

Possible Six Sigma Approach in Cricket

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Advent of Six Sigma has been a revelation in our business. It has changed the way we have been doing things. It has been implemented in various sectors and industries. Since I come from a cricket crazy nation and being a cricket fan, it always prompted me to ask myself whether we can apply six sigma for our cricket team so as to enable them to win more matches and finally, instates them as a number team in the world. So lets see what we can suggest our team to do i.e. by going six sigma way.

Six Sigma is a management strategy which aims at improving the processes by identifying the wastes and warding off those wastes and the variability.

Usually, we follow two project methodologies en route to six sigma. Both these methodologies comprise five phases:

1. DMAIC is intended for the projects aimed at improving an existing process

When it comes to cricket, this methodologies can be used at fine-tuning the batting, bowling and fielding techniques

2. DMADV is intended for the projects aimed at creating new product or process

In cricket, when a batsman develops a new kind of shot , for example Switch- Hit discovered by Kevin Pieterston, Scoop Shot by T. Dilshan or upper-cut by Tendulkar etc. and when a bowler manifest a new delivery like Doosra by Saqlain Mushtaq, we can go for finding out the effectiveness of all that.

Assuming the key problem area is an existing process, we will adhere to DMAIC methodologies

Define

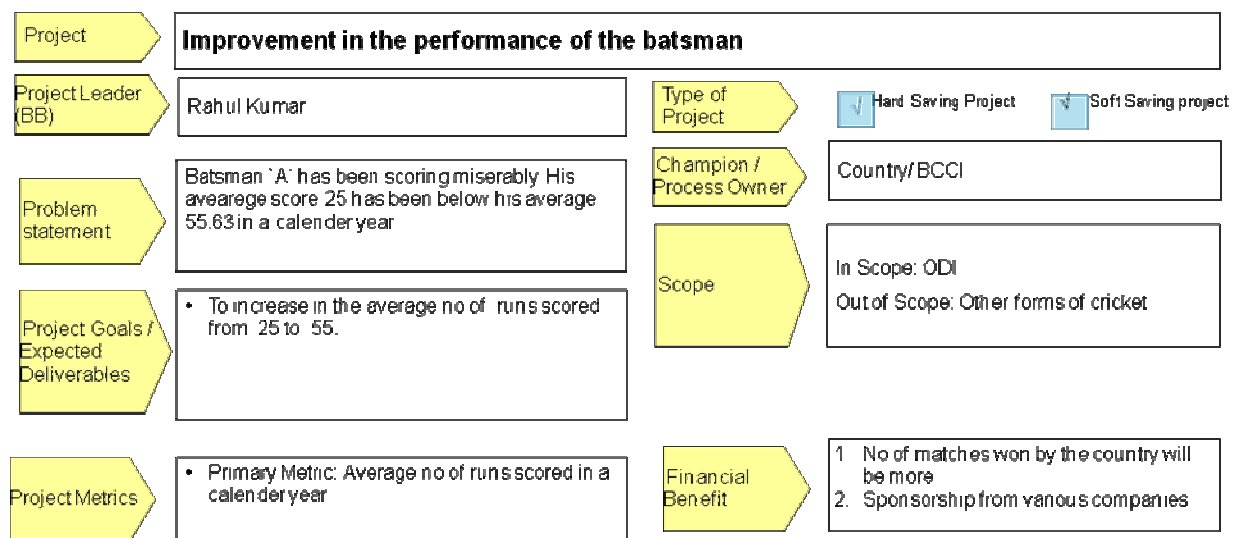
In define phase, the project leaders are responsible for clarifying the purpose of the project. They need to identify the key problem area i.e. CTQ which is causing the trouble. The project goal should be pretty lucid in order to avoid any conflicts with the champion. The project leader should see if the goal is realistic and if he/she has understood the process champion's expectations and requirements properly.

Business Case- Batsman “A” falters miserably in a calendar year. That batsman was supposed to be the mainstay of the team. So, the coach analyzes what went wrong with that batsman. He has to bring in improvement of the performance of the batsman.

CTQ for the team/Country/BCCI – The performance of “A” on the tour has been below average.

If we wish to prepare a project charter for this, it would appear like following-

Project Charter



Measure

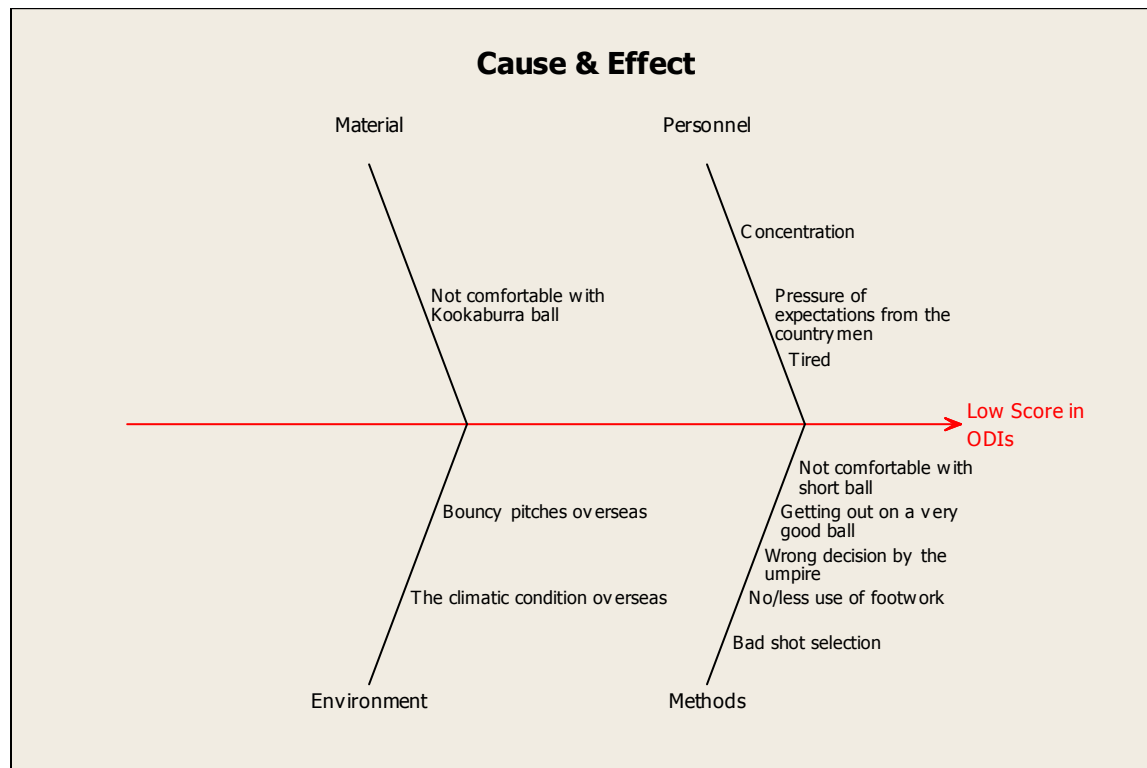
The objective of the measure phase is to get as much information as possible about the process in order to understand it properly. If baseline data is available for the process, then collect it. Otherwise, we need to baseline the process. We got to develop a process map with the help of team. Information gleaned out of it could be of great help.

In cricket, batting process map would contain how to bat ideally for different kind of deliveries. For example, when to go for defensive shots and when you can play hook shot etc. This is just like a business process. Let's say, in finance & accounting process, a processor gets so many requests, the processing of those requests could be different and he/she does it accordingly.

As we already know the career average of that batsman "A" has been 55.63. So, baseline data is available to us.

Now we need to have a cause & effect diagram for the batsman's failure so that we will have causes which are affecting his batting adversely.

Cause & Effect Diagram for the batsman



Cause & Effect diagram depicts so many causes. We need to filter off all the causes into controllable & uncontrollable variable.

Controllable – No/less use of footwork, Bad shot selection, Concentration, not comfortable with short ball

Uncontrollable – Getting out on a very good ball, wrong decision by the umpire, Pressure of expectations from the countrymen, bouncy pitches, climatic condition, not comfortable with Kookaburra ball

Now we need to work on controllable variables.

Data collection Plan

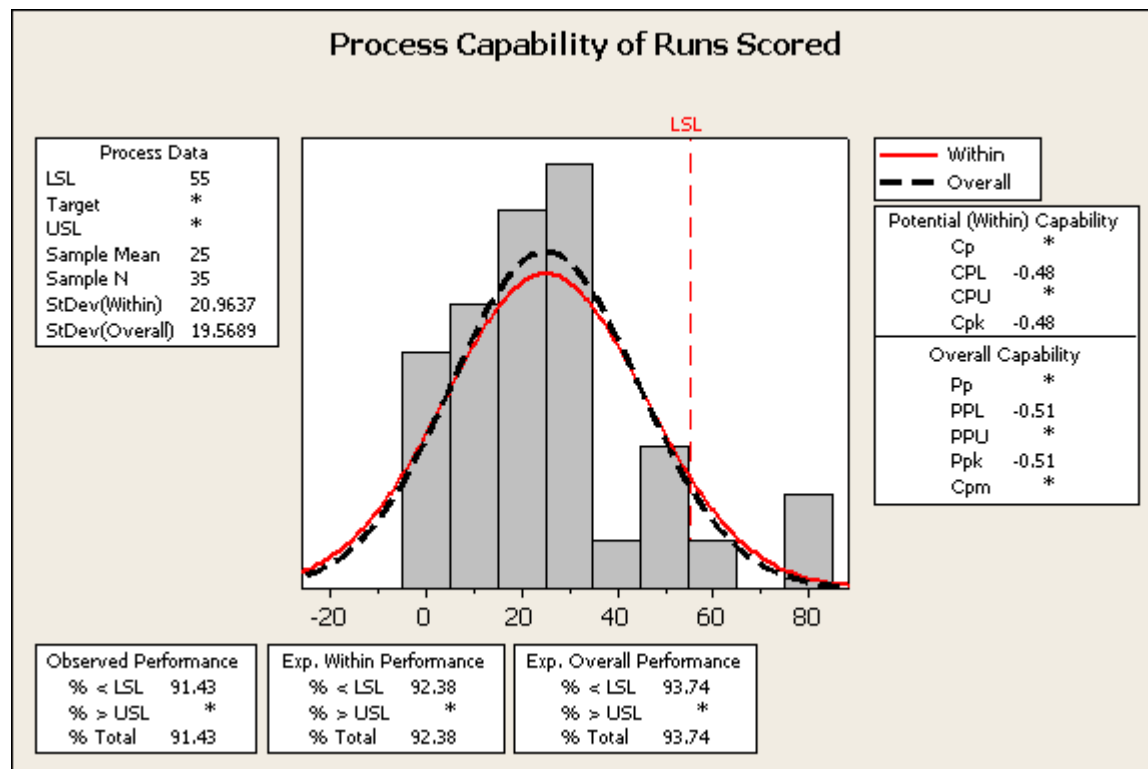
Data Needed	Runs scored	Way of dismissal	Wrong decision By the umpire	Use of Footwork	Out on short ball
Source of the Need	Cause & Effect	Cause & Effect	Cause & Effect	Cause & Effect	Cause & Effect
Status	Collected	Collected	Collected	Collected	Collected
Data Source	Website	Website	TV Replay	TV Replay	TV Replay

Collected Data

Match	Runs scored	Way of dismissal	Wrong decision By the umpire	Use of Footwork	Out on short ball
1	20	catch	N	Y	Y
2	30	catch	N	N	Y
3	0	bowled	N	N	N
4	25	catch	N	N	N
5	45	catch	N	Y	N
6	12	catch	N	N	N
7	18	run out	N	Y	N
8	57	LBW	Y	N	N
9	32	stumped	N	Y	N
10	24	run out	N	Y	N
11	31	catch	N	N	Y
12	25	catch	N	N	Y
13	34	bowled	N	N	N
14	9	catch	N	N	Y
15	4	bowled	N	N	N
16	52	LBW	N	N	N
17	20	LBW	Y	N	N
18	12	catch	N	N	Y
19	7	catch	N	N	Y
20	75	catch	N	N	N
21	3	bowled	N	N	N
22	52	LBW	N	Y	N
23	17	run out	N	Y	N

24	23	catch	N	Y	N
25	27	Hit wicket	N	Y	Y
26	28	run out	N	N	N
27	15	bowled	N	N	N
28	28	catch	N	N	N
29	36	catch	N	N	N
30	13	catch	N	N	Y
31	15	bowled	N	N	N
32	0	bowled	N	N	N
33	6	catch	N	N	Y
34	78	stumped	N	Y	N
35	2	catch	N	N	Y

Process Capability



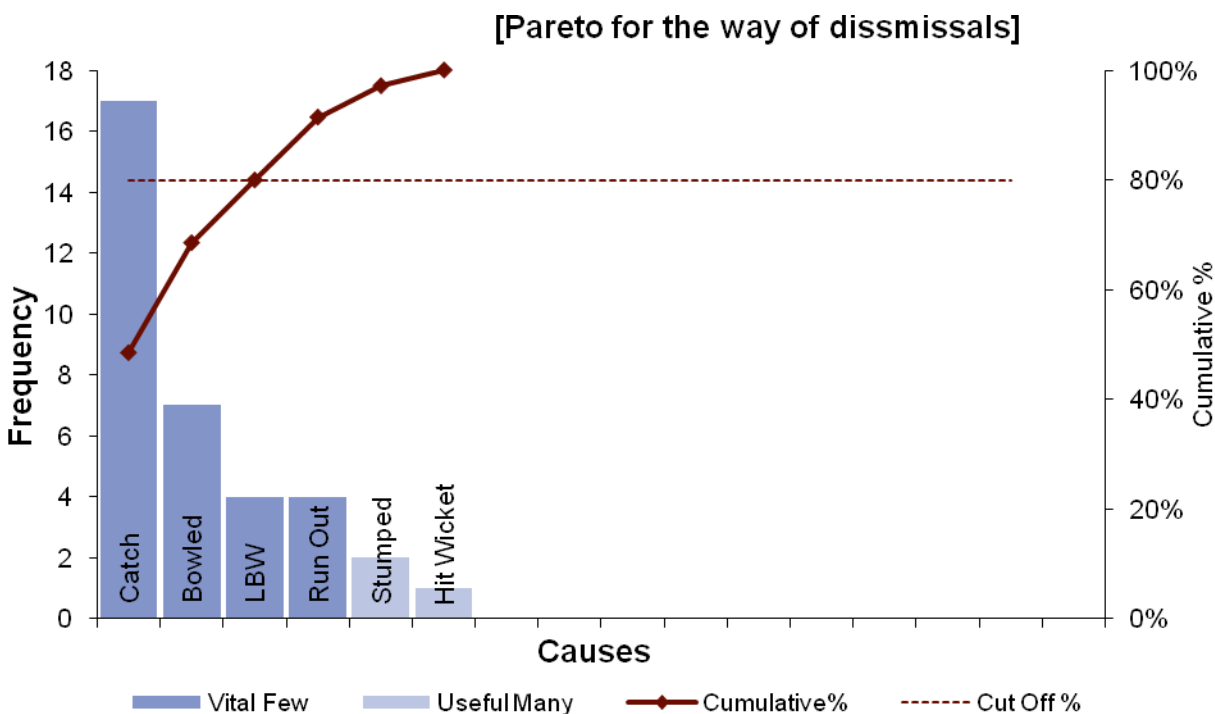
Process capability depicts that no of data points falling below LSL are numerous. The Cpk value is -0.48 which is lesser than 1 and that makes the process incapable. In addition to that, we can see that 91.43% of times, the batsman has scored below LSL.

Analyze

In this phase, we are analyzing the root cause of the problem i.e. what are the factors contributing to the failure of the batsman. Thereafter, main factor would be focused on after prioritizing it.

No of ways in which the batsman has been dismissed in that season should be found out in order to get a clear picture of shortcomings of him or any issue with his technique.

Catch	Bowled	LBW	Run Out	Stumped	Hit wicket
17	7	4	4	2	1



As we can see that he has been facing catch out dismissal more often. So, there could be an issue with his technique or a problem with his footwork. So, we are trying to drill down the problem hereby.

On analyzing the data, we get the following results:

$n(F)$ = No of catch out involving less use of footwork = 14

$n(S)$ = No of catch out involving shortballs = 10

$n(O)$ = No of catch out involving other reasons= 3

$n(F \cap s) = 9$

Above results exhibit two main causes of the failure:

1. The batsman is not comfortable with shortballs
2. The batsman is not making use of footwork while playing shots.

Improve

If we drill down more the above causes:

We need to go to see the video footage of the batsman's game and find out where he is going wrong while playing shortballs.

In addition to that, the batsman should be made realize that using footwork will improve his game and failure will be reduced and he will be well equipped to tackle spinners.

Proposed Solutions

1. The batsman needs to learn to tackle shortballs by net-practice
2. The batsman should bring in use of his feet more often while playing shots

Above study was one of the cases in the cricket, it can be applied in other department of the game as well. It will reduce the errors committed by the players.

In retrospect, ICC (International cricket council) has taken major steps towards improving the game in terms of umpiring decisions since its inception. Run-out decision used to be a major issue and there was always an element of doubt. Third umpire was introduced so as to alleviate the errors committed in run-out decisions. And it really worked. The technology had a role to play and it brought down the errors drastically. We had something to watch out for. It got some amount of glamour in the game as well . it was no longer a passe. Now the process of giving run-out decision has been quite capable.

LBW decision for the umpires have always been a tough nut to crack. They often fall prey to people's ire because of wrong decisions. ICC instituted the idea of umpire referral system in Test matches to allay the no of wrong decisions. Pair t-test would exhibit that there has been a considerable reduction in the wrong decisions.

I feel that an MSA or Gauge R & R should have been done for all the international umpires because there could be a flaw in measurement system. This will bring all the umpires on the same page in terms of decision making.

Conclusion

Though we can have enough of discourse to bring in Six Sigma in terms of decision making for the umpires, but one thing is for sure that it will shove off the excitement out of the game. The

game of cricket will become predictable, but do we need this in the sport? When we make a statement that the cricket is a funny game and it changes in the moment of batting an eyelid, it won't be funny anymore if it arrives at the situation of prognostication.

Imagine a situation when a batsman hitting almost every ball out of the park after achieving "Six Sigma" in batting, that would be an end of the day for the cricket. All the passion for the game will be in doom.

It's us to decide whether we need a stable & predictable process of cricket or a thrilling, humdinger and exciting cricket as it has always been.

(Note: Authors have not directly referred to any other existing papers/articles while writing this paper. If it matches with the views expressed in any existing articles, it is purely coincidental)