Quality Improvement Is Not Just For Problems: Success and Effect Diagram

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Introduction

Quality Improvement (QI) tools and techniques have been used extensively for solving problems in organizations; however, these same methods can be used to analyze *successful* processes. Understanding successful processes can give a management team insight on how to improve other processes and constantly improve the organization's efficiency and effectiveness.

Too often we ignore the successful things that operate in our organizations while we focus on the problems needing immediate attention. By understanding our successful processes we can uncover what is working well and transfer that knowledge to other processes to make them more efficient and effective.

Attributes of a Successful Process

Over the years we have come across many successful processes and have asked those in charge of them what made them successful. The following is a list of the attributes of successful processes we have collected from a number of management teams. This is not an all-inclusive list but a start to analyze a successful process.

- Efficiency - the process produces the required output at minimum resource cost. Doing the right things right
- Effectiveness - doing the right things and producing outputs that conform to stated requirements
- Cost control - all costs are monitored and managed
- Predictable - produces a consistent output all the time
- Employee attitudes - customer and quality oriented
- Employee skills - meet the requirements of the process and are upgraded when the process is improved
- Timelines - the process produces its output correctly and on time
- Visible metrics - the process is measured at many points, plotted, and results made visible to those doing the process to see how it is operating in real time
- Lean - the process has applied the lean principles and all process steps are value added
- All variables optimized - all variables have been studied and statistically optimized
- Continuous - process is always undergoing improvement
- Culture of innovation - organization empowers its employees to continuously improve

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- Ownership - employees feel a sense of ownership of their work
- Use 5S's technique[2] - there is evidence that the 5S's had been applied to the organization and its processes
- High quality output - what the process produces meet or exceeds customer expectations
- Additional successful process attributes - the list is not all inclusive - add yours.

How to Analyze a Successful Process

One QI tool that can be used to analyze a successful process is a hybrid of the Cause and Effect Diagram. The Cause and Effect Diagram can be turned into a Success and Effect Diagram to analyze successful processes. The Success and Effect Diagram is developed in a similar way to the Cause and Effect Diagram. Instead of using the "5 Why's" we use the "5 What's" as our analysis tool.

Construction Steps of a Success and Effect Diagram

1. As shown in Figure 1, write the success as a symptom statement on the right hand side of the page and draw a box around it with an arrow running to it. This success is now the effect to analyze.
2. Generate ideas about the main successes of the effect. The attribute list of a successful process detailed above can be used as a starting point. Label these as the main branch headers of the Success and Effect Diagram.
3. For each main success category, brainstorm ideas about the related sub-successes that might affect the issue statement. Use the 5 What's technique when a success is identified - "What" caused this success? Keep repeating the question until no other success can be identified. List the sub-successes using arrows.

[2] To learn more about the 5S's technique, visit PHF at http://www.phf.org/resourcestools/Pages/A_Lean_Day_in_the_Tulsa_Health_Department_White_Paper.aspx

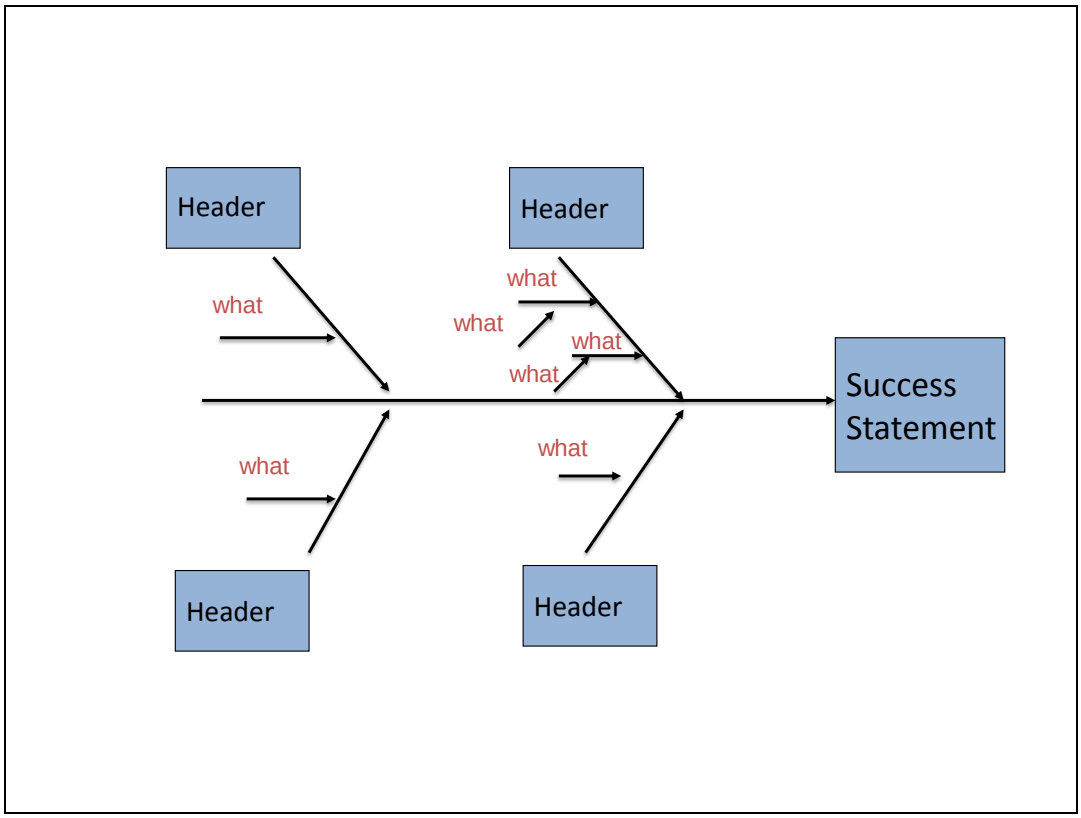

Figure 1: Success and Effect Diagram Template

Figure 2 is an example Success and Effect Diagram created to analyze a successful top level organization correspondence process. The team identified headers specific to the successful process they were analyzing. They labeled the four major headers frequently used with Cause and Effect Diagrams (People, Method, Material, and Machine) to illustrate the parallel associations of the Success and Effect Diagram discovery process. Under the four major headers they asked "What" made this successful. The "What" question can be used on the sub headers to drill down into the details of the success.

When the Success and Effect Diagram is finished, the next step is to decide what few "What's" to focus on that may cause the success being analyzed. Some are obvious – low hanging fruit. Some require more research using other QI tools such as:

- Pareto Diagrams
- Run Charts
- Surveys
- Histograms
- Etc.

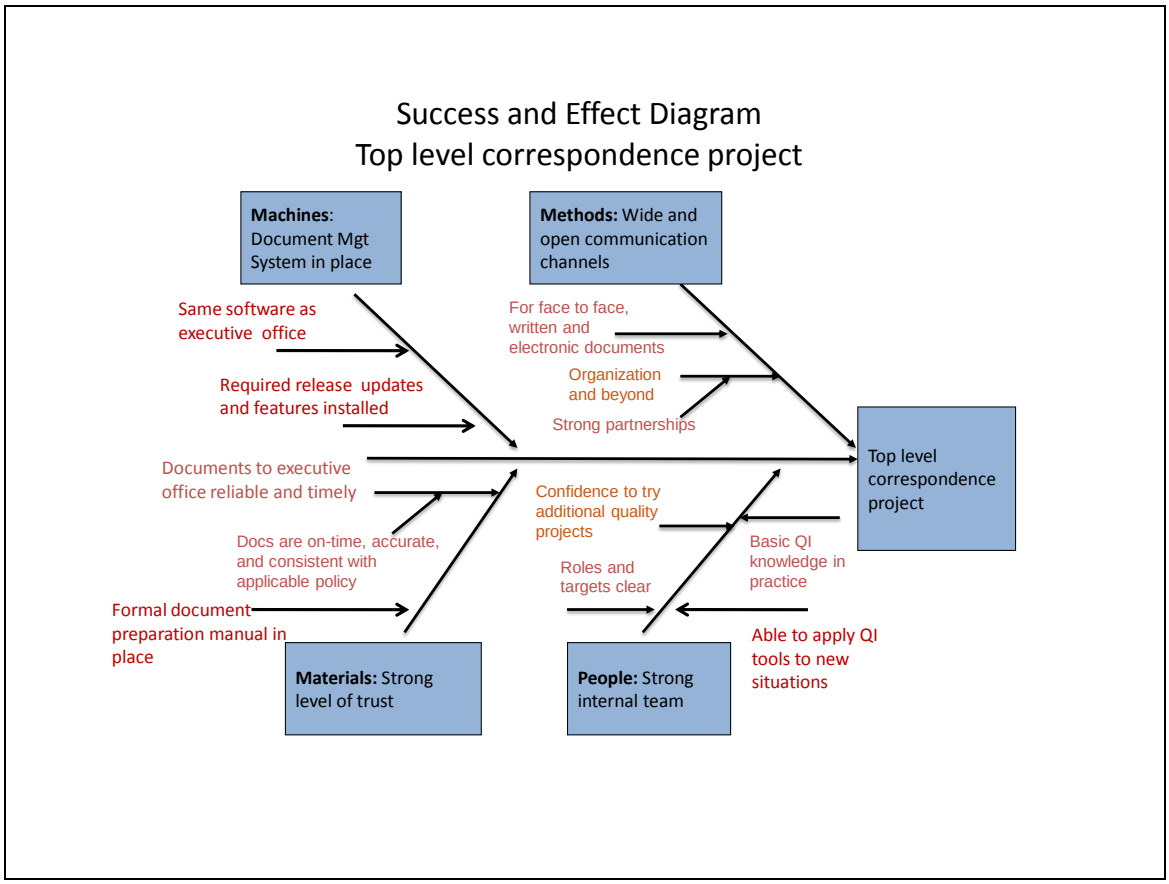

Figure 2: Success and Effect Diagram: Top level correspondence project

The 5 What's technique helps teams zero in on potential root success as shown in Figure 3. Asking "What made this process a success?" helps teams study a successful process to stay focused on the analysis until they identify the root success or successes.

To illustrate how the process of finding the root success worked, the example team decided to analyze the main header of materials and the first "What" to start with "Documents are on time, accurate, and consistent with applicable policy." This is the observed success. Now the team repeats the "What" question to drill down into root success.

- Observed Success - documents are on time, accurate, and consistent with applicable policy
- Visible Success - meets the customer's requirements
- First Level Success - people who are processing documents are trained appropriately
- Higher Level Success - customer needs are understood and service level targets are set and monitored
- Higher Level Success - customer needs are collected regularly and reported to those doing the process

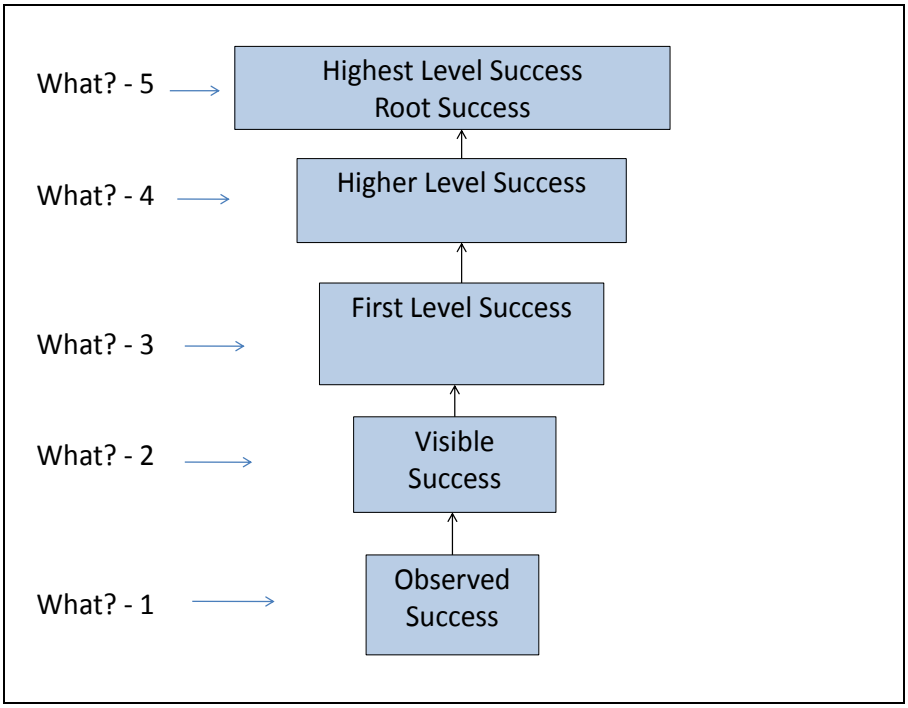

Figure 3: Finding Root Success: The 5 What's

There may be more than one root success that makes a process perform at an optimal level. Each main header needs to be analyzed to determine what made it successful. Many successful processes have compound successes, where different factors combine to make the process a success. It is rare that a successful process has a single root success. One check that a team can make after they have determined the top few root successes is to determine how the successful attributes relate to each other. The team can use an Interrelationship Diagraph[3] to determine if there are interconnections between the potential root successes. Determining these interconnections may show patterns that change the team's decision on which root success(es) make the process effective.

Another approach is to use the Root Success Analysis Rating Form shown in Figure 4. This matrix is a way to prioritize the root success(es) uncovered using the Success and Effect Diagram. This matrix allows the team to assess each potential root cause over a number of potential impact dimensions and develop a score. The score can help rank the potential root successes. The attribute having the most impact on process success is ranked number one.

[3] R. Bialek, G. Duffy, and J. Moran, editors, *The Public Health Quality Improvement Handbook*, ASQ Quality Press, ©2009

Root Success Analysis Rating Form

	Impact on the Success					
Potential Root Success	Improved Quality	Reduced Costs	Improved Customer Satisfaction	Others	Total Score	Ranking

Impact Scoring Scale: Low = 1, Medium = 3, High = 5

Figure 4: Root Success Analysis Rating Form

Summary

Using QI techniques and tools to analyze success gives a new dimension to continuous improvement process and shines a light on the good things and organization does, not just the bad things. Too often we get so focused on problems that we ignore the successful process that we perform in our organization. By understanding successful processes we uncover what is working well and transfer that knowledge to other processes to make them more efficient and effective.