

Selecting the Right People and the Right Projects

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Introduction

By this point in your Lean Six Sigma process, you should have two pieces in place that are critical to delivering on that claim: the engagement of senior executives and an infrastructure plan for widespread implementation. The third and fourth pieces of the puzzle—the people who will be part of the new infrastructure and the high-potential projects they will work on—are the subject of this chapter. The order described here—people first, then projects—is deliberate. Remember that your black belts are being groomed to become leaders in your organization. They will hopefully hold their black belt positions through many projects and therefore represent a more significant investment than the projects themselves.

Selecting Black Belt Resources

Knowing that you need to staff champion and “belt” positions is a long way from actually having appropriate, trained people in place. The general process for selecting and developing these resources is best modeled by looking at black belts, the largest group of people in an organization who are working on Lean Six Sigma full time.

The selection of the black belt candidates is a collaborative effort of the business unit management, the business unit champion, and the line managers who own the processes. This group:

- ✓ Develops position descriptions.
- ✓ Develops the criteria for selecting black belts.
- ✓ Screens, interviews, and selects candidates.
- ✓ Coordinates training of these resources.

Selecting Black Belt Resources

Understand that black belt and champion *selection is often the first major action that the organization will see management take in the implementation of Lean Six Sigma*, so in that sense it is the *first test of management commitment*. Consequently, it is an important opportunity to communicate (through action) the importance of Lean Six Sigma. If the best people are chosen for these roles, the broader population of employees will know that management is serious and that Lean Six Sigma is not the latest flavor of the month.

Selecting Black Belt Resources

Black Belt Selection Criteria

Some recommended criteria, in priority order, include:

- ✓ Team leadership skills.
- ✓ Project management experience.
- ✓ Problem-solving training and experience.
- ✓ Communication skills.
- ✓ Interest in a process view beyond his or her unit.
- ✓ Ability to learn financial analysis (ROIC, NPV, etc.).
- ✓ Computer and technical skills, ability to master tools.

Selecting Black Belt Resources

Being Realistic

After the opportunities for black belt or other positions are posted internally, interested candidates almost always have a lot of questions and concerns. The best candidates will already be high performers with a great career trajectory and may be worried about what happens if Six Sigma is a failure or gets dropped. That concern can be addressed only if there is active, visible support by every manager from the CEO on down.

Selecting Black Belt Resources

Being Realistic

In addition, the selection group needs to be able to *clearly articulate the roles, responsibilities, interactions, and financial results expected of a black belt*. They need to frankly discuss with their candidate his or her ratings on the criteria and have a plan to correct any weaknesses. Candidates must understand the *personal investment they will be making* in training, travel, and the usual “long hours” it takes to achieve results. Perhaps most important, the team also needs to be able to clearly describe how accepting the position will help candidates *propel their careers upward* within the business.

Selecting Projects

Effective project selection is a key factor in determining the effectiveness of your Lean Six Sigma effort. Why? Some Six Sigma programs have failed to deliver on their potential because black belts became elitist cowboys who competed for scarce resources for projects that were not necessarily sanctioned by the P&L manager or process owner.

The Lean Six Sigma infrastructure defined previously goes a long way toward preventing this problem, ensuring that black belts work on delivering results via the right projects in the right amount of time. However, it is still critical to ensure that the *first projects are successful*, so that the program grows of its own momentum to larger, very-high-NPV opportunities.

Selecting Projects

The projects must be selected based on a trade-off decision comparing value delivered with effort expended. One of the most powerful tools for this purpose is the benefit/effort graph.

These graphs usually depict the increase in operating profit versus the effort required to deliver this benefit (including team resources plus any costs or capital). The projects in the high-benefit/low-effort square may become the focus of more data collection and analysis to determine NPV. Displaying potential projects in this way provides an easy way to make a first cut at deciding which projects have the greatest potential benefit.

Selecting Projects

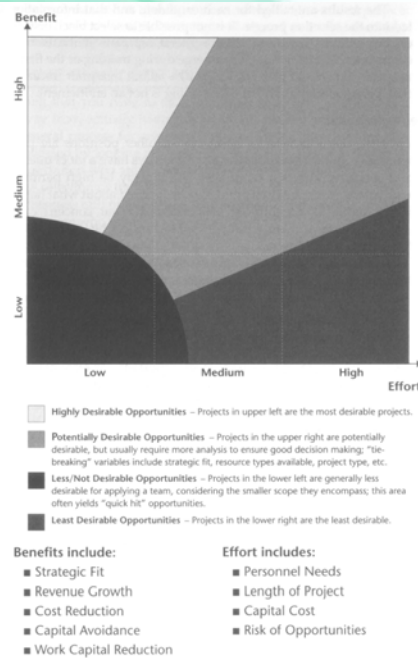


Figure 8-1. Benefit/effort graphic

Selecting Projects

Project selection can be viewed as having several evolutionary stages:

- ✓ At the outset of your Lean Six Sigma initiative, there may be some existing opportunities in the organization that must only be properly scoped and prioritized.
- ✓ During the kickoff Transforming Event, P&L managers, champions, and others will be asked to start thinking about criteria for project selection and brainstorming new ideas for projects.
- ✓ The method described in this chapter adds more rigor to the process, including specific ways to “prime the pump” of project selection by scouring your existing data sources and knowledge base to identify the initial wave of black belt projects.
- ✓ As you evolve through the first year of the Lean Six Sigma initiative, you’ll start to rely more heavily on value stream mapping as a tool to identify the highest-impact projects.

Selecting Projects

While all of these approaches are valid and can contribute to the desired outcomes, *only value stream mapping allows the accurate identification of time traps* and the ultimate elimination of the biggest sources of waste. Realistically, therefore, your first few black belt projects are unlikely to bring the kind of impressive gains described before, but they will prepare your organization to become increasingly effective in the second and third waves of projects that generate significant gains in shareholder value.

The Language of Project Selection

- ✓ Value stream: The set of activities that convert customer needs into delivered products and services. Improving an entire value stream requires multiple projects.
- ✓ High-potential-NPV value stream: A value stream that, once improved, can significantly contribute to shareholder value and be a key success factor for the company. Example: improved cost position in product X.
- ✓ Opportunity: Abounded idea potentially composed of multiple projects. Example: reduce assembly costs in Duluth for product X.
- ✓ Project: An idea that can be addressed by a Lean Six Sigma project team and largely meets established screening criteria. Example: reduce scrap in product X assembly in Duluth.

The Language of Project Selection

- ✓ **Quick hit:** An idea that can be addressed by the line organization without the dedicated assistance of a black belt (but may require a Lean “kaizen blitz” team). Example: sell scrap components from product X assembly, reduce travel cost by outsourcing, etc.
- ✓ **Process cycle efficiency:** A key Lean Six Sigma metric, measured as the amount of value-added time in a process divided by the total lead time.
- ✓ **Diagnostics:** A series of observations, data collection, and tests used by champions to generate project opportunities.

Who Does What

Project selection is first and foremost the responsibility of the management team within a company, division, or business unit. The role of the Lean Six Sigma champion is to help guide them through the selection process and its decision-making criteria and to educate them on the types of projects that lend themselves to Lean Six Sigma solutions. The management team of the business unit must provide initial guidance on strategy and criteria for project selection, provide input on opportunities throughout the process, and finally agree on which projects will be launched with scarce resources on a periodic basis.

Who Does What

A natural human tendency is to advocate one's own beliefs and managers typically have strong beliefs about the types of issues to deal with first ("pet projects"). The rigor of the entire process we will describe is designed to allow the champion to facilitate a meaningful discussion among upper managers that hinges on data that represents the future direction, rather than opinions and tacit knowledge that is the embodiment of the status quo. The champion will propose the value streams to work on and recommend specific projects for improving those value streams.

Who Does What

We have learned that low process cycle efficiency causes high cost and that 80% of the process delay is caused by fewer than 20% of the nodes (e.g., workstations or transactional steps) in any process. The champion will be aided in his or her endeavors by many new software tools, such as Supply Chain Accelerator, that disclose the time traps, each of which can be addressed by one or more Lean Six Sigma projects. The ultimate project selection decisions are in the hands of the P&L manager, group president, or CEO.

Project identification and selection is a process by which champions identify the key value streams and develop projects within those value streams, selecting those projects that can create the most value for the amount of resources applied.

Diagnostic Processes for Project Identification

A Lean Six Sigma program's ultimate success is highly correlated to its initial success. The stakes are high, given the opportunities for shareholder value and cultural change, so you cannot afford to fail early. So one goal in the process described below is to make sure you've sought out the best ideas in the organization. In fact, the first lesson in project identification is to avoid self-censorship too early in the process. It is imperative that the basket of potential opportunities be as large as possible. In fact, a good process will generate a healthy mix of opportunities; the challenge is to convert as many of them into worthy projects as possible.

Diagnostic Processes for Project Identification

The best way to get a large basket of ideas is to keep project identification inclusive, systemically seeking out ideas from every corner of the organization. One way to do this is to use both top-down and bottom-up techniques to compile the initial list of ideas:

- ✓ Top-down: Idea generation and development start from corporate priorities and a high-level assessment of the business and its value streams.
- ✓ Bottom-up: Idea generation from existing projects and the employees.

Because each approach has its strengths and weaknesses, it's best to incorporate both into your project selection strategy. The top-down approach is more intricate and represents principles and methods that will be new to most people.

Diagnostic Processes for Project Identification

	Pros	Cons
Top-Down	Intrinsically linked to strategy/goals: yields a high NPV Involves a "fresh eyes" approach, gets you "outside the departmental box" by design New insight gained from a fresh look at markets and customers	Requires a new diagnostic process that champions must learn, execute, and educate others on Requires a cross-functional team
Bottom-Up	Good mix of quick hits and projects Allows a wide audience to contribute Self-generating	Bias towards what you already know Tends to surface "pet projects" Typically not driven or supported by data Many ideas are the "persistent pain"—irritants that may have little connection to important value streams

Table 8-1. Comparing top-down and bottom-up approaches for identifying projects

Top-Down Project Identification

The structure of top-down project identification combines traditional decision-making elements (such as creative thinking and rating ideas against criteria) with elements unique to Lean Six Sigma (such as assessing potential contributions to process cycle efficiency). The goal is to identify performance gaps and then to develop projects that will close those gaps.

Top-Down Project Identification

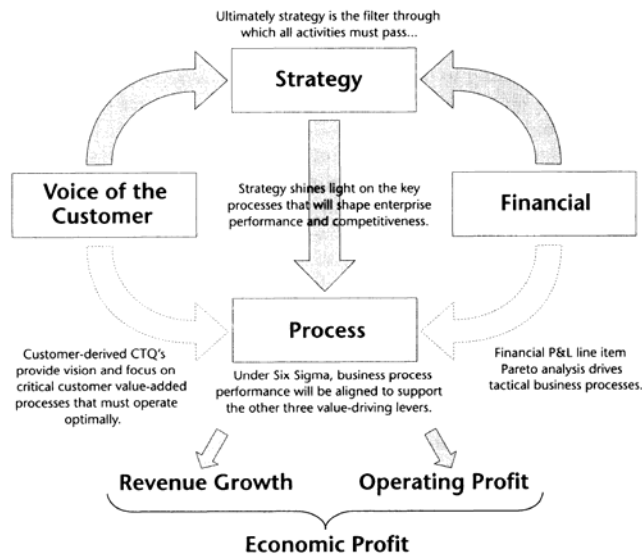


Figure 8-2. Balanced scorecard for project identification

Top-Down Project Identification

A. The “Existing Strategy” Lens

The first phase of project identification is to examine your existing strategy to bring to light high-potential-NPV value streams or business segments that require improvement. Our usual source of this type of data would be the existing strategic plans or, in their absence, the broad agendas of the business unit leader and his or her staff.

Whether the strategy is formal or informal, most companies have a pretty good idea of the strategic path they want to travel. And in either case, it helps if your champions are trusted advisors of the P&L manager so that they will fully understand and execute the manager’s strategy.

Top-Down Project Identification

There are multiple ways of analyzing strategy. The best advice is to keep it simple. Strategy, at its core, is simply about charting a path from a current state to a desired state.

One approach for helping champions understand the magnitude of the opportunity for value creation is having them work with the controller to determine the current ROTC of the business and the amount of capital employed.

Top-Down Project Identification

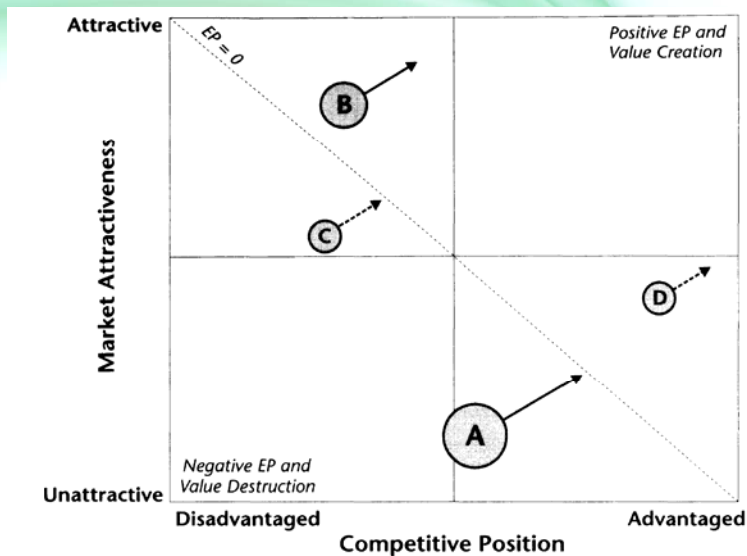


Figure 8-3. 2x2 matrix for competitive position vs. market attractiveness

Top-Down Project Identification

To illustrate this concept, consider some extremes. The airline industry is a very unattractive market (large, but ROIC is much smaller than WACC) that destroys value, while pharmaceuticals are highly attractive (large and ROTC is much greater than WACC) and create value. However, even within an unattractive market, executing a low-cost strategy can create shareholder value (e.g., Southwest Airlines). The terms “value creating” and “value destroying” can be summed up by asking whether sufficient returns are generated by an investment (ROTC) to compensate for the risk undertaken (WACC). Given the two examples above, over the last decade or two, investors would have fared far better investing in a basket of pharmaceutical stocks than in airline stocks.

Top-Down Project Identification

The final component of this analysis is to ascertain the desired future state of the graph, as shown by the arrows. In this case, it looks like A is an unattractive segment. The company may desire either to exit that business entirely or to harvest its returns and invest them elsewhere. Segment B is a fairly attractive market and perhaps could benefit from more investment. It should be noted that, unless the company is a monopolist, it is very difficult to make a market more attractive, so the focus is usually placed on how to improve the cost competitiveness of the current business or shift into an adjacent market that is more attractive.

Top-Down Project Identification

B. The “Financial Analysis” Lens

Another lens within the project identification process is the use of financial analysis. It has the virtue of being universally applicable, since all businesses are required to maintain financial and accounting information. Your goal in this stage of the project identification process is merely to ascertain which areas are most likely to spawn suitable high-value projects. At this point, you want to focus on the big picture. A more detailed financial analysis occurs once you have screened numerous project ideas to identify a smaller, more manageable pool of candidates.

Top-Down Project Identification

Assessing the financials is a two-stage approach for identifying opportunity areas related to financial drivers:

1. Find the big buckets of money from the financial statements.
2. Decide which of those you can reasonably hope to influence.

Top-Down Project Identification



Figure 8-4. Value driver tree (financial)

Top-Down Project Identification

Identifying the “Big Buckets of Money.” By examining the income statement, balance sheet, and cash flow statements, you can quickly isolate the highest-impact line items. Typically, for a manufacturing company, the largest cost value levers will be found in raw materials and manufacturing overhead—and less likely in direct labor. We suggest the champion build his or her “pie chart” of opportunity, much like the following graph.



Figure 8-5. The cost levers

Top-Down Project Identification

An element often overlooked when performing this analysis is the impact of sales price on profitability. As can be seen in the graph, for an average manufacturing company, selling price has the largest impact of all the value levers. The graph depicts the impact of a 1% improvement in various value levers for a generic manufacturing company. Can we gain a price premium by cutting delivery times by 80% or increasing the quality that we deliver?

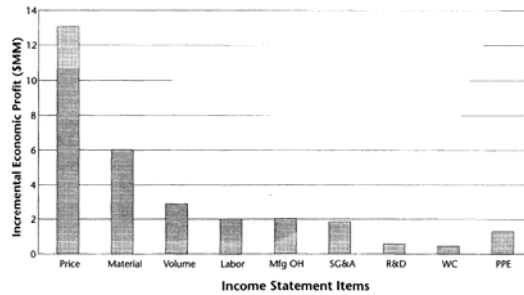


Figure 8-6. 1% change applied to income statement items

Top-Down Project Identification

Evaluating the Likelihood of Influence. The next task is to consider your ability to change these high-impact line items. By doing this, you can determine the overall size of the opportunity pools, as shown in the simple formula and example below:

$$\text{size of lever} \times \text{percent improvement} = \text{size of pool}$$

$$\$50,000,000 \text{ in raw materials} \times 6\% \text{ reduction} = \$3,000,000 \text{ potential}$$

Top-Down Project Identification

The estimates of improvement potential in each value lever are based on a combination of statistical data (e.g., from the value stream map analysis) and structured team discussions and judgment. Some companies possess excellent sources of benchmarking information that allow us to compare our performance with that of others. In many cases, we need not even look outside the company for this, as we can leverage the performance characteristics of similar plants or assembly lines to establish an internal “best in class” performance that will form the basis of our performance improvement efforts.

Top-Down Project Identification

Focusing on Projects with High Financial Potential. The result of this simplified financial analysis is to establish a list of opportunities, each with its own pool of potential savings. Each of these pools will ultimately form an area where you should look for additional ideas that will generate the savings possible. Keep your Pareto hat on here. focus your idea generation on the larger, most promising pools. The main benefit here is to ensure that you do not tire yourselves out trying to move an immovable lever or waste time pulling on lots of lower-value levers.

Top-Down Project Identification

C. The “Voice of the Customer” Lens: What Works, What Doesn’t

Listening to the Voice of the Customer is an integral part of the Six Sigma methodology, so it is not surprising that it plays a central role in project identification and selection. This phase of the diagnostic process typically yields the greatest new insights into the business and may surface project ideas that radically impact the business.

In an ideal world, reams of data would be available on our customers’ requirements and the relative importance of each. Using this data you could evaluate yourself against the competition and thereby identify performance gaps that would spawn projects—an approach known as key buying factor analysis. Unfortunately, performing this of analysis well can consume several months.

Top-Down Project Identification

Another tool often used to identify projects that will directly affect customers is Quality Function Deployment (QFD), a methodology most closely identified with product development and competitive assessments. However, QFD can be formidable and, based on our observations, an impractical undertaking for initial project selection.

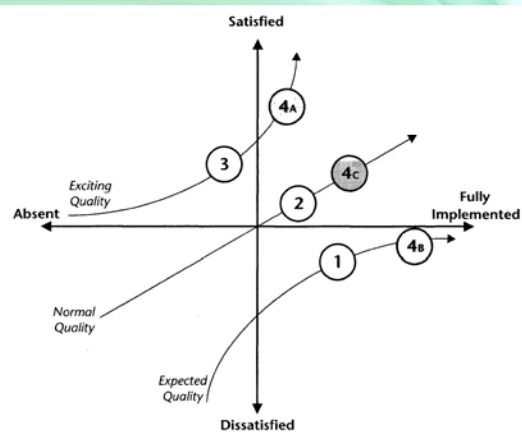
It has been have found both key buying factor and QFD analyses to be too slow to achieve the type of first-year impact required of Lean Six Sigma, especially since markets move very fast. However, both of these tools maybe required in maturing Lean Six Sigma efforts to get to the next level of performance.

Top-Down Project Identification

There is a simpler, less formal approach that can accelerate the process of making the Voice of the Customer heard in the project identification and selection process. Within the company there are numerous sources of marketplace and customer preference data: warranty logs, satisfaction surveys, call center logs, etc. In addition, everyone who interfaces with the customer directly can contribute pieces to the puzzle. All of these data sources can be used to create a list of customer requirements and establish a relative importance among them.

Start by scouring your existing sources to collect as much “tribal” knowledge of customers as you can. You can then validate this information through discussions with the P&L manager and marketing people. This quick analysis can be systematized by plotting the data on a Kano chart, which can help create an initial representation of customer desires. The following figure shows a sample Kano analysis from the auto industry to illustrate the key concepts and their application to project identification.

Top-Down Project Identification



Automobile Examples:

- | | |
|----------------|----------------------|
| 1 Brakes | 4a AM Radio – 1930 |
| 2 Acceleration | 4b FM Radio – 1960 |
| 3 Night Vision | 4c CD Player – Today |

Figure 8-7. Kano chart

Top-Down Project Identification

In our example, three customer requirements are identified for the automobile:

1. Braking
2. Acceleration
3. Night vision

Braking is considered “*expected quality*” because it is unlikely to make the customer happy at any level of performance, while its absence would be immediately noticed and cause grave dissatisfaction. Acceleration is considered “*normal quality*,” because the customer can be either pleased or displeased by it and the more of it in the automobile the happier the customer. Night vision is considered “*exciting quality*,” because its absence will not displease the customer, but if it is available it delights the customer.

Top-Down Project Identification

The first lesson to learn from a Kano analysis is to *take care of your customers' expectations in sequence from expected to normal to exciting*. In the automobile example, for instance, any car company that ignored a performance gap in its brakes or anything else in the “expected quality” area will not last long enough to work on “exciting quality.” Similarly, companies must understand the need to address “normal quality” sufficiently before embarking on the search for new “exciting quality” differentiators. *Differentiation is a key component of establishing or maintaining brand equity*, but it is secondary to ensuring a consistency of message and performance, as depicted by “normal quality” and “expected quality.”

Kano is a powerful model because it provides a framework to think about both “spoken” and “unspoken” customer requirements. If you think about what customers ask for, they typically focus on the “normal quality” items; it's rare that customers will tell you about something that is “expected quality” (because they just assume you will provide it) or “exciting quality” (because they have not thought of it).

Top-Down Project Identification

Applying Kano analysis to project identification allows you to *understand in a structured manner what influences your customers' behavior and buying decisions*. Once you understand the dynamics of each requirement, you can assess the performance of your unit or the company, from the customers' perspective, in meeting those needs. Identifying where you fall short leads you to gaps. You can focus your project identification around the most critical influencers of customer satisfaction and retention.

Top-Down Project Identification

The "Process Analysis" Lens

The final lens for top-down generation of project ideas is to look at core processes. The sequence of lenses here is deliberate. People tend to gravitate toward what they know, so idea generation would naturally be confined to existing projects. The reason for leaving the process analysis lens until the end is that insight gleaned from the financial, customer, and existing strategy lenses will enhance the output from this step.

Before you can delve deeply into process analysis, you need to *define your core business processes*. The first consideration is what a process is and is not; the tendency is to define processes in functional terms, such as "engineering" or "sales." But lessons from Lean Six Sigma tell us that *the customer is indifferent to the methods or structures we use to meet their demands*. We must first abandon these functional definitions in favor of descriptors that more closely portray what the customer perceives. This is the value stream concept (sets of activities, such as different product lines, that turn a customer opportunity into a delivered outcome), as discussed numerous times throughout this course.

Top-Down Project Identification

Through a process lens, something that used to be labeled “engineering” could become “design new products” and “sales” may actually be “tailor products to my needs.” One helpful hint during process definition is to cast your activities as verb/noun constructs, which will help overcome the legacy of functional structures. At the highest level for a generic manufacturing company, for example, the overall value stream may consist of the following processes: “take orders,” “acquire materials,” “make products,” “deliver products,” “collect payment.” Viewing the business this way may help break down traditional functional silos and speed the realignment of processes to customer demands. Each of these processes would need to be further decomposed once or twice before they are small enough to contain meaningful LSS projects.

Top-Down Project Identification

Identifying processes instead of functions is just the first step in applying a process lens. The real goal is to identify the business processes that

- ✓ are most critical to your success.
- ✓ can be most readily improved by Lean Six Sigma tool sets.

The overlap between these two criteria is where you should dig deeper to generate projects that will close the performance gaps.

Top-Down Project Identification

Importance	Relative Economic Value	
	Value Creating	Value Destroying
Identity		
Priority		
Background	← Thrive	Survive →
Mandatory		

Survive by eliminating processes that destroy value, then thrive by building processes that create value.

- **Survive** – Minimize the number of Value Destroying processes either by improving (moving them to the Value Creating Side) or by eliminating/outsourcing them.
- **Thrive** – Improve, change, or move appropriate processes upwards (toward identity) or increase their returns (create even more value).

Figure 8-8. Process classification via Process Edge approach

Top-Down Project Identification

Processes that enhance or protect a franchise or a differentiated product are the greatest value creators in a business. If a process improvement has the potential for protecting or creating differentiation, it will tend to have a high value and should be executed. In a sense, these processes define the company from the customers' perspective and hence have a high priority; they are your key value streams.

You can determine whether a process is creating or destroying value via value stream mapping. You may also want to use process cycle efficiency as a good indicator of whether a process is efficient or not. It is also possible, in theory, to perform a detailed financial analysis on processes, which would distill them to a common denominator, like NPV or EVA. In practice, these latter approaches may require a good deal of time, so they are usually not undertaken lightly. For our purposes, we will assess processes based on indications of variability and waste and by benchmarking them against internal and external competitors.

Top-Down Project Identification

Priority processes like “scheduling machines and assembly” or “acquiring raw materials” are important and may be indirectly visible to the customer, but do not define the company. They are important because their shortcomings can cripple the business, spoil the relationship, and provide an opening for a competitor. To create the highest shareholder value, a firm will strive to create a franchise, a preferred brand, or a recognized reputation for excellence.

Top-Down Project Identification

“It was not the fair market value of the inventories, receivables, or fixed assets that produced the premium rates of return. Rather it was a combination of intangible assets, particularly a *pervasive favorable reputation* with consumers based upon countless pleasant experiences they have had with both product and personnel. Such a reputation creates a consumer franchise that allows the value of the product to the purchaser, rather than its production cost, to be the major determinant of selling price.”

Warren Buffet, Berkshire Hathaway Letter to Shareholders, 1983

Top-Down Project Identification

Compiling the Input

As you work through the top-down analysis, document the key value streams identified and the project ideas that arose from applying each of the four lenses—strategy, finance, customers, and process. These will be fed into an evaluation and screening process.

Bottom-Up Project Identification

Bottom-up approaches (including the commonly used suggestion box) are usually simpler to understand and more accessible to people throughout the organization. Many of the projects that arise from a bottom-up method will reflect projects that existed before Lean Six Sigma.

For our purposes in launching a performance improvement initiative like Lean Six Sigma, we will differentiate between two resource groups: senior management and the broader organization. Each will be able to contribute unique insights to the project identification process.

Bottom-Up Project Identification

Soliciting Ideas from Senior Management

The role of senior management—whether at the corporate, business unit, or local level—is to supply information on both the projects currently under way or planned and any problems they are aware of from their spheres of influence or control.

You need to capture information on current or planned projects so they can later be assessed from a number of perspectives:

- ✓ Some projects will lend themselves better to the DMAIC methodology than the prevailing approaches and can therefore be pulled into the Lean Six Sigma realm.
- ✓ Projects that do not fit the DMAIC methodology will likely consume resources that could conflict with the soon-to-be-launched Lean Six Sigma projects. Management will need to make hard decisions about the relative priorities of these competing demands for common resources, be they capital, human, or management attention. (An impact/effort chart will be prepared to help filter out the best projects.)

Bottom-Up Project Identification

Regardless of the disposition of an existing or planned project, projects identified through bottom-up approaches are typically aimed at solving a specific problem, not contributing to an important value stream. Their utility stems from the fact that they may shed light on related problems or offer the possibility of extending the solution to an adjacent area or problem that lends itself to the Lean Six Sigma methodology.

Management is also in a unique position to have a bird's-eye view of the business and can often contribute ideas on where to look to solve the persistent ills of the company. Canvassing the management groups within the organization will not only generate numerous ideas for improvement projects but also ensure that organizational commitment and buy-in are widespread.

Grouping and Screening Ideas

As a result of both the top-down and bottom-up analyses described above, most business units find themselves at this point with *more ideas than they can easily pursue*, typically several hundred. These ideas will take the form of high-potential-NPV value streams, opportunities, and projects and will be largely undefined or scoped. Our task is now to *isolate the projects suitable for Lean Six Sigma implementation and to select the most promising ones for further definition and scoping*.

Grouping and Screening Ideas

Step 1: Convert Opportunities into Specific Projects

It is likely that some of the original ideas from the four-lens diagnostic or bottom-up approaches describe “opportunity areas.” rather than specific projects. But black belts don’t get assigned opportunities; they get assigned projects. Throwing out the opportunity suggestions could eliminate a valuable project; it’s far better to develop each opportunity into one or more projects.

Focused brainstorming exercises, in which you challenge people to identify manageable pieces of the broader opportunity, often yield good results. Doing these in a small group or team often works better than having people work individually, because the creative process is more dynamic and greater clarity is gained when the projects are discussed.

Grouping and Screening Ideas

Step 2: Sort the Ideas

Once you have milked the opportunity suggestions for all they are worth, assemble a complete list of project ideas.

To work more efficiently, you need to assemble the list in a format that you can easily manipulate. For some, that means writing the basics of each idea on a separate card or self-stick note; for others, it means entering them into a computer spreadsheet. In either case, you want to then sort through the project ideas to eliminate redundancies and perhaps group similar projects.

One tip: keep the project descriptions short at this stage. Remember that you're winnowing a long list of potential projects down to just a few, so trying to come up with detailed project descriptions here would be a big waste of time. You'll get a chance to flesh out the most likely project ideas just a bit later in the process.

Grouping and Screening Ideas

Step 3: Apply Screening Criteria

There are a number of valid screening criteria that can be used to winnow our list of 300-plus project ideas down to our goal of 50. Depending on the initial priorities of the business, some combination of the following benefit/effort criteria will likely be used:

Benefit

- ✓ Financial (NPV or annual cash flow impact)
- ✓ Customer satisfaction
- ✓ Potential to leverage across the business
- ✓ Strategic fit (applies more to the bottom-up ideas)

Effort

- ✓ Resource requirements
- ✓ Duration of project
- ✓ Risks
- ✓ Capital required
- ✓ Special skills/tools required

Grouping and Screening Ideas

Regardless of the exact criteria employed, it is often useful to classify each project into one of three broad categories (high, medium, low) for both benefit and effort. You can then graph the results on a benefit/effort matrix.

The results are far from scientific, but the goal at this stage of the project selection process is to be directionally correct—that is, to help concentrate your efforts on the highest-potential projects.

Grouping and Screening Ideas

Step 4: Identifying the Top Candidates

Ideally, at this point a number of “high-benefit” project ideas will leap out at you. Usually, you would give preference to those that rate low on the effort scale (these promise quick-hit gains), but don’t abandon ideas yet simply because they may require a lot of effort.

Project Definition and Scoping

Project ideas need to be better defined before they will be ready to undergo a final prioritization. The task will be to turn a “postcard” of information into a more robust description of a Lean Six Sigma project, for two reasons. You need to be able to convey the essence of the project to new audiences, like a project selection committee, the management of the Lean Six Sigma program, and the company’s senior management. You also need sufficient detail to be able to make informed decisions about which projects to launch first.

Project Definition and Scoping

The use of a project definition form (PDF) is a key component of the overall project selection process. This form will be a living document that evolves as the project teams are formed and begin work on their project. Although PDFs capture more information than was represented on the postcard or in a spreadsheet, it is not necessary to go into excruciating detail yet, because the project teams will augment and refine the information as they proceed.

Another reason to keep it simple is the burden that will be placed on the selection committee to become familiar with each project it must prioritize. An ideal PDF therefore is just a single page, with an absolute maximum of two pages.

Project Definition and Scoping

The contents of the PDF will form the core of the traditional Six Sigma project charter and include information such as the following:

- ✓ Problem statement*
- ✓ Project scope*
- ✓ Background information
- ✓ Key measures*
- ✓ Benefits*
- ✓ Effort*
- ✓ Assumptions*
- ✓ Risks/accelerators
- ✓ Resource requirements
- ✓ Project duration/timeline

(Items marked with an asterisk are considered essential to a complete and useful PDF, but each company is different.)

Project Definition and Scoping

The champions have been orchestrating the project identification and selection process up to this point. In many cases it will now be necessary to augment the resource pool with others who can help fill out the PDF, for the following reasons:

- ✓ To ensure that sufficient capacity exists to pursue the projects.
- ✓ To establish cycle time to completion, which will determine the number of projects in process.
- ✓ To tap into detailed process knowledge others may have that the champion lacks.
- ✓ To start gaining involvement and buy-in from the wider organization. Those tapped to assist with PDF creation will often become project sponsors or team members when the projects get launched.

Project Definition and Scoping

Refining the Financial Analysis

The most problematic aspect of the project definition process is typically the valuation of benefits. It is also the most crucial, as the majority of the selection criteria will focus on the net benefit to be realized from each project. Financial guidelines will vary from program to program, but they generally mirror the criteria the company uses in its budgeting or capital allocation request processes. Regardless of the criteria used, it is imperative that the calculation be made consistently and in compliance with the goals of the Lean Six Sigma initiative.

Project Definition and Scoping

The importance of establishing a consistent set of financial guidelines early in the life of a Lean Six Sigma initiative cannot be emphasized enough. Unfortunately, it is rarely done this way, primarily because it involves the resolution of many difficult issues. Good financial guidelines will address the following questions and many others:

- ✓ What types of cost reduction savings “count”?
- ✓ How are “soft” savings or benefits (cost avoidance, revenue increases, effective capacity increases, lead-time reductions, etc.) treated?
- ✓ How long are results to be tracked and credited? Who tracks and reports them?
- ✓ Will we use different criteria to select projects than to report savings?
- ✓ Will we “charge” projects for team members’ time?
- ✓ What level of detail is required to substantiate financial estimates?
- ✓ Who will approve them?

The purpose is to fashion a set of financial principles that capture the many aspects of value creation, so that you can make good project selection decisions and have a useful yardstick for measuring the success of the Lean Six Sigma initiative.

Project Definition and Scoping

Revisiting the Link to Corporate Goals

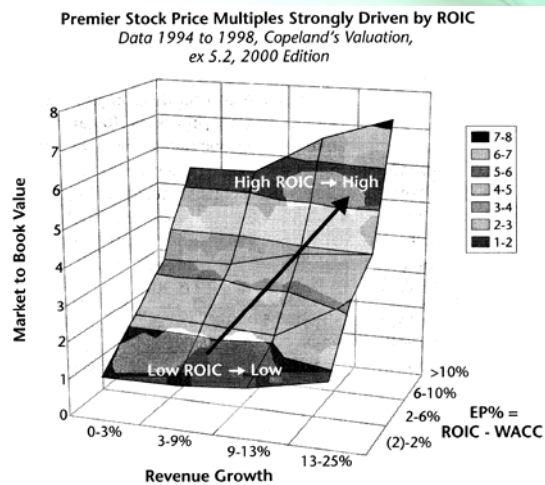


Figure 8-10. Value mountain chart

Project Definition and Scoping

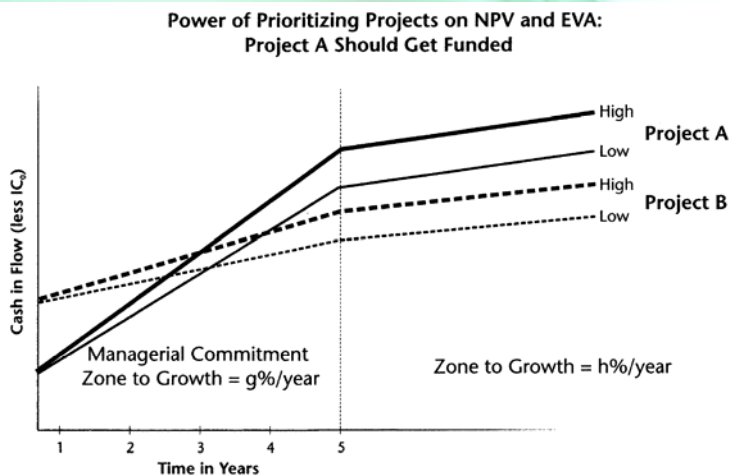


Figure 8-11. NPV chart with two projects

Final Project Selections

Before getting into final prioritization, here's a recap of the process that brings us to a sufficient level of detail to be able to proceed confident that the best projects will be selected:

- ✓ We identified high-potential-NPV value streams and generated project ideas that would close any performance gaps detected.
- ✓ We eliminated redundancies from our list of projects and did a cursory valuation of each idea by bucketing it into high/medium/low categories for benefit and for effort.
- ✓ Having selected several projects per black belt to investigate further, we completed a simple project definition form on each one, which included a more detailed appraisal of all costs and financial benefits associated with the project, as well as specifying known risks and all assumptions made.

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Final Project Selections

The entire process was facilitated by the Lean Six Sigma business unit champion with appropriate involvement of others as required.

The approach used for final prioritization is not substantially different than what was employed for the initial screening. You will still employ a comparison of benefit and effort to determine which projects will yield the greatest returns for a given unit of effort. However, there are some key differences from the screening exercise, on both the benefit and the effort sides.

All projects will be plotted on a common benefit-to-effort graph and their relative merits explored. Because these projects are plotted using a composite index for both benefit and effort, the display will only be directionally correct because it tries to display a multi-dimensional data set in only two dimensions. It should be noted that the project's position on the chart is not really a point but a "neighborhood" centered on the point represented by the coordinates.

Final Project Selections

Prioritization will actually occur in "flights" of projects, making the decisions less onerous and contentious. This is true because most organizations will have multiple black belts available to deploy to projects and the goal is to generate two or three projects per black belt per year.

The main concern is to ensure that the top five to seven projects are placed in the top 10 slots so that they are launched immediately by one of our black belts. The prioritization process will deliver to us a queue of Lean Six Sigma projects. However we will launch only those numbers of projects consistent with the cycle time to attain results. If you err, err on the side of too much resource applied to too few projects.

By ensuring an adequate inventory of projects in the hopper, whenever a black belt finishes one project he or she can immediately be given another project to launch. The projects thus launched will be selected easily, based on their relative priority from the ranking described above and the "fit" to the individual black belt who has become available.

Final Project Selections

Monitoring Implementation

Once the projects have been selected, the business unit champions can begin acting as portfolio managers, examining their basket of projects under way and in queue, to ensure diversification and optimization of the short- and long-term value of that portfolio. One way to do this is to prepare a Gantt chart of the projects in process (to help you manage your “work in process”!). This would be useful in forecasting benefits to the division and highlighting any capacity constraints that may arise due to resource scarcity. It is recommended that the champion and business unit manager adopt a formal project launch/review process.

Projects Suitable for Lean Six Sigma

As a final check in your project selection process, consider asking these simple questions:

- ✓ Does this project address customer critical-to-quality (CTQ) issues?
 - Yes → Lean Six Sigma project
 - No → not Lean Six Sigma strategically focused
- ✓ Does this project address revenue growth?
 - Yes → Lean Six Sigma project
 - No → not Lean Six Sigma strategically focused
- ✓ Does this project address cost reduction?
 - Yes → Lean Six Sigma project
 - No → not Six Sigma strategically focused
- ✓ Can it be completed within three to five months?
 - Yes → Lean Six Sigma project
 - No → stop or rescope
- ✓ Is there sufficient “value creation” at stake (\$150-\$250K annual operating profit)?
 - Yes → Lean Six Sigma project
 - No → stop or rescope

Projects Suitable for Lean Six Sigma

Besides closely observing whether your company leaders are living and breathing Lean Six Sigma, your employees are going to pay particular attention to the following two considerations:

- ✓ Whether it's the best people who are chosen as Lean Six Sigma resources.
- ✓ Whether the projects selected are important to the company.

In other words, do not rush these decisions. Pay careful attention to the criteria you use to select black belt and champion resources and take the time to work through the project selection procedures carefully. The implications are far broader than gaining employee support and commitment for your effort; they will determine your ability to deliver on the Lean Six Sigma value proposition of delivering bottom-line improvements in under a year!

References

1. Michael George, *Lean Six Sigma : Combining Six Sigma Quality with Lean Production Speed*, McGraw-Hill, first edition , 2002, ISBN-13: 978-0130176158.
2. Salman Taghizadegan, *Essentials of Lean Six Sigma*, Elsevier Inc., first edition, 2006, ISBN: 978-0-12-370502-0