COMPUTER VERSION OF THE RUSSIAN TEAM MATCHES AT THE WORLD CUP RUSSIA 2018

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ABSTRACT

The game consists of a sequence of game oppositions (game components) and the realization of the moment. The total number of components in the futsal is> 50. The assessment is not focused on the oppositions, but on their value for the result. The difference in the score of the game is obtained from these indicators for the players in each component of the game. The level of the player in the game component decreases in proportion to the number of oppositions. The location of the players is chosen so that the total number of oppositions won by the team is maximum. For each minute of the match, the most effective combinations in the attack are determined. They consist of martial arts with the greatest advantage of the players of their team. There are several services (SciSports, Stats) where the neural network reproduces the solutions of a good trainer. The PIRS model solves the problem of successful performance of a top-level team as a mathematical one. The result of the work is the expected maximum possible score of the game which must be on the scoreboard when the players fulfill all the conditions. Existing Instat, Basket-stats, ICEBERG, LONGO Match PRO, FUTSALSTAT, etc. form the headache of a trainer from the statistics of past games. PIRS technology provides already calculated solutions for the best result of the upcoming match. The trainer will not be able to compete with PIRS, since the information pool called futsal is too large for one person. Therefore, the resource of the game in matches of different levels is used only by two thirds. Provided 50% of the recommendations are fulfilled, the team will receive 20 - 30% of the points collected additionally. An example of the work is given at the match of Russia and Kazakhstan on the European Championship in 2018. The results of the study were presented to the coach of the team one month before the start of the tournament.

Key words: Futsal. Players. Rating. Single combats. Tactics.

RESUMEN

Modelado de juegos futsal con la participación del equipo ruso para el campeonato mundial 2018

La diferencia entre los goles marcados y los goles concedidos por un equipo se compone de indicadores similares de sus jugadores. Al ganar o perder combates individuales en el juego, cada jugador forma una diferencia personal de goles marcados y concedidos. Es inconveniente trabajar con muchos indicadores de jugadores. Es más conveniente convertir la diferencia creada por los jugadores y el equipo en una clasificación rating. La estabilidad del rating permite simular cualitativamente el próximo partido. En el futsal hay 50 tipos de combates individuales. El juego consiste en una secuencia de confrontaciones de juego. Todo termina con la ejecución de un golpe en la portería del oponente. En este artículo estamos hablando del modelo matemático del futsal. El resultado del trabajo es el máximo resultado, que se espera del juego. Debería estar en el marcador cuando los jugadores realicen todas las tareas asignadas. El Instat existente, Basket-stats, ICEBERG, LONGO Match PRO, FUTSALSTAT, etc. le dan dolor de cabeza al entrenador con las estadísticas de los juegos anteriores. La tecnología PIRS proporciona soluciones ya calculadas para el mejor resultado del próximo partido. El entrenador no podrá competir con la PIRS, ya que el archivo de información llamado futsal es demasiado grande para una persona. Por lo tanto, el recurso del juego en partidos de diferentes niveles se usa solo en dos tercios. Sujeto al cumplimiento del 50% de las recomendaciones, el equipo recibirá el 20 - 30% de los puntos recaudados adicionalmente. Como ejemplo del fucionamiento del PIRS se describe a continuación el partido del Campeonato Europeo 2018 de Rusia y Kazajstán. Los resultados del estudio fueron presentados al entrenador del equipo un mes antes del inicio del torneo.

Palabras-clave: Futsal. Jugadores. Clasificación. Tácticas.

INTRODUCTION

Is there a maximum result which one team can win another? The answer is objectively positive. You can have no idea where it is, but intuitively we understand that it exists. If it exists, how far is it from the usual level of the game? How close are modern trainers to it? A person can live up to 120 years. There are examples of people who lived to 116-117 years.

That is, the limit is achievable. We see this on individual examples. In Russia, however, men live up to 60-65 years. We are all used to the fact that 50% of the limit is the norm. On average, lifetime increases by 3 years every 10 years. We are slowly moving to the limit of our capabilities. And we'll be able to get it after 200 years.

However, when the author shows the limit result to the team trainer, this usually causes distrust. Is it possible to calculate the expected score of the match for different arrangements and game scenarios? What will the score of the upcoming match be if you go to the game in three central defenders?

The work Losquiño, Santesmases (2018) considers the tactics of the game as an offer of the greatest number of options for continuing the game to the partner holding the ball.

The authors (Jamshad, Muhammad, Pravene, 2018) examined the successes of the Indian team up to 17 years at the FIFA tournament. They came to the conclusion that it is necessary to have as many offensive strategies and tactics as possible.

"Previously, performance analysis relied mainly on frequency distributions of certain game events. In contrast, the novel approaches allow calculating more complex metrics. This helps to measure and identify the performance of teams and individual players and especially how teams interact".

The authors often deify IT capabilities (Memmert, Rein, 2011) believing that they will solve all the problems. The great possibilities of IT actually do not work. The authors offered only three criteria for the game: the amount of space controlled by the player, the number of defensive opponents cut off from the gate and the speed of the player's movement.

"We develop a dynamic model based on the Poisson difference (Skellam) distribution which simultaneously models the two different point scoring mechanisms in Australian Rules Football, the motivation for which comes from work on predicting outcomes in soccer matches. Our model is developed in a Bayesian framework and is fitted using the Stan modelling language. Model validation is performed on the Australian Football league (AFL) home and away season in 2015" (Manderson, Murray, 2018).

"The application of continuous attacks is dominant, beginning by cutting a pass and winning "the second ball" on the opponent's half, while the final pass is in most cases the center and back lateral passing". However, the Leontijević, Janković, Tomić (2017) hope to find more serious criteria for the game in the future. The Filipe et al., (2013) try to analyze the geometric aspects of the game: the center of gravity of the game and the effective area of the game.

In connection with the poor in terms of content, the scientific base in football will be relevant to the analogy of basketball. There are a number of competing indicators of the player's utility in basketball and the corresponding correlation coefficient with the results of games: the coefficient of utility of the PBL (0.89), KPI (0.37), EuroKPI (0.37), KPI (0.9), NBA +\- (0.56), LithuaniaKPI (-0.17). The PIRS technology determines the cost of single combat from the game statistics. Therefore the correlation with the result of the game will be practically 1. In order to be correct when comparing with other technologies these indicators from previous matches were used. In this case, PIRS gave a 0.93 correlation with the results of the games (Burov, Polozov, 2011) Such low correlation coefficients can explain to us why until now the expert coaching evaluation takes precedence over the analysts' assessment.

It was already in 1997 when Polozov AA. published an article which showed the fundamental possibility for the existence of a computer version of an upcoming match. Skorovich S.L., the current trainer of the Russian national futsal team, graduated from Institute of Physical Education, Sport and Youth Policy, URFU, in 2003. In that time we collaborated in the work on his diploma thesis. The Russian team has never won against the Spanish national team from 1998 to 2014. Our cooperation continued. The theme of the game modeling was in demand. Today, the national team of Russia has already won over the Spanish national team twice. And there is another leader in the world rating of teams in futsal. Later experience with the team was invested in other game sports.

Why is it difficult for a trainer to manage a game? An information pool called handball is too large to be controlled by one trainer. If I ask you

"Who is the best and who is the worst player of your team?"- Then the answer is definite.

"Who are the 6th in the level of the game?"- Then the answer is most likely absent.

"Who is the fifth in coordination defeating?" - The answer is especially absent.

"Who is the fifth in the coordination defeating after 10 minutes of the game?" – You unlikely can answer. Etc.

We a priori ascribe to ourselves the ability to finely differentiate the ranking of players according to their game level, but in fact we cannot. Therefore, most of the game remains at the discretion of the players themselves. It's hard to believe that a trainer can, for example, say how a player's transfer from one position to another can change a match result, express in one number the tactical effect of the team in the last match. This is beyond the capabilities of the average person. In this situation, trainers-analysts help to a trainer (Instat, Basket-stats, ICEBERG, LONGO Match PRO, FUTSALSTAT, etc.).

They calculate technical and tactical actions (TTA) that have no correlation with the results of games for similar teams. Instat, Basket-stats are not able to answer specific questions. What is the score for this plan of a game? How much less dribbling A player will win from C one at the beginning of the game and at the end? How many goals will players score from this point of the field from an uncomfortable position? Our conversation with opponents always ends here.

The purpose of this study is the success of the Russian national team performance at the European Championship in 2018. Part of this research is the definition of the maximum value of the team result and the ways to achieve it based on the created technology for the result simulation. The latter is called Polozov Information Rating System, hereinafter referred to as PIRS.

Methodology. Let's consider some problems of game analytics.

1. The game consists of a single combat sequence allowing you to approach the gate and realize the created moment. To determine the actual value of the cost we should understand how to evaluate the implementation of scoring chances. Let's imagine that we are at some point in the field and want to get into the gate. The index of the field point is ratio of the multiplication of α and β vertical angles of the view of the gate to the distance to the gate (r):

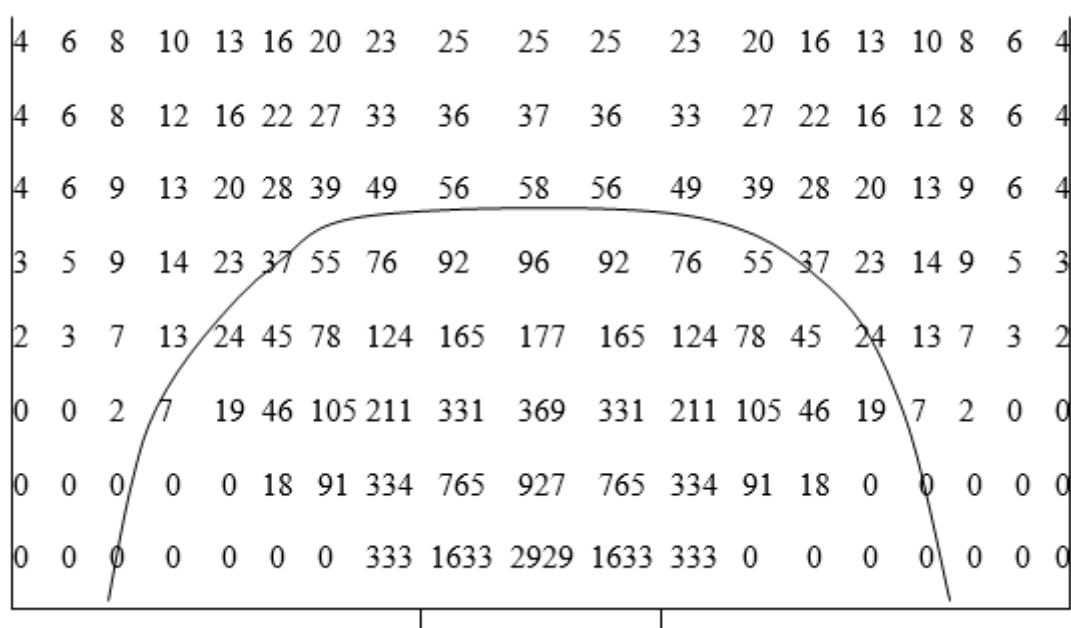$$\varphi = \frac{\alpha * \beta}{r}.$$

4	6	8	10	13	16	20	23	25	25	25	23	20	16	13	10	8	6	4
4	6	8	12	16	22	27	33	36	37	36	33	27	22	16	12	8	6	4
4	6	9	13	20	28	39	49	56	58	56	49	39	28	20	13	9	6	4
3	5	9	14	23	37	55	76	92	96	92	76	55	37	23	14	9	5	3
2	3	7	13	24	45	78	124	165	177	165	124	78	45	24	13	7	3	2
0	0	2	7	19	46	105	211	331	369	331	211	105	46	19	7	2	0	0
0	0	0	0	0	18	91	334	765	927	765	334	91	18	0	0	0	0	0
0	0	0	0	0	0	0	333	1633	2929	1633	333	0	0	0	0	0	0	0

Figure 1 - The distribution of the index on the futsal field (Polozov, 1995).

There is a link between the probability to score from the given point of the field in this match: $p = 1 - (\exp(-\varphi o/A))$, where A = 70-200 (for Russia). Any action on the field can now be estimated from the increase in this probability. Hereafter, this increase we call the single combat cost. On the other hand, we have to evaluate the player in the implementation of shots. The value of A is average for the players of this tournament. You can calculate the average probability of scoring for each shot of the player in the match. So by the end of the game we will get the expected number of points scored by the average rating and actually scored by the player. The difference between these two figures is the necessary evaluation.

2. Mixing of technical and tactical actions (TTA) and technical and tactical single combats (TTSC) should be considered as another problem of analysts. TTA can be set up even when the opponent on the field is not at all. Therefore they create data noise than help to evaluate. Correlation with the results of games is usually below 0.5. It is necessary to go from TTA estimates to TTSC. They are not less than 30. These are a pass for the back, dribbling (speed, coordination, and force), control of the ball in a situation when being knocked out, upper single combats, a pass tackling, barriers, etc. There is a forceful, coordinating and speedy dribbling. In addition to these well-known components, there are less actively used such as blocking a shot, restoring a position after a lost single combat, a barrier. TTSC are taken into account only as a loss of the ball and are recorded as an independent component.

3 The necessity to display the results obtained on an abstract rating scale. If an A player has beaten a B player for 5 out of 10 single combats in one of the components of the game in a match with one team, what will this ratio be in the match with a C player who plays in the next team on the calendar? We cannot create a model without it. The key consideration is that the difference created by the team consists of the differences created by its players. Therefore, we need to arrange the teams on the scale of the rating at a distance corresponding to their score for a personal meeting. Then the players can be placed on it.

A website www.ra-first.com was created, (Manderson, Murray, 2018) where there was a section on futsal. The current results of all club and national teams were obtained from the relevant sites and then transformed into a rating on-line. To prove the consistency of the concept the forecast for the next match was formed. The ratings of the teams set the average values of the ratings of its players.

4. Player's level is transferred into the rating and it is built for each component. The player's rating falls during the game from the number of single combats. But it happens with different speed. There are "light" single combats that are not associated with significant expenditure of energy. There are "heavy" ones. Finding the dynamics of decrease for each component of the game of each player is not a difficulty. The results obtained allow us to redistribute the match load among the players. The load is given to strong players until their level is equal to the level of the others. This mode is called equiparametric. This is the distribution of the number of single combats by players when the largest number of single combats in the match will be won. The player must be given such a distribution in comparison with his usual number of single combats.
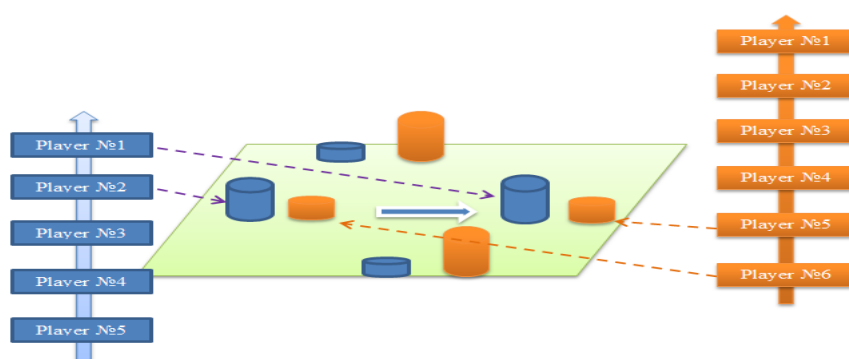

Figure 2 - Tactics and player ratings.

5. Tactical effect. It often happens that a player should collect a number of single combats in defense, but they are not enough on his position. The algorithm moves the player to another position where he will get the necessary number of single combats in this component. As a result, the algorithm rearranges the players throughout the game that gives significantly more won single combats. Accordingly, one must write to the player - when he goes, against whom he plays in the attack and defense. To do this you must use the substitution and placement of the opposing team in the previous match. Then, as a result, a table is formed for each minute of the match with the alignment of the opponent and our team in the attack and defense.

6. Team combinations. There are about 400 combinations that assume more than 90% of the overall effectiveness of the game. The combination consists of a sequence of single combats and a shot. The probability to score a goal is equal to the multiplication of the probabilities of winning their single combats, to score from a given point of the field. Probability is formed from a rating that decreases from the number of single combats. Hereafter, under advantageous replacement we mean player single combat with the greatest advantage in the corresponding rating (the greatest chances to win this single combat). The algorithm selects the most advantageous replacement and combines them in combination. The effect of combinations is that the strongest your players do not play with the weakest opponents. This gives an additional increase in the result The aspects are discussed in more detail in (Karminsky, Polozov. 2016; Manderson, Murray, 2018).

Experimental part

The matches of the Super League AMFR, 2017/18 were analized.

- Avtodor – Dina. Score: 4 - 3
- Gazprom-UGRA – Sinara. Score: 3 - 3
- New Generation – Progress. Score: 1 - 1
- CPRF – Norilsk Nickel. Score: 2 - 4
- Tyumen – Sibiryak. Score: 8 - 2
- Ukhta – Polytech. Score: 5 - 4

The cost of single combat is an average change in the result of the game on the scoreboard in case of its winning. It is universal for different types of single combats so far. The dependence of the average values for the Super League AMFR in 2017/18 on the positions of the players is shown in Table 1.
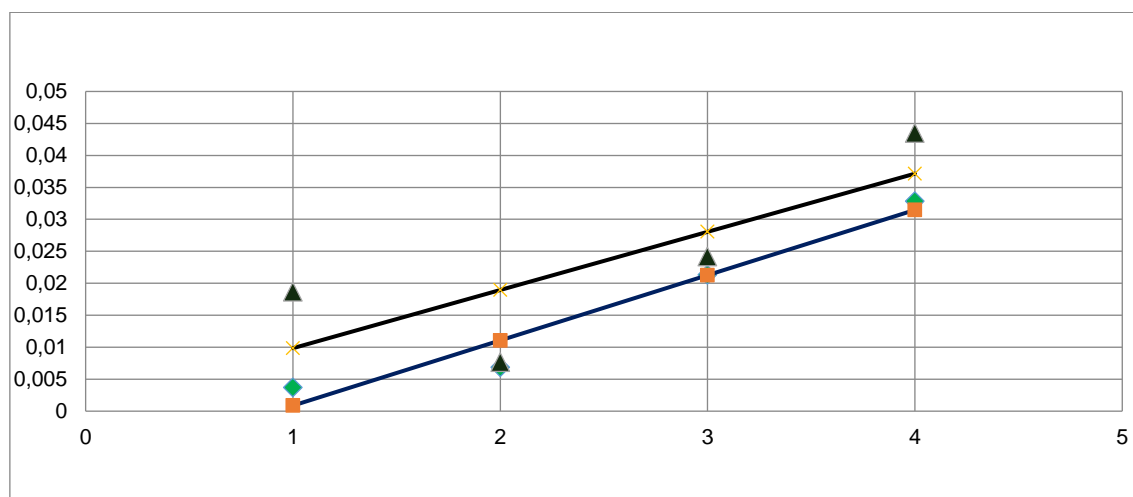

Figure 3 - The cost of the futsal single combats (super league AMFR, 2017/18), depending on the player position: 1 – fullback, 2 – outside left, 3 – outside right, 4 – forward.

Some other changes have also been made to the PIRS technology. Then the expected results (www.ra-first.com) based on the level of the game and the possible results after the intervention in the game were compared.

The results of the games of MFC Sinara – MFC Gazprom-UGRA in 2017/18:
1:2   2:6   1:2   1:2   3:3
The total balance of goals scored and conceded: 8:15
The expected score of the match with PIRS: 6.06:5.74

Table 2 - Changes in the results of Super League teams AMFR in 2017/18 using the simulation technology.

	Expected score	The score of the game that can be obtained
CPRF - Avtodor	5.6:2.9	6.5:2.1
Tyumen - CPRF	4.7:3.3	3.9:4.1
Sinara - CPRF	4.0:2.4	3.4:2.6
Progress - CPRF	4.5:2.0	2.7:3.9
CPRF - Polytech	4.8:2.2	5.5:1.5
CPRF - Ukhta	4.2:1.8	4.8:1.2
CPRF - Sibiryak	2.4:2.1	2.9:1.7
Progress - New Generation	7.1:0.4	7.9:0.1
Progress - Tyumen	4.9:1.6	5.6:1.0
Progress - Communist Party	4.5:2.0	5.2:1.4
Norilsk Nickel - Progress	2.6:3.9	2.0:4.6
Sibiryak - Polytech	6.5:2.0	7.4:1.2
Ukhta - Sibiryak	1.7:3.3	1.2:3.8
Sibiriak - New Generation	8.0:1.0	8.9:0.1
Sibiryak - Tyumen	4.1:1.9	4.7:1.3
Progress - Sibiryak	5.7:2.8	4.9:3.7
Sibiryak - Nor. Nickel	2.9:3.1	3.5:2.5
Sinara - Gazprom	2.9:3.1	2.5:3.5
Polytech - Gazprom	1.5:4.0	1.0:4.6
N. Generation - Gazprom	1.4:3.6	0.9:4.1
Tyumen - Gazprom	3.8:4.7	3.0:5.6

Table 3 - Part of the rating list of players - candidates for the Russian national team.

Rating	Surname	Club
3870	Sorokin	Sinara
3833	Kutuzov	Norilsk Nickel
3770	Nevedrov S.	Tyumen
3655	Glavatskikh R.	Sibiryak
3485	Kostyanoy I.	Sibiryak
3472	Suchilin	Norilsk Nickel
3444	Prudnikov	Sinara
3444	Kozlov K.	Progress
3415	Baghirov	CPRF
3384	Bastrikov	Sinara
3337	Signe	Gazprom
3304	Rudykh	Ukhta
3270	Kruty	Dina
3262	Kudziev R.	Sibiryak
3236	Osinovsky	Polytech
3234	Chishkala	Gazprom

The sequence of steps taken for the success of the Russian national team at the European Championship-2018 is following: the possible model for the Euro-2018 was made, the most significant opponent was pointed out, and a model of the match with him was created.

As a result of the made research of the AMFR-2017/18 a rating list of players was

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obtained. This is the basis of recommendations formulated for the national team line-up.

According to preliminary estimates, the outcome of the European Championship-2018 for our team was largely determined by the two matches between Russia and Kazakhstan. In previous years, it was Spain. However, this year the Russian national team line-up was selected according to the national team of Kazakhstan

Table 4 - Expected results a month before the beginning of the European Championship-2018.

		5 February		8 February		10 February	
Slovenia	2377	Italy	2715				
Serbia	2440	Kazakhstan	2854				
Italy	2715			Portugal	2840		
				Kazakhstan	2854		
Russia	2866	Russia	2866				
Kazakhstan	2854	Serbia	2557				
Poland	2324					Kazakhstan	2854
						Russia	2866
Portugal	2840	Portugal	2840				
Romania	2268	France	2516				
Ukraine	2412			Russia	2866		
				Spain	2715		
Azerbaijan	2440	Spain	2715				
Spain	2715	Ukraine	2412				
France	2516						

Table 5 - Actual results of the European Championship-2018.

	Rating	Scores	5 February	Rating	Scores	8 February	Rating	Scores	10 February	Rating	Scores
Slovenia	2377	4	Slovenia	2377	0						
Serbia	2440	2	Russia	2866	2	Russia	2866	2			
Italy	2715	1				Portugal	2840	3			
			5 February								
Kazakhstan	2854	4	Portugal	2840	8				За 1 место		
Russia	2866	2	Azerbaijan	2440	1				Portugal	2840	3
Poland	2324	1							Spain	2715	2
			6 February						За 3 место		
Portugal	2840	6	Serbia	2440	1				Russia	2866	1
Ukraine	2412	3	Kazakhstan	2854	3				Kazakhstan	2854	0
Romania	2268	0				Kazakhstan	2854	5			
			6 February			Spain	2715	6			
Spain	2715	4	Ukraine	2412	0						
Azerbaijan	2440	3	Spain	2715	1						
France	2516	1									

The results differed from expectations. This is a normal situation. If you calculated the result of a match as simple as odd money in a store, then the sport would lose its viewer and the meaning of existence. However, there is a feature in this case. The algorithm did not react to the Portuguese national team that beat the Russian team in the semifinal. In previous years, the team was selected for the most powerful opponent which was usually the team of Spain. Now the algorithm focused the coach on the national team of Kazakhstan. At the same time, it was assumed by default that the Russian team would beat weaker opponents on the class. However, due to the generation change process, difficulties were already in the match with Poland.

As a result of this comparison, the modeling algorithm on www.ra-first.com has been improved.

The Russian team played against Kazakhstan in the group with a score of 2:2 and 1:0 in the match for the bronze medals at the European Championship-2018. The total score of these games is 3:2. At the same time PIRS gave the advantage of 4.26:2.75. For two matches, this difference would be equal to 3 goals + 1 goal loss for not exactly selected players. Total team for a personal meeting did not get 4 goals. Let's consider where this advantage was lost.

Table 6 - Comparison of the play level of the recommended and actually involved line-up of the national team.

Evaluation	Player	Club
3870	Sorokin	Sinara
3833	Kutuzov	Norilsk Nickel
3655	Glavatskikh R.	Sibiryak
3444	Prudnikov	Sinara
3444	Kozlov K.	Progress
3415	Baghirov	CPRF
3384	Bastrikov	Sinara
3337	Signev	Gazprom
3619	Lima	Gazprom
3348	Robinho	Gazprom
3011	Davydov	Gazprom
3234	Chishkala	Gazprom
3207	Lyskov	Gazprom
3226	Romulo	Dynamo
3240	Milovanov	Tyumen
3395	Abramov	Dina

Legend: Average Rating – 3522. Average Rating – 3375

Table 7 - Recommended by the algorithm and the actual number of single combats of participants of the match of Russia and Kazakhstan.

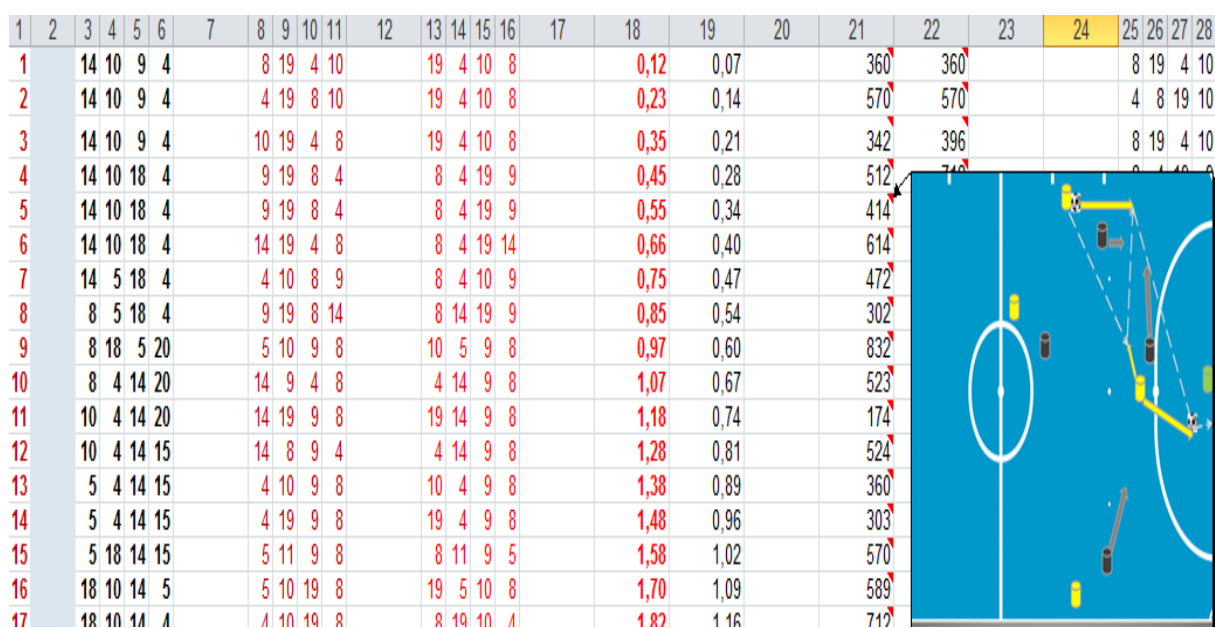| Player	Ned attack		Ned defence		Deflection
	Recommended	In fact	Recommended	In fact	
19 Chishkala	17	25	22	20	-6 ↓
10 Robinho	42	45	12	8	1 ↕
14 Davydov	17	19	21	17	2 ↕
8 Lima	25	33	14	18	-12 ↓↓
5 Romulo	21	20	48	21	28 ↑↑
4 Lyskov	25	26	12	8	3 ↑
9 Abramov	19	20	20	27	-8 ↓
11 Niyazov	18	8	13	10	13 ↑↑

Figure 4 - Line-up of the national team of Kazakhstan (black, No. 3-6), the corresponding line-up of the Russian national team in defense (burgundy, No. 8-11), in attack (red, No. 13-16), the expected game score according PIRS (18, 19), recommended combinations (21, 22).

Table 8 - Minutes that players of the Russian national team have to play in different positions (1 – defender, 2 – left edge, 3 – right edge, 4 – forward).

Player No	No 1	No 2	No 3	No 4
19 Chishkala	14	1		
10 Robinho	14	2	14	
14 Davydov	5			9
8 Lima				20
5 Romulo	1	15		9
4 Lyskov	5	16		
9 Abramov			26	2
11 Niyazov	1	2		4

We created a game model of Russia-Kazakhstan and found out that:

0.2	The difference in the ratings of the Russian national team and the national team of Kazakhstan is 60 points. It gives advantage to our team for 0.2 goals.
0.5	The opponent and our team played with the score 2:2 in the first match and 1:0 in the second match. A total score is of 3:2.
-0.5	The choice of the coach weakened our team by 0.5 goals
+1.5	When using the management solutions recommended by us with the line-up chosen by the coach, the expected score in the match of Russia-Kazakhstan is 4.26:2.75.
- 4	For two matches, this difference would be equal to 3 goals + 1 goal loss for not exactly selected players. Total team for a personal meeting did not get 4 goals.

The expected score in the match with such an advantage PIRS team: AMFR team 1.9:1.4 = 0.5 гола.

The choice of coach weakened our team by 0.5 goals.

The best amount of playing time for each player depending on the position of the Russian team on the field at the European Championship-2018 is presented in Table 8. This amount depends on the opponent line-up and the location of the most comfortable player of the opposing team.

DISCUSSION

Each coach in the course of work creates his own game model team. Usually this model is the main secret of the team. Therefore, there are so few similar examples in the literature. The PIRS model is not artificial intelligence. She is a mathematical model for solving an applied sports problem of successful performance of a top-level team.

For the PIRS model, there are two possible alternatives. This artificial intelligence and expert assessment of the coach.

Artificial intelligence based on neural networks is used by well-known services SciSports and Stats. The problem of these systems is the need for many years to teach the program on the examples of the decisions of famous trainers. In other words, artificial intelligence reproduces the opinion of a good coach. Thus, we have only one opposing point of view. This is an expert assessment of the coach.

In order to understand how accurate it is, you can conduct an experiment. Ask a group of coaches to write on paper the best player in the national team. Ask them to write a fifth player on the team. Ask coaches to write a third player on the level of ability to realize a scoring chance. Collect trainer records. You will find that they wrote different surnames. According to the head coach of the Russian national team S. Skorovich, the coach knows well the strongest and weakest players in his team. The rest of the players, he imagines very approximately. Therefore, it is not possible to evaluate 110 players of the Russian Super League as candidates for the national team.

In other studies based on the PIRS model, we found that coaches realize the potential of their team by only 67%.

We could compare different models for the accuracy of the forecast for the match. The PIRS model provides such an opportunity. However, other models do not provide such an opportunity. We could cite the comparative data of the work of the PIRS model with bookmakers, but this topic is beyond the scope of this study.

In such a situation, the coach cannot adequately compare all possible alternatives.

However, this study was able to assess important aspects of the work of the coach.

Why is the maximum level practically unattainable?

- Players may not reproduce their level of play.
- Players may not remember too much information.
- Opponent can change his game.
- The dynamism of the game and the impossibility of its full determinism.
- Players are used to a certain model of their game in the team, etc.

To overcome all these difficulties it is necessary to create your game model for each next opponent and master it in training. Perhaps, after a while, futsal players will also wear an earpiece on the game through which the coach will tell them what to do next like the stars of TV-series.

CONCLUSIONS

Computers are better playing chess and other games than a person. Game sports are next. An information pool called futsal is too large to be effectively controlled by one coach. The resource of the game is used only by two thirds by the forces of coaches. This unclaimed tactical resource of the game is the limit of the coach possibilities. Now there is the time of information algorithm competition. The competition of coaches turns into a competition of analytical groups.

The information rating technology (PIRS) proposed by the authors

• based on the priority for the game activity difference of goals scored and conceded goals

• represents a simple universal linear solution of a complex problem

• allows you to determine the maximum value of the game result with a given opponent based on his placement and distribution of single combats according to the positions of the players.

• Forms answers in an understandable format of the advantages in the score

There are a number of other competing indicators of the player's utility. But their correlation with the results of games is lower and they do not have such ability to create a computer version of the upcoming match as PIRS. Technology is better at the national team level where it is more difficult to work for a coach because of the large number of options to create a team.

The maximum result is practically unattainable due to the information complexity in the use of a large group of people. It is necessary to create your game model for each next opponent and master it in training, rather than using one universal version of the game.

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