

# **Marginal gains: Olympic lessons in high performance for organisations**

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## **Introduction**

A concept known as 'marginal gains', an approach to performance improvement in elite sport came to prominence during the London 2012 Olympics when Team GB cycling won a record eight gold medals. Since National Lottery funding was awarded in 1997 to develop British cycling, the ethos of making aggregated small gains in many areas to improve overall performance has been central to its success. The concept of marginal gains is not new and the approach is used in many sports, where it has contributed to individual and team achievement at the highest level. Some examples of marginal gains and their development in sport are outlined below. A management perspective is provided which considers the implementation of a marginal gains approach in a Fire and Rescue Service organisations.

## **Team GB cycling**

Dave Brailsford, British Cycling Performance Director appearing on BBC Breakfast on the final morning of the Olympic track cycling competition, explained the concept of marginal gains as: *"The whole principle came from the idea that if you broke down everything you could think of that goes into riding a bike, and then improved it by 1%, you will get a significant increase when you put them all together"*. In other words, it is the aggregation of a number of small gains that result in a large gain in overall performance, which can be significant in terms of achievement and outcomes. Brailsford sums it up: *"Put simply... how small improvements in a number of different aspects of what we do can have a huge impact on the performance of the team"* (Slater, 2012).

In addition to his role with GB cycling, Brailsford is also the principal of Team Sky Pro Cycling who came second in the 2012 Tour de France team competition, and team member Bradley Wiggins became the first ever Britain to win this iconic race before going on to win a gold medal in the time trial event at London 2012 – his seventh Olympic gold, a feat only equalled by Sir Chris Hoy of Team GB cycling.

## **Marginal gains in other sports**

Many sports adopt a marginal gains approach to improving performance - we will focus on those where this method has been widely publicised. Many marginal gains in cycling have their origins in technology, e.g. frame, wheel and other component design in terms of the bikes. Technology also influences what riders wear and their diet. Bike technology has been heavily influenced by Formula 1 (F1) racing with the use of computational fluid dynamics (CFD) and carbon fibre, to design and manufacture the lightest and more aerodynamic machines possible (Hargrove and Bradley, 2012).

The world of F1 is dominated by marginal gains, as regulations on the specification of racing cars drives the teams to eke out the smallest performance advantages they possibly can, which has led to the use of energy transfer systems, changing down force and the use of

telemetry (collection of real-time data from a car as it is driven). McLaren Applied Technologies in Surrey, UK is the R&D organisations behind McLaren F1 racing and is utilizing its technology in other sports such as sailing and cycling, developing racing bikes tested by 2011 Road Race World cycling champion, Mark Cavendish.

The England rugby team won the World Cup in 2003 under coach, Sir Clive Woodward, who describes the importance of 'critical non-essentials' (CNe's) as part of his strategy to develop England into a World Cup winning team (Woodward, 2004). CNe's were the small things in the detail of everything the team did in its preparation and playing that could be improved to set the England team apart from its rivals, and create a winning mindset which would influence players' behaviour. Woodward's interest in the concept of CNe's was influenced by the work of Australian Dr Paddi Lund (Lund, 1998) who Woodward met while working in Australia before he became England coach. Ironically, England defeated Australia in Sydney in the final.

The first recorded application of marginal gains in competition takes us back to the 19<sup>th</sup> Century in the game of chess, when Wilhelm Steinitz (1836-1900) became the first official world chess champion in 1886. Steinitz was the first player to develop a scientific approach based on the accumulation of small advantages, which became known as Steinitz' Accumulation Theory. The success of this approach lay in the ability to analyze and understand the position of pieces to be able to accumulate advantages to gain dominance against an opponent (Landsberger, 2006). For 'accumulation of small advantages' read 'aggregation of marginal gains'.

### **High performance organisations**

To compare the use of marginal gains in sport with performance in business, it is helpful to consider the principles which underpinned GB Team cycling's 2012 Olympic success. Dave Brailsford provides insight into the systematic management approach applied at Team GB cycling: "*Firstly, you need a team with the skills and motivation to succeed. Secondly, you need to understand what you want to achieve. Thirdly, you need to understand where you are now. Then, you need to put a plan in place to see how you can get from where you are now to what you want to achieve.*" (BBC Breakfast, BBC1, 7<sup>th</sup> August 2012). This quotation captures the strategic and systematic management approach taken by Brailsford and his team. Understanding where Team GB cycling is now and planning future performance is based on the sophisticated application of metrics to track marginal performance gains. Marginal gains are sought from every aspect of Team GB cycling's activities that contribute towards performance, including the technology that enables collection and analysis of real-time performance data. Performance improvement across such a range of areas demonstrates the holistic management approach taken by Team GB cycling.

Brailsford states the first requirement is a team with the skills and motivation to succeed. One cannot underestimate the interventions to meet this requirement, e.g. talent management, but the strategy of marginal gains in terms of elite competition starts when the team is in place under Brailsford's performance management specialists. Theories in performance management and high performance teams/organisations suggest that people need to be highly skilled and motivated to perform well (Katzenbach and Smith, 2005). Elite sports teams are high-performance teams that are shaped by a high-performance

organisational culture. The HRM literature describes the application of specific and integrated ('bundling') of high-performance work practices (HPWPs) in high-performance work organisations (HPWOs) to aggregate gains (Lawler, 2005). Team GB cycling has successfully embedded continuous improvement practices in all aspects of its operation to realise aggregated marginal gains and, in doing so, is effectively managing change and performance.

## **Managing improvement at Dorset Fire and Rescue Service**

Dorset Fire and Rescue Service (DFRS) have a proud history of high achievement that has been widely acknowledged by external bodies and the public, but there is a continuous need for improvement and to reshape the organisations, particularly in light of recent poor financial settlements and an ever gloomier economic forecast. To respond effectively to these challenges, major destabilising change may be required in some areas, but this needs to be complemented by small evolutionary change in other areas. However, the desire for evolutionary change (marginal gains) may sometimes be obscured by more revolutionary strategic debate, rendering continuous improvement passive rather than being driven by strategic intent. It is this context that has sparked an interest in the concept of marginal gains as representing an opportunity to be more proactive, more empowering and more organic.

Like many organisations DFRS is sometimes surprised by the impacts that small positive interventions can make. Allowing on-call firefighters to text in their availability rather than having to visit the station has led to a massive increase in fire cover across rural Dorset. Applying bar-code readers to manage assets has led to significantly improved legal compliance and management of over 30,000 traceable pieces of equipment. Changing station shift systems in tandem with increased managerial flexibility has led to a more productive working day. Less prescription over work routines has allowed adaptable and responsive services being applied to changing community needs. All of these things in themselves are small changes but together have led to some considerable improvements to community and firefighter safety through aggregated marginal gains.

Whilst these changes are proactive, they often lack a strategic and holistic drive, and a framework for marginal gains to be more clearly recognised, identified and exploited. As a strategic management team, DFRS are now interested in this approach to join up these smaller activities into larger programmes of work that are more strategically focused, allowing them to be fully recognised alongside the appetite for bigger revolutionary change. DFRS have identified three key areas as a focus for discussions taking this forward:

1. **Leadership gains:** small changes in overall strategic leadership and management that provokes new thinking in managers, and innovation within and between departments that improve efficiency, effectiveness and increased morale.
2. **Technological gains:** introducing low cost, undistruptive ICT or equipment changes that improve customer and service delivery experiences.
3. **Process gains:** changing processes through LEAN thinking and application, along with the improved use of metrics to focus resources on the things that really make a difference and from which marginal gains can be determined.

To take a more strategic and proactive position on marginal gains, DFRS management believe that there are a number of common challenges to organisations. There may also be some that are more relevant to public sector organisations where the 'bottom-line' is more complex than profit, or in the case of sport, quickest time or points accumulated on the board.

### **Resetting the culture**

One of the key challenges is to mindfully recognise 'margin gains' within the overall strategic discussion and debate regarding continuous improvement. This must start with a discussion on the cultural norms that an organisations wishes to develop and promote. The focus needs to be 'we're good, how do we get better?' and 'our people are good, how do we make them better?' Adopting this position sets a fundamentally different starting position from one that may often be focused on gaps and weaknesses. Although both approaches are focused on continuous improvement, the former is more likely to positively inspire, support higher levels of trust and allow empowerment to flourish. An example could be adoption of a strengths-based leadership approach to the development and management of our leaders that could produce the marginal improvements in personal performance and maximise talent.

### **Corporate coordination and focus**

Inherent to this debate is the tension between the creation of an enabling environment with bottom-up empowerment and the need to corporately focus limited resources to maximise the opportunities for marginal gains in key and prioritised areas. If this is not considered then positive marginal gain in one area could cause an unintended consequential impact in another unless some coordination is in place or boundaries for managers set.

### **Not everything needs to be measured**

It is important that resources are fully accountable and used to their full potential and metrics are clearly important when indicating areas for marginal gains and measuring their success. However, whilst metrics are very important, organisations can often sleep-walk into an approach whereby gains need to be fully justified and accounted for or, potentially, may be dismissed. Introducing measurement frameworks and metrics may lead to innovation more focused on meeting targets (because individuals are held to account) than a more creative culture where managers are encouraged to innovate and to find marginal gains in all areas of their work.

This may be particularly relevant in the public sector where outcomes and outputs are sometimes less tangible and, it may need to be accepted that not everything can or needs to be measured. There is the danger that intended marginal gain may be quickly eroded by the bureaucracy needed to measure it. Sometimes it may take courage to allow the gain to be ill defined; irrational, but emotionally valid. For instance, a feeling of self-efficacy in managers through greater empowerment is essential in creating improved performance is very difficult to measure.

## Conclusion

It is argued that the notion of marginal gains could offer a more proactive, less passive approach to an organisation's desire for continuous improvement. Such a gradual approach offers benefits in terms of managing change, i.e. more involvement and less resistance, and developing an organisational culture that supports high performance behaviours. However, central to this must be a mindful debate and intent to recognise that many small gains can add up to something bigger in terms of individual and group performance for an organisation.

The concept of marginal gains has had an impact in sport and, it is interesting to wonder why this approach seems to be recognised more in sport than in business. Perhaps part of the London 2012 Olympic legacy will be that we reflect on the success of Team GB's athletes and appreciate the significance of marginal gains in their achievement?

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