

# Evaluation of Pentagon Tactical Formation of Soccer Through Categorization of Strengths And Weaknesses

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**Abstract.** *In soccer, there exist several tactical game plays which allow the team to progress towards goal and eventually score goal or goals. These tactical formations give the team the numerical advantage to pass the ball in contrast to the opponent. In this paper we had established the pentagon tactical formation where we had provided several hypothetical situations and these situations were evaluated by delineating the strengths and weaknesses of the pentagon at that particular situation.*

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## I. Introduction

The sports industry is a billion dollar industry where several entities such as endorsement, ticket sales, athletic products, and others come into play. One on the popular sports is soccer where the objective of the game is to score more goals than the opponent. According to Micoogullari and et al, soccer is played worldwide and a lot of researches had been done with regards to soccer and these researches were actuated to understand the game better and for teams to obtain the desired results [1].

With sponsorships at stake and also global merchandising, it's always a good thing for teams to aspire to win matches and several approaches are usually taken to win matches. One of them is the tactical play where teams would utilize tactical positions such as 4-4-2 or 5-3-2 or others. Memmertand et al indicated that there were several discussions upon which tactical position or formation is the best and valid arguments were laid out [2]. Memmert and et al measured the passing efficiency of players in order to dissect and understand the tactical formation of soccer [2].

We followed suit with our evaluation and analyses but ours was constricted to the Pentagon Formation where players form a pentagon shape in order to create several passing lanes for the purpose of passing the ball with several options available. We posed 3 scenarios with regards to the Pentagon Formation and evaluated those 3 scenarios within the context of Strengths and Weaknesses. We perhaps embolden and contribute to the breath of knowledge pertaining to the game of soccer.

Actuating the playing formation or the play itself requires the players to be physically fit. Mathieu and et al stated that soccer players play significantly high number of matches throughout the season and this had taken a toll on the physical fitness of the players [3]. Thus ensuring the players are fit is vital for the success of the team. Harridond had measured the physical fitness of individuals through unconventional means of evaluating one's food consumption and sleep level as these entities contributed to the increase or degradation of physical fitness as well [4]. This could also be integrated in soccer where players could be evaluated within these means and hence offering a holistic view of physical fitness.

In order to evaluate the Pentagon Formation, we had utilized the SWOT Method but we had altered its composition where we had only utilized the Strengths and Weaknesses components. Benzaghta and et al had pointed out that SWOT analysis (Strengths, Weaknesses, Opportunities, and Threats) is a key ingredient in developing strategies and is usually utilize for assessment of situations [5]. He and the team further reviewed the functionalities of SWOT and deemed SWOT appropriate for the usage of evaluating scenarios and entities [5].

This somehow validated our approach of utilizing the semi-SWOT method where our evaluation was in accordance to the listing of Strengths and Weaknesses of each scenario. We also went further by dissecting the scenarios in terms of other realms such as physical fitness, mental concentration, and others. This thus produced a holistic picture of those scenarios.

## II. Literature Review

As mentioned before the game of soccer is hugely popular with countries and clubs competing for honours and these countries and clubs invest substantial amount of money to the alleviate the stature of their players. Wong and his team concurred with this and stated that soccer is the most popular sport and it is played

constantly but, within this context, players tend to get injured as matches are frequent and highly charged [6]. Wong and his team had analyzed the rate and severity of injuries of the soccer players and these had been tabulated for discussion and observation for interested parties [6].

It's always a norm for a team to try out and retain certain tactical formation in order to penetrate the defense of the opponent. Perl and et al had devised an approach that assessed the tactical efficiency of certain formations [7]. In fact, he and his team utilized the Statistical Frequency Analysis to evaluate the selected formations with emphasis upon ball possession [7].

In order for the formation to flourish, the players need to apply good judgement and not be distracted on the field. Harridon indicated that in any situation, be it soccer or engineering or aviation, it's imperative for individuals to remain steadfast and practice optimum judgement in order to actuate any process efficiently [8]. Harridon also stated that good judgement is vital to avoid catastrophe where in the field or in a soccer match it is a catastrophe to loss a ball or to be intercepted [8].

There are numerous shades of opinions regarding tactical formation of soccer. In fact, Zuo and et al had iterated that success of matches depended upon the tactical formation that was applied [9]. Zuo and his team also mentioned that they had utilized the Multivariate Analytical Method to assess the situations in soccer matches [9].

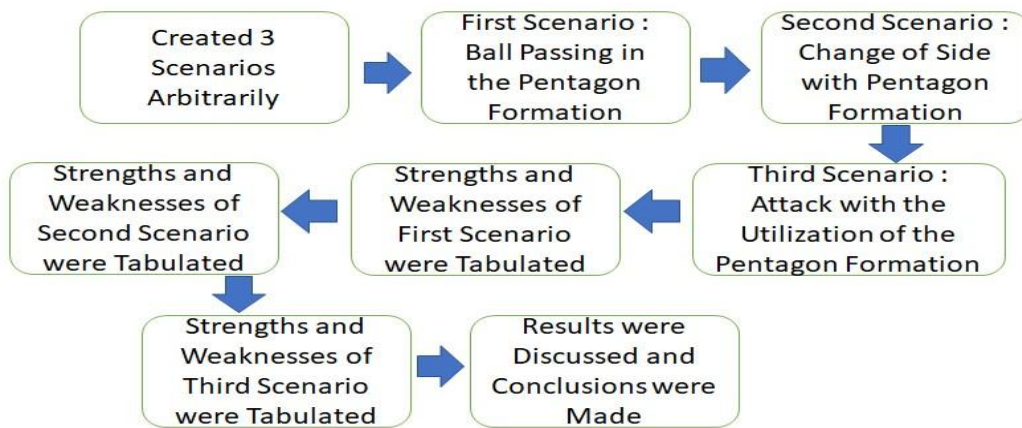
There is also the fitness component that should be taken into account while performing any of the tactical play since there is always the need for the players to be in constant movement in order to be at the right locations to receive the ball. Orange and Smith had studied the physiologies of soccer players and the results of their studies indicated that players go through sprinting and physically demanding activities constantly during matches [10]. They had used the Narrative Review method where they had reviewed various relevant literatures to gain the stated results [10].

With regards to the findings by Orange and Smith, it can be seen that the players should be integrated with a training regime that's rigid and beneficial. Harridon had proposed a physical fitness training regime that's akin to a military fitness regime which perhaps can be implemented for players [11]. Military requires its personnel to be at their peak physical level and hence it's plausible that the military model is optimum for soccer players as well but more study can be carried out to ascertain the validity of this implementation.

By evaluating the tactical formation, be it diamond shape or pentagon shape, teams can formulate a win and thus capture a championship. Our work, through the evaluation of Pentagon Tactical Formation, is essential and the evaluation method that was used is congruent enough. Namugenyi and et al stated that SWOT is useful in devising strategy and game plan and hence its usage is welcome to aid teams and coaches in fostering a winning team [12].

### III. Methodology

The evaluation of the Pentagon Tactical Formation was actuated through a defined methodology as shown in Figure 1.



**Figure 1.** The Methodology to Evaluate the Pentagon Tactical Formation

We had created 3 scenarios and these scenarios were arbitrary created. Other scenarios could be produced but it's not within the grasp of this evaluation process. Thus only 3 scenarios were offered. The First Scenario is the ball passing process within the Pentagon Formation. Five players formed the Pentagon Formation where the Pentagon shape were made by the players through their positioning on the field.

The Second Scenario is the changing of the play from right field to left field where a player from the Pentagon Formation passed the ball to the left end of the field. The Third Scenario is the attack towards the goal of the opponent where the Pentagon Formation was moved in incremental fashion.

We then proceeded to tabulate the Strengths and Weaknesses of the First Scenario. Tabulation of the Strength and Weaknesses of the Second and Third Scenarios were also carried out. The results were then discussed and conclusions were made.

#### IV. Results

The scenarios are shown in Figures 2 till 4 while the corresponding Strengths and Weaknesses are shown in Tables 1 till 3.

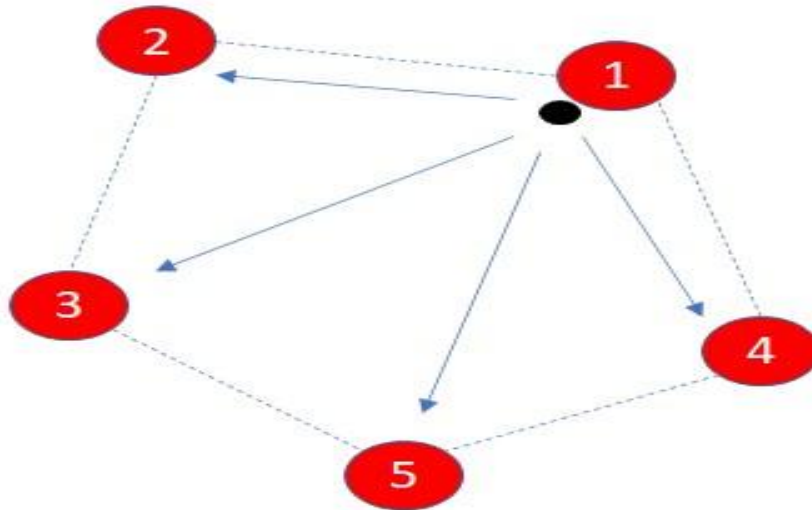


Figure 2. First Scenario

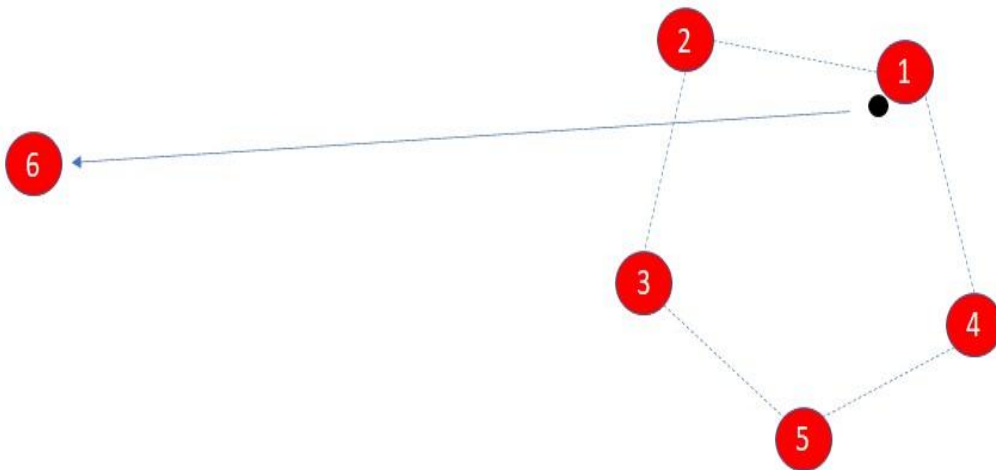


Figure 3. Second Scenario

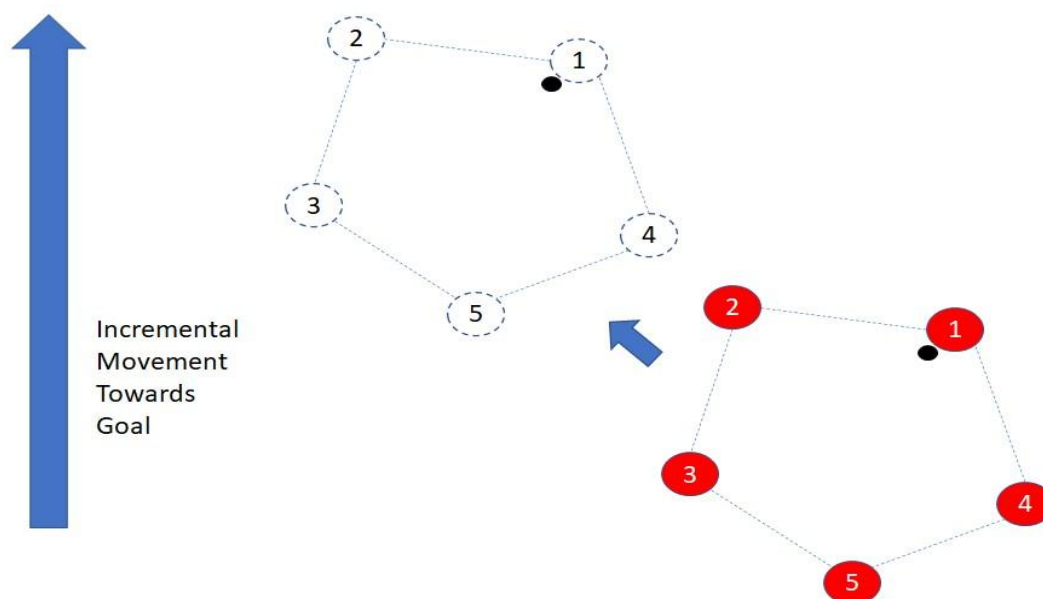


Figure 4. Third Scenario

Table 1. Tabulation of Strengths and Weaknesses of First Scenario

First Scenario		
Strengths		Weaknesses
1	There are 4 passing lanes	The ball could be intercepted by the opponent
2	There are numerous passing options	Fitness of the players should be high as the players are constantly moving to retain the Pentagon Formation
3	Passing the ball constantly would bore the opponent	Concentration of the players should be high as the players need to focus perpetually in order to retain crisp passing
4	Possession is high	Players should be on a look out for opponents all the time as opponents would want to disrupt the Pentagon Formation
5	Confuse the opponent	Players need to scan constantly for their team mates in order to pass effectively in the Pentagon Shape
6	Fast pace game (if ball is passed quickly and crisply) as ball is being passed constantly	

Table 2. Tabulation of Strengths and Weaknesses of Second Scenario

Second Scenario		
Strengths		Weaknesses
1	Either player in the Pentagon Shape could change the play from right to left field	There is a void surrounding the left outfield player
2	The ball could be passed around several times in the Pentagon Shape before it is passed to the left outfield player	The left outfield player has to confront the opponents alone
3	The opponent would be confused as to which player would pass the ball to the left outfield player since there are numerous options available	The players in the Pentagon Shape have to collectively move to the left of the field in order to support the lone player
4	One two could be played in the Pentagon Shape before the pass to the left outfield player is actuated	The players have to be physically fit as they have to move in a quick fashion to the left of the field
5	The ball could be passed quickly in the Pentagon Shape before being suddenly passed to the left outfield player. This would surprise the opponent.	There is a chance for the ball to be intercepted when it is crossed to the left of the field
6		Confusion could arise as to who in the Pentagon Shape would be responsible for passing the ball to the left of the field

Table 3. Tabulation of Strengths and Weaknesses of Third Scenario

Third Scenario		
Strengths		Weaknesses
1	Work collectively as one unit to move the ball towards the goal of the opponent	Fatigue could come into play as the players are in constant movement to pass the ball
2	There is a lot of movement of the ball towards the goal of the opponent which thus kept the opponent chasing for the ball	The players should be physically fit as the ball is moved quite often
3	There is always a lot of options to pass the ball when moving the ball forward towards the goal	For the Pentagon Shape to be constantly retained, the players should be in synchronization all the time thus requiring full concentration perpetually

4	The ball is shielded from the opponent as the ball is enclosed within the Pentagon Shape	The opponent could intercept the ball and thus devastate the increment of the team
5	The players that make up the Pentagon Shape can take their time to pass the ball around while still incrementing their positions toward the goal of the opponent	The players of the opponent could position themselves at strategic locations which breaks down the Pentagon Shape or Formation
6		The opponent could form a line that would deter the incremental forward move of the team

### V. Discussion

In the First Scenario, the Pentagon Formation was formed and this created 4 passing lanes which provided the team an effective passing strategy. Within this strategy the team can put the opponent in the back seat and other advantages (strengths) followed. These are tabulated in Table 1 where the disadvantages (weaknesses) were also stated. We can observe that even though there were numerous Strengths, Weaknesses were also in abundance. Thus, the coach has to optimize, in accordance to the situation, the usage of the Pentagon Formation.

In the Second Scenario, there was a change of play to the left field. Various Strengths existed for this scenario where these Strengths were indicated in Table 2. One that is prominent is the fact that several players are available within the Pentagon Formation to initiate the change of play. But we have to be cautious as several Weaknesses were also in existence as seen in Table 2. This should serve as a reminder to the coaches that the implementation of the Pentagon Formation should come with adaptations.

In the Third Scenario, the Pentagon Formation or Shape moved in incremental fashion towards the goal of the opponent. While there are disadvantages of this collective movement, the advantages (Strengths) of this movement are valid and intriguing. For example, the constant movement of the ball would wear the opponent down and it's plausible for the opponent to start chasing the ball. Evaluation of this scenario is delineated in Table 3.

### VI. Conclusions

The Pentagon Tactical Formation was evaluated based upon 3 arbitrary scenarios. The evaluation showed that the formation has its strengths but drawbacks do exist. Its up to the coach to intelligently adapt the formation in lieu with the ingrained scenarios. We had offered only 3 scenarios and thus to better understand the Pentagon Formation it's advisable for other scenarios to be assessed as well. We are confident that the Pentagon Formation could be utilized for match purposes but it needs to be actuated with caution and slight modifications could increase its efficiency.

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