

Corporate Strength Six Sigma

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The purpose of this article series is to get you to think “outside the box” (man I hate that saying) and hopefully give you some organizational tools that you can use to systematically structure and identify key components in your strength programs that are doing well or not doing so well.

Now stay with me – this first part is pretty tedious.

In the first installment of this article series, *Corporate Strength – Gartner*, we defined and created the **Strength Quadrant** (derived from Gartner’s Magic Quadrant). The **Strength Quadrant** will be used to define and analyze how “functional” specific exercises are for each individual athlete’s strength program.

It progresses an exercise accordingly; Target Musculature =>Effort=>Strength Development Goal=>Functional Movement Pattern=>**SPORT SPECIFIC**.

What potential adaptation are we trying to achieve by incorporating a specific exercise into a routine? If it doesn't fit, why do it?

Now we are going to look at another tool that manufacturing institutions (and more recently corporations – have utilized the same methodologies for their project work) have been using for many years to drive the instances of “defects” down in their products and processes, thereby; increasing customer satisfaction, identifying cost reductions strategies, setting upper and lower control specification limits, centralizing their knowledge repository's (eliminating silo'd information) and improving their profitability.

Six Sigma



Six Sigma is said to have been created by Bill Smith, a guy who worked for Motorola in 1986. It is still under debate as to whether he “invented” it, but he was definitely the one who pulled all of the processes together and implemented them successfully for manufacturing process improvements - at a large corporation.. The goal was to continuously drive toward improvement of the business by improving product quality.

“Six Sigma at many organizations simply means a measure of quality that strives for near perfection. Six Sigma is a disciplined, data-driven approach and methodology for eliminating defects (driving towards six standard deviations

between the mean and the nearest specification limit) in any process -- from manufacturing to transactional and from product to service.

*The statistical representation of Six Sigma describes quantitatively how a process is performing. To achieve Six Sigma, a process must not produce more than **3.4 defects per million opportunities**. A Six Sigma defect is defined as anything outside of customer specifications. A Six Sigma opportunity is then the total quantity of chances for a defect.*

*The fundamental objective of the Six Sigma methodology is the implementation of a measurement-based strategy that focuses on process improvement and variation reduction through the application of Six Sigma improvement projects. This is accomplished through the use of two Six Sigma sub-methodologies: **DMAIC**”(1)*

So, if we eliminate process defects (or get to as close to zero as possible) – the business prospers. Similarly, if we “eliminate” our athlete’s “defects” – they excel.

Six Sigma utilizes a methodical, systematic process to structure how they approach each task or project. This process is summarized by the acronym **DMAIC**.

DMAIC

DMAIC is simply defined (for our discussion) by the following steps:

Define

What problem needs to be solved?

Measure

What is the capability of the process?

Analyze

When and where do defects occur?

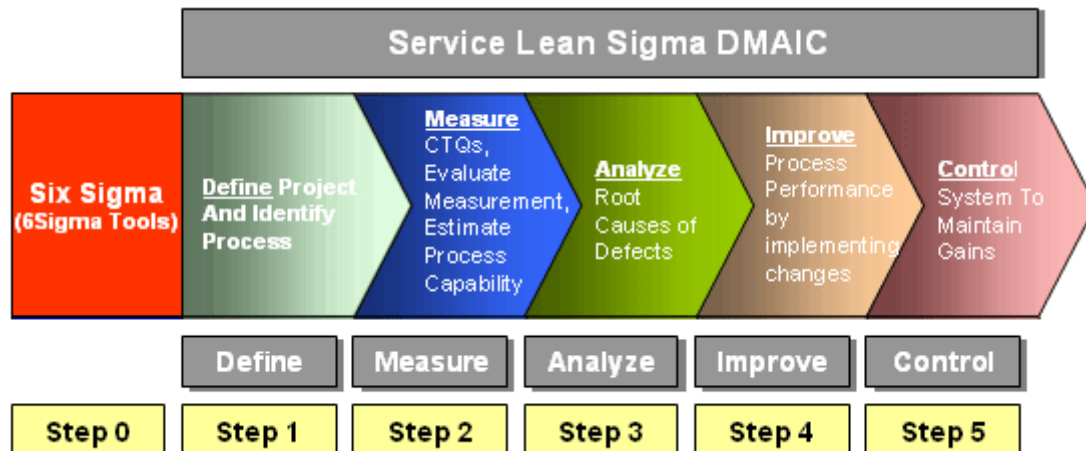
Improve

What are the vital factors?

Control

What control can be put in place to sustain the gain?

Or visually by this flow diagram.

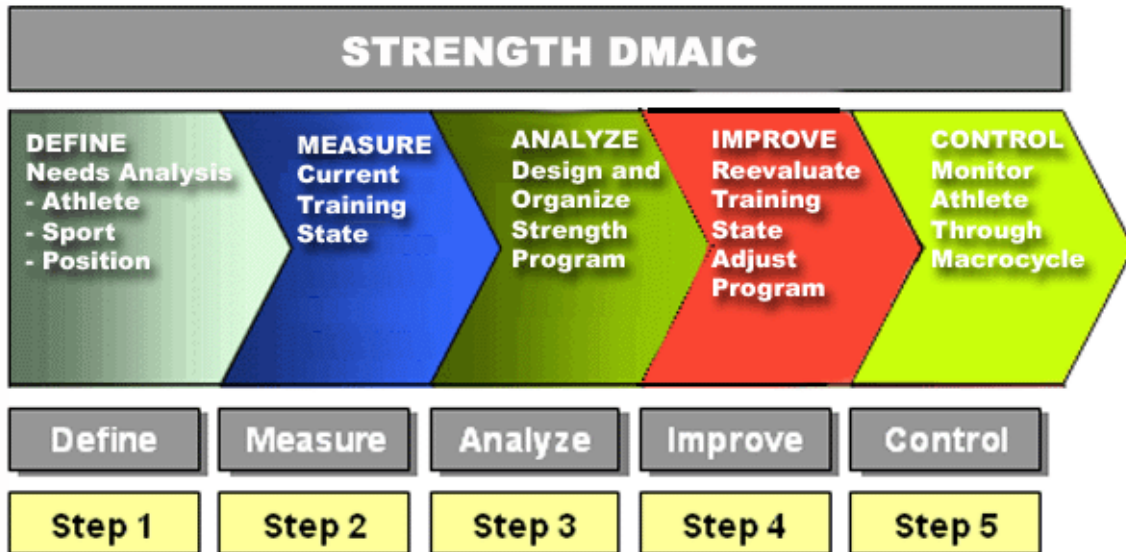


Now, what does any of this have to do with strength and its development for athletes? Maybe nothing, maybe everything! It is not the connection to manufacturing that is important - it is the process! We can derive huge benefits from this process if recognize the importance of structure, repeatability and control. Like Six Sigma we must also be diligent and methodical when preparing our athletes for sport.

Key Note: Different people view, understand (absorb) and apply knowledge in their own way. Some people can understand rows and columns of data (nerds) and other people are more visual. They watch other people do something and they can repeat it. Or they assimilate data through the use of charts, graphs or visual aids easier. The purpose of

this article series is to take a complex concept – like preparation of athletes - and express it visually to make it easier to understand.

So let's look at our application.



DEFINE

- Needs Analysis of the Athlete
- Needs Analysis of the Sport
- Short Term / Long Term / Competitive Goals of the Athlete

Note: More on the **DEFINE** step in the next article *Corporate Strength - Projects*

MEASURE

- Current Training State
 - o Current 1 Rep Max (3RM,5RM)
 - Where do they fall on the Force Velocity curve?
 - o Current Aerobic Capacity (VO2 max)
 - o Current Anaerobic Capacity

- Current Flexibility State
- Current Mobility State
- Current Agility State
- FMS™
- Body Composition

ANALYZE

- Analyze Data from Define and Measure Steps
- Create Periodized Comprehensive Training Protocol for Athlete addressing and developing (eliminating) weaknesses, while preparing for the demands of their sport.

IMPROVE

- Analyze, Reevaluate and Improve Data from;
 - o Strength Program to adjust for New Percentages and to,
 - o Set New Goals for Athlete (goals will change as weaknesses are developed and new goals (and process improvements) must be defined!)
- Read and watch everything! Books, Manuals, DVD's, transcripts, articles, the leaders in the industry – anything you can get your hands on. Never rest. Like Alwyn Cosgrove says, “When you think you know everything, that is when you know the least!” You owe it to your athletes to continue to learn all things current and all things old and then innovate. Be the Benchmark!

CONTROL

- Closely monitor development of athlete
- Maintain strength developed in each phase, training block, microcycle and macrocycle
- Test, Audit and Update any (and all) aspects of the program periodically to ensure validity.
- Demand accountability by assigning key tasks to the coach (yourself or your coaching staff) and the athlete.

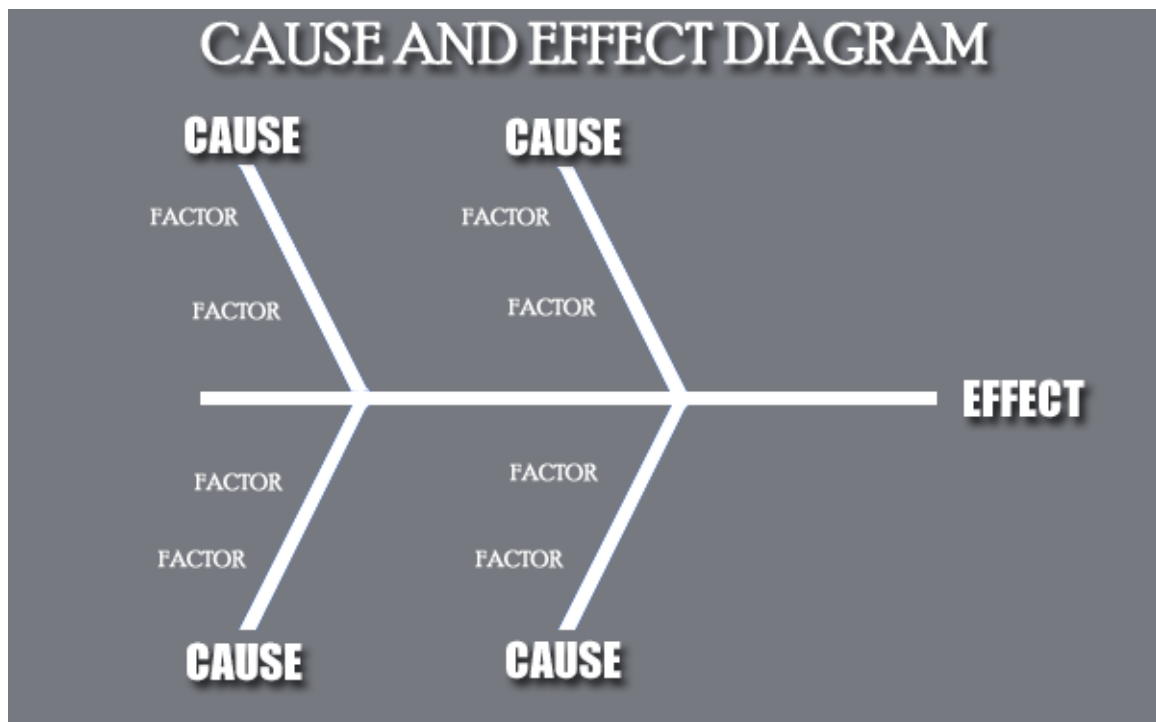
Now, for the good stuff. **DMAIC** utilizes many, many different charts and graphs to express the compiled data that they have gathered from their (manufacturing) processes.

One of the best diagrams for isolating an issue in **DMAIC** is the *Cause and Effect* diagram.

CAUSE AND EFFECT (FISHBONE)

When investigating root cause analysis of a “defect” in a process or product a *Cause and Effect* (fishbone) diagram is used.

The fishbone will help to visually display the many potential causes for a specific problem or effect. It is particularly useful in a group setting and for situations in which little quantitative data is available for analysis.(1)



Now let's look at our application.

What are Causes? = Main Categories

Example: Athlete's Strength

What are Factors? = The key components that make up the Causes. Ask yourself *What? Where? When? How? Why?* If your gathered group of experts (skill / strength coaches) are having trouble starting – ask them *"Why does this [Cause] happen?"* or *"What in [Cause] is making this happen...?"*

Example: Athlete is strong, but cannot express speed.

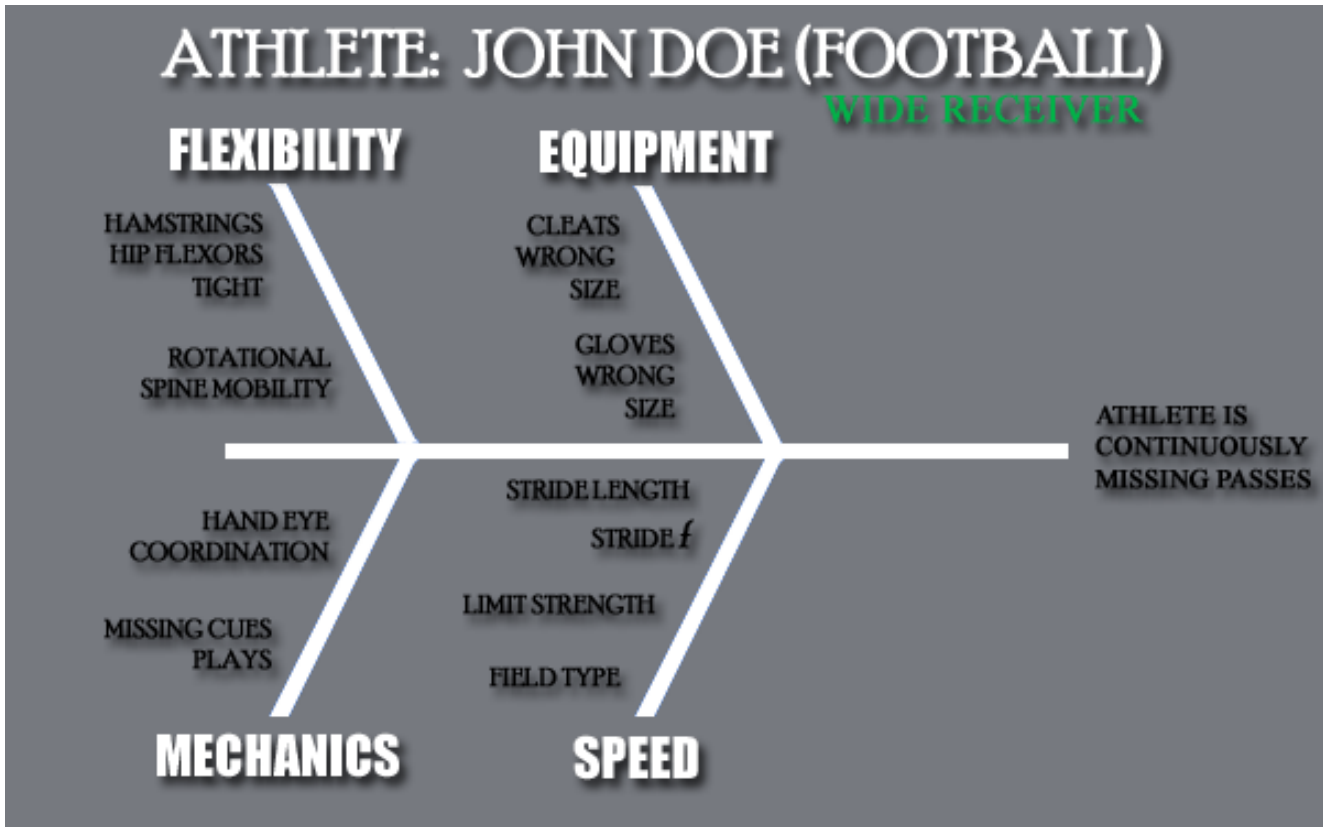
What is the Effect? = The problem statement you are trying to analyze.

Example: John Doe strikes out a lot

Sit down with the skills coach(s) and your team and put together a ***Cause and Effect*** diagram up for each of your athletes.

Steps:

1. State the **Effect** or "problem" you want to address for the athlete
2. Create the **Causes** (Main Categories) across the frame of the diagram
3. Start asking questions to determine the **Factors** under each **Cause**.
4. The diagram will start to fill in. Nice!



You can now see the benefits of laying out your strategies (visually) to address the needs of your athletes as they pertain to their respective sports. The Six Sigma approach is logical and systematic – and we can pull tools from this process and adjust them for our purposes.

In the next and final installment, we will discuss the complex world of corporate projects, their structure and our adaptation. Thanks for reading this article series and thank you to Elite FTS.

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