



leicester tigers

Smart is...

Using biometric data to anticipate player injuries and intervene to prevent them before they occur.

Player safety is a paramount concern for English rugby club Leicester Tigers; if top players are absent from big matches, it not only affects the team's performance, but could also result in lower ticket sales and reduced revenue. The club is in the early stages of using data mining and predictive analytics technologies from IBM – funded by the Matt Hampson Foundation – to gain insight into its historical biometric data with the aim of identifying the common factors associated with previous player injuries. By analysing its current player data for these factors, the club hopes that it will instantly be able to see which players are at the highest risk of an injury, and take preventative measures such as altering training intensity.

Leicester Tigers tackles player injuries head on

Keeping the team fit with predictive analytics from IBM

Founded in 1880 as Leicester Football Club, Leicester Tigers has grown to become the most consistently successful rugby club in England, with nine English league titles and two European Heineken Cup wins. The best-supported club in the country, Leicester Tigers generates an annual turnover of around £20 million.

Increased injuries, decreased ticket sales

Injuries to players are common in the sport of rugby – on average, one in four players will be injured during a season. Hamstring injuries alone, for example, account for an average of 14 missed playing days per season.

Injuries to players can have as great an impact off the pitch as on it. Aside from the human cost, if top players are frequently absent from important matches, there will be an increased risk of losing games, potentially leading to reduced ticket sales, and, ultimately, a fall in revenue. For these reasons, Leicester Tigers wanted to reduce the business risk presented by injuries to its 45-strong squad.

Andrew Shelton, Head of Sport Science at Leicester Tigers, explains: “Our data suggests that if we have a fully fit squad, we’ll rival any team in Europe. When we’ve had a lot of injuries in the past, we had trouble competing with the best.”

Need for deeper insights

Previously, the club's sports science team used spreadsheets to store, manage and analyse the large volume of data it collected on its players – including statistics on player fatigue, game intensity levels and injury rates. However, this spreadsheet-based process did not provide the predictive analytics tools required to deliver the deep insights that Leicester Tigers needed to reduce injuries. Furthermore, the spreadsheet application was unable to manage the sheer volume of data that Leicester Tigers was generating.



Business Benefits

- May enable the prevention of a greater number of injuries by proactively altering at-risk players' training programmes.
 - May reduce business risk by ensuring a higher level of play – helping the club to drive increased ticket sales.
 - May allow up-and-coming players to develop more effectively, increasing their chances of playing for the first team.
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Choosing a professional platform

The club wanted to gain the ability to use its massive amounts of objective and subjective raw data to identify and protect players at greatest risk of injury. To obtain the greatest value from its player data and reduce risk to its business, Leicester Tigers, with funding from the Matt Hampson Foundation, decided to implement a professional predictive analytics solution from IBM.

Working closely with IBM, Leicester Tigers implemented IBM® SPSS® software. After importing historical data from its legacy spreadsheets into the new solution, the club's sports science team used SPSS to identify trends that had led to player injuries in the past. The team then configured SPSS to look for these early indicators of injury in biometric data from sensors attached to players' bodies, alongside physiological and psychological data.

Biometric monitoring with SPSS

Sensors attached between players' shoulder-blades and live performance analysis software measure the frequency and intensity of collision and movement during training and matches. The sports science team aims to set individual parameters based on predicted injury thresholds and keep players within this range.

If the psychological, physiological or biometric data displays a statistically significant change, the IBM solution could issue a warning that the player is likely to become injured imminently. Using these insights, Leicester Tigers' trainers can create personalised training programs for players most at risk of injury.

“Leicester Tigers have always been proud of challenging at the top of national and European rugby competitions, but as the game gets more competitive every year our focus must be on helping our players stay injury-free for longer,” says Andrew Shelton.

Smarter Sport Science

Boosting player performance and reducing injuries



Instrumented

The new analytics solution integrates data collected throughout the season, including biometric data from sensors between players' shoulders, physiological and psychological information.



Interconnected

Coaches and trainers access the information to help inform the design of individually tailored training programmes.



Intelligent

Using predictive analytics, the sports science team aims to spot patterns and trends in player performance and behaviour, enabling the club's trainers to alter at-risk players' training programmes to reduce the risk of injuries.



Solution Components

Software

- IBM® SPSS® Modeler Desktop
 - IBM SPSS Statistics
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“We are confident that by adopting IBM predictive analytics our team will be able to leverage data about the physical condition of players for the first time and considerably enhance our performance.”

— Andrew Shelton, Head of Sport Science,
Leicester Tigers

“There is a tremendous value to be gained by retaining experienced players within the squad, and we are confident that by adopting IBM predictive analytics our team will be able to leverage data about the physical condition of players for the first time and considerably enhance our performance.”

Preventing injuries, reducing risk

In the past, the club's spreadsheet-based approach made it difficult to prevent injuries by identifying risk factors and proactively altering players' training routines. Today, Leicester Tigers is able to compare information about individual fatigue levels, injury records and psychological data with information such as the intensity of matches or practices using IBM SPSS software. By quickly identifying trends that increase the likelihood of an injury and taking action before damage is done, the IBM solution could enable the sports science team to ensure that more players are fit and healthy at any given time.

The sports science team plans to develop the solution to easily compare the relative health of the whole squad – seeing which players are trending upward in performance, and which need more rest or more training to prevent the harmful effects of over- or under-training respectively. With more players on the pitch for big matches, Leicester Tigers would be even better placed to continue to win games, attract large numbers of spectators, and maintain healthy ticket sales.

The club also hopes to use the IBM solution to help invest in its future success. By using predictive analytics in its under-19 academy, Leicester Tigers could assist coaches in selecting the most talented young players.

Conclusion

With IBM's expert support, Leicester Tigers has gained the professional analytics platform it needs to predict and prevent injuries.

Andrew Shelton concludes: “The end goal is that nobody gets to a state which may predispose them to injury. The logic behind this approach is simple: if you have your best players on the pitch, combined with the best tactical knowledge, you'll win more games.”

About IBM Business Analytics

IBM Business Analytics software delivers data-driven insights that help organisations work smarter and outperform their peers. This comprehensive portfolio includes solutions for business intelligence, predictive analytics and decision management, performance management, and risk management.

Business Analytics solutions enable companies to identify and visualise trends and patterns in areas, such as customer analytics, that can have a profound effect on business performance. They can compare scenarios, anticipate potential threats and opportunities, better plan, budget and forecast resources, balance risks against expected returns and work to meet regulatory requirements. By making analytics widely available, organisations can align tactical and strategic decision-making to achieve business goals.

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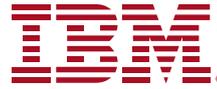
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About Leicester Tigers

To learn more about Leicester Tigers, visit www.leicestertigers.com.



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