

RTLS: Improving **Analytics, Performance** and **Engagement** in Sport

Digitalisation and technology tend to find their way into every area of life where they can offer some added value. Sport is no exception. The latest innovation conquering the sports world is athlete tracking through real-time locating systems (RTLS). The efficient use of data collected by wearable tags is proving to be a real game changer for the industry.

This is because data can enhance both the performance of athletes and the enjoyment of spectators. Location and biometric tracking offer huge possibilities for coaches and their athletes, but tracking is not only for professionals. Tracking applications can make sports more interesting and fun at all skill levels. Furthermore, the generated data can make sports more entertaining for those who sit in front of a TV or at a venue cheering for their favourite teams.

For example, all of the below stakeholders can benefit from the use of RTLS for sports tracking:

- + Sports coaches
- + Professional Athletes
- + Recreational Athletes
- + Sports Fans
- + Sports Venue Owners
- + Sports Betting Companies
- + Digital Service Providers i.e. TV Broadcasting



“ The ability to generate physics-based statistics provides value to teams in their competitive analysis and training, but it also offers value to viewers interested in the details.

The Present and Future of Motion Tracking in Sports
via Athletic Business
<https://www.athleticbusiness.com>

Access to New Data

The sports industry has always valued data. The best coaches are usually those with the most information and the most successful athletes are those who use data to improve their performance. Back in the 1970s, access to high-quality slow-motion video was a huge leap forward as it enabled coaches and athletes to make tweaks based on data rather than feeling. Today, RTLS is expanding the scope of data and analysis even further. New solutions can provide useful data on everything that happens on the field, with tailored accuracy from simple presence monitoring to centimeter-level precision.

- ✓ **Access to Accurate Data**
- ✓ **Analysis of Performance**
- ✓ **Comparisons Between Competitors**
- ✓ **Cost-effective & Unobtrusive Devices**

Team sports are a great example of where RTLS can really offer added value through new data. In football for example, small and unobtrusive tags can be integrated into players' uniforms, providing data about their every move: speed, distance, jumps, tackles, spurts etc. If we then also add a tag into the ball, the amount of available data expands even further as it becomes possible to track ball speed, passing percentage, ball possession, time travelled in the air and many other metrics. With data analysis it's now possible to learn which moments have the biggest effect on the game result and which players are most valuable to the team.

A totally different example of RTLS in sports comes from the equestrian event of show jumping, where RTLS together with video of the competition provide brilliant analysis of the differences between competitors. The system can be used to accurately track the time taken around the course, the number of faults, the average velocity as well as the distance taken to complete the course.

Individual sports can also benefit from the new data provided by RTLS. For example, in running, swimming or any other sport where athletes compete against the

clock, RTLS makes it possible to show a “ghost” of the world record performance next to the competitor’s performance to find out where racers fall behind.

The amount of data that can be collected with RTLS is simply massive. With advanced algorithms, the only limit is imagination.

Available for All Sports

Judging and evaluating an athlete’s movement is an essential factor in all sports. Despite the wide market potential this offers, most existing applications have been developed specifically for one type of sport. RTLS, on the other hand, offers a solution that can be used across the sports industry from swimming to high jump, from ski jumping to Australian football. Just think of your favorite sport and you can quickly imagine a dozen possible uses for RTLS.

✔ **Beneficial Across Sports**

✔ **Versatile & Adaptable**

The ways in which real-time data can be used vary across different sports and RTLS solutions can easily be tailored to these needs. The system can be set up to only show the data that is important to the user, be that a coach or an individual athlete. It can also be set up to provide the level of accuracy needed for analysing a specific sport.



For example, in fast-moving sports such as ice hockey, high-accuracy and real-time data are key. With the players and the puck moving across the ice at such high speed, it is essential that the tracking system can accurately assess where the puck is at all times without holding a doubt as to which player has control of it.

However, in some other disciplines, the real value of RTLS is not in the live tracking but the ability to analyse an athlete’s performance after an event for training purposes. For example, in javelin throwing, the analysis of the javelin’s trajectory through the air between rounds and between competitions can help athletes to adjust their throws more precisely than with old video-based

technology. Similarly, skiers have found analysis of data collected with RTLS to be useful in comparing different skiing techniques and how they affect time lost or gained at different stages of the track.

RTLS is a versatile solution that can bring value to a range of sports with different data needs. The collected data can be used to provide better statistics and to optimise training for athletes at all skill levels.

Benefits the Entire Value Chain

RTLS solutions naturally provide many results for the athletes and their coaches, but they can also provide benefits across the value chain. The same data that is used to improve performance, can also be used to increase fan engagement and to provide new content for TV broadcasters.

✔ **Performance Enhancement**

✔ **Performance Statistics for Teams**

✔ **New Content for Broadcasters**

✔ **More Statistics for Fans**

✔ **Improved Fan Engagement**

An example of a comprehensive RTLS application in sports that benefits the whole value chain can be seen in ice hockey. The same easy-to-use real-time ice hockey analytics solutions can provide data for coaches, teams, players, hockey fans and other relevant stakeholders.

Before RTLS, the manually compiled ice hockey statistics and analytics were very limited and slow, often based on video analysis. The analytics were far from real-time and it was not possible to make data-driven decisions during the game. Typically, game statistics were available many hours after the game – usually in the next day’s newspaper.

Now, RTLS offers real-time data to coaches, players and fans during the game. The benefits of an RTLS analytics solution in ice hockey are obvious:

+ **Coaches** can now make data-based decisions in real time. They can get visualised, easy-to-read material during a game or a practice session and react to it quickly.

+ **Players** get objective insights on their strengths and development areas. The analysis is no longer based on how skating, shooting or positioning looks or feels, but on accurate, reliable data.

+ **For Fans**, ice hockey with RTLS provides a new way to follow their favourite team. They get statistics instantly, and the fan experience can be enhanced with real-time competitions. For fans of sports betting, the extra information gives a better insight into both the player performance and the game.

+ **TV Broadcasters** get to enjoy better statistics and new possibilities to create more comprehensive sports entertainment than ever before.

With more value seen across the value chain, the stakeholders are more willing to invest, creating a positive chain reaction. The more the solution is developed, the better the value for all parties involved. From the example of ice hockey, it is easy to see how such solutions could be used to engage the whole value chain in other sports too.

Opportunities for Sports Venues

RTLS and sports digitalisation can also create new business opportunities for various sports venues by enabling them to offer more enjoyment for recreational athletes.

- ✓ **Enhanced User Experience**
- ✓ **Increased Safety**
- ✓ **New Competitive Advantage**

One good example of how RTLS can be used to enhance user experience at commercial sports venues is its use as an anti-drowning system for swimming pools. In these cases, swimmers in the pool have a trackable tag attached to their goggles and the system can then send a notification to staff if a swimmer is underwater for too long. In addition to the notification, the system can also pinpoint the exact location of the distressed swimmer for the lifeguards on duty to make sure that accidents are prevented. This is especially important in large facilities with multiple pools.

That same RTLS application can also be used to offer swimmers data about their personal performance in terms of distance, time, speed and calories burnt. While providing an additional service to the swimmers, and thus a competitive advantage for the swimming pool, the gamification of such solutions will also motivate swimmers and help them meet their fitness and activity goals.

Besides swimming pools, there are many other sports venues where traditional trackers do not work because they are not accurate enough. For example, golfers can gain much more enjoyment from their sport by using RTLS at the driving range. With a tag on the player and



inside the golf ball, it's possible to analyze swings, putts and the ball's path in extreme detail.

Modern RTLS can also provide competitive advantage for gyms. The tracking system can, for example, provide gym goers with useful information about peak times, which equipment is currently free and where to find easily movable equipment such as mats and steppers. This allows them to optimise their day and their workout, leading to happier customers for the gym. Setting up such a service for gym members requires a forward-looking approach from gym owners, but once the required technology gets even more cost-effective than today, it can be expected to become a standard feature at every modern gym.

Innovative sports venue owners can offer even more value to hobby league teams all over the world. Instead of just paying the rent for the field, teams can rent RTLS as a service. By paying a bit extra, teams receive access to tags and the service, as well as analysed and visualised data on all players – even if they are a hobby league.

As we can see, there are many ways in which sports venues can improve the services that they offer with the help of RTLS.

This article is just the tip of the iceberg on the impact that RTLS can have on sports. New applications are being developed across the industry everyday.