are about enabling organizations to accomplish more advertising with fewer resources, which is equivalent to more advertising and more
effective advertising per dollar spent. Over time, improvements in this area may very well drive down advertising and promotion costs. The other side of these improvement initiatives is to develop formal processes to measure incremental revenues that are directly attributable from advertising and promotion efforts.

Sales and Operations Planning

This is often referred to as SOP, S&OP, or SIOP (Sales, Inventory, and Operations Planning). This key business process is the turbine of the organization because the performance in this area has far reaching implications into other areas of the organization. S&OP performance has a direct impact on inventory performance, product availability, customer satisfaction, and financial performance. The new economy is forcing organizations to rethink their traditional S&OP process and metrics such as aggregate delivery performance and forecast accuracy. In the new economy, these metrics are meaningless and non-actionable. Organizations are using the Lean Six Sigma methodology to track down, Paretoize, and eliminate root causes of problems in their S&OP process. In addition, organizations are developing the capability of measuring S&OP performance by customer, product families, product groupings, sales territories and regions, time and seasonal factors, and new vs. existing products. This improvement strategy in S&OP is called **Segmented S&OP Management** – Replacing a one size fits all S&OP process with a segmented S&OP process that recognizes the dynamics and attributes of different discrete groups of customers, markets, and products. Then the segmented S&OP process enables the management, policy deployment, and performance of these segments in different ways with different S&OP practices and policies. The goal of a segmented S&OP process is to manage the segments with appropriate planning policies, keep supply and demand synchronized realistically and with facts, and micromanage the hell out of the tall poles. Segmented S&OP Management provides visibility into what is going on in the strategic groupings, including elemental performance and more specific and actionable root causes.

**Example:** One international organization was experiencing problems with finished goods availability and delivery performance. This organization decided that it was going to change from a make-to-stock company to an off the shelf supplier, but failed to install the right infrastructure changes to support their strategy. Their forecast accuracy was at 24%, and the delivery performance was around 60%. The international VP of Sales and Marketing explained their current dilemma with forecasting demand for so many products in so many products in Europe, the Middle East, and Asia. A team was assigned to improve delivery performance and quickly verified the metrics and poor performance. The team analyzed sales and supply chain data and found that 88% of revenues were sold through 14 distributors. They also learned that 85% of the revenue was contributed by about 50 products. They went to work implementing point-of-sale tracking capabilities with these major distributors and installed new practices to manage distributor supply and demand on a daily basis. Within months, forecast accuracy shot up to 68% and delivery performance improved to over 93%.

Supply Chain Planning and Logistics

Depending on the organization, this includes sales planning and analysis, forecasting, sales and operations planning, demand and supply planning, in house or offshore production authorization, procurement, order administration, distribution, and offshore quality assurance. A common mistake organizations make is assigning a team to improve supply chain management. This well intentioned initiative becomes a frustrating solve World hunger assignment for an improvement team. There are literally dozens of individual improvement initiatives in the total supply chain ranging from improving forecasting accuracy, to rightsizing safety stock, to removing the fluff caused by planning factors and parameters, to reducing backorders and backlog, to improving a premier customer’s delivery and inventory performance, to reducing product and packaging damage, to rationalizing global distribution, to reducing premium freight, to consigned shipping strategies to name just a few. Without even looking, the new economy has
introduced improvement opportunities in global supply chains that are worth millions of dollars to most organizations.

**Example:** We have worked with several organizations on their premium freight issues. Much of this is driven by noise in the planning process: Exediting requirements when they are hot, but not de-expediting products when things change. In many cases, it is too late because product is in transit. For many of these projects it is not unusual to find that as much as 25% to 40% of receipts arrive via premium freight. Many of these receipts also sit around for days or even weeks before they are placed in stock or requisitioned to the individual who ordered the material. Sometimes premium freight is used as a security blanket, with no policies in place to monitor and control it. Many of these premium freight improvement projects end up saving their organizations millions of dollars.

**Distribution, Warehousing, and Transportation**

CEO has conducted many projects in these areas of the global supply chain. Globalization, mass customized products, and an increase in country supply and demand streams has increased the complexity, predictability, cost, and risk of making the right products available at the right places at the right times. Synchronizing physical distribution, warehousing, and logistics is a significantly complicated dilemma that relies on the successful execution of the right decisions within many different transactional processes. In other words, it is not an easy fix; it require a deep, fact-based analysis of root causes, and several different concurrent improvement initiatives. Examples of these improvements include order fulfillment, sales and operations planning, inventory management and control, physical warehouse operations and layout, warehouse quality control, distribution and warehousing locations, distribution and distributor practices, premium freight, third party logistics, supplier and contractor management, and many other supply chain activities.

**Example:** A global pro-audio and consumer products organization was losing market opportunities due to product availability. Their network of global warehouses always seemed to have the wrong mix of finished goods, leaving their sales force with a painful option to sell what was available (at discounts) vs. what customers demanded to meet their end of the month numbers. Although the sales numbers looked good, on time delivery line item performance was 54%. Additionally, customers would tend to purchase a competitive product if the item was not in stock or available within a few days. Three integrated improvement teams analyzed sales and operations planning, inventory performance, and transportation costs respectively and identified the expected inefficiencies in the overall process: a high forecast error, incorrect SKU ordered, a gross mismatch of planned manufacturing and supplier orders vs. sales mix, premium freight due to emergency shipments, excess and obsolete inventory, damaged product due to material movement, and a number of other typical issues that disrupt product availability. The teams set up "in house" consigned inventory agreements with major suppliers, implemented demand management process improvements, consolidated warehouse locations, centralized order management and installed simple mistake-proofing techniques in order entry and release, and implemented inventory policy improvements. Lead times were reduced from 8-12 weeks to 2-4 weeks, and cash-to-cash was improved from 120-150 days to 30 days. On time delivery performance increased to 92% within the first four months. The combined improvements summed up to $4 million in cost reductions. The teams determined that incremental revenues from their direct efforts were about $42 million due to improved product availability.

**Supplier Development and Management**

Many improvement opportunities exist in supply base activities. The attributes of velocity, flexibility, perfection, responsiveness, value, and flawless execution are more dependent on global supplier
networks. Supplier Development and Development is important because suppliers represent a large cross-sectional piece of the total supply chain. The performance of the supply chain is highly dependent upon the performance of suppliers. Some benchmark studies have placed the competitive leverage due to suppliers in the total supply chain as high as 70% to 90%. Supplier Development and Management is important because there are dozens of improvement opportunities worth millions of dollars in this area. Examples of these improvement opportunities include supplier sourcing and evaluation, supplier selection and partnering, supplier quality and delivery improvement, collaborative and short interval S&OP, targeted cost reduction and operations improvement programs, formal information reporting and feedback processes, supplier certification and direct ship strategies, collaborative product development, supplier performance management, and supplier conferences. Supplier Development and Management is a growing area of concern as organizations have shifted to their strategy of outsourcing products and services. Although the comparative labor costs appear to be attractive, there are many hidden outsourcing costs that organizations are uncovering as they develop more experience in these areas. For example, the usual hop-scotching around to find reliable, capable offshore suppliers costs organizations millions of dollars. Most organizations have an incredible opportunity to harvest millions of dollars in improvement and competitive advantage in the area of Supplier Development and Management.

**Example:** One client (like most organizations) focused their outsourced supplier selection on purchase price and overlooked the total cost of ownership and risks. They outsourced the manufacturing of high end proprietary ergonomic office chairs and related furnishings to a contractor in China. One day a salesman was Googling and found a few of their products for sale from a China distributor at almost half the retail price. The company feared that a foreign manufacturer was committing patent infringement and knocking-off their products. After a three month investigation they learned that their supplier in China allegedly set a family member up to manufacture a few of their highest margin products, and also supplied the equipment and raw materials. They also made a few design changes to reduce costs (and subsequently quality). Suddenly the company disappeared. Our client not only suffered from lost sales, but they also learned that they were assuming the warranty, return, and repair costs for products that were made by another manufacturer. This is a real risk that must be factored into outsourcing decisions. Their example demonstrates the severity of choosing the wrong supplier.

**The Marketing and Selling Process**

This area has been exempt from improvement initiatives because marketing and selling products and services has a higher perceived priority to some executives, than improving how the organization markets and sells products and services. The terms selling and improvement have been commonly viewed as two distinct and conflicting business activities. Fact is, organizations are capable of selling more by improving the Marketing and Selling Process.

One of the most effective analytical approaches in the sales and marketing organizations is worth factor and value analysis. Basically, this is an inventory of how these organizations spent their time and resources, vs. the sales generated directly from the inventory of various activities. Not surprisingly, sales and marketing people often spend the most time and resources on customers, prospects, market opportunities, and other activities that just don’t pay off. Much of this is driven by the emotion of “If we don’t do this we will lose the sale.” Again, this area is an emotional roller coaster where unfortunately, emotion wins over facts (because there usually are no facts). However, when one looks at these activities and outcomes with data and facts – Including the all-in hidden costs, the organization might have been better off and certainly more profitable if the sales associate was absent on that particular day when an order was placed. The facts demonstrate that it is not always the best use of time and resources to drive out to Timbuktu in the last few days of the month, to sell a one-time customer a low volume product at a deep discount, in the interest in getting an order. The end of the month drives a lot of frenzied behaviors that might generate additional sales, but not always the accompanying additional profits. There are
significant opportunities to improve sales and marketing efforts by realigning resources and metrics on the activities that matter the most. This also changes the focus from getting an order, any order to landing profitable business. This analysis is also revealing in other transactional areas such as R&D, Material Planning and Purchasing, Engineering and New Product Development, Quality Management, and Finance to name a few.

**Organizational Development and Human Resource Management**

This is an area where most may not associate readily with Lean Six Sigma and strategic improvement. This is also an area where when things go wrong, it impacts the productivity and well being of large sections of the organization. There are many improvement opportunities in Organizational Development and Human Resource Management worth millions of dollars to the organization. Areas such as absenteeism, hiring and termination of associates, training and development, organizational planning, employee compensation and benefits, performance review processes, communication and change management, talent and career development, workplace safety, wellness initiatives, diversity planning, legal reporting and compliance, security management, and team building present major opportunities for fact-based analysis and improvement. As one can observe from this list, Human Resources plays both an organizational improvement role, and an internal Lean Six Sigma role in deployment activities (e.g., talent selection and development, awareness and communication, change management, team effectiveness, group dynamics, conflict resolution, behavioral and cultural issues, etc.). These opportunities also include both direct and indirect benefits to the organization, both of which are quantifiable and measurable.

**Global Real Estate and Space Management**

This is an area that has usually evolved piecemeal as the requirements of the business have changed. Again, most may not associate readily with Lean Six Sigma and strategic improvement. In most cases, the total cost of real estate and space management (Including support, maintenance and repair, overhead, and utilities costs) are not readily available and known. With all of the consolidations, downsizing, and outsourcing activities that have taken place recently, Global Real Estate and Space Management presents new opportunities for improvement for many organizations. Since many of these costs are either hidden or unknown, quantifying these costs is usually received as a big surprise to executives. There is undoubtedly a high level of emotion with individuals in the organization regarding workplace space, geography, proximity to amenities and/or other departments, furnishings, physical appearance, and perceptions of change by others. Nevertheless, there are millions of dollars in opportunity for many organizations who commit to doing the analysis and the math objectively.

**Strategic Maintenance and Facilities Management**

One of the largest unknowns in many organizations is unplanned maintenance or unplanned downtime. These failures seem to occur randomly, and the root causes are unknown. With a bit of creative thinking, the same issues exist in the unplanned disruptions in transactional processes. The largest reason why these failures and/or disruptions are unknown is due to lack of root cause thinking and the availability of facts. People have their opinions about why these things happen, and they typically use their intuition for improvement. Many of the preventive maintenance (PM) procedures in organizations are based more on intuition rather than facts. This random tinkering with processes usually creates more problems and variation than it removes, and sometimes it throws processes into an unpredictable, out-of-control state. Many of these failures are extremely costly and disruptive, particularly if they represent the revenue-gating operation, or replacement spare parts or servicing capabilities are not on hand. This is a challenge across all industries and all equipment, whether it is a large paper machine, a line producing
pharmaceutical or personal care products, a plating line, or a MRI operation in a hospital. Revenue generation and customer satisfaction is a matter of keeping things up and running.

Example: Many organizations have conducted several successful Lean Six Sigma and basic improvement initiatives in these areas:

• One team analyzed the root causes of unplanned downtime in a large plating area. A Pareto analysis was constructed based on maintenance work orders and touch time to repair hours. Upon reviewing the analysis, the Executive Sponsor and the team noticed that the repairs that were easy to fix but consumed the most elapsed time were at the bottom of their Pareto list (A lesson on using Pareto charts: Sometime the root cause is not in the tall poles). Some of the low poles created as much as whole shifts of downtime. The team revised their analysis, isolated the vital few issues that created the most unplanned time, and began digging deeper into root causes. This was an interesting project because the root causes were part of a larger continuum: Individually they can be the beginning or the end, but there were multiple connections between root causes and failure modes. The team’s project was similar to putting a complex puzzle together. In the end, the team identified approximately $1.3 million in savings by reducing unplanned downtime.

• In another organization, a team began analyzing unplanned downtime for a group of screw machines. Operators ran their machines across all three shifts at their settings, so there was a lack of standardized work. The team isolated the largest root cause of unplanned downtime to non-standardized chuck changes. If the chuck was too tight, it would cause jams; If the chuck was too loose, the machines would crash causing timely and costly repairs. The real challenge was determining how tight is right, how tight is right? Operators had a variety of answers ranging from you can feel when its tight enough to three whacks with a mallet. A common practice was wrapping a rag around a wrench and batting it with the palm of their hands. The answer through experimentation was the development of a safe torque wrench, reducing the cost of downtime by $320K/year. During this project, the team also learned that three people were out on disability leave with broken hands. This spurred several other improvement projects looking at root causes of injuries across the plant. Many of these claims were caused by similar reasons: Lack of standardization and home grown tools and methods. The company saved another $800K in disability benefits through several simple quick strike improvements.

• A utilities improvement team used the Lean Six Sigma methodology and tools to analyze major utilities costs (e.g., electricity, fuel oil, propane, lubricants, maintenance cleaning supplies, etc.) and root causes. Within weeks they developed many basic recommendations to reduce peak electricity costs by developing a standardized equipment start-up sequence, moving selected production runs to 2nd and 3rd shifts, installing motion switches in less used areas of the plant and office, changing PM procedures, a consigned MRO inventory managed by the supplier, and several other simple changes. Within 90 days the team identified over $1 million in utilities savings. The team also created a visual awareness program that compared utility costs to pictures such as a Cadillac Escalade, an RV, a new home, and a Hawaiian vacation for 15 people, and other comparisons with great visual impact.

• A new product organization was experiencing several unplanned disruptions at Gate 2 (Product and process design) of their development process. A team conducted a simple quick strike project and isolated the root causes to lack of information, missing information, and changes to information up front in the product concept and definition. Digging deeper (The 5 Whys), they learned that the right decision makers were not getting together up front, leading to many after the fact changes and modifications. Additionally, the process was defined well (e.g., what information is necessary to begin Gate 2) but not being followed. The team created a simple template for the Gate 1 activities,
eliminated much of the engineering waste of doing things over, and reduced product development cycle time by an estimated 4-8 weeks.

Financial Management

Finance is another area where most may not associate readily with Lean Six Sigma and strategic improvement. After all, Finance conducts a great deal of financial analysis and generates information to review and improve the business. Financial Reporting and Analysis is a critical business and legal requirement of all enterprises. In terms of improvement however, there are several common problems with financial data:

- It is reported well after the path is cold, so the information is nice to know but un-actionable;
- It is reported in a consolidated fashion, where it reports outcomes and buries root causes;
- It is sometimes inaccurate, or presented in a manner that leads people to the wrong conclusions and symptomatic actions;
- It often reports the wrong, or conflicting information which leads to the wrong decisions, wrong behaviors, wrong actions, and wrong results;
- It leaves people conjecturing on root causes based on perceptions, opinions, or other data carefully selected to support a position.

From a Lean Six Sigma perspective, Finance is riddled with “defects” in their processes – Defects caused by others in the organization outside of Finance. These defects are in the form of journal entries, trial balance adjustments, and other transactions that were not processed right the first time. If Finance had defect-free suppliers of information, organizations could perform their monthly close process with the push of a button. It is a challenge to get Finance to view these institutionalized accounting practices which have existed for 100 years as defects that create non value-added work, consume time and resources to correct, and impact the entire organization when they occur. The challenge to making financial information more improvement friendly is to simplify and reduce the cycle time of reporting, report the right metrics, and expand reporting to include activity-based and hidden cost information.

**Example:** A popular improvement project in Finance is to reduce the monthly close cycle and other reporting cycles. It is an interesting analysis to group and Paretoize transactions by transaction type, source or root cause of transaction, cost of transaction, and time to process transaction. Guess what one finds? 80% of the effort, time, and cost is consumed by a small grouping of transaction types which are assignable to root causes and therefore correctable. It might require a dozen valuable financial resources who act as glorified clerks and several other resources outside of Finance, several days to chase down and correct the problems. When these hidden costs are quantified, they are unbelievable! These well paid resources could be put to better use than fixing defective transactions and looking for the rest of the pie. The good news is that correcting 20% of the problem gets an organization 80% of the benefits. These defects are typically workmanship issues that are correctable through training, work discipline and attention to details, doing things right and complete the first time, and consequences for non-performance. Many of these issues are caused by an attitude of I don’t have time and someone else will catch it. By the time they catch it, the cost to fix the problem has grown exponentially. Using this analysis, it is not unusual to reduce the close process from a week to days or hours.

Information Technology

Information Technology is an area that often gets caught up in insatiable demands, a bombarding of questions and complaints about applications, an unending backlog of projects, the proliferation of server networks and other equipment, and large requests for additional IT expenditures. Executives complain about rising IT expenditures but much of driven by key business process owners external to IT. The costs
of IT are usually known but the benefits of IT can sometimes be fuzzy. Some of the areas where Lean Six Sigma has generated substantial benefits has been in the areas of requirements definition and justification, IT value analysis, managing IT backlog and priorities, software development and release, user collaboration and development, IT project management, server and network uptime, and IT performance.

A major but unpopular opportunity is in analyzing IT requests for enhancements and modifications. Often users do not understand or are not aware of the full functionality, features, standard reports, etc. in their enterprise architecture. Additionally, users often attempt to create on the spot “silo” capabilities that add more waste and IT glitches than value to the organization. Since IT is a service organization, they do not have the authority to question, deny, or demand “hard” justification of these IT requests, so they just queue up. Many IT staff is also unfamiliar with the full functionality and features of their enterprise systems. Many of these IT requests are generated because users have a particular issue with the software and do not take the time to drive to root causes. It is easier to submit an off the cuff IT request than it is to conduct true root cause problem solving. If more users used the “Five Whys” and took the time to understand why they are having problems, the corrective actions often have nothing to do with the need for another IT request. Often, the problems are related to discipline, non-standard practices and procedures, transactions without knowledge, and data integrity – Issues that organizations have been struggling with since the 1970s Ollie Wight days.

Software development is an interesting improvement opportunity. Many of these professionals are developing software that will be integrated with hardware, but the full requirements are still in an evolving state and are not known. It is a bit like driving to a new location without the GPS: Some of the destination may be known but it usually involves getting lost, asking for directions, and making several detours before arrival. This becomes complicated by outsourcing decisions where software development is scattered around the globe, where the variation increases proportionally with the number of people involved, regardless of development standards and practices. This often leads to software that either does not work, or software that exposes unexpected bugs and glitches some time after release. Although software development is confusing and complicated to most, the improvement of software development is more common sense than rocket science. A combination of process standardization, requirements standardization, bug and Bugzilla root cause analysis, the right corrective actions, and frequent formal hardware/software integration updates goes a long way towards improving software development.

Another useful analysis in IT that was mentioned earlier is worth factor and value analysis. This is the inventory of current and proposed projects quantified by objectives, benefits, costs, time, and risks. Usually the IT group remains buried by everything the user community is demanding of them, and lacks a formal process of routinely reviewing, reprioritizing, and/or cancelling IT projects. Worth factor and value analysis provides an objective method of reviewing priorities and reasoning with users, collectively deciding upon priorities, and redirecting limited resources on the most critical issues. The problem with IT is similar to the Catch-22 problem with engineering organizations: There is never enough time and resources to complete all the changing requirements in the pipeline, nor is it feasible to consume all of the time and hire all the resources that are necessary to complete the changing requirements in the pipeline. So what does the CIO and his/her organization do? They make the best of what they have at their disposal, manage the emotions of their user community, and continuously optimize around the operating constraints with data and facts.

**Acquisition and Integration Process**

This is yet another area where most may not associate readily with Lean Six Sigma and strategic improvement. A successful acquisition requires a lot more effort than analyzing financial statements,
looking at customer lists, and conducting pro forma financial spreadsheet analysis. Organizations that limit themselves to this kind of thinking end up missing out on opportunities, or end up with an acquisition loaded with unanticipated problems. Many times we are invited to participate in due diligence activities to define the current state of the business, confirm strategic fit both qualitatively and quantitatively, identify potential improvement opportunities, and develop the implementation and integration plan which is ready to go directly after the acquisition is consummated. In addition, this additional information is critical for conducting a more robust feasibility analysis of the proposed acquisition. These acquisition decisions are not reversible for a long time, so the value of doing things right the first time is somewhere between high and off the chart.

Another improvement opportunity in this area is the development and standardization of a robust acquisition evaluation process. In many organizations, this high risk initiative is backed up by informal ad hoc processes and/or lack of process. An acquisition without a formal evaluation process is like developing new products without a formal stage-gate process, or manufacturing products without routings. A structured and disciplined Acquisition and Integration Process avoids millions of dollars in unexpected costs and pays for itself in the first few minutes of the acquisition.

**Performance Measurement Process**

Performance measurement system analysis represents a major opportunity across all transactional processes. Many organizations are unaware of the hidden costs associated with inadequate measurement systems. These may include emphasis on the wrong metrics, too many conflicting metrics, or metrics created by informal or over-specified measurement processes. The value of this information is often much less than the effort it takes to measure performance.

**Example:** Organizations have benefitted from several transactional measurement systems analysis projects:

- **One organization** that was overly conscious about product costs developed extremely detailed routings, bill-of-materials (BOMs), and tracking requirements in their ERP system. An improvement team pointed out that operators spent more time processing completion and move transactions than in building the product. The cost of assigning a part number, maintaining, cycle counting, and looking for many low C-level inventory items exceeded the value of the part. Although product costs were calculated to four decimal places, this hidden cost equated to 15 full time equivalent people (fte's) employed to process and correct accounting transactions. The accountants complained about labor and material variances that were less than the hidden $450K cost of processing transactions. Routings and tracking requirements were simplified, and many items in BOMs were expensed and maintained as floor stock. The accuracy of product costs and BOMs improved significantly with much less overhead costs.

- **A high tech company** designed its quality system to collect very detailed information about defects and root causes. Their quality system included 84 defect codes and hundreds of secondary root cause codes. When a defect occurred, dozens of operators across all shifts were instructed to enter the correct defect code and root cause code in the system. Quality engineers had the greatest of intentions, but their system incorporated too much discrimination. Individual operators had little consistency in repeating their own correct codes, and operators across shifts had even less consistency in reproducing the correct codes. In a sample, even the quality engineers showed little consistency in repeating and reproducing the correct defect codes. Over time, their quality data was normalized by noise, and the Pareto charts were almost flat. Therefore it was difficult to decide where and how to improve yields. More time was spent analyzing and presenting data than improving yields. An improvement team redesigned the quality system with less defect codes, and
potential root causes were discussed in person with operators before summarizing data into categories. The Pareto charts began to show the tall pole problems and yields were improved significantly. The cost of scrap and rework was reduced by over $2 million annually.

- A new product development organization prided itself on getting new products released on time and at target design cost. Many engineers were rewarded for their performance. An improvement team began looking into the cost of commercialization after release (e.g., ECN activities, manufacturing rework due to design, field quality and reliability, inventory performance, lost revenue, etc by each new product released). The team demonstrated that the root cause of these recurring inefficiencies were due to specific issues in the product development process. The target design cost was but one element of cost, and engineering was held accountable for design related life cycle costs after release. The company saved millions in commercialization and post release costs.

- Another organization created their performance war room. Two walls were covered with monthly performance charts on everything about the organization. Again, a well intentioned initiative created more confusion, emotional interpretation, debates, and finger pointing than improvement. It was difficult to differentiate causes from effects, and the data was unactionable. The war room was replaced by a smaller set of critical, real time, event-driven metrics in automated dashboard formats. People now had the ability to sense-interpret-decide-act-monitor (SIDAM) on a daily basis (and with real facts), and prevent potential performance issues before they occurred.
**About our Firm . . .**

The Center for Excellence in Operations, Inc. (CEO) is a leading global operations management consulting firm specializing in *Improvement Excellence™* - The mastery of developing and implementing successful strategic and continuous business improvement initiatives, transforming culture, and enabling organizations to improve how they improve. Improvement Excellence is the fusion of all improvement methodologies such as Kaizen, Lean, Six Sigma, Product Development Excellence, Supply Chain Management, Education and Change Management, and integration of Enabling Technologies.

CEO’s focus is practical “hands-on” implementation followed by tangible breakthroughs in business performance. We differentiate ourselves from our competitors through our roll-up-the-sleeves, make-it-happen approach, and our consistent unmatched financial results with clients. CEO strives to achieve benefits with our clients in excess of at least 10 times our fees. This is not a guarantee. However it is a recurring result with our clients that comes from the aggressive goals we establish together up-front, and the tough work of implementation that we share until we achieve breakthroughs in business performance.

**Professional Management Consulting Services**

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- Automation Tools (CAD/CAM, modeling, KMS)
- Collaborative Forecasting and Planning
- Sales Inventory Operations Planning (SIOP)
- Push, Pull, and Push-Pull Systems
- Value Chain Synchronization Strategies
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Our engagements reach far beyond the improvement tools themselves. CEO’s expertise is Implementation: We integrate the key infrastructural elements of Creative Leadership, Improvement Strategy and Vision, Deployment Planning, Customized Education and Development, Execution Best Practices, Performance Management, and Sustainable Continuous Improvement and Cultural Change. Our clients reach Benchmark performance in their mission critical business initiatives such as strategic improvement, time to market, robust design quality and reliability, sales and operations planning, and supply chain performance. Our clients also achieve a velocity, magnitude, and upward direction in improvement, financial results, and culture change unmatched by global competitors and other organizations.

CEO understands how to navigate our clients through the obstacles of success and achieve Improvement Excellence: A state of real benefits beyond what was thought to be possible, and a culture to continue the journey to a higher level of excellence and performance.