

MICHAEL CALE

CODING

<for>

SPEED

A Hacker's Guide to a Faster Web

Coding For Speed

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Michael Cale

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A jug fills drop by drop

– Bhudda

Contents

The aggregation of marginal gains	1
Building for speed	3
Book layout	4

The aggregation of marginal gains

Dave Brailsford was asked to do what had never been done.

As the new General Manager of Great Britain's professional cycling team (Team Sky), he was asked to lead the team to a victory in the Tour de France.

Inspired by the book *Moneyball* by Michael Lewis, Brailsford took a clean review of cycling's standard measurements and thought processes. He developed a new and innovative approach.

Initially, there were no grand, sweeping changes to the team training program. But there were hundreds of tiny, seemingly trivial changes. His goal was a 1 percent improvement in every area. And he meant *every* area.

He analyzed and focused on areas that other teams considered meaningless, or had never considered. He theorized that the combination of these tiny improvements would, in the end, be larger than their sum.

When he was hired, he was told the team goal was to win the Tour de France in 5 years. The team won it in two.

“People often associate marginal gains with pure technology, but it is far more than that. It is about nutrition, ergonomics, psychology. It is about making sure the riders get a good night’s sleep by transporting their own bed and pillow to each hotel. It is about using the most effective massage gel. Each improvement may seem trivial, but the cumulative effect can be huge.” – [Dave Brailsford](#)¹

Yes, he said transporting their own bed to each hotel. Actually, it was just the mattress, duvet, sheets, and pillows. And Team Sky staff cleaned each hotel room before arrival to make sure the athletes were comfortable.

Even the team’s bus was designed with a focus of making life easier for the athletes. It has custom seats, a cinema, and showers to ease the pre and post-race routines. It has a meeting room for strategy sessions

¹<http://road.cc/content/news/94528-sir-dave-brailsford-marginal-gains-and-froome-wiggins-rivalry>

whose glass becomes opaque at the touch of a button. The large black bus is nicknamed the Death Star.

Team Sky went on to dominate the 2012 Summer Olympics. Great Britain won 12 total medals in Cycling including 8 Gold, more than double the medal count of any other nation. Team Sky followed that up with a back-to-back win of the Tour de France in 2013 as well.

Building for speed

The reason we digress into cycling is to introduce this valuable concept.

The aggregation of marginal gains is the exact approach that will dramatically improve performance of web sites and services.

Taken alone, many of the approaches in this book may not provide notable (or even *noticeable*) improvements. But taken on the whole, there is room to significantly improve the speed of web services.

For more on incorporating this principle into your personal life, please read *This Coach Improved Every Tiny Thing by 1 Percent and Here's What Happened* by James Clear <http://jamesclear.com/marginal-gains>².

²<http://jamesclear.com/marginal-gains>

Book layout

In general, the techniques discussed in the book are presented with major techniques first. That is, the techniques presented in the early chapters will, in general, give you more improved performance than the techniques listed in later chapters.

Now, before we get into the specific techniques, let's review the importance of speed in web design and why it matters.