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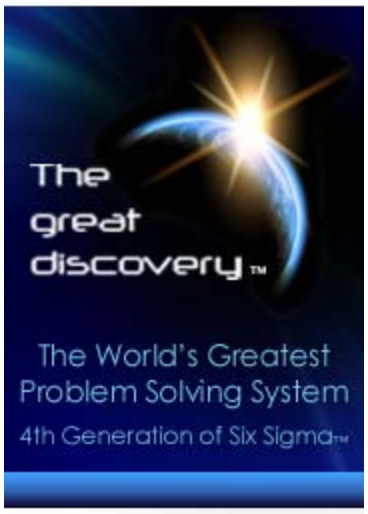


Selecting the Steps Needed for Change

Applying proven managerial techniques to your personal Life
Part IV
Alan M. Leduc
March 27, 2011

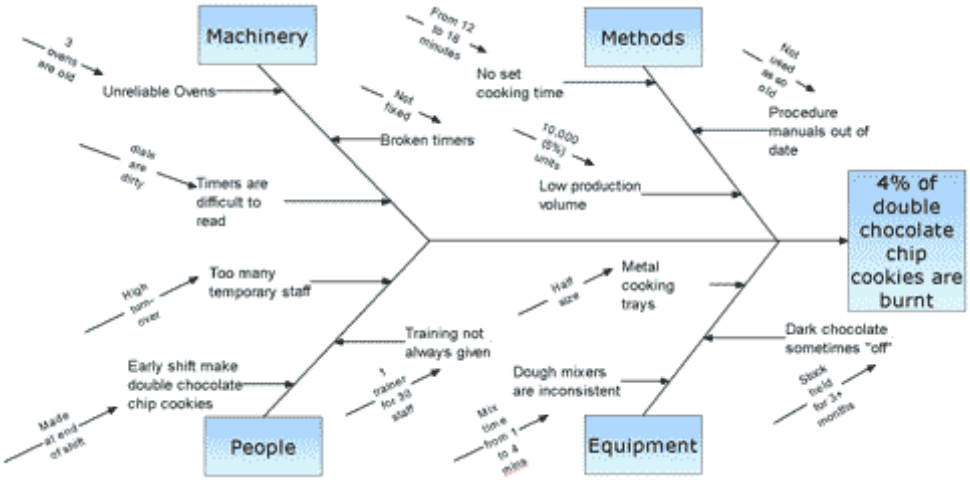
This is the fourth in a series of articles based upon *Managerial Breakthrough,* by Joseph M. Juran, 1964. The other three articles are:

- Personal Breakthrough, Part I
- Breakthrough vs. Control, Part II
- Attitudes Affect Our View of Change, Part III

Once you have decided that change is necessary and you are willing to commit to change, the rest is as simple as following a "proven path." The Great Discovery identifies and guides you along this path. A critical step along the proven path is determining the elements necessary to accomplish change; determining what will give you the most leverage toward accomplishing change; and determining the appropriate implementation method.

Two managerial tools will be used to determine the elements necessary to accomplish change:

- Ishikawa Diagram developed by Kaoru Ishikawa in 1943 (*"Guide to Quality Control,"* by Kaoru Ishikawa, Asian Productivity Organization, 1968 will be used as primary reference).
- The Pareto Principle as discussed in the fourth chapter of *Managerial Breakthrough.* The Pareto Principle is more widely known as the 80/20 Rule and is a filtering tool used to identify the causes which have the highest leverage on or pose the most challenge for accomplishing the desired effect (change).



Cause and Effect Diagram

The Ishikawa Diagram is also known as a Cause and Effect Diagram because it focuses on the causes that contribute to the effect instead of focusing on the effect. It is also known as a Fishbone Diagram based upon its appearance.

A cause is something that has an effect on something else. A cause happens before an effect. To determine the cause, ask the question "Why or What contributes to this effect?" The effect is what happens as a result of the causes. It is the desired change or the problem that needs solved. The effect can be thought of as the symptom to the problem and the causes as the real issues. In Six Sigma talk, the term Y = f(X) is used to represent this concept. Don't get scared! This is not algebra, but just a short cut to saying Y is a function of X or the symptom is not the real issue. Salve might be rubbed on a rash to make it feel better; but, to prevent future rashes it is necessary to find the X's that caused the rash in the first place. The example in the Cause and Effect Diagram above was taken from Management for the Rest of Us.[i] Everybody understands food and nobody wants burnt double chocolate chip cookies. The effect (problem or change that is needed) is that 4% of the cookies are burnt. The Cause and Effect Diagram is used to develop a list of potential causes leading to burnt cookies.

Interestingly as I was preparing to write this article, I was doing a Google search on "Cause and Effect" and discovered that this is a skill that appears to be taught in elementary school. I contacted my sister, Cindy, who is an elementary school teacher, and ask if she knew at what level this skill was taught. She responded"

> Indiana has it listed in an academic standard at first grade: 1.2.6. The 1.2.6 stands for 1st grade standard 2 and substandard 6. Obviously, once it is introduced as a standard you are going to see it more advanced each year after. It is an English/Language Arts skill and most likely taught within the reading component.

Standard 1.2.6 begins, "Draw conclusions or confirm predictions about what will happen next…" This is exactly the objective of the Cause and Effect Diagram. It starts with the desired effect and provides a method for drawing conclusions or potential causes (predictions) of what happens next (the effect). So why if a first grader can get it, is it so difficult for us to get it in our business and personal lives? We tend to spend all of our time thinking and talking about the "symptom" instead of focusing on what might be done to alleviate the causes. The fact that Ishikawa developed a tool to deal with this issue and Six Sigma uses Y = f (X) as a core philosophy, tells us how we tend to ignore the importance of this principle in our daily business and personal lives. Failing to understand this principle is one of the most significant reasons for failing to achieve change.

As you look at the Cause and Effect Diagram you will notice that it is really nothing more than an indented outline of the causes that contribute to the effect. We all know that our English teacher encouraged us to make an outline before writing a theme. But how many of us did it? Ishikawa found a way to get people to develop an indented outline without telling them that they were developing an outline. Very creative huh? Like most Japanese tools the Cause and Effect Diagram provides a visual image of the problem.

Look at the Cause and Effect Diagram above. The effect that we wish to resolve is shown in a box at the right side: "4% of double chocolate chip cookies are burnt." The other four boxes are the major "causes" that might contribute to the effect. Classically, the 6 M's were used in the initial diagram template to get a discussion started about the effect:

- Machines
- Methods
- Materials`
- Measurements
- Mother Nature
- Manpower

These six causes were chosen because they are the most common major elements in manufacturing where the Cause and Effect Diagram was developed. Now that this tool is being used in service organizations and our personal lives, these six categories might not be the most appropriate. The idea is to simply select the big causes and put them in boxes on the outside. Then on branches along the “big bone” identify sub-causes. Affinity Diagrams are also used for this purpose. If you want more information on this style of thinking you can do some research on your own. However, I will exclude discussing Affinity Diagrams in this article.

The Cause and Effect Diagram is a divergent thinking tool and is commonly combined with brainstorming. For individuals or when calling a meeting to do brainstorming is not appropriate, you should focus your discussions, with those that have an interest in helping you solve or improve the effect, on the causes instead of on the effect itself. Instead of making the statement “My life sucks!; “You would say, what are the contributing factors that are making me feel bad about where I am in life?” Or in a business situation, instead of saying over and over in staff meetings, we need to increase sales; inquire as to the things that are preventing us from increasing sales. As a parent instead of constantly complaining about an outcome; you might have a conversation with your child to determine the causes of the outcome and work on improving the causes individually.

In business we like to have all parties who might be interested in the effect as team participants. This provides divergent perspective and allows us to look at the issue from all angles. Psychologists, consultants, and others are often hired to bring divergent thinking or objective evaluation to an issue. We need to do the same in our personal lives. Find someone you trust. If they really care about you, they will want to share in your desire for change and will be willing to give you honest input. The goal is to get as many ideas as possible regardless of whether they seem reasonable or not. In brainstorming there is a rule that bans comment until there are no more ideas. You are encouraged to take the same attitude as you develop a list of causes to the change you are seeking in your personal life. Resist the temptation to comment and focus on developing a list of causes.

When you are trying to develop a pathway leading to a problem, you first focus on the big steps to resolving the problem; then the causes that effect the problem, and finally the forces contributing to the causes. Each of these levels has a $Y = f(X)$ relationship.

While manufacturing uses the 6 M’s, Dr. Mikel Harry in The Great Discovery Novel suggests that in one’s personal life the following categories might be more relevant. However, don’t feel restricted by either of the two category lists. The idea is to identify the big things that will give you a starting point.

- Physical
- Emotional
- Spiritual
- Societal
- Behavioral
- Psychological

To get to the root cause of a problem or to better understand what is required to obtain change, Six Sigma uses a technique called the 5 Whys. Anybody that is a parent will understand that there is no magic to the 5 Why’s, as children are very good at this concept. However, this is a terrific tool for increasing divergent

thinking and digging through surface responses. When something is determined to be a cause, asking "Why" leads to sub-causes, asking "Why" about the sub-cause leads to things that contribute to the sub-causes. It is not essential to ask exactly 5 Whys. It may be that 3 are sufficient or it may be that 7 are necessary. Understanding the need to apply this simple tool generously is what is important. You need to be that child that is a pain in the parent's side.

Let's summarize what you want to accomplish as you use the Cause and Effect Diagram:

- Succinctly identify the desired effect that you hope to achieve.
- Use divergent thinking to identify as many possible contributing causes as you can.
- Consider adding team members or seeking advice from those who can provide a different perspective.
- Use the major causes and branches to categorize the causes.
- Use the 5 Whys to develop the branches (sub-causes) after brainstorming as diminished generating ideas.
- Consider grafting relative bare branches onto others and consider splitting up overcrowded branches. The idea is to get a balanced diagram.

You don't have to use an actual diagram. If you are more comfortable, make an outline or an indented list, then do so. However, you do need to give serious thought to this step if you expect to be successful in accomplishing change. Ishikawa states, "The Cause and Effect Diagram is a guide to concrete action; the more use that is made of it, the more effective it becomes."

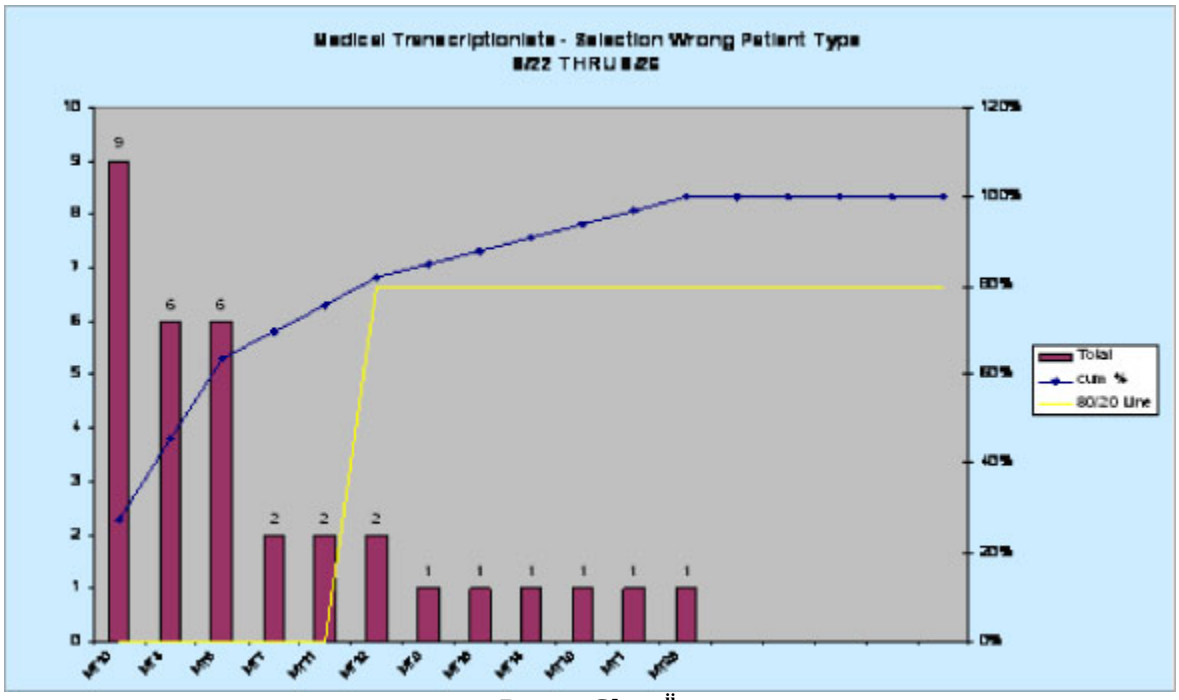
You are now on your way to creating change. You have overcome the "attitude" that inhibited you from thinking about change; you have a comprehensive list of possible causes; and now it is time determine which of those causes has the most leverage. You will use The Pareto Principle or the 80/20 rule for this purpose and will need to shift from divergent thinking to convergent thinking.

If you did a good job on developing your list of potential causes, you are likely feeling a bit overwhelmed. There are likely so many items on your list you feel that you can't get your arms around the thought of accomplishing any such change.

The Pareto Principle is not some new fancy technique. It is a concept refined by Juran in an Article titled Universals in Management, Planning, and Controlling, *The Management Review*, November 1954. Vilfredo Pareto was a nineteenth century economist whose studies included the distribution of wealth and income. He observed most of the wealth was in a few hands while the great majority was in poverty. Juran recognized that this concept was universal and developed what is most frequently called the 80/20 principle. 20% of the possible causes on your list are going to have 80% of the contribution to accomplishing the desired effect. Likewise it will only take 20% of your time to accomplish the problems which contribute 80% of the effect and will require an additional 80% of your time to accomplish those that contribute only 20% of the effect. Juran calls the 20% that have the most effect, "The Vital Few" and the 80% that has the least effect, "The Trivial Many."

Juran notes, "The vital few are everywhere, but masquerading under a variety of aliases. In their more benevolent forms they are known as such names as key accounts or star salesmen. In their weak moments they are known as the bottlenecks, chronic drinkers, or Most Wanted Criminals.

The Pareto Principle has broad ranging impact on change. First and foremost it provides a mechanism for segregating the causes that will have the most impact from all of the other possible causes. Secondly, identifying and working on causes that have significant impact in the early stages of a solution provides motivation to all involved. Thirdly, recognizing that 80% of the causes are going to have minimal impact and staying away from those causes, keeps those involved from becoming frustrated and discouraged. As you work on the things that have the most leverage, you will not only be motivated by your accomplishments, but will learn a lot about the issue you are trying to solve. Solving the high leverage causes might simply eliminate some of the smaller causes and you won't need to even deal with them. Since business and life is dynamic – things change, sometimes rapidly – I encourage clients to simply work toward 80% satisfaction and then let the dust settle. If 80% provides sufficient satisfaction, it might not be worth the effort to try for perfection. In fact there may be some other issue that is more important than the 20% left to resolve on this issue. If more satisfaction is needed, then focus on the 20% of the remaining issues that will give 80% improvement in what is left. This approach can be repeated as necessary. However, take a deep breath between each cycle to let things stabilize.



Pareto Chart[ii]

The above chart is a typical Pareto Chart. It is essentially a bar chart reordered in magnitude from the most important cause to the least important cause using the scale on the left side. The blue line represents the cumulative contribution based upon the percent scale on the right side. The yellow line running horizontally from 80% and then down, identifies the 20% of the items with 80% of the impact. In this example the first 5 causes have been selected as being the "Vital Few". I would likely focus on just the first 3 causes, as there is a significant jump between the third and fourth bar. Like the 5 Whys, it is not important that you select exactly 80/20, just focus on the natural breaks.

While each of the vital few problems is likely a unique problem, Juran felt that each tends to exhibit some common characteristics:

1. **Most vital few problems in business are interdepartmental in character**. This means that within a department things run pretty good; but, it is common to have breakdowns, redundancy,

or imposed mandates from other departments. In one's personal life, this means that we often have outside influences that we must consider when looking for solutions to our problems.

2. **Each of the vital few problems requires in-depth study to resolve.** This means that intuition, common sense, and executive decision are not likely to work on these problems. They require digging into the details. In one's personal life this means that we have to learn a new way to think about these problems. General knowledge is good enough to identify the vital few; but, is not good enough to solve the vital few. You are going to have to do some digging if you expect to get results.

Business problems often have things to count in order to develop the Pareto Chart. However, this is not true for all business problems and is only true for very few life problems. Therefore, we must create a means for quantifying these potential causes so we can utilize the Pareto Chart for analysis. One way to do this is to weight each of the possible causes. If there is a team, each team member could rank order the list of causes and then the rankings could be totaled to get an overall ranking. If you are working on a problem individually, you could simply put the problems in rank order and work with that list.

Once you have a rank order of the possible causes, you divide the list into three groups. The "Vital Few" are the ones that you or a broad consensus of your team agrees are most important. The "Trivial Many" are the ones that you or a broad consensus of your team agrees are least important. The third group is the group that you as an individual are not sure about or where you cannot get consensus from your team. You should dig a little deeper into this third group and force these causes to one of the other two groups. Don't throw away the list of possible causes you consider trivial. If you decide to come back and work on this issue some more after you have resolved the vital few, you will have this work to jump start the process.

Having identified the vital few possible causes, you will set out to resolve each of them. As described above, Juran believed that a common characteristic of all vital few problems is that they all will require significant digging to resolve them. Dr. Mikel Harry would disagree. While each of the vital few problems identified have a high impact on the desired effect, this does not mean they all will require a special way of thinking to accomplish. Some may be "Just Do It's" – problems that can be resolved with your current skill set or the skill set of your team. They may not be easy and may take a significant amount of work; however, there isn't any reason you can't start doing them right now.

Let's review the Pareto Process.

- We started out with the list of all possible causes we could think of by using the Cause and Effect Diagram. We had so many causes we felt overwhelmed.
- We put the causes in rank order allowing us to broadly identify the order of importance.
- We sorted the causes into three groups "Vital Few," "Not Sure," and "Trivial Many."
- We dug a little bit deeper into the "Not Sure" group and forced them to one of the other two groups.
- We set the "Trivial Many" causes aside for later consideration.
- We divided the "Vital Few" into two groups. Those we can "Just Do It" – they might not be easy; but, we have nothing from preventing us from starting – and those that are going to require a different way of thinking.

You should now understand the most problems or dreams start out being so big that we believe finding a way to resolving or accomplishing them is unachievable. It is this barrier to our thinking that holds us back as managers and as individuals and makes us resistant to change. If we learn to identify the causes

that have the most leverage and then determine which we can “Just Do It” and which requires a special way of thinking we will be much more comfortable with embracing change.

The Great Discovery uses The Six Sigma Way of Thinking to resolve the causes which give us the most leverage and are beyond our basic skill set.

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[i] http://www.mftrou.com/image-files/fishbone2.gif
[ii] http://www.shawresources.com/images/ChristianHospFig9.jpg