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London 2012 Olympics: Sir Clive Woodward backs technology 'gamechanger' to deliver Olympic golds

Meet Dartfish, a revolutionary video coaching and analysis tool that's Sir Clive Woodward's latest weapon in delivering sporting success for Team GB at London 2012.





Belief: Sir Clive Woodward is banking on technology to help Team GB succeed at London 2012 Photo: GETTY IMAGES



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10:51AM BST 12 Oct 2011

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Sir Clive Woodward is a man who most English rugby union fans would love to see come to the rescue of the national team after their disastrous World Cup campaign, but he is currently property of the British [Olympic](http://www.telegraph.co.uk/olympics/) (<http://www.telegraph.co.uk/olympics/>) Association, where his innovations continue to produce results.

One of his slogans in his previous tenure as head coach of the England team, a time defined both by his methods and his victories, was typical of his efforts to do anything to gain an advantage: "If you win in IT, you tend to win".

Between 1998 and 2004 Woodward implemented a number of methods that raised eyebrows amongst his rivals but that ultimately gave England small "half a per cent" advantages over their opponents. He employed a vast backroom staff including coaches for specific aspects of the game (unheard of at the turn of the century): a masseur, a chef, and even a QC for any legal issues that arose on tours.

Woodward understood that to be the best rugby team in the world the England side had to be the fittest. So he completely revamped the players' health and conditioning habits. Under the advice of their nutritionist - another member of the backroom staff - the England team were put on a high protein diet that prohibited them from eating carbohydrates after lunch and recovery after matches and training was led by the use of ice baths to help halt the build up of lactic acid.

Sherylle Calder, the visualisation coach who had helped establish Australia as the dominant cricket team of the 1990s, was also brought on board by Woodward. She created a software program that players used in training and spoke with them on a one-on-one basis to try to increase their spatial awareness.





Jason Robinson, in tight fitting England kit, scorches over for a try in England's 2003 Rugby World Cup final win over Australia

Every detail was accounted for, even the rugby jerseys the team wore. Woodward had noticed that some of England's fastest players were being prevented from accelerating away because their opponents were able to tug at their jerseys. Their kit suppliers Nike were alerted to the complaint and England entered the World Cup clad in tight-fitting shirts that Woodward insists made his players harder to tackle.

At the Rugby Football Union he also introduced Prozone, an evaluation system that fed back from 12 cameras strapped to the roof of Twickenham, which allowed him to track all the performance levels of his players.

This, he says, allowed England to overtake their southern hemisphere rivals and become the best team in the world, winning the only World Cup victory by a northern hemisphere team in the tournament's history.

Now in his role of director of elite performance at the BOA Woodward is at it again, determined to make Team GB the most technologically advanced outfit at the London Olympics.

And encouragingly for those who want to see GB athletes on the podium next year, he thinks he has the answer, thanks to the analysis software and storage products provided by a company called Dartfish. Little known outside professional sports, it is creating a minor revolution within them.

Woodward, in fact, rates the Dartfish technology, used by 22 of the BOA's Olympic sport teams, as highly as the Prozone software used on the way to Rugby World Cup victory.

"With England we understood how important technology was," says Woodward. "So I implemented the use of Prozone and it allowed us to lead the way ahead of the Aussies and the Kiwis.

"We've now set up an IT hub down in Stratford where we're planning on getting live feeds from the all London 2012 events, and we're hoping to work with Dartfish in terms of the overall software programme that we're using."

The intention is for the BOA to use the live video footage provided by the Olympic Broadcasting Services during the Games and plug that footage into the Dartfish software. Coaches on the sidelines during live events are then able to watch and analyse the pictures using their iPhones and iPads and can make live decisions based on real-time performance.

Brendan Reilly, the UK head of sport at Dartfish and a former Olympic high jumper for Great Britain, says this potential relationship between Dartfish and the BOA will give Team GB a significant advantage over their rivals as no other team will be able to plug into the OBS feed and make in-competition decisions.

"The other national bodies will not have access to Dartfish from the OBS feed," he says.

"We'll take the OBS feed and direct it into each NGB's private password-protected platform. This means we can also take footage of other teams. Team GB's analysts can then download it, tag it up, and find out weaknesses in the other teams before GB plays them. Their opponents will definitely not have access to this advantage.

"I had this wild idea a few years ago about whether this could help with home advantage and it's gone from a coffee conversation to something that's on the verge of actually happening."

FACTFILE:

What is Dartfish?

Dartfish is a Swiss video solutions provider. Many sporting bodies such as the British Olympic Association and the United States Olympic Committee use the software to analyse how their athletes are performing in training. Chelsea and Manchester United football clubs use the Dartfish Team Pro product to integrate their GPS data on top of a video to add relevance to the statistics.

How is it different from other video analysis software?

Dartfish allows its users to time-capture and tag their video footage, which means they can organise and categorise the footage, edit it intelligently and therefore analyse athletes' performance to a fine degree.





Michael Johnson using Dartfish to analyse sprinters' starts from the blocks

What can it do apart from editing?

Coaches can design an index which they can use to receive instant statistics from live footage. This allows a coach to make a quick tactical analyses of a live situation, or to technically analyse players in training.

How do athletes access it?

They can use a cloud-based storage portal accessible from any internet browser, known as Dartfish TV, to access video analysis specifically tailored to their needs by coaches.

What are their success stories (apart from Team GB)?

Dartfish software helped win 162 medals at the Winter Olympics, but it can also lay claim to helping Usain Bolt break the 100m world record at the Berlin World Championships, beating his previous mark from Beijing. "Usain Bolt's coach phoned me in 2009 and I sold them some licenses to the software," says Reilly. "They use it very basically. They line up the camera along the track, let him do his run and then come back and make minor adjustments. Just before Berlin he adjusted his start and by all accounts ran pretty quick."

Obsession or over-rated?

Woodward admits that in his roles with the RFU and the BOA he has spent many a night lying awake obsessing about who has the more effective technology - his team or his rivals.

He insists that by winning the technology war you not only stay one step ahead of your opponents, but you also win the respect of your athletes, who feel confident they are being coached by a team breaking new ground.



Dartfish analysis of Phillips Idowu's triple jump technique

"Your responsibility to these athletes is to make sure you stay ahead of the game," he says. "And if you come

away and you've lost because someone's turned up with something you've not thought about then you've blown their one chance.

"But there's a balance to be struck. That's the art of coaching. You get the balance right and it makes a big difference to the team and the athletes.

"We want to lead in everything we do: on the pitch, off the pitch, in training and in technology. We want to lead in everything. If your athletes think you're leading the way it can provide a really good boost as they know their coaching team is pushing the boundaries."

These words might resonate within the corridors of the Rugby Football Union but Woodward is not without his detractors. He received plenty of criticism for his approach to the British and Irish Lions' tour of New Zealand in 2005. As head coach Woodward took a bloated party of players and coaches, even hiring New Labour spin doctor Alastair Campbell, but this time Woodward's methods did not work as the Lions lost the series 3-0.

The touring party was split into two groups with a midweek team and a de facto Test team travelling and lodging apart from each other, creating somewhat of a chasm between the two, while Campbell's confrontational approach to the media gave the impression of an aloof Lions set-up.

If Team GB fail to get near their performance in Beijing on home soil then the sight of Woodward looking helplessly on with an iPad could be even more damaging for his legacy.

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Will Sir Clive Woodward's technology deliver glory for Team GB?



Yes - if you fail to prepare then prepare to fail



No - what a load of old tosh

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Reilly is of course (as a provider of the product) an advocate of the role technology can play in sport. But he is also in the helpful position of having been an athlete himself.

He says his experience in the run-in to the Barcelona 1992 Olympics was an example of how all athletes can benefit from regular close examination of their technique.

"I jumped poorly at a national meet before the Olympics and a biomechanical analysis was done on me at the time. I got the results at the end of the season and they said I had a brilliant high point of mass but I was 25 centimetres in front of the bar, so I was coming down on it.

"I had something clear to work on before the Olympic Games which was very helpful. So I went in to the

competition expected to do well but because my run-up was inconsistent I messed up.

"That experience allows me to know that athletes don't just make improvements on a season-by-season basis, they can improve on a rep-by-rep basis, and it's pretty easy to achieve that."

At London 2012, Woodward's hope will be to take modern sport one step forward. There will be less reliance on coaches' innate judgement: the stakes are too high and most importantly the technology is too good to ignore.

So, if you hear Woodward or one of his Team GB cohorts uttering the famous Olympic motto of "Faster, Higher, Stronger" during the Games, don't be surprised if they're referring to broadband speeds, fixed cameras and GPS signals.

THE COACH

Peter Bentley, a performance coach with the British sailing team, speaks about Dartfish in positively evangelical tones. This is unsurprising when you consider that sailing, from the boats to the sails, is a sport with technology at its heart.

Bentley says that international sailing teams have been locked in a constant race to get the best technology since the days when polycarbonate housing for their cameras cost as much as £800.

"Video technology is absolutely fundamental to what we do and our coaches will rarely go on to the water without the equipment," he says.

"When we train we take the footage we shoot and put it into Dartfish. It enables us to edit the video footage that we have so that as a coach I can take that 30-minute video and reduce it to maybe three 10-second clips of the athlete doing something three times.

"Now as a coach I am in control of the debrief. I can clearly show that athlete that these are things I want them to work on, instead of them watching 30 minutes of unedited footage, drawing their own conclusions and learning nothing."

Bentley likes to use the phrase "gamechanger" so much so that it begins to lose meaning. But when he talks about Dartfish TV - the firm's cloud storage portal - he gets so animated that its hard not to believe that it really has made a difference to the British sailing team.

"Dartfish TV is our cloud-based server that holds all of our footage," says Bentley.



Ben Ainslie benefits from the video analysis that Peter Bentley provides using Dartfish

"The athletes can go home, log on and watch it in their living room. But instead of watching the whole session they've got the three clips to focus on. It also gives us the ability to search for, archive and store video.

"Very recently we bought a machine that could burn 10 DVDs at once for our athletes. At the time we thought it was fantastic. Now it's gathering dust in a storage container somewhere."

THE ATHLETE

Louise Hazel, the 25-year-old British heptathlete, who came fifth at the recent World Athletics Championships in Daegu, is a convert to the use of video analysis.

She says technology has helped improve her technique, avoid injury and accept when she is wrong, and her coach is right.

Before using the technology she admits she was unaware of a major fault in her throwing technique, and would argue about it with her coach. Now there is no argument because the video tells no lies.

She gives the example of the 100m hurdles, where the use of super-slow motion playback allowed her to implement a tiny change to her block settings. Hazel says it is no coincidence that she consequently recorded a

personal best.



Louise Hazel (with glasses) on her way to a personal best in the 100m hurdles

"We film in super-high speed and play back in super-slow motion so we're [Hazel and her coach] able to pick out aspects in very fine detail that you wouldn't normally be able to see," she says.

"In the 100m hurdles we were able to adjust my block setting by about six inches just to make sure I crossed the hurdle as smoothly as possible without decelerating. And it must have worked because I ran a personal best in Daegu.

"When you're out training all week the camera analysis can add additional purpose to the session, giving you a goal, a clear objective you want to meet. This targeted approach can help increase your effort in training.

"And when you can refer back to that feedback and gain something positive, that goes a long way, it boosts confidence. That's absolutely imperative, especially in the summer period when focus is on quality over quantity."

Clive Woodward, Peter Bentley and Louise Hazel were speaking at a Panasonic event at the British Olympic Association.

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