minsait
by Indra

Who is going to win the next World Cup?

The data gives us the chances

impact to go

Who is going to win the next World Cup? The data gives us the chances.

In an ever more equalized sports world, where small details separate victory from defeat, Sports Analytics gains strength as a differential factor giving the possibility of unimaginable success rates to teams that know how to take advantage of it.

Although the analysis of data applied to sport has been used for years, the greater power of calculation of the equipment and the evolution of the analytical systems has made this study get more relevance and a new horizon has appeared in the sports competition.

Such is the importance it has acquired in recent years that a specific branch of analytics dedicated exclusively to this field has been created. Sports Analytics, which is defined as the application of advanced data analysis tools using objective information that optimizes the work of athletes and clubs.[1]

As in the business environment where the use of data and Big Data offers great possibilities, in the sport environment the same thing happens, although many do not know what can be obtained with the data collection and its subsequent study.

Those clubs who decided to go for this analysis are gaining decisive advantages over their rivals letting small teams compete as equals with clubs with bigger budgets when they are using this tool efficiently. This is the case of Leicester City, which is a modest team of the English Premier League that won 2015/2016 premiership by using data analytics for the prevention of injuries, getting to be the least damaged team in the entire league.[2]

Nowadays, a large technological investment is not necessary due to cloud technology. The most important thing is to have data. A team of Data Scientists allows refining and obtaining the relevant information. This group, in cooperation with the staff of the clubs, will create multidisciplinary teams, giving meaning to the data and designing strategies that will help them to obtain better results.

Sports analytics started to be developed in the United States; being the pioneers in the study of baseball, football and basketball data. However, nowadays its versatility towards any sports has made it expand to other countries, where teams from other sports such as football or cycling, incorporate data analysis as a complement to their actual systems

> “During a football match 8.5 million data are generated and then are analyzed by Big Data tools such as Python, R or Spark”
>
> **Noelia Gonzalez Rodríguez**
>
> Data Science Tribe Lead in Digital Practices of Minsait by Indra

Clubs are aware of the value that fans bring to their business structure, so they use data analytics to improve their business efficiency by offering the most appropriate benefits according to their commitment. One of the best ways they have to get this fan engagement is keeping their fans updated at all time, by generating quality contents in accordance with their tastes and preferences, which is known by the clubs due to the data obtained of social networks. However, the opportunities generated with Sports Analytics are not limited to fans, but have also been extended to athletes and clubs in fields such as the following:

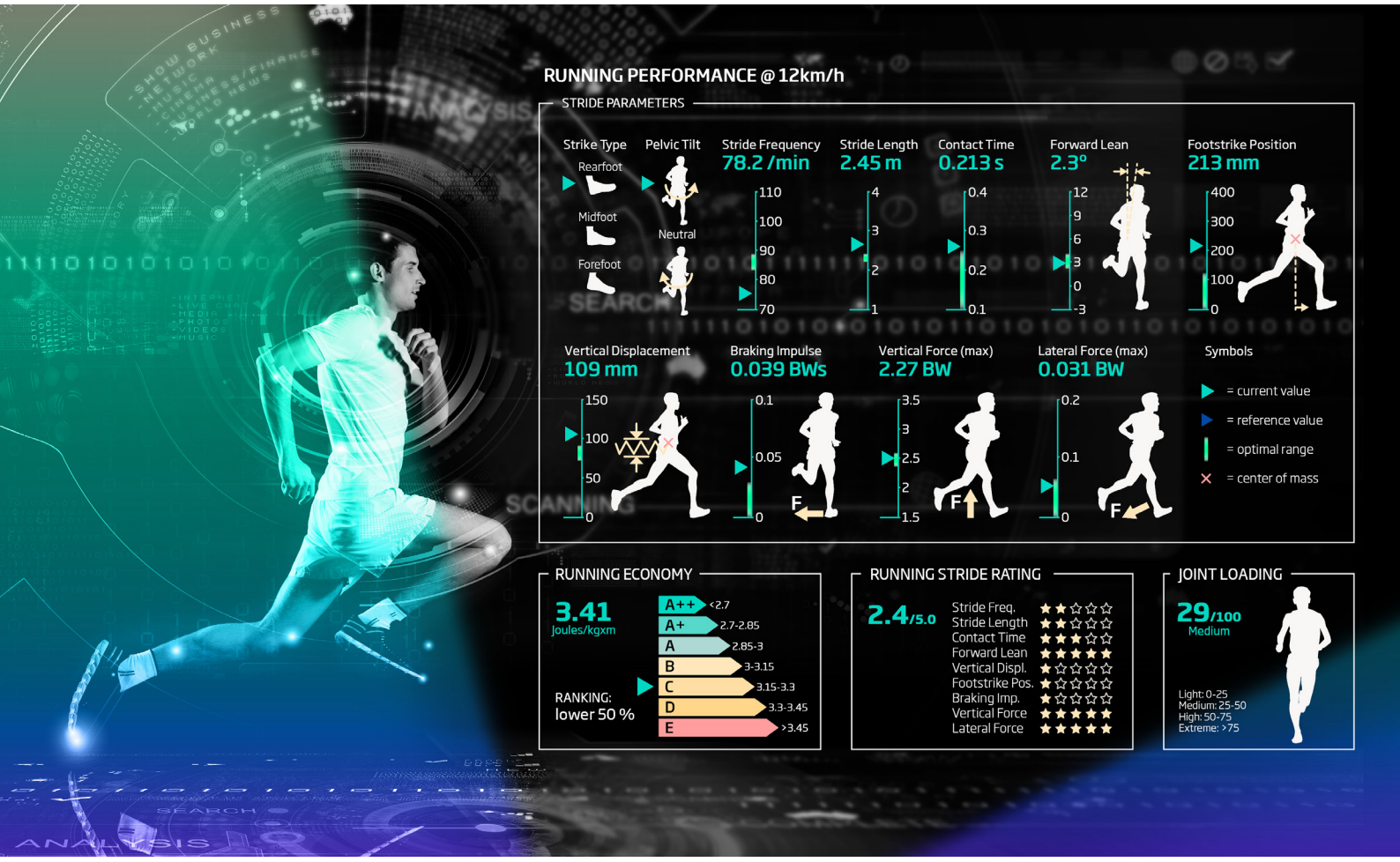
[1] Minsait

[2] Mark Brus. **Leicester City are bottom of the Premier League table...for injuries** [online], April 2016. <http://metro.co.uk/2016/04/26/leicester-city-are-bottom-of-the-premier-league-table-for-injuries-5841263/> [Consulted: 11/4/2018].

Detailed performance control

Athletes are the greatest asset that the clubs have. For this reason, to maintain optimal conditions when facing competitions, special care must be taken with their physical condition. As a result, the workload should not exceed what the athlete can endure through good physical planning. In this way, the possibility of an injury occurring decreases considerably. This will be a main objective for the clubs, due to the high costs that these circumstances entail. It is estimated that, in 2015, in the four most important professional football leagues, the loss due to injuries was US $ 12.4 million per team.[3]

With the use of wearables that monitor the activity of the athlete, and through the support of the biomechanical analysis, greater control con be achieved, allowing adaptation to the particular circumstances of each one and achieving a higher performance. However, the results do not depend only on physical aspects, psychological factors can make athletes not take advantage of their qualities. Therefore, these data must also be considered and incorporated into the analysis.



Picture 1. Biometric analysis of a runner

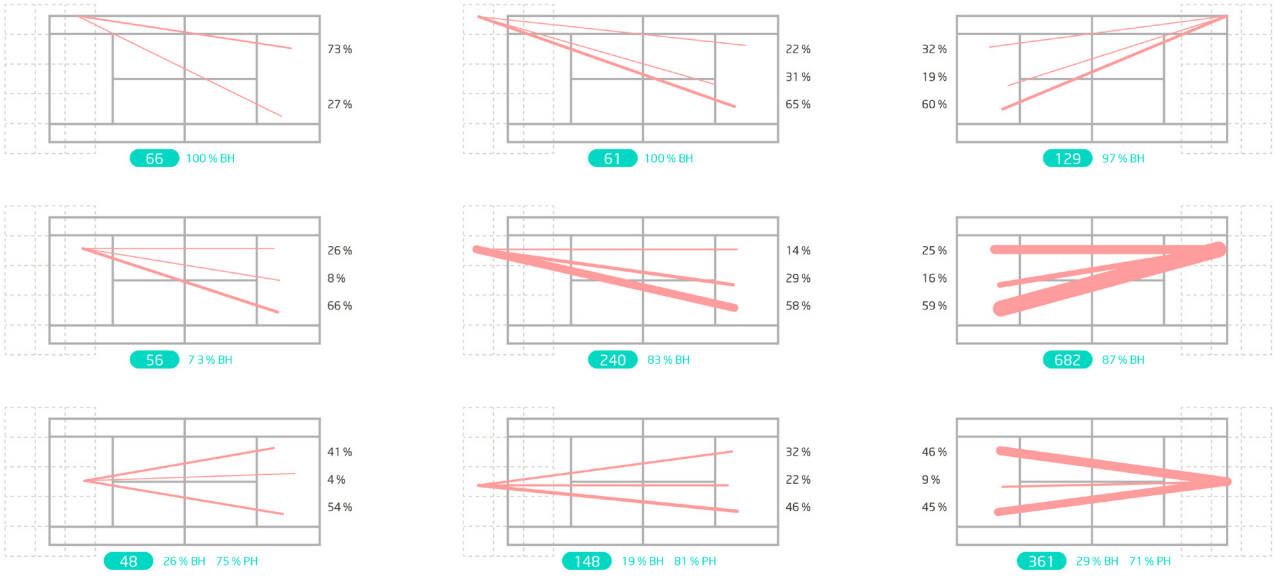
[3] Kasem Abotel. **El costo abrumador de las lesiones deportivas** [en línea], Agosto 2015. <https://news.sap.com/latinamerica/2015/08/19/el-costo-abrumador-de-las-lesiones-deportivas/ > [Consultada: 11/4/2018].

Digitalized competitions

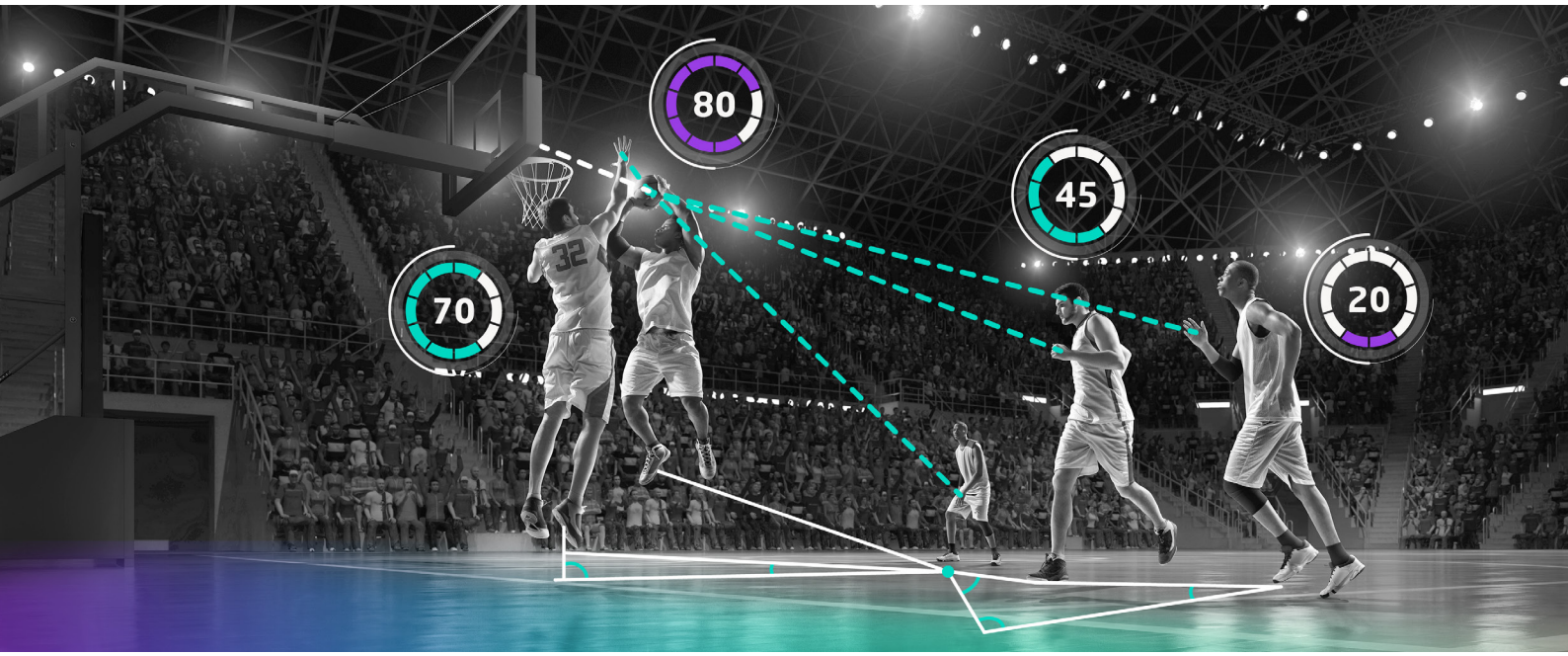
Sports competitions are decided by small details. Therefore, clubs want to have under control any aspect that can become decisive. Currently they have people specialized in visualizing opponents to know in advance their strengths and have more resources to be able to face them. However, the huge number of players and locations makes it a practically impossible task. Thanks to Sports Analytics it could be automated and make the process more efficient, being able to analyze the patterns of the game and the most effective plays of the teams that use Machine Learning as well as to know the skills of the athletes.

It is also possible to have a better preparation for competitions or even make corrections during the competition in real time. Post-competition analysis gains value, with quality information obtained through this tool.

In the NBA, the Golden State Warriors assess the potential of each play with data analysis. For example, they optimize the position of their players on the court so their best shooters can receive unopposed.



Picture 2. Analysis of a tennis player's pattern

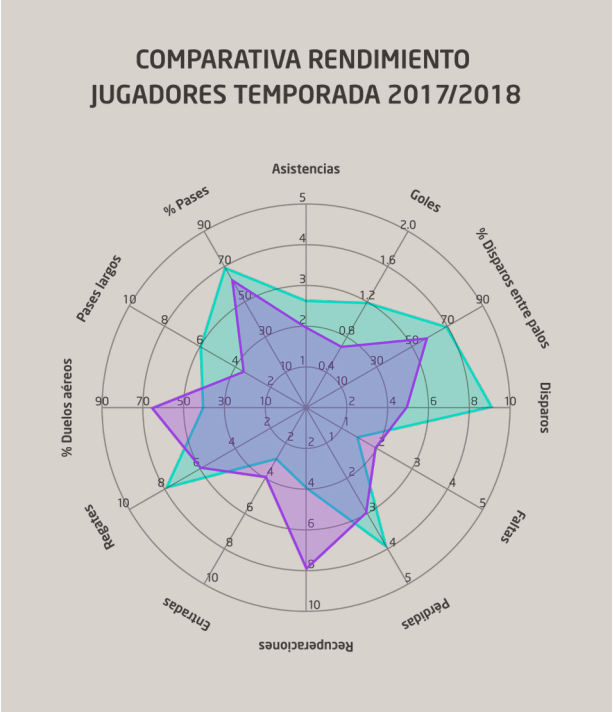


Picture 3. Optimization of a play in basketball through Space Analysis

Recruitment and retention of talent

Nowadays, sport is not just an entertainment but a business. The operations carried out in the transfer markets are carefully studied to know if the investment that are going to be made will fulfill the objectives that are sought. Sports Analytics provides reliability to operations, ensuring that movements are carried out with quality information. For this, the objective data of the athletes are taken into account to be evaluated according to the benefits they can bring to the team. With these evaluations, it would be possible to reward the athletes who have higher performance with higher salaries, achieving a fairer distribution of them based on measurable and objective parameters, or even redesign the incentive models based on other alternative parameters.

One of the most famous success stories is about Oakland Athletics, a baseball team that, for the 2002 season, recruited the players based on the statistics obtained from the data analysis, making a very competitive team capable of achieving a run of 20 consecutive victorias.[4]



Picture 4. Comparison of two soccer players according to their characteristics

Conclusions

The evolution in the future will be the integration of new wearables in athletes, with more activity tracking sensors, as in the different tools used for the game (rackets, balls, equipment, etc).

The current panorama of the sport is changing, the data analytics is getting more presence and its influence optimizing results is undeniable, so the study of them will be something usual in the future.

[4] Sports Illustrated. **2002 Oakland Athletics: 20** [online], September 2017. <https://www.si.com/mlb/2017/09/08/longest-winning-streaks-2002-oakland> [Consulted: 11/4/2018].

Bibliography

Minsait

Mark Brus. Leicester City are bottom of the Premier League table…for injuries [online], April 2016. <http://metro.co.uk/2016/04/26/leicester-city-are-bottom-of-the-premier-league-table-for-injuries-5841263/> [Consulted: 11/4/2018].

Kasem Abotel. El costo abrumador de las lesiones deportivas [en línea], Agosto 2015. <https://news.sap.com/latinamerica/2015/08/19/el-costo-abrumador-de-las-lesiones-deportivas/ > [Consultada: 11/4/2018].

Sports Illustrated. 2002 Oakland Athletics: 20 [online], September 2017. <https://www.si.com/mlb/2017/09/08/longest-winning-streaks-2002-oakland> [Consulted: 11/4/2018].

Authors

Ignacio Alvaro Fariñas
Director in Digital Practices

Noelia Gonzalez Rodríguez
Data Science Tribe Lead of Minsait by Indra
and professor of the Sports Data Analysis and
Big Data Course at the University of Valladolid

Minsait es la unidad de negocio de Indra que da respuesta a los retos que la transformación digital plantea a empresas e instituciones. Indra es una de las principales empresas globales de consultoría y tecnología y el socio tecnológico para los negocios clave de sus clientes en todo el mundo.

minsait
by Indra

impact to go

minsait.com