

An Insider's Guide to Performance Analysis

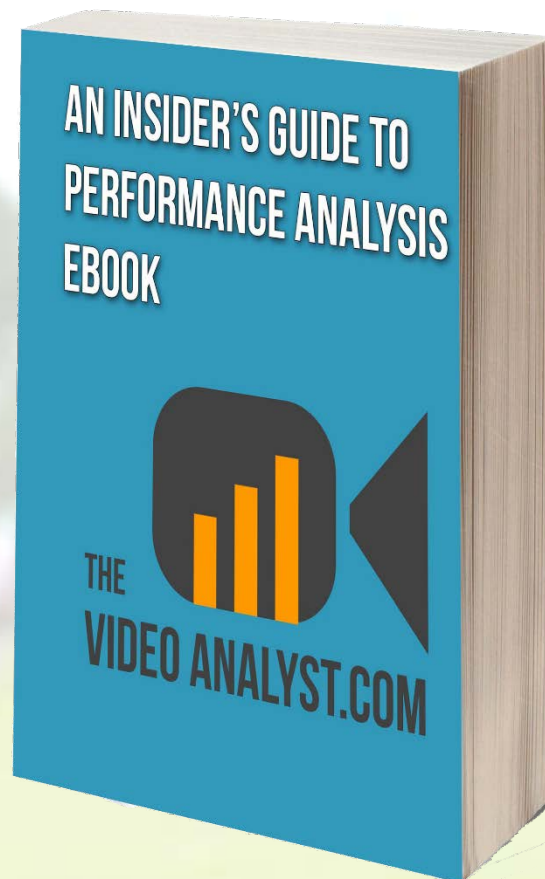


Rob Carroll
thevideoanalyst.com

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It would be brilliant if you found this book useful. It would be even better if you thought it was worth sharing with your friends, colleagues or players.

Although the book is 'free' I would ask that you don't just forward on the PDF file. It would be a massive thank you to all the hours that went into creating it. [To share this book simply click the book below.](#)



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About This eBook

The first eBook 'An Experts Guide to Performance Analysis' has been an overwhelming success and I thought it was about time to pull together version 2. The new book 'An insider's guide to Performance Analysis' contains the best of the blog posts written since the last book as well as some exclusive content that has yet to appear on the blog.

The aim of thevideoanalyst.com was to create a central hub of all things Performance Analysis – it's hard to believe, but in 2008 you would have found it very difficult to find any information about this specialty on the web. Now we see countless blogs and content created by the companies in the industry, analysts working in the field and many, many fascinating pieces written by analysts working 'outside' the club structure.

So almost 7 years on, I still can't believe the feedback I get on a regular basis. The eBook is broken into 6 distinct sections and contains pieces written by myself and some expert guest authors. I hope you enjoy it but above all I hope the following pages are useful to you as a coach or an analyst.

Thanks You's

The book contains some sponsored content as well as plenty of guest posts. I would like to sincerely thank, in no particular order; Will Jones, Paul Bonas, Eanna Kennedy, Mike Haines, Ali Pearson, Joe Maiden, Jose Ehrbar, Simon Edgar, Gunnar Mattiasson, Simon Farrant, Enda Barron, Mark Upton, Stuart Lierich, & Hannah Thomas.

Also a big thanks to everyone who interacts, ask questions and challenges the content on the site. I learn way more from this than people would ever know.

About The Author



Rob Carroll is the founder of the website thevideoanalyst.com, a site dedicated to bringing you a wealth of information in the area of video & performance analysis in sport.

Rob has worked in the area of performance analysis for the last 10 years and has worked across many different sports and in many different environments.

He currently lectures on the MSc in Sports Performance in University Limerick.

He currently holds an MSc in Performance Analysis from Cardiff Met and holds an ISPAS Level 6 award. He continues to learn as much as he can about this ever diverse field.

Rob also runs a sports data business called Gaelic Stats. This business collects performance metrics on behalf of the National Governing Body, teams and media organisations. You can learn more about this at GaelicStats.com

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Chapter 1

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5 Lessons I've Learned as a Performance Analyst

1. Network Your Ass Off



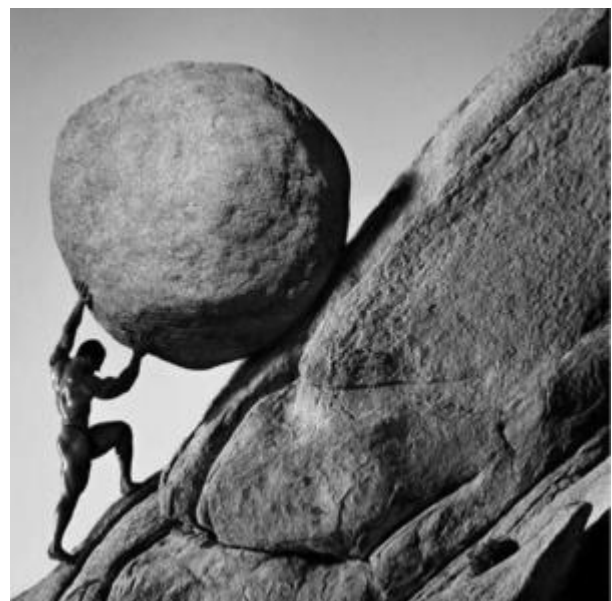
I absolutely hate the work Networking and when I started in business it frightened the crap out of me. But over the last few years I have seen that it's probably the best way to learn and pick up on new opportunities. When you are young and starting out Networking can be a daunting task. You attend conferences and it seems like everyone is in a click so you stick to yourself and look at your phone.

Push yourself - Aim to meet 2 new people at every conference you go to. 99% of these encounters will lead to nothing but if just 1 of those encounters leads to something it was all worth it. I actually think so many conferences (the actual talking bit) are mediocre - it's all about the coffee breaks.

Social Media offers a great way to meet new people, slowly introduce yourself, join in a conversation. **DON'T ASK FOR SOMETHING!** Your first contact with someone should not be asking for a job, experience, advice - try and get on their radar before you go rushing in and asking for something from someone who doesn't know you.

2. Don't Waste Time with Doubters

I've lost count of the number of meetings I've had with people who simply come with a closed mind about analysis. At first I used to waste my time trying to convince them - not any more. It just isn't worth the hassle. If a coach doesn't get it and isn't open to even discussing it - move on. The world will always have flat-earthers and that's fine, but don't waste your time with them, analysis has bigger things to worry about.



3. Push hard... and know when to stop talking

There can be so much enthusiasm with a new role in Performance Analysis, you have an idea of how things should be done. College has taught you best practice but life inside a professional sports organisation can be very different. Pre-season is easy as the managers or players are under no pressure but wait until the season get's started and you ship that first defeat and you will see a different side of things.

I think it is a big part of all analysts to constantly push hard within a team. Coaches and Players don't know what they don't know so you need to do more than just what you are asked for but you need to listen as well. You don't know it all, there are hundreds of things going on within a team environment and while there is a time to push you need to adsorb as much as possible and pick your moment.

4. Don't Forget The Basics

I often think at times there is some sort of technology arms race. Everyone needs more and more technology to beat the opposition. Often this comes at the cost of doing the basics right. I meet teams who spend thousands on performance analysis gear but couldn't tell me the definition of a successful pass?

Basic KPI knowledge, recording, storing and presentation are the very foundation of what we do - technology is only there to help. Don't get lost in a sea of gadgets and gizmo's - remember the basics and deliver them as effectively as possible.

5. Value Your Work



I have spoken previously about [internships](#) and [free work](#) so I won't re-hash the same arguments again. Free work is ok - as long as you are getting something real out of it. The minute that stops being the case you have to ask what's the point? I will still do some free (voluntary) work from [time-to-time](#) but ultimately that won't pay the bills so you need to be

confident in the value you add to an organisation and start charging for your time.

The other thing that people underestimate about charging is that it makes everyone pay more attention. If you are a volunteer and you keep showing up day after day people can take it for granted but start charging and people demand more from you and feel like they need to listen to you. Charging has an effect on your own efforts and how well it is received.

Funding Your Performance Analysis



Outside of the very top clubs in world sport, funding your performance analysis department can be difficult. Constantly going back to the powers that be looking for more money is time consuming and difficult. But are there ways you could finance some new equipment without asking the club for more money. I think there are, and watching a recent video from the Carlton AFL side I was reminded of two stories. In [Clive Woodward's book *Winning*](#) (which everyone should read) he talks about how in the early days he was having difficulty funding all the plans he had. He couldn't get the powers that be at the RFU to fund some of his ideas.

Innovative Thinking

The first was to makeover the dressing rooms; At the time there was a TV programme running which pitted 2 interior designers against each other to see who could make-up a room better. After getting nowhere with the RFU Woodward approached them about doing a show on the England dressing rooms. Simple, they were interested and Woodward got a brand new dressing room befitting the World Champions they would later become. The second story was just before the world cup when Woodward insisted on talking a chef with the team to Australia. Again the RFU wouldn't cover the costs. Woodward approached the Sun newspaper and made them an offer of the inside scope on the England players eating habits and menu throughout the World Cup. The Sun loved the idea and funded the chef.



Limited Budget

Both stories show that even on a limited budget (if any) it is possible to get things done. But how can you apply this to your local team? You don't have the branding or pulling power of the England Rugby team. Well I still think it's possible. Below is a video from a recent training camp that Carlton were on. There is a whole series of these, each lasting about 2 - 3 mins. They are really interesting behind the scenes footage, without giving away any trade secrets.

[Click on this link to watch the video.](#)

Use our Skills

Video is our bread-and-butter, it's what we all do on a daily basis. Why not approach a local business - see will they sponsor your next purchase, a camera, a tripod, go-pro camera whatever. In return tell them you will shoot some video, either a behind the scenes at the club for a week and they can sponsor the show or maybe you will shoot them a corporate video? Companies want something in return for their sponsorship, we have a skill that is in high demand and something a lot of small business can't do themselves. Perhaps there is a local camera shop or laptop repair centre that would love have a corporate video or be associated with your local club? Sure your not an international team but you still have value to add. Imagine a small series of videos shot of your team at training, in the gym or in the build up to a game brought to you by XYZ Limited... Bigger clubs have realized the potential of their brands but that doesn't mean the smaller guys have to stand idly by.

If there still not convinced show them some of these figures;

- 100 million people watch online video everyday
- 3 billion hours of video is watched on YouTube every month
- 85% prefer to watch a video than read text
- Visitors who view product videos are 85% more likely to buy
- People spend 88% more time on websites with video

It's just an idea, I welcome any thoughts, but remember there are many ways to fund your department without waiting for the boss to sanction a spend.

Perfect KPI's in Sport

Perfect KPI's in Sport come at a cost. In fact, it's rare, we shouldn't be aiming for perfect. We are trying to find a balance between risk and reward. That should be reflected in your analysis.

The Cost of Perfection

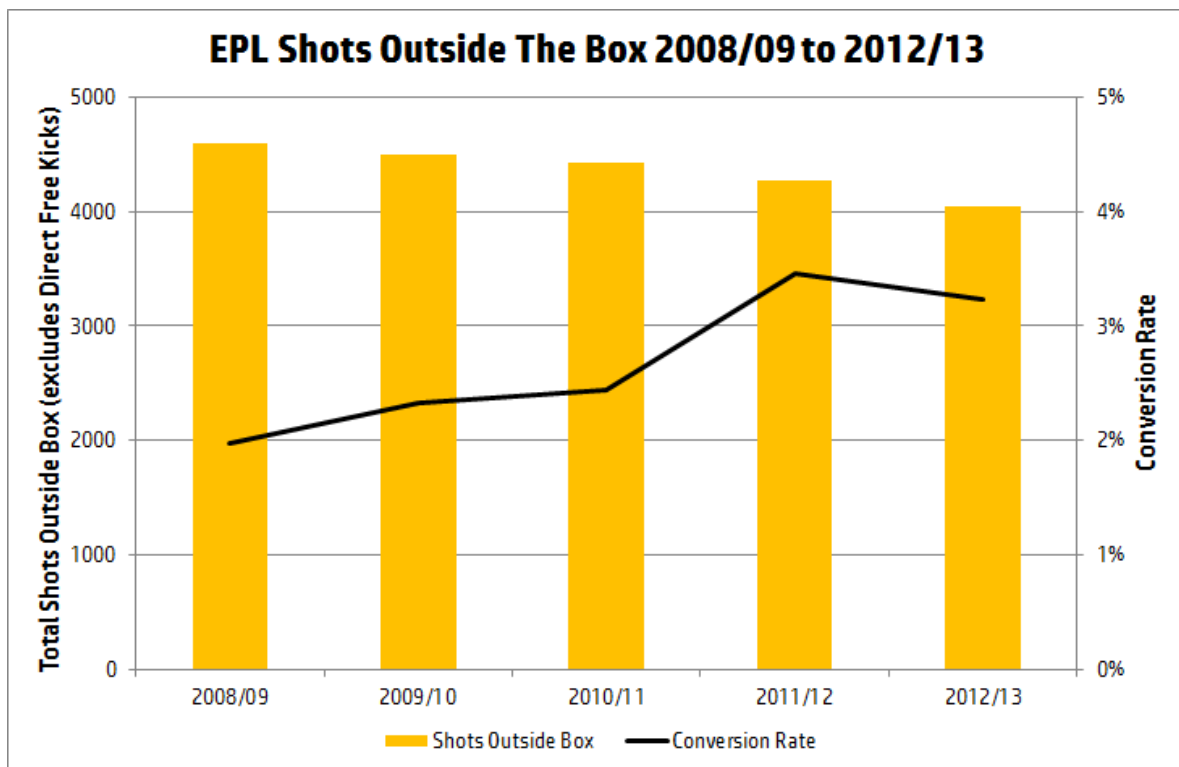


The problem with that is 100% will come at a cost. Aiming for 100% pass success rate will only lead to easy passes being made, players feel under pressure to hit targets but that's at the expense of trying something with more 'risk' but getting a big return.

This is where there needs to be an art to the science. Take shooting as another example. We can see constant mentions as to the return rate from shots outside the box - but maybe these misses have

some value not picked up in the numbers. If the defending team knows you won't shoot from outside the box they can sit deeper, not commit players and ultimately close all the space inside the box. By contrast if the attacking team takes the odd shot from outside the box (and maybe gets the odd goal that appears on Match of the Day) it forces the defending team to push out a bit more and hopefully leave more space inside the danger zone.

Taking a look at some figures from the excellent guys over at Stats Bomb we can see the sort of return shots from outside the box get in the Premiership.



Although the conversion rate has increased it's only from 2% to just above 3% - compared to all shots from inside the box over a 5 year period the return is 13%. Based on these numbers it seems quite obvious - take your shots from inside the box! [As the article on Stats Bomb](#) asks the question;

But it still begs the question, if the chances of scoring from outside the box are so low why do teams even try to do it? Wouldn't it simply be better to keep passing and probing until a chance inside the box could be created or a set piece opportunity won?

The manager can be well aware that the return from outside the box is negligible but keeping the opposition interested creates other opportunities. It forces defenders to make a decision. It's vital that we are careful with both the metrics we choose but also the sort of targets we set. This is something that is hard to monitor simply but it is still important.

Training Ground Perfection

Another big issue I see is presuming that getting to 100% in training is a great thing. Take any sport, the coach sets up a drill or conditioned game and walks off 20 minutes later delighted that the



players didn't drop 1 ball or didn't miss the target once. The problem here is that the coach has simply made the session too easy. The same way the physical intensity of a training session should match the demands of the game, so should the tactical and technical side of the game. Through the use of GPS it is possible to accurately measure the load during training sessions and 'match' that to the load the players will expect in a game. But are we doing this for performance analysis?

It's a great idea to examine training ground games with the same vigour we would a game. Having great success with our KPI's in training might be because the coaches made the drill too easy or one team didn't put in enough effort. There will often be differences between a conditioned game and a 'real' game but accurately measuring the vital signs are key - and don;t make it too easy just to hit a target.

Video Editor v Performance Analyst

Are you really a Performance Analyst?

This is something I have grappled with myself in different teams & situations. I also had a recent conversation with a couple of people on twitter on the problem with Video Editors v Performance Analysts. There are a



lot of people and organisations who consider themselves as having or being Performance Analysts when in fact they could really only be called video editors. Clearly the editing process is part of being a Performance Analyst but the role does not finish at that. This is something I constantly come across and it can be frustrating to see. Performance Analysis is about so much more than just Capture - Code - Copy!! As Andy Smith stated at the recent GSIC conference.



It's a bit like the difference between being a book-keeper and a Chief Financial Officer. A book-keeper's job is to **Capture** all the invoices/payments etc.. Input (**Code**) them into a computer system and **Copy** that information to some standard report and send it onto the decision makers. Whereas a Financial Officer has a seat on the board, is involved in the decision making process and at least has the ear of the CEO and other key personnel. In smaller organisations the CFO might have to do the book-keeper job as well but still holds the responsibility of CFO. Can you say the same in your current analysis role?

This analogy can be easily applied to Video Editors and Performance Analysts. If the limits of your job are to Capture, Code and Copy match highlights and pass them on, can your role really be considered any more than a video editor? Sometimes the limits are put in by the manager, whether through fear or a lack of knowledge about what's possible, some managers want nothing more than someone to hand them a highlights reel. However it is up to people to push themselves to become more like a CFO and **be part of the decision making**. That won't mean you have a say in final selection or recruitment of players but it should mean you have a place at the table.

How do you become a Performance Analyst?

First thing to say is it's not always that easy. Managers can often put you in a box and while you can do your utmost to change that it, might not always be possible. So what can you do?

- **See what other's do.** Don't just come back and copy them, you have to develop on what you have seen. Most of the time if people are willing to share something it is because they are confident they can improve on it. You need to take what you saw and make it your own.

- **Do something you weren't asked for.** This is about pushing both your own boundaries and that of the coaches you work with. Often coaches won't ask for something because they don't know it's possible. Part of your job is to educate coaches and players so you need to constantly push to make yourself more valuable. New reports, new metrics and new methods of delivery.
- **Go direct.** Are there players who might like to work more directly with you? I'm not advocating going behind the coaches back but can you become valuable to the players directly rather than always through coaches?
- **Walk away.** Sometimes you might just need to walk away. If you have outgrown an organisation and genuinely feel that your path from the video guy to Performance Analyst is not going to happen you might need to make a serious decision about your future with that team, if you stay too long as a video editor with a team it might be hard to shake off that image. You might need to take your lesson and move on.

Video Analysis Starts With Asking Why?

It's Monday, the team I was working with at the time had suffered a heavy and humiliating defeat the day before. Despite a rare planned night off, I got a call from the manager at lunch time and I'm told all the players and backroom team will meet at 8 that night. There is no need to edit the video – we are going to go through it frame-by-frame.

Generally I hate these sessions, watching a game in sequential order is fine in your own time but not in a room of 30+ players, there is no theme to anything. It's just whatever happens next. **The sessions usually end up discussing everything and nothing all at the same time.**

To be fair the session was not a blame game – it was an attempt to reset, find out what the hell happened and could we learn anything from it. It was close to 2 in the morning by the time the players headed for their cars and begun the journey home.

Who Will Ask Why?



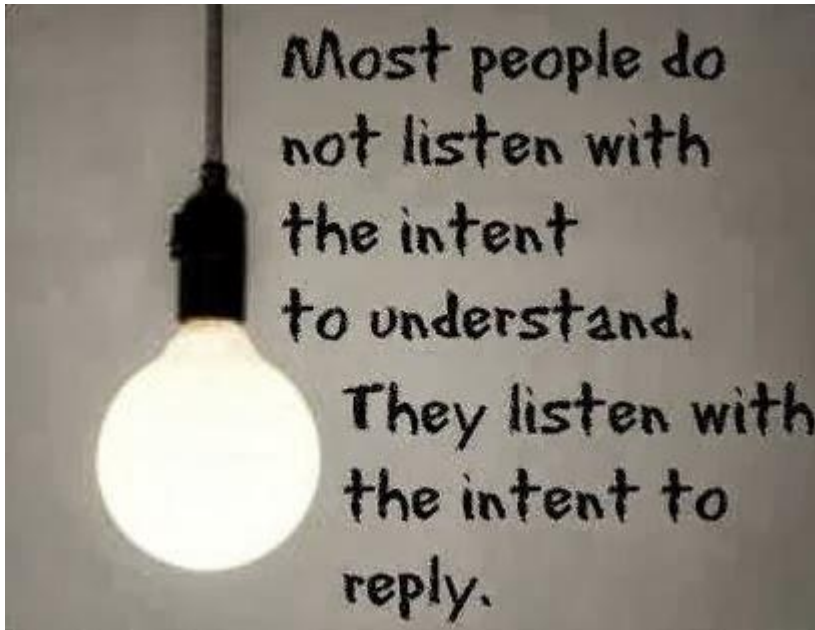
Throughout the session I was struck by how little the manager asked Why? Often a passage of play was stopped, something was either explained by the coaches or a leading question was asked where it was quite obvious what the required answer was. But rarely did the coach ask WHY? For me that misses the

whole point.

I was reminded of this night while watching an excellent [presentation at the recent GSIC Sportstec Conference](#). The presenter Trevor Dale displayed the following quote;

It is important not to blame individuals for what went wrong, but to understand why, what they did at the time, made sense to them. – [Just Culture, Sidney Dekker 2007](#)

Video Analysis Should Always Start With Why



There have been so many times in meetings where a player has admitted Why he did something that has absolutely floored me. The simple question is not meant to catch anybody out but it should be the first port-of-call of any video analysis review. Without understanding why a player did that – how can you expect to change

behaviour? It's a bit like the saying give a man a fish feed him for a day, teach a man to fish feed him for life. Too often video analysis review sessions are the former – coaches rush to show the mistake, explain the solution but never get around to asking why?

Coaches too easily fall back on the old reliables such as lack of motivation or we need to work on... (insert appropriate skill here), without every questioning the decision making process that went with that action.

In that Monday meeting there were too many times where those questions weren't asked or when the answers were given we just moved on. **If we are can recognise that decision making is such a vital part of a players skill-set then we need to start including it in our analysis and our review.** Video Analysis needs to start with understanding WHY.

The Wider Context of Performance Analysis

Show me the results of notation analysis, not the notational analysis results (Hayes 97).



The recent edition of [IJPAS](#) contained the following paper '[The wider context of performance analysis and its application in the football coaching process](#)' ([Wright, Carling & Collins](#)). This paper explores the evolution of Performance Analysis (PA) from both an academic and practitioner perspective. The paper is a sort of state of the nation about

Performance Analysis, where it has come from and some key questions about the future of this sports science discipline.

Where is PA currently?

The paper outlines where PA has been and the traditional role of an analyst. In summary;

- PA has been focused on creating a systematic record of performance using match and motion analysis techniques.
- PA has evolved rapidly over the last decade to a point where most 'serious' teams have a dedicated analysts who is an integral member of the backroom team. However, despite the importance of the role it is not uncommon for analysts to have no or limited interaction with players (Carling, Wells & Lawlor). *Scary!!*
- Their role has traditionally been (and I would suggest largely still is) to disseminate video compilations and game statistics.

The paper gives a very good overview of the current role of analysts and the authors thoughts around Performance Indicators is especially valid. The biggest confusion comes from the terminology, where KPI's are used to describe simple action variables. O'Donoghue's (2010) definition of performance indicators is a great starting point 'A performance indicator must represent some **relevant and important** aspect of play'.

From my own experience it is not uncommon for coaches to name performance indicators based purely on their own thoughts without any checking of their importance or not. Analysts knowing this and being able to change the coaches opinion are 2 very different things however!

Performance Analysis Constraints

The paper highlights some very important constraints that analysts work under.

- **Short-term appointments:** We all know the competitive nature of professional sport and this makes it hard for all sport science staff to operate with any long-term thinking, but can we find a way? One example I really like is [Bill Gerrards' role with Saracens](#), he effectively operates outside the day-to-day nature of the club and is in place to take a more long-term view. It would be great to see clubs adopt more roles like this but this is probably not a unique issue to PA.
- **Arriving by the front door:** Too often having an analyst can be a box ticking exercise. I can speak from experience here and say that when it's the head coach/manager that brings you in you get a very different level of respect than when you are co-opted onto a team. Wherever possible your relationship as an analyst needs to be with the head coach first and the support staff second. If it's not your voice will be watered down.



One piece that jumped off the page to me was the following;

The ability of PA to resolve specific performance questions which directly inform the coaching process might be dependent on the coaches' ability to clearly articulate and operationalise what they associate with success in football. This clearly might be a concept which some coaches will struggle with (Anderson 2013).

MANAGING UP

- How To Manage Your Boss -

This is one of the key issues with PA; it relies so heavily on the coaches understanding and openness. S&C coaches, the medical staff and sports psychologists don't face the same issues. It's why I would mark **managing up** as a key skill set for an aspiring analyst. Again the authors but this very well;

At this point another important question might be to consider where the stimulus for analysis should lie; does the responsibility lie with the coach or the analyst team? Would we expect the coach to be proactive in setting specific performance related questions or is it the role of the analyst to proactively provide insight which the coach has not previously considered...

Compared to other sports science disciplines I don't think that responsibility lies with the coach as much as it does in PA. Which raise the point is PA a legitimate 'stand-alone' sports science discipline or just another tool available to the contemporary sports scientists and coaches?

Questions to Answer



The paper finishes with some very strong thoughts on the questions that need to be answered and where further research should be focused.

- What is clear is that we need more evidence based research on the actually effects of PA, not just papers looking at the game actions themselves. One big

area of personal interest would be around the pedagogy of learning from performance analysis. Previous research surrounding feedback has suggested

that performers can become too reliant on feedback and thus it suppresses the performer's ability to identify faults (error detection) and correct faults (error correction) themselves (Hodges & Franks, 2008).

- Clearly, careful consideration should be given as to how and when information might be best delivered to the players to enhance its impact, 'ultimately, a good performance management and analysis tool is not just a control mechanism but a learning system that effectively communicates and informs' (Wiltshire 2013:180).
- As Wright et al., (2013) have highlighted, the performance analysts themselves play a very varied role in terms of the feedback and debriefing of information to the manager, wider coach team and players. What is not currently explored in the literature is to what extent coaches, and analysts understand the complexities in which they might have to consider when and where feedback is or is not implemented. This is an issue which again might be considered as being central to the effective delivery of video and PA analysis process, but again the literature has only just started to unpick some of the pedagogical issues which might need to be considered when implementing PA approaches (Groom et al., 2011).

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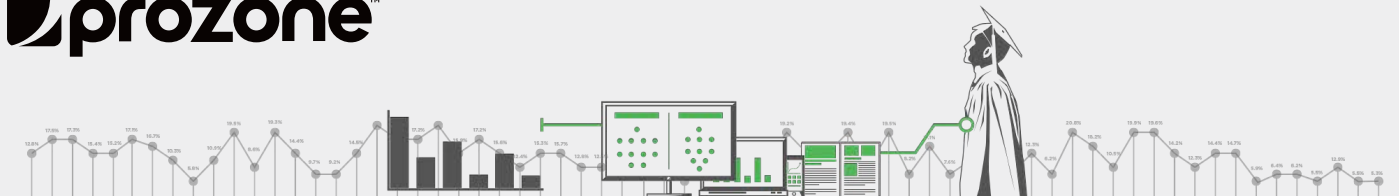
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Chapter 2

7. Should all coaches be Analysts?
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Should All Coaches Be Analysts



I have always found that there is something peculiar about the role of a Performance Analyst. While most other sports science disciplines can be left to their own devices, the role of an analyst is so ingrained in the coaching process that I often wonder should analysis just be something every coach does and not a separate discipline?

A strength and conditioning coach for example can really be left to his own devices when it comes to programme design, implementation and delivery. Yes there will be meetings and input from management but it's not something

head coaches would have to oversee directly. A plan is made and it is up to the S&C coach to oversee - and report on.

Chinese Whispers



But a performance analysts role is different. Analysts (mostly) don't take team meetings or coaching sessions, often they prepare videos or information and bring it to the coaches attention, and if it's useful, the coaches pass it onto the players. It's often like analysts operate with a translator between them and the players - I'm not sure nutritionists, psychologists or S&C coaches operate likewise. All sports scientists get frustrated at times if their ideas are not being heard but other disciplines seem to own their space that bit more.

Who's Responsibility?

This often brings me back to the point that more coaches need to take on some analysis responsibility. It doesn't have to be everything, as we have been witnessing over the last few years the role of the analysts is ever expanding. But perhaps coaches should take on more analysis duties. Somebody I follow quite a lot on twitter is [Stuart Lierich \(@kickcoaching\)](#). His expertise is in Kicking but he constantly mentions analysis as a big part of his coaching process. What I find interesting is Stuart doesn't seem to think the 'analysis' should be done by somebody else - he objectively monitors kicks both in game and in practice and develops a training programme accordingly. He is not taking over once the analysis is done by somebody else he assumes responsibility for it. Presumably this allows him go into greater depth than an analyst who must cover the entire game can and he can be more flexible in his use of analysis. [Andy Elleray](#), who contributes to this site, would be another who very much combines his role as GK coach and analyst. Perhaps this combination of skills is better than each one existing separately?

Analysis is relatively new and remember a lot of current coaches grew up pre-technology, I wonder as younger coaches come through, who feel much more comfortable using technology, will they consume some of the current jobs of the Performance Analyst?

3 Great Resources To Improve Your Presentation Skills

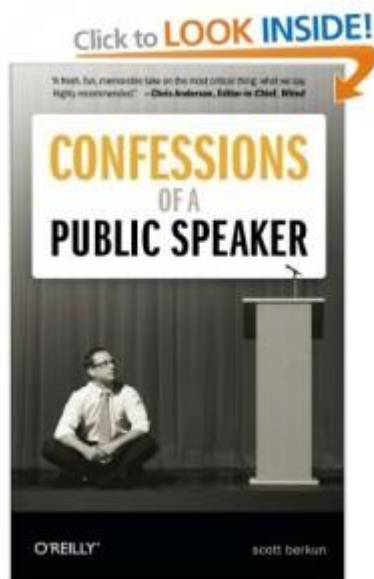


We all end up presenting at some stage in our careers. While I dreaded the thought of it through there came a point when public speaking was just something I was going to have to do. Whether it's a public speaking event or simply talking in a dressing room it is a skill worth developing.

Although the fear doesn't go away I have always looked for ways to make the presentations more interesting and valuable to the audience. Trying to learn as much as possible from events I attend is a start - but to be honest most people get asked to present based on their work not on their ability to present.

Over the years I have read books like [Slideology](#) which is an excellent reference book that I dip in and out of when working on my PowerPoints. With that in mind I thought I would highlight some of the more recent resources I have found that have (hopefully) helped me improve my presentations and talks.

1. Confessions of a Public Speaker



Scott Berkun is the author of Confessions of a Public Speaker and having read some of his previous work it's sure to be an enjoyable book.

In this hilarious and highly practical book, author and professional speaker Scott Berkun reveals the techniques behind what great communicators do, and shows how anyone can learn to use them well. For managers and teachers -- and anyone else who talks and expects someone to listen -- *Confessions of a Public Speaker* provides an insider's perspective on how to effectively present ideas to anyone. It's a unique, entertaining, and instructional romp through the embarrassments and triumphs Scott has experienced over 15 years of speaking to crowds of all sizes.

Highlights include:

- **Berkun's hard-won and simple philosophy**, culled from years of lectures, teaching courses, and hours of appearances on NPR, MSNBC, and CNBC
- **Practical advice**, including how to work a tough room, the science of not boring people, how to survive the attack of the butterflies, and what to do when things go wrong

- **The inside scoop** on who earns \$30,000 for a one-hour lecture and why
- **The worst -- and funniest -- disaster stories** you've ever heard (plus countermeasures you can use)

2. Slides That Rock, Presentation Design

Rock your Slides Intro

After being introduced to the class, we will look at the audience: Who will you be talking to? Many presenters don't think enough about their audience. They just talk. We will ask you step back and get clear on the audience. You will look at their problems and how you can help.



I recently took this class on [SkillShare](#) - a brilliant (IMO anyway) site that offers a range of courses across Business, Design & Technology. This particular class is all about how do design better slides and how the design if your presentation is as important (if not more so) than the content.

The course contains a few different lessons - some relate particularly to business but there is more than enough in this course to justify the \$25 price tag. There are 7 video lessons and plenty of good resources offered. You can check out the course [here](#).

I did the course last week and loved the simple easy to follow steps. Hopefully those listening to me next time see the difference.

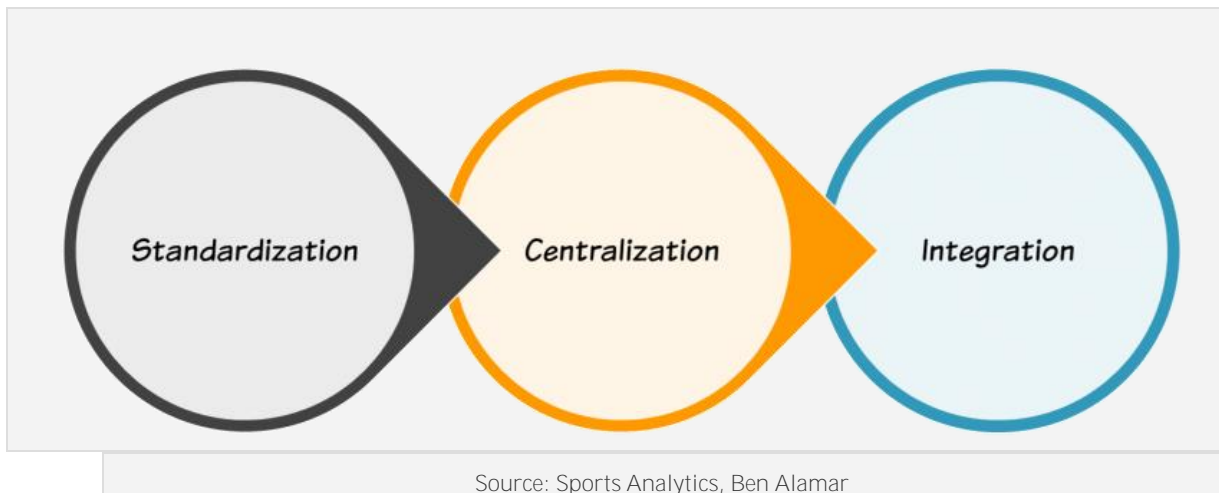
3. Prezi - The Anti PowerPoint/Keynote Tool

If you never heard of it you should definitely check it out. [Prezi](#) is a much more interactive presentation tool. It allows you much more freedom to use different types of content and can be a really great way to break up that boring deck. It can be tempting to get carried away with this tool though - remember you are still trying to convey a message - but if you get the principles right from 1 & 2 above this can really make you stand out.

7 Critical Elements of Dashboard Design

1. Single Version of the Truth

Information is a source of learning. But unless it is organised, processed, and available to the right people in a format for decision making, it is a burden, not a benefit. (William Pollard).



Standardization; The first step to helping decision makers work more efficiently is to standardize the data. Make sure you are collecting everything in the same way week after week. Simple things like player names can catch you out. For example are you collecting full names John Carr or J. Carr or John C. Avoid these mistakes at all costs!

Centralization; Does access to your data rely on just one person? What happens if they aren't available? Don;t worry you are not alone. According to the SAUS survey some data is dependent upon one person in at least 90% of teams. Can you make your data available to the people who needed it when they need it?

Integration; There is nodoubt that more ball actions and physical data is being collected than ever before, but how often do different datasets talk to each other. Integration is key in being able to reference injury reports with GPS, Scouting reports with ticket sales and so on. Even if you operate at a lower level how can you make all your data talk to each other?

2. Clear KPI's



A dashboard must only display data that leads to action. Before you create your dashboard, identify your Key Performance Indicators (KPIs). The entire purpose of a performance analysis dashboard is to provide **comprehensive insight about the KPIs its tracking — in as little time as possible.**

Having an effective performance analysis dashboard requires metrics to be straightforward and easily readable. I would strongly suggest that the dashboard design employs basic charts and graphs with key numbers clearly highlighted for the user to review. **This will ensure that the viewer gets the “full picture,”** as well as a bottom line statistic for interpretation.

3. Customization and Interaction



Remember, one size doesn't fit all. Even users in the same department may want to see different data, or just view their data in a different format. Think about how defence and attack coaches may want to see things from different perspectives.

An effective dashboard lets users customize the data they see on their dashboard, along with the layout. It lets them interact with the data displayed in the dashboard. Rather than create multiple dashboards for multiple users, give them a single dashboard that they can customize. This is possible in Excel (without a decent level of knowledge), but tools like [Qlikview](#) and [Tableau](#) are becoming much more accessible and allow for a lot of this customization to happen seamlessly.

4. Minimize Noise

Some analysts make the mistake of cramming as much data as possible into a dashboard. **This only distracts the users and weakens the dashboard's effectiveness.**

While all of the data may be important, it becomes overwhelming when crammed into a single dashboard. **Be selective. Also read [this](#)**

Still to this day this is one of my favourite examples of the power good Data Visualization can make.

The image compares two designs for a blood test result. On the left, 'Old Blood Test Result Design' shows a dense, text-heavy layout with a table of patient information and a large block of text for 'Cardio CRP' results. On the right, 'New Blood Test Result Design' is a clean, modern dashboard with a clear title, patient info, and visual progress bars for CRP level test (3.3) and Total cholesterol level (265). It also includes a risk assessment section showing a 15% reduction in risk and a 'What now?' section with icons for diet, exercise, smoking, and doctor consultation.

SAME DATA – WHICH ONE DO YOU WANT TO READ?

Old Blood Test Result Design

PATIENT NAME	DOB	SEX	AGE	REPORT DATE	REPORT TIME
DOE, JOE	06/11/2010	MALE	49	06/11/2010	09:41

Cardio CRP
For Ages > 17 Years:
Risk According to AMA/CDC Guidelines
Lower Relative Cardiovascular Risk
Average Relative Cardiovascular Risk
Higher Relative Cardiovascular Risk
Consider retesting in 1 to 2 weeks to exclude a benign transient elevation in the baseline CRP value secondary to infection or inflammation.
Persistent elevations upon retesting may be associated with infection and inflammation.

New Blood Test Result Design

Bloodwork Cardiology Result

1 About this test
This report evaluates your potential risk of heart disease, heart attack, and stroke.

2 Your results

CRP level test
3.3 your level of a specific protein in the blood used to inflammation of blood vessels
Low risk (0-0.3) Average (0.3-1.0) High risk of cardiovascular disease (1.0-10.0)

Total cholesterol level
265
Desirable (100-160) Borderline high (160-199) High (200-239) Very high (240-300)

LDL "bad" cholesterol
100
Normal (100-129) Borderline high (130-159) High (160-199) Very high (200-300)

HDL "good" cholesterol
30
Low (30-59) Normal (60-119) High (120-159)

3 Your risk You show an elevated risk of cardiovascular disease.
If you're similar with normal blood pressure, 130/80 mmHg, but family history of heart attack before age 60, you or your parents your risk over 10 years is 15%.
Year risk would be lowered to 8% if your blood pressure were 120mm/Hg, 8% if you quit smoking, 6% if you reduced cholesterol to 160mg/dL.
Use your CRP results and cholesterol level to compare your 10 risk of a cardiovascular event at [ReproRisk.org](#).

4 What now?
Diet & exercise: Can improve your cholesterol levels.
Quitting smoking: Can decrease your heart disease risk by 50% or more.
Ask your doctor: About statins or other medications that can lower cholesterol.
Consider retesting: In 1 to 2 weeks to exclude a temporary spike in blood levels.

David McCandless & Stephen Pople for Wired Magazine // [informationvisual.com](#)

David McCandless

5. Offer Drilldowns

This step allows pack more punch with your overall Dashboard design. A dashboard gives users a high-level view of their data, but it must also let them drill-down to more details as necessary. For instance, if your dashboard displays high-level KPI's, it should also let the user drill down and see where events happened, what players were involved, how does that compare to recent weeks, or seasons gone by.



6. Use Imagery

Appropriate images require relatively little processing because they fit with the message. Showing people meaningful, content-based visuals, as opposed to text, lessens their cognitive exertion and improves overall experience. For numerous other examples of how visual design affects

our brain's processing capabilities, see [Chabris and Kosslyn \(2005\)](#).

Additionally, images often allow us to explain, simplify, or expand concepts in ways that are very difficult to do (if even possible) with text—or even with spoken words. [Levie and Lentz \(1982\)](#) looked at 46 experiments comparing pictures included with text, or text used alone, and found that 45 of the studies—all but one—showed that including pictures improved memory or comprehension. In one case, a group following directions in text illustrated with diagrams did an amazing 323% better than a group following the same directions without the illustrations.

7. Real Time



Suppose the dashboard in your car only displayed day-old data. Would that help **you at all? Of course not! You don't want** to know how much petrol you had a day ago. You want to know how much you have right now!

Many teams make this mistake with their dashboards. They confuse the concepts of a report and a dashboard. A report shows historical data. A dashboard displays **real-time data. It shows you what's happening in your business at that very moment.** If the information presented by the dashboard cannot be used to correct **current problems, or improve your current situation, it's not a dashboard. It's a report.**

Commanders Intent & Sticky Ideas

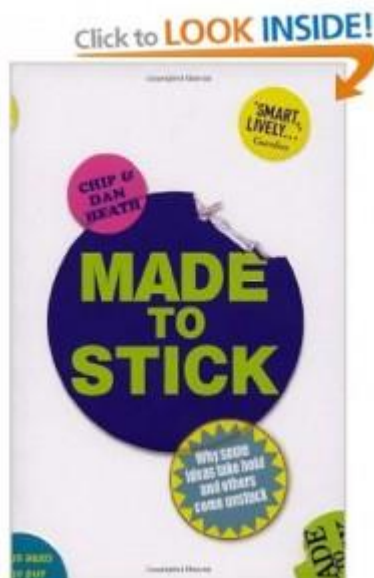
Do players really learn anything from team meetings? There are numerous examples from traditional education where breaking the 'Lecture' style classroom sees a big increase in learning and more importantly retention of that learning. For anybody who hasn't seen it yet I recommend you check out this [post by Mark Upton](#) who makes the point;

Educational institutions are coming around to the fact that the way we design areas for learning ("learning spaces") and deliver sessions in those areas have a huge impact on the quality of learning. Often a key to effective learning space design is the enabling of a collaborative/social exchange between participants. When well-designed learning spaces are then complimented by the use of technology (such as digital video, interactive whiteboards, mobile devices & wireless networks) new levels of learning and education are potentially achievable.



Or this somewhat unbelievable [TED talk from Sugata Mitra](#) showing how giving kids access to material and almost leaving them to it produces better results than the traditional educational model.

Sticky Ideas



As analysts or coaches our job is no doubt to 'analyse' what happened and come up with a strategy to improve performance but both of these are useless without the ability to impart that knowledge. I read a marketing book recently that explored something really interesting and transferable to coaching. The book is called [Made To Stick](#) and it's basic premise is to improve you (as a business or coach or anybody who wants to communicate an idea) in imparting that idea.

The book makes reference to the 'Curse of Knowledge', this idea that the person sharing the idea has all sorts of insider information that others don't. I see this a lot in presentations from coaches, they almost forget they have seen the clip 20 times where the players might be watching to for the first time. On the coaches part there is this implied knowledge that the players have which often they don't.

Commanders Intent

Throughout the book the authors refer to this concept of '**Commanders Intent**' - I think this is a fabulous concept and should apply to all teams & even team meetings. I know I said above that team meeting can be ineffective but for the moment they are here to stay and during a tournament or competitive campaign it is not always possible to set up ideal learning environments. The basic premise of the Commanders Intent is that the leader, Head Coach for example, sets a very clear philosophy and if any subordinates are unsure about what to do they can simply ask themselves if their decision will help them achieve the Commanders Intent.

Some Examples;

WAR

Army Commander: "We need to get to the top of that hill as safely as we can". There no detailed instructions on how this is to be achieved, what route to take or how long, just that the primary objective is as safely as possible. The consequences of this are that any individual soldier or squad leader can adjust their strategy at any moment; but they must adhere to the primary objective.

BUSINESS

Ryanair: "Low Fares Airline", Ryanair are so clear about there commanders intent that they put it next to their logo. Ryanair do nothing that would jeopardize the fact that their primary objective is to be the Low fares Airline. For those who don't know Ryanair - they constantly toy with the idea of charging people to use the toilets on their plane! Whether you agree or not with the intent the strategy is crystal clear and no staff member could be in any doubt when left with a decision to make themselves which way they should lean.

SPORT

In a sporting environments team may have a commanders Intent - 'to be the hardest team in the league to beat', to be the highest scoring team' or 'to play a passing game at all times'. I have worked in many teams where this has not been clearly defined and you could argue that such an overarching goal is difficult to adhere to - but if it works in War and Business why not in sport?



Every Meeting?

Finally - I would be a firm believer that every meeting should have a commanders intent. There should be one clear message to deliver, of course there may be subplots but if it doesn't lead to the main Intent then leave it out. Players want clear messages and too often coaches try and deal with 4-5 playing aspects in one meeting, sometimes just to fill the 20 mins they set aside. I would be much happier showing only 2 videos if that meant we **got our message across and it was understood by the players.** If you read the following 2 statements ask yourself which project you would rather be involved in, which team would you rather join and which plan is clearer?



JFK said "**put a man on the moon and return him safely by the end of the decade.**" if he was a CEO he probably would have said "**Our mission is to become the international leader in the space industry through maximum team-centered innovation and strategically targeted aerospace initiatives.**"

I challenge you to even remember half of the second statement this time next week. So be clearer as an analyst and as a coach. Give your team one Commanders Intent and even try to have 1 Intent per meeting. Any thoughts?

Video Presentations & The Social Environment

I came across this really interesting paper last week via twitter (thanks [@ScottDUK](#)) and thought it deserved more than a retweet.

[The social environment during a post-match video presentation affects the hormonal responses and playing performance in professional male athletes.](#)

Christian J. Cook & Blair T. Crewther

Abstract



This study examined the social environment effects during a post-match video presentation on the hormonal responses and match performance in professional male rugby union players. The study participants (n=12) watched a 1-hour video of mixed content (player mistakes and successes) from a match played 1day earlier in the presence of; (1) strangers who were bigger (SB), (2) strangers who were smaller (SS), (3) friends who were bigger (FB) and (4)

*friends who were smaller (FS). The salivary testosterone (T) and cortisol (C) responses to a physical stress test were assessed 3days later, along with pre-match T levels and match-ranked performance 6-7days later. All treatments were associated with elevated T responses (% change from baseline) to the stress test with SS>SB and FB>FS. The C stress responses after the SS and SB interventions were both greater than FS and FB. On match-day, the FB approach was linked to higher T concentrations than SB and better ranked performance than FS and SS. The subsequent testing of a population sub-group (n=8) across a video (V) and a non-video (NV) presentation in a neutral social environment produced similar stress-test and performance outcomes, but pre-match T concentrations differed (V>NV). **In conclusion, the presence of other males during a post-match video assessment had some influence on the hormonal responses of male athletes and match performance in the week that followed. Thus, the social environment during a post-match assessment could moderate performance and recovery in elite sport and, in a broader context, could be a possible modulator of human stress responses.***

My Thoughts



Considering that group presentations still make up the majority of video presentations, this does have implications that we need to consider. The study does have some limitations but the idea that the environment in which we deliver our presentations is something we always have to be conscious of.

The researchers reported that in previous research, video presentations can acutely modify male testosterone concentrations and thus, could potentially link through to

changes in behaviour and short-term physical performance. Social environments can be affected by a multitude of factors but it is interesting to see the effects reported in this study. By inviting strangers and friends into the video session they saw a significant rise in testosterone concentrations with the introduction of Small Strangers giving the greatest jump in testosterone, up 51.8% compared to Small Friends increasing testosterone by 8.6%.

It is well worth checking out the full paper [here](#). If nothing else it might get you thinking. How could we use this information in a practical setting?

I would like to see some similar research done with 'Motivational Movies' - do they really make any difference?

#AnalysisForAll



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With over 15 years experience in the field of Performance Analysis, AnalysisPro Ltd can provide high quality consultancy services to help you **get the most out of your coaching and performance**. By creating and developing workflows tailored for you, supplying powerful and affordable software and developing the market's future needs, we can successfully build the solutions to suit your performance requirements.

Through working with international and elite teams in sport and industry settings, we have gained vast experience at the forefront of video analysis and have seen how the industry standard workflows have developed and been utilised across a wide range of activities. Video analysis using **timeline based software** has become the recognised standard for creating powerful analysis and feedback resources, but until recently, these processes have been limited to the elite levels due to high costs of software, cameras and the Macintosh computers required.

Our mission at AnalysisPro Ltd is to make analysis available for all so that teams all the way down to the **grass roots** can mirror the processes carried out at the elite levels of performance.



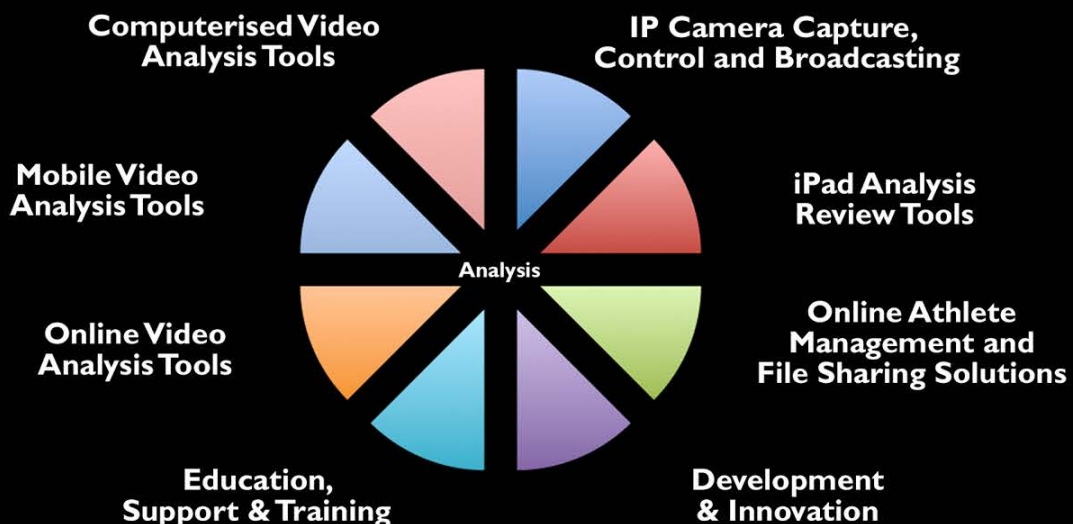
We achieve this with customers from a wide range of sports and performance levels thanks to powerful and affordable products we are able to represent and deliver alongside our support and training, to ensure that people get the most out of their investment and can utilise industry standard workflows. One of these products is called **Nacsport**, a timeline-based video analysis software that runs on the Windows platform. With a product range starting at just £130 (+VAT), Nacsport provides users with a vast array of features to ensure that analysing performance is not only powerful and impactful, but also user-friendly. Due to the software being Windows based and the capabilities it has over other competitors, we have seen the barriers of video analysis fall as more people can invest in **affordable software**, computers and a wider range of associated equipment like cameras and integrated IP-camera and tripod solutions we have developed.

We would love to let you know more about Nacsport and the powerful processes that can be achieved throughout this software range, so please take a look through the rest of this info, **visit our website** and get in touch with us to find out more and also trial any version of the software for free.

We would also encourage you to search for **Nacsport Tag&go** in the app store to download this perfect analysis tool onto your iPad!



Helping you to build and implement a Complete Performance Analysis Solution



A typical Nacsport workflow



1

Connecting a HDMI camera to laptop through affordable live capture device



2

Live analysis on the iPad with Tag&go

Live capture & analysis inside Nacsport



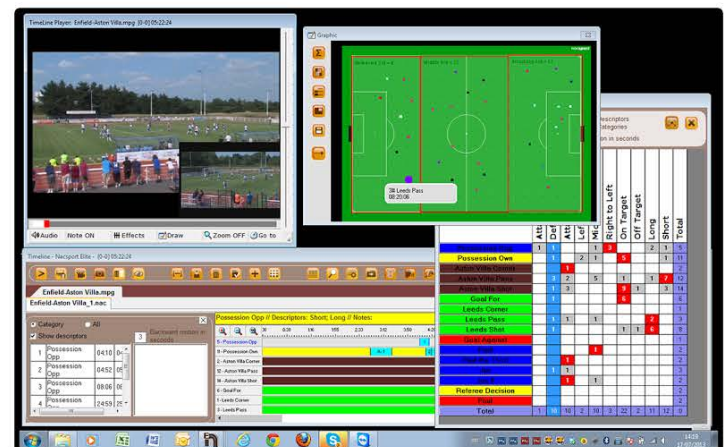
3

Review of analysis inside Nacsport

4

Creating a presentation with notes, drawings & voiceover

Using Nacsport data for a stats output



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- 📍 Capture from DV, USB, IP cameras
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*Prices shown do not include VAT

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Annual Rental

Nacsport User	£26
Non-Nacsport User	£105

*Prices shown do not include VAT



Chapter 3

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 - Cardiff Met
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 - Middlesex
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20. Performance Analyst perspective (sponsored)
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3 Great Sports Analytics Interviews

All good things come in 3's - and so it seemed last week when 3 great interviews landed in my Twitter stream. I often don't click on these types of interviews unless a few people start re-tweeting them. Often they contain one quote from the subject wrapped around 1,000 words. But not this week. We were treated to some great quotes and insights from 3 very important people in the world of Sports Analytics.

1. Bill James Interview for NBC Sports



Now, 10 years after “Moneyball,” 40 years after he began writing about baseball in spare moments while serving as night watchman at the Stokely-Van Camp Cannery, Bill James looks around and, well, he still sees a whole lot of bullshit, some of it in places he helped build.

The opening paragraph is perhaps my favourite part; *“Bullshit has tremendous advantages over knowledge. Bullshit can be created as needed, on demand, without limit. Anything that happens, you can make up an explanation for why it happened.”*

It's a really fabulous interview and well worth the time to read it [here](#)

2. Kirk Goldsberry - This Guy's Quest to Track Every Shot in the NBA Changed Basketball Forever

A really great article tracking Goldsberry's rise in the game of Basketball. Far from coming from a sporting background he got his bachelor's degree in earth science and geography at Penn State, and then a master's and PhD in geography. Basketball has many more similarities to football and rugby than Baseball would. Unlike the static, state-to-state action in baseball, basketball is a constant flow. Basketball was like one of Goldsberry's maps—a complicated, intertwining flow of information without a beginning or end. But that didn't mean it couldn't be analyzed.



Goldsberry called his system CourtVision, and it showed differences in players no one had ever quantified. Ray Allen, one of the NBA's best shooters, had several deadly hot zones from three-point range, and he barely attempted any midrange jumpers. Kobe Bryant, the Los Angeles Lakers' dynamic star, took lots of shots from all over the court, but there were places that, if you were playing against him, you'd prefer he shoot from (like the baseline, because he struggled to convert from there). Goldsberry had generated nothing less than an instant visual signature of a player's offensive game, easy to read and understand. This went way beyond what a smart analyst or coach might intuit from courtside. The more you studied the CourtVision maps, the more insights they revealed.

Take a read of the full article [here](#)

3. Billy Beane can't get enough of soccer after revolutionising baseball



You all know who Billy Beane is and you have to wonder how interesting it would be to see him ending up as a director of football in the premiership. Maybe one day!

- Traditional stats only credit outcome. They don't credit process.
- "I've got brilliant staff," he says. "One of my right-hand guys, Farhan Zaidi, has a PhD in behavioural economics from the University of California, Berkeley. He never played much baseball. He followed American sports when his dad was working for the Asian

Development Bank." Isn't that a disadvantage? It would be hard to imagine many English clubs doing the same. "Yes, but he has no experience-bias when he comes to my office, so he is able to question the obvious," says Beane. "A guy like myself, who has been in the game his entire life, may not be able to spot when the emperor is not wearing any clothes."

- "The best thing about the book was that it blasted the door open for people who were really bright," says Beane. "Baseball is no longer sort of a closed-insiders' club where you had come up through the business or be a player to be part of it. "Because of that, it became a lot smarter. And that's great.

Take a read of the full article in the Guardian [here](#)

Enda Barron – Performance Analyst

Enda Barron is an analyst with a wealth of experience in both amateur and professional sport. I thought it would be great idea to get some of the key lessons he has learned over the years. First an introduction;



"I have been working in professional sport for 10 years now, and in amateur sport for a while longer again. I have worked in countries all over the world, ranging from Gaelic Games and football in Ireland, Australian Rules (in Australia Obviously), in the Middle East, but the majority of my experience has been in the professional football leagues in England.

I arrived late into professional sport, my playing career didn't take off as much as I had hoped as a teenager. I wasn't blessed academically either, and had to wait until I was in my 20s before starting a degree in Sport Science. I have always wanted to work in sport, I originally thought that I would be a strength and conditioning coach, but stumbled into Performance Analysis, probably through being able to manipulate data, and being able to be concise with my feedback. I did my best to transfer this back to Ireland when finishing my degree, but I ended up having to take on a Performance Analysis Masters to gain experience in a football environment, which I grasped with both hands.

When written down, it seems quite a roundabout way to get into any professional sport, but I recognise that it's important to sample multiple sports and be able to analyse multiple events and come up with indicators. It's surprising how similar invasion games are in truth!"

What have I learned in my role as an analyst?

I was asked once what I thought the role of an analyst is. Put quite simply, analysts are the glue that can hold the football department together. The game will go on regardless, but you can consider yourself the 1%er that can make the difference between winning and losing. You are the one with their finger on the pulse, having your ear to the ground and the one with information at your fingertips. You are the tech person when things go wrong. You may feel like Oz, being all-seeing and all-knowing.

In general, being an analyst is not a glamorous job. It requires long hours, being unsociable, almost hermit like, and doing what you can to look organised. That is what you subscribe to. Working in sport is like a drug, once you get bitten by it, it is

hard to put down. There is nothing like working under pressure, and it is a great feeling knowing something you did made a difference in some shape or form.

As an Analyst

(1) Be invisible and visible at the same time. Be there early and stay late. Know when to be somewhere and when to disappear. Analysts can be easy targets for standing, gawping and trying to be the centre of attention. Always remember, the event will take place whether you are there or not, whether you are ready or not. There is nothing worse than a crowded dressing room and staff staring at players. The dressing room should be a safe place for the players and coaching staff.

(2) Know when it is your place to speak, and when it is time to say nothing. Effective communication need not be a sentence. Analysts generally have not played the game, so their opinion needs to be accurate and backed up with fact. Like a scientific paper, make a statement – back it up.....

(3) Be prepared for all eventualities. Have wires and connections to suit every eventuality. Fail to prepare, prepare to fail. Coaches don't understand why something isn't working. No excuses. Have a plan B, C and Z. Be organised. Assume something will break or not work and come prepared for that.

(4) Buy yourself time wherever you can. Set equipment up early and ensure everything is working as it should. Be prepared for last minute coaching requests. Time yourself what is the shortest time to set up and clear up equipment, and try to do it quicker.

(5) Come up with a best practice for you and your organisation. The person that follows you should be able to slip in seamlessly to the base level expectations and know exactly what to expect. New analysts should have a manual of what they need to know by heart to be successful.

(6) Be on the edge of research, software's and equipment. Know what the next best thing on the market is, and whether it applies to you. Take trials and give things a go. Companies need feedback as much as anyone.

(7) Just because the big clubs do it one way, does not mean it is right for you. Each club is different, do things your own way. You can learn from everyone, cherry pick, but don't copy.

(8) Try to change something internally every year or 6 months. If you are doing the same thing for 2 or 3 years, you haven't improved. The only constant in the world is change. Change with it. Football is in a constant state of flux.

(9) Set up a network of helpers outside of your club. These people need not know of each other, but are aware of their importance to you.

(10) Remember the feedback cycle. If you can change the event, during the event, you will increase the chances of being successful. You should aim to help (not replace) the coaches giving feedback. Position yourself as close to the coaching staff and the pitch as possible.

(11) How well do you know your own team? Do you know how many goals you score from any particular source? Do you know how many the opposition score from a given source? Who are the league leaders in goal scoring, and how do they score them?

Coaching

(1) Coaches do not understand how you get from point A to point B or how long it takes. Doing things quickly, quietly and efficiently is important.

(2) Little conversations are important. You have one mouth and two ears, meaning you should listen twice as much as you talk. Analysts take coach talk and make it a number or something quantifiable. Sit at the coaches table at lunch, be there for team meetings, and involve yourself where you can.

(3) Assume you are not a coach and shouldn't answer or give instructions that coaches would. You should know what the coaches know, but only so you can see what they see.

(4) Can you replace what a coach would write on paper with a PowerPoint or a computerised version?

Athletes

(1) Athletes are not your friends. Keep that professional boundaries at all times. They are tradable commodities and your relationships with them cannot affect being professional. Footballers will only ever get you sacked.

Human

(1) Give credit where credit is due. If those under you have done something, don't hog the credit. Be kind to the little people, the smallest things make the biggest difference.

(2) Be nice to those on the way up, you'll never know who you'll meet on the way down. Don't ignore emails, it takes a matter of seconds to reply. Entertain everyone you can, people remember those that were kind to them. Manners cost nothing.

(3) Be nice to security guards and stadia people at your own and other clubs. They may work match days only, but they can help you. Being ignorant gets you nowhere. Smile, ask politely. Say hello to everyone, people respond to kindness.

From House of Fraser to Performance Analyst

Guest Blog Post by Hannah Thomas, aspiring Performance Analyst.



This time a year ago I worked as a Beauty Merchandiser at House of Fraser HQ. I was good at my job and had a lot of love for my beautiful, beauty obsessed colleagues - but that aside I was pretty disillusioned with the retail industry and this time a year ago I handed in my notice and said farewell to the comfortable life of merchandising to start a career as a Performance Analyst within sport. I started a Masters, plunging myself back into the world of writing essays when the most I had been used to was the occasional long(ish) email.

I swapped the world of Beauty for a job within a successful football club. Now, I am

aware this sounds like a ridiculous change but my job within retail was incredibly analytical – using large sets of data to monitor and improve performance – so while it was a big change there was a lot that was also transferable. My intention was never to write about my experiences. I am well aware that I am not even a year into the world of PA and that there are many other people out there who are more qualified than I am to talk about this subject. But in a rapidly growing industry there are a few bits and pieces that I have experienced and some useful thoughts that I wish someone had been there to tell me in my early days of panicking about whether this career was right for me.

Number One: Experiences outside of sport are applicable. And they are important.

When I left my job at House of Fraser I had zero sport experience on my CV and couldn't get an interview for internships anywhere. Subsequently, I gained work experience doing basic filming for a non-league club and suddenly I was being considered for internships and was offered one at a successful Category 2 football Academy. This has always irritated me slightly. At House of Fraser I not only learnt how to effectively work with analytical data but I also learnt other important skills such as how to manage people, how to negotiate, how to work under pressure and how to communicate effectively to different audiences. All of these skills are routinely used on person specifications for Performance Analyst roles. I feel very strongly that my success in my internship was due more to my previous experiences outside of sport than within it. I hope when I get to the stage of leading my own performance analysis team that I will be more open to employing candidates whose experiences are outside of the general Sports Science route.

Number Two: You don't need to have professional experience of playing the sport you work in.



In hindsight I spent a lot of time over the last year not feeling able to express my views as confidently as I would like because I had not kicked a football professionally or otherwise in my life – my sport was always tennis. After careful reflection this was ridiculous. Performance Analysts are not coaches and the two should not be confused. Before I started my MSc I read the Numbers Game, which suggests that 'successful players are more likely to hark back to the methods that made their careers glorious, rather than adapting and innovating'. I wish I had remembered this more over the last year and understood that my opinion was still valuable. It might take

a little bit longer to get your head around techniques/tactics but I wish I had not spent so long worrying about whether my opinion was as valid as the next guys because I had never kicked a football. Your opinion is always valid and should be counted, regardless of your playing experience.

Number Three: Academies rule.

They actually do. I've worked with junior players across tennis and football and both have been amazing experiences. I never set out to work within an Academy – I had this notion that Arsenal first team were obviously going to come calling. However, I can honestly say that working within an Academy setting was the best introduction to Performance Analysis for me. Firstly, I had a great manager. He was patient, an excellent teacher, understood my strengths and weaknesses from the beginning and helped me to develop my skills to fulfil my personal and professional objectives for the year. Aside from his crazy no-wheat diet and obsession with Crossfit he was pretty perfect in terms of the type of manager you want from your first real job in sport. I honestly believe that if I had gone into a first team environment I would not have received the same development as I did in an Academy. Secondly, aside from the fact that I don't really understand their lingo (I think the fact I just said lingo shows I'm not down with the kids anymore) working with young players and aiding their development is incredibly worthwhile. I worked closely with the really little ones in introducing them to the concept of PA and how it can aid their development. Aside from the occasional child who 'just wants to go outside and play football' I think the majority found it interesting and worthwhile. Maybe they were just humouring me but hopefully not.

Number Four: Don't settle for a role that is less than you are worth.



This, in my view, is the most important thing that I wish I had been told. A career in Performance Analysis is never going to make you a millionaire. You do it for the love of the job. But it is ok to turn down roles if they are not right for you. Just because a role is within sport does not mean you should automatically feel lucky to have it – you should only feel lucky to have it if it gives you the ability to tick off your professional and personal objectives for your career of choice. Don't settle for less

than you are worth. You need to have a life outside of work, whether that is within sport or without, and therefore it is important that the role you take, whether at internship or full-time job level is the right one. Sport is no different to other industries in that you can turn down roles or opportunities if you feel they exploit you.

Next Chapter?

After a year of working within football and a summer of working with the Lawn Tennis Association over grass-court season I have now finished my MSc and looking for my next full-time role within sport. I'm hoping I will remind myself of these four pieces of advice during any moments of future fleeting panic and hopefully they can help other newbies to Performance Analysis.

Want to get in touch with Hannah? She is on [Twitter](#) and [LinkedIn](#)

Update Feb 2015: Hannah now works as a Performance Analyst with Manchester City academy.

Interview with Joe Maiden – Hampshire CC Performance Analyst

Joe: *First of all thanks Rob for the opportunity to write this, I've been a keen follower of the videoanalyst.com and have always found the site incredibly useful for analysis ideas and information prior to and during my time at Hampshire. Im always looking to improve as an analyst and hopefully this will be able to give an insight into how analysis can play a part in First Class Cricket.*

Rob: Can you give me an idea of why you wanted to be analyst?

Joe: I used to play a lot of cricket when I was younger and I was a part of Gloucestershire CCC age group squads from the age of 11. From 15 to 18 I was lucky enough to get into the Gloucestershire Fast Bowling Academy which allowed me to be in and around the professional staff and gave me the opportunity to see what takes place in that elite environment. During my time there I was very interested in how all areas of the support staff contributed towards improving performance.



The idea of becoming an analyst didn't really occur until I was at university. I knew that my university (UWIC, now Cardiff Met) was renowned for its performance analysis set up, so chose to explore that as a module in my 2nd year. I then took analysis into my 3rd year and finished university having completed my dissertation in the analysis field. The work through university and seeing how analysis contributed in elite sport then led to my desire to become a performance analyst.

Rob: What sort of route did you take to end up at Hampshire (College - , coaching background, work experience etc...)

Joe: Upon leaving university I was at the crossroads where a lot of aspiring analysts are often found. I knew I wanted a career in analysis, but was unsure how to get there and was unsure on the amount of opportunities in which to do so. I identified early on that I wanted to work in cricket as that was a large chunk of my childhood and I wanted that to continue. If I didn't make it as a player, I wanted to still be involved so that took me down the coaching route. I worked as a cricket coach during my university holidays for a local company and at the same time completed my Level 1 and Level 2 coaching qualifications. During this time I was always looking for opportunities to do analysis and it was after university that I got a chance. One of our coaches at Gloucestershire was going overseas on an International tour and had asked

me if I wanted to do some general statistics in preparation for the grounds they would play at and the opposition they may face. During the tour I did little bits of analysis here and there and sent them out to him.

That was my first experience of conducting my own analysis at an elite level and after that I sought out a job working in analysis in cricket. I spoke a lot to the performance analyst at Gloucestershire and varying other county analysts in order to see how analysis was developing and whether or not there were opportunities for someone like myself to get in. Unfortunately it was clear that each county had 1 analyst and unless they left there weren't any full time opportunities to get my hands on.

At that point I decided to bide my time, and went to Australia for 6 months travelling. Whilst I was in Australia I checked videoanalyst.com and saw that Hampshire had a vacancy. I knew I was on the other side of the world, but through the experience I had built up and the contacts I had made I thought I would give it a shot. I applied with the understanding that me being on the other side of the world probably wasn't the ideal scenario for them, but completed the interview process via Skype and was asked to fly back to start my role, and here I am!

Rob: What's the analysis structure like in Hampshire? Are you the only analysts or is there a team of people?

Joe: The analysis structure at Hampshire prior to my arrival was 1 person who was responsible for coding all of the home games. The club made a decision to make the role more prominent and made it full time. In my first season it was only me, however the role had changed so now we expanded into not just coding the home games which is a requirement for the ECB, but now I was in charge of analysis team meetings prior to games across all formats and any other work myself or the coaching staff saw fit to complete in order to improve our chances of success. From my point of view it was a very successful first season in analysis and Hampshire as we won County Championship Division 2 (which we highlighted as a goal at the start of the season) and we reached T20 Finals Day for the 6th year in a row. On the back of that success we have now expanded our analysis department and we now have an intern for the 2015 season who will assist with the coding of games and data collection which will allow us to expand the areas we can analyse.

Rob: It would seem to me that the TV stats in Cricket are very limited in terms of evaluating players - without giving away any secrets do you guys look at metrics that the general public maybe wouldn't be aware of?

Joe: I would agree with that point. One of the things I found from watching a lot of cricket growing up was that the 'TV Stats' aren't always a true reflection of individual performances. A lot of the stats shown on TV are average, strike rate, economy etc. based built up over a playing career. As an analyst I find them to be useful for comparisons to our own players, but only in certain contexts. I think averages: strike rates & economy's can be very valuable

when used on the right scale.

We try and keep our database as up-to-date as possible and any information we give to the players will be relevant from the past couple of seasons in relation to the game. For instance if we are looking at an opposition player, who's average in T20 cricket is 30 at a strike rate of 130, we want to look deeper into that and find an area we can capitalise on. We will look at his performance at home and away: strike rates against a variety of types of bowling in different periods of the game in order to create a plan to decrease his effectiveness.



My 'mantra' as an analyst is always to look deeper than the original stats suggest. There is a vast amount of data available in cricket, and it's important to pin point the areas that you feel will impact on your own and opposition performances the most. I've been very lucky to come into a club where the coaching staff have been very supportive and have given me scope to make my own decisions on what we look at and how we go about it and I think that during last season it allowed me to explore a lot more metrics and trends that the public wouldn't see on their TV screens.

Rob: Of all the sports that could learn directly from Moneyball it should be cricket - do you think there is a big difference between what is collected now and what might have been collected in previous years? Will we be reading about a Bill James of cricket in a few years?

Joe: As the 2014 season was my first in cricket analysis it would be difficult to tell what was previously collected however I do believe that all the statistical data that is collected now would have been available for a wide range of years. From reading Moneyball I firmly believe that it is very transferrable to cricket. I think that it will take time to come up with a system that will accurately measure the value of a player and their worth to a team, but that is definitely something I and I'm sure other counties are exploring. The key is finding the correct KPI's to evaluate player performances.

As in Baseball and previously mentioned the vast amount of available data in cricket makes it difficult to pin point the key areas to look at, and I think it will take a bit of trial and error to work out the metrics that will create that 'system'. I think for us to hear about a Bill James of cricket it would be dependent on the amount of input the analyst would have in a coaching and club set up. As I said I've been lucky in a sense that I've been trusted to go and do my own analysis and would like to think that the coaches trust the information I put across to them and the players, as they are what we use in our game preparation. If an analyst had that kind of input into transfer decisions and signings then I see no reason why in a couple of years cricket couldn't find its very own Bill James.

Rob: Can you give me an idea of what your typical game day set-up is like? The type of tasks you do during the game etc...

Joe:

Pre-Game:

We will have a 30 minute meeting on the day before a 4 day or 1 day game to analyse opposition, the ground we play at, and the individual strengths and weaknesses of the players we expect to play against the next day. We cover a variety of statistical data and video footage in order to back up points I make and to ensure that players learning styles are covered by both data and visual representation. There is also normally a motivational video at the end to hopefully inspire players to go out and play to their potential. I will then take the opportunity to ensure that both of our cameras are in the correct position for the game the next day.

During Game:

The main role last season was to code every ball that is bowled on the software which is provided by the ECB. The software is called 'Feedback Cricket' and allows you to monitor a variety of areas that happen in each delivery. Where the ball landed, what shot was played, how many runs were scored to name a few. At the end of each day we are then required to upload the footage to the ECB server which then enables other analysts to access the footage and data.

Post-Game:

After the game we can assess how we did compared to the areas we wanted to achieve and do any further analysis based on any points that the coaches may bring up to look at ahead of the next game. Then the attention turns towards the next game and collecting the data and video footage of the following opposition.

This layout will change this season as our intern will be coding, whilst I can monitor other areas we identify for feedback during games. Having 2 people

to do analysis is going to save us a lot of time and will enable us to track a lot more throughout the game and add more effectiveness to our data collection.

Rob: I would imagine each game produces a huge quantity of data? Is it a big job to manage all that and can you describe to people what's involved in that side of your job?

Joe: Each game does produce a lot of data, and I think the size of the job and managing it is dependent on how early you identify the areas you want to manage and look at throughout the season. Our analysis team has sat down with the coaches and come up with the key areas that we will be looking to record and analyse, so in terms of that side of the role its fairly straight forward albeit time consuming. We have a variety of databases that we have created which we look to keep up to date on a game-by-game basis in order to ensure that our pre-game analysis is as relevant as it possibly can be. 'Feedback Cricket' is a very good product as it manages all of the video footage and makes it easily accessible from the ECB Server.

When a coach asks me for any specific analysis which he has identified, I find Cricinfo very useful as it keeps records of the all matches in an archive so the stats are easy to find.

I think by identifying what you are trying to achieve at the start of the season it makes this side of the role a lot simpler and frees you up to look at other areas should they arise.

Rob: Do you find players are happy to just look at data or do most of them like the combination of video and data?

Joe: As mentioned before I try to make sure that all my analysis and the way I put it across to the players will allow every individual to take from it what they need to. I think this is one of the main challenges of the role as you may find some ground breaking stats which will really benefit the team, however if you cant get them to buy into it or understand it then the data becomes useless.

As in every sporting and working environment, everyone has their own learning style. I try to keep the slides as brief and as to the point as possible. In some circumstances and if used in-correctly analysis can become a boring part of the match preparation, so im always keen to be concise and relevant.

Some players wont respond as well to some of the statistical data, but will learn a lot from the video parts of the presentation so its about finding the balance. Even with individual analysis where players have come to me and asked for something, it's still important to make sure it is portrayed correctly.

Im lucky enough to have come into a club where I am a similar age to the core of the team, which has enable me to build strong relationships and allowed the analysis to work really well.

Rob: You are nearly a year into the job - are there any big lessons you have learnt that you would like to share? And maybe what's been your favourite moment.

Joe: I think the main lesson I learned is that sometimes the stats will lie. Which interestingly came at the same point as my favourite moment of the season. We played Nottinghamshire in the Quarter Final of the T20 Tournament and the winner would book a place at Finals Day. We were the last of the Quarter Finals and got there the day before the game and went about the analysis meeting prior to training. In the meeting I had come up with the stats we had used throughout the season, I said about how strong Nottinghamshire were and how they won 100% of games at home that season when they batted first. I said that should they bat 1st we need to restrict them to below 165 as that was the average winning score.

They won the toss and batted as we had expected, however they went on to amass a big score of 190, well above what I had predicted. The players came in and were aware that they had gone well above the average winning score.

We went back out and chased 190 with an over to spare in an incredible run chase. The stats had lied, nothing like that had happened at Trent Bridge for the previous 3 seasons, as im sure you can imagine the elation was incredible (see picture of us celebrating on the balcony).

That trip home resonated with me as a moment where I learned a lot. As an analyst we always want to be as accurate as humanly possible, its great when you analyse the stats and they come to fruition. However in arguably the biggest game of our season, they lied, luckily for us we had the ability to make the stats for that game irrelevant.

Maiden's over

Joe Leach's dismissal earned a first first-class scalp for the catcher, Joe Maiden.

On briefly for just an over as a replacement fielder for James Vince, the club cricketer from Bristol, working at New Road as Hampshire's video analyst, successfully pouched a catch at mid-on off the bowling of Matt Coles.

Away from analysis my favourite moment occurred in a very different capacity to what most analysts would experience. Due to my previous playing years at Gloucestershire I was utilised at a 12th man (substitute fielder) for the majority of our away games in 4-day cricket. During an away game at

Worcestershire I was fielding at mid on when a catch came my way! Luckily I managed to hold on to it, and it's a moment I will never forget!

Rob: Any advice for aspiring analysts?

Joe: My advice would be to make the most of any experience you can get. I've found that having a strong knowledge of the sport you plan to work in is great as well. With regards to my own experience, I feel that without taking an opportunity to do some work at elite level off my own back, I wouldn't have been in a position to get the role I have today. The onus is on you as an analyst to put yourself out there and find a way of getting in and making strong contacts along the way.

Diary of a Performance Analyst - International Rules

The following article is based on my time working with the Irish International Rules Team. Hopefully it gives you a run-down of the work I did with the team and my reflections on the whole experience.

Forming the Backroom Team



The manager Paul Earley was selected early in 2013 for the 2 test games played in October. Paul began to put his backroom team in place over the next few months and thankfully I got a call about being the Performance Analyst. Myself and Paul sat down early on to layout what I could bring to the team and what he was expecting.

This was a **really important meeting as it meant we both had clear expectations of the role and what needed to be done.** This is something I would recommend everyone does at the start of a new job or season - any current analyst will tell you the importance of managing up as well as managing down.

Historical Analysis

This is not like other sports where 100+ games are played every year. There had only been 34 matches played since 1984 so there were no great historical analysis that we could do that would be of any use. The teams, management and venue change so regularly that it would be foolish to try and gain much insight from previous games. However we did identify some factors that were worth looking at, just to give us an indication if nothing else.

Ball In Play - GAA matches consist of 2 halves each of 35 mins (+injury time). AFL games consist of 4 quarters each of 20 mins. However the AFL stop the clock more regularly so game time can be quite a bit longer. The International Rules is played over 4 quarters of 18 mins. I looked back over the last 4 test matches to examine if Ball In Play was much different to our own game. As it turns out they were almost identical. There are obviously many other factors to consider in this but as an indication it told us that the players would be required to play very similar times.

Tackles - One of the big rule changes from an Irish point of view is the introduction of the tackle. This is something we don't currently have in our game (similar to a rugby tackle) and something previous teams have dedicated a lot of time practising. Paul wasn't sure it was that prevalent in the games played in the last few series, so during my historical analysis we looked at how many tackles were made - and the results were pretty clear, there were a few but very few. As a result of this we decided to emphasise other skills during training and although the players spent time practising the tackle it was not given more attention than needed.



Training Analysis

In the early weeks there was a lot more emphasis but on the skills of the game. Although many of the skills remain the same there were some new additions that players would have to get used to. Although to an outsider they can look quite small it can take quite a bit of work on the training park to get the players comfortable with them. This affected my analysis work in a number of ways.



Firstly **when I was videoing I had to video much closer to the action than I normally would have. The coaches were much more interested in technique and the video had to allow them analyse that first and foremost.**

The second way this affected me was what I needed to analyse. Certainly for weeks 1 & 2 I spent much more time looking at how the players kicked the ball & their technique in the tackle than any tactical elements of play, that came later.

Usually when I video I take footage from behind the goal (end on) looking down the pitch as it allows me take in much more of the pitch than side-on and it also gives me the view the players see. So when we review the video if everything is done right we should be able to view the game from the players perspective.

For the first few weeks I videoed the Friday session, which was more game based from the end-on position and the Saturday morning I videoed close up shots from pitch side. We used these to hone in much more on technique.

Training Games



In total we were together for 9 weeks. We trained every Friday evening and Saturday morning for the first 6. We played 2 practice games. One among ourselves and one against a travelling amateur Aussie rules team. In the main my training analysis followed the same format mentioned above however a couple of things did change. As the weeks progressed I could afford to video from much further out.

In total we were together for 9 weeks. We trained every Friday evening and Saturday morning for the first 6. We played 2 practice games. One among ourselves and one against a travelling amateur Aussie rules team. In the main my training analysis followed the same format mentioned above however a couple of things did change. As the weeks progressed I could afford to video from much further out.

As players began to get the hang of the various new skills the management could start to concentrate on more tactical elements of play. During the training games I would take stats live, while someone else videoed the session. At different times the manager might ask me something or as each quarter came to an end I might offer an opinion based on the stats. These were always well received and there were numerous times where the stats directly impacted the interval team talk.

Each Friday once the session was over and everyone had dinner I went back to my room and started to tag the game. In the later weeks we were coding very specific KPI's that we had agreed. These KPI's were coded by team and player, after all we were still very much in the selection process. I would have the main game KPI's coded by Saturday and a selection of clips ready to be reviewed by the management team and the players.

The manager would look over the clips I had picked out based on his feedback during the session or highlighted over dinner. The players would usually arrive for a presentation that lasted between 10 and 25 mins depending in the discussion topic. We conducted the meeting and then the players headed out for training.

Online Review

Obviously between the session ending on the Friday night and the review session the following morning it wasn't possible for the coaches to review much of the session. The backroom team would have a debrief meeting on the Saturday morning once the players left but again there wasn't time to review much video. Therefore it was important to get the clips or full sessions to the players and coaches. We used an online cloud service offered by the software company I use.



This worked seamlessly and allowed me upload raw or edited video that night. Every coach & player was given their own unique login details and they could review the session in their own time.

There are numerous articles on this site about the power of online delivery. For one thing it saved a huge amount of time for me as an analyst. I didn't have to burn multiple copies of sessions, one upload and everyone had access. Did every player login and look at the clips - NO, but I didn't expect them to.

Like in any group of people, a team is made up of different characters and characteristics. For the majority that did login I'm sure it helped them, whether they wanted to review a 10 second clip or an entire session. I don't see the need in forcing players to login and telling them to watch it - what would that achieve?

I will do a follow up post on being in camp and the actual games.

** A note on the sport. The International Rules is a 'compromised' game played between Ireland and Australia. A team is picked by both nations to compete in a 2 game test series. It gives an opportunity to players from both nations to compete on an International stage, something they would not otherwise get as both the GAA and AFL are indigenous games played only (ish) on their respective islands.*

Question and Answer Session with José Ehrbar, Video Analyst, Association Suisse de Football

Q: José Ehrbar, as the video analyst for the Swiss Football Association, could you please introduce yourself and explain your daily role within the organization?



Before taking over this important role, I was a coach at the ASF Training Center in Payern (U15-U16) for 12 years. I have been working full time as the ASF Video Analyst for the past 2 years. My function includes multiple daily tasks with overall responsible to manage the different Dartfish TV Channels for the national coaches, national team and elite football coaches. We use our footage for multiple purposes, covering coach education, talent identification and obviously use with our national teams for scouting and player feedback.

My role is to also film the national teams and talented players to compile footage for our video database. We also video all our training sessions so the coaches can review. I create reference video analyses for our elite football coaches, who work with young players. These are for players of different levels from U12 to pro. 60% of the analyses is done for players outside of Switzerland. After 2 years, we now have more than 500 reference videos on our Channel. These are extremely useful in the coaching and learning process of our elite players. They can all access the videos and use them in the Dartfish Express app. I believe that this video database is unique in Europe. I support our 13 football elite partners in Switzerland with their Dartfish work.

Q: How has the video process evolved over the last few years ?

We started the reflection in 2012. ASF believed that it was very important to introduce video for the following reasons:

- The current generation is a video generation. They use videos on a daily basis.
- We wanted to analyze videos, not just statistics.
- Video is an excellent way to educate both players and coaches.
- Video enables anyone to observe his/her performance to assess strengths, weaknesses, and to track progress.
- Video must be included in the career planning of any player (i.e. medical files).
- Video allows the use of reference clips to achieve perfection and track progress.

Q: What have been the key success factors?

My role is to support our coaches with great methodologies and video can play a huge part in this process. It's important that we have strong relationships with clubs and our partner coaches. As much as possible we want to individualise our videos for the young talent.

Q: What have been key challenges and how have you overcome them?

Our first challenge has been to convince our partners of the usefulness of video in general and to help them we have quipped them with the complete toolset: (camera, PC, Dartfish software, access to Dartfish TV).

It is also vital that we find the right person in each club. Technology is only part of the solution and creating the right learning environment is critical to our success, we concentrate a lot on on-going specialized training.

Q: What was your criteria when selecting a video solution provider?

We needed a global solution provider that could answer all our different needs around use of video. It is a 360 degree approach vs working with non-integrated solutions. Dartfish was the evident choice, thanks to their technology - TeamPro software, apps: Express and Note, and of course Dartfish TV with its unique online toolset. Dartfish training and support were also key in our selection.

Q : Where are you today?

The project is evolving and doing very well. I do have to set priorities, because right now, I am the only one in charge of our program.

Q: Have you met your objectives?

Yes, but this is an ever evolving project and new objectives develop on a continuous basis. As we aim for excellence, we regularly adapt our course.

Q: What are next steps?

- Training special team coaches (goalies, offense, and defence).
- Selecting a part-time video coordinator for each partner.
- Filming potential talent more often.
- Introducing video as core development/training.

- Linking videos with statistical analysis.

Q: What advice would you give clubs or federations for integration of video into their daily routine?

I think it's important to select the right person (part-time or full-time) and good coaching experience is vital. It's important to plan and have clear objectives, it's easy to get carried away with what is possible but having clear objectives allows everyone focus. Training is also vital, it's important that you constantly try and stay update with your skillset.

Keep it simple & focus on the essentials. It's easy to get carried away. Finally I also think it's vital to create and develop an online video database.

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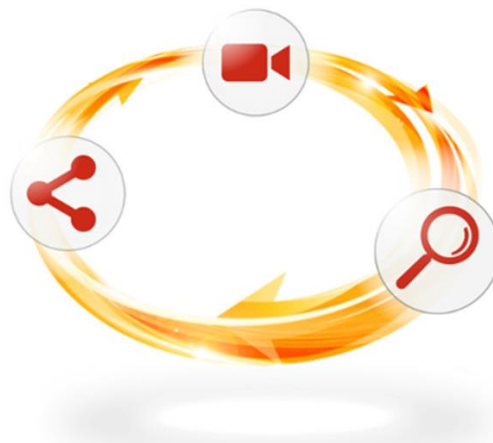
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Performance Analysis MSc Cardiff Met - A Students Perspective



Mike Haines details his experience studying an MSc at Cardiff Met University. Mike has plenty of practical analysis experience and recently completed the MSc, below he describes the course at Cardiff

Met, what he got from the course and some great advice to anybody thinking of following a similar path. Mike has his own blog over at: <http://mikehainesperformance.wordpress.com>

Rob: Why did you want to do an MSc and what made you choose Cardiff Met?

Mike: After completing a BSc in Sport Science at the University of Gloucestershire and with two years' experience as an analyst with Swindon Town under my belt, I felt that the next step was to undertake further study for an MSc in Performance Analysis. I researched all of the courses available, but the reputation of the course at Cardiff Metropolitan University, the possibility of remaining at home and commuting in (Cardiff was approximately an hour and a half by train from my home at the time), and the fact that I could get an academic scholarship to pay my fees were decisive factors. In truth I'm not sure I could have afforded to complete a Masters without the scholarship and I still needed to work quite a lot throughout my studies to pay the bills.



Rob: How is the course structured in terms of format and contact hours?

Mike: I chose to study full-time and initially hoped to complete the course within a year, since the lectures (every Monday during term-time) were completed within the first eight months, leaving just the dissertation to complete. With the demands of my role with Swindon Town and another part-time job it soon became clear that this was unrealistic for me if I wanted to achieve the sort of marks I felt capable of. Whilst I allowed myself the full two years to complete the course for this reason it is definitely possible to complete it within a year under the right circumstances.

I didn't find that the level of work was that much harder than at undergraduate level, it was more of a natural progression with greater detail and critical thinking required, and longer assignments (approximately 5,000 words compared to up to 3,000 at undergraduate for example) requiring more planning. I did find the dissertation proposal presentation very hard though, as the lecturers really grilled me on my proposal, which of course was good because this gave me lots of further ideas on how to improve it.

Rob: Do Cardiff Met provide you with work placements or did you need to find them yourself?

Mike: There is the opportunity to complete a placement module, and the university will assist you in finding a placement either with a university team or through links with professional teams across a range of sports. I can't comment too much on this process as I already had a role with Swindon providing me with experience, but know some of my peers worked with Championship football clubs for example. Perhaps others can comment below on this aspect of the course in more detail from their experiences.

Rob: As the most established PA MSc I'm sure the lab facilities are good?



Mike: Whilst the labs were well stocked with analysis software (SportsCode Elite, Dartfish TeamPro, NacSport etc), there were technical issues at times. We received some tuition on how to use each, but this didn't constitute much more than an introduction to them, with instructions provided to be explored in

your own time. One of the assignments required the comparison of different software, which was a really good idea and encouraged you to spend plenty of time exploring the strengths and weaknesses of each. However I did feel it might have been good to be shown some more powerful processes and workflows used across different sports to give an insight into how to more extensively push the software, since not all of us gain practical experience in environments that do so. There was the opportunity to access a heavily discounted student licence for Dartfish, which I took advantage of to allow me to explore the software more extensively at home.

Rob: Is there a broad range of teaching expertise on the staff?

Mike: The teaching staff were very knowledgeable with a broad range of experiences between them, so if I had a question there would always be someone to approach with suitable insight. I was fortunate to have Peter O'Donoghue (I'm sure any student reading this has referenced him many a time!) as my dissertation supervisor and on the occasions I turned to him for guidance his responses were prompt, focused and to the point which meant I wasn't left waiting around before I could progress my work further.

Rob: Do you think the fact that you worked as an analyst first helped you get more out of the masters, or did it matter at all?

Mike: Working as an analyst will have helped in that I had experience of the practicalities of being an analyst and where the theory you learn fits within your practice. If there is a bit of a disconnect between the theory that is taught on a particular course and the practicalities of being an analyst then being able to experience both is a positive and helps you to be critical of the theory which will benefit you academically. There are also some situations you come across as an analyst that you probably won't come across in the classroom, such as

how to react when a coach and player are having an argument and you know the footage may show that the player is correct - what would you do?

Rob: Do you feel there is a big disconnect between the practical aspects of an analyst and what is taught at masters level?



Mike: Simply being able to film and visualise data proficiently are considered key skills for an analyst and are skills that courses are not generally considered to be particularly good at developing in students. However the course included a module where we were required to analyse a performance and produce an interactive dashboard and video to present our findings. Quite some time was spent on the importance of visualising information for

effective feedback.

Rob: Was there one main thing you took away from the course?

Mike: One of the major aspects I took on board from the course was reflective practice. This is something I was introduced to at undergraduate level but didn't fully take on board until studying the Masters. I now reflect regularly on my professional practice and this is something I feel really benefits my work. I started a blog as a result (mikehainperformance.wordpress.com), which has also provided further opportunities to network with others in the industry.

Rob: What gaps (if any) are missing at university – if you could add something to the course what would you add?

Mike: One thing I have found is that some interns I have worked with haven't had much knowledge or understanding of Excel or Numbers. Being able to set up and maintain statistical databases is a skill highlighted on most job specifications but it doesn't appear to be given much time in courses. There was a 3 hour session on Excel and various uses within PA on the Masters course at Cardiff Met, and links for further reading and tutorials to work through were given. More time could perhaps be spent on it but at the same time the onus is on you as a Masters student to spend the necessary time developing these skills and there are only so many hours of lectures to cover everything.

Rob: Since finishing the course how has your analysis life been going?



Mike: From January 2013 I started applying for jobs more extensively, as it was becoming clear to me that I needed to leave Swindon if I wanted to find full-time work as an analyst. I found that having the MSc on my CV helped me to get to the interview

stage far more often than I had previously, but frustratingly I kept getting down to the final few candidates and missing out. By the end of the Summer I was getting to the point where I wondered if all the hard work and sacrifice had been worth it as I had a number of rejections even for unpaid internships. Then shortly after submitting my dissertation I was invited for interview at Fleetwood Town. Not only was I put forward for the role on the back of an interview earlier in the Summer with Prozone, but David Lucas (a current Player/Goalkeeping Coach at Fleetwood) was at Swindon previously, and on seeing my CV contacted a member of staff at Swindon to find out more about me. The interview went well and I was offered the role of First Team Performance Analyst shortly after.

Whilst the MSc undoubtedly helped me get through the door initially by helping me to meet the criteria for the role, I am certain that the previous experience, hard work and networking I had done over the years played a big part. An MSc is an important qualification when seeking a job as an analyst, but not the only aspect that will get you a job.

Middlesex Uni MSc Performance Analysis

A Students Perspective



As the number of Performance Analysis MSc courses grows I thought it would be a good idea to get a student's perspective. So I caught up with Eanna Kennedy to find out his experience in Middlesex University last year. Here are some of the questions I put to Eanna. I'm sure if you have any yourself you can ask them in the comments box below.

Rob: What made you pick the course in the first place?

Eanna: I decided to accept the offer of a place in the MSc in Performance Analysis last year for a number of reasons. First of all the course was only a year long (in fact it is really only 11 months; start of October - end of August). I felt that this would benefit me in terms of finances as I would only have to pay fees for 1 year and I would also be able to apply for paid jobs then as well. I still personally think that this is a big advantage of the course as you still get good work placements within the year.



Rob: Is there a lot to cover in 1 year?

Eanna: The disadvantage of the year long course can be that there is a huge amount to cover in a short space of time and if you are not ready to start on day 1 and work hard for the full 11 months with coursework and your placement, you could fall behind very quickly. With an increased amount of reading and critical thinking needed from your undergrad some students can become overwhelmed with everything if they don't start reading and working straight away. However, treating the course like it is a full time job and you should be fine.

Rob: What sort of contact time (lecture hours) are involved?

Eanna: In terms of finances, while rent in the London area is extremely high regardless of the area you live, a lot of my cohort lived at home and travelled in to London one day a week (Wednesday) for lectures. This would obviously be a huge advantage to people living within driving distance in terms of funding your studies. The negative side to this is that it doesn't feel like you are part of the university and you can't turn to a classmate for help with stuff. Even though I did live near the university, it was a weird experience as you wouldn't know anyone around the place and never really felt like a student. However, with facebook and emails nobody is ever too far away to help you.

Rob: Did the university location help with finding work placements?



Eanna: Looking at the location, it was a major reason why I decided to go to Middlesex. It is a huge advantage to have so many professional clubs in the London area allowing students to get a good work placement to begin their performance analysis CV. In my cohort, people got the opportunity to work with the likes of QPR, Reading, Charlton, Brentford in football, Saracens and London Irish in rugby union and the English Institute of Sport for numerous other sports.

Rob: What type of work experience were you required to do?

Eanna: We were expected to work over 100 hours in total. This could be done any way you liked- 1 placement or a number of different placements combined. My placement hours were made up of 2 placements with Charlton (Football) and London Irish ARFC (Rugby). I spent the entire season with Charlton working with teams from u11 to u18 and also worked with the first team from February on. This was an excellent experience and gave me an idea of how PA is used in football. However, don't be expecting to get paid well (if at all) as clubs see you as a cheap way of fulfilling the (EPPP??) requirements at academy level.

Rob: How did you find the lecturers & lectures themselves?

Eanna: The two main lecturers are Nic James and Ed Burt with guest lectures from other people including Mike Hughes. Both Ed and Nic are extremely helpful and make their lectures interactive and enjoyable. With lectures only on Wednesdays, I feel that it is important that you don't think it only requires 1 day off your week to do the course. It is important that you are in a position going into the university on a Wednesday that you have read papers in the subject area and have questions and queries ready to ask the two guys. Before you know it, the weeks go by and you have so many questions and problems you won't know where to start. My main concern with lectures was that there just wasn't enough of them with the course only being one year. I would have liked a few more just even just to go back over stuff as a nice reminder later on but I suppose at post grad level you are expected to do that yourself.

Rob: As a new course what are the facilities in the Performance Analysis Lab like?

Eanna: Regards the lab, it will be new this year as it is moving to the Allianz Park with Saracens, but last year it was only a classroom and we brought our laptops in each week. We got licences for Dartfish and Focus and a number of biomechanic programs which were helpful.

Rob: Any thoughts on the University itself?



Eanna: One major negative that needs to be mentioned when you are thinking of applying for the course at Middlesex is the administration side of the university.

However this has very little to do with the course itself so it shouldn't put you off applying (I'm just warning you). The majority of people on the course have encountered problems with documents, deadlines etc but they do get there in the end and I have been told they are

improving. During the application process, it took a long time for them to process my request and I didn't find out that I had a conditional offer until nearly July. This was obviously a worrying time for me as I needed to go whether to get a job or take offers from other universities. Maybe, I still hold a grudge against them for being so bad in dealing with my application that I am always seeing them in a negative light but I hope that if people apply they get through the process much easier.

Rob: Any final comments on the course?

Eanna: In all, the course is definitely up there with the best that others have to offer. The standard of teaching you will receive is top quality and all the necessary help you need is there for you (but you still need to be the one to initiate things). With hard work and dedication, there is no reason why you can't graduate with an MSc in Performance Analysis and get a job in your chosen sport (with a little bit of luck thrown in).

MSc Performance Analysis Chichester - A Students Perspective

Ali Pearson has just completed the MSc in Performance Analysis from Chichester. He was in the first cohort of students to finish this MSc and below he shares his experience of the course and what he got out of it. You can also read the review of the MSc's at [Middlesex University by Eanna Kennedy](#) and [Cardiff Met by Mike Haines](#)

Rob: What made you choose Chichester Uni?

Ali: Having completed a year as an academy analyst at Portsmouth FC during the final year of my undergraduate degree at the University of Portsmouth, I was looking at doing an MSc in Performance Analysis. I applied for the course at Chichester quite late and after going down to Chichester and meeting Matt Robins (Programme coordinator and lecturer), I knew it was the right choice for me enrolling on the MSc Sports Performance Analysis programme.



The course was very applied in nature which allowed us to gain exposure to a considerable number of software and technology products. We also benefited from practical tasks in-class which taught us some key fundamentals of the discipline. The small group also gave greater intimacy and involvement in lectures, and opportunity to see Matt one to one and improve the learning environment with us all moving in the same direction. The work placement unit was of great importance, not only in gaining experience in industry, but also with assessments such as a job interview which prepared you for what the process of applying for a job may be like.

Rob: What did you cover during the lecture hours?

Ali: The PA lectures covered a wide range of theoretical areas within the discipline. Having the opportunity to cover such a breadth of information gave us a great knowledge base, as well as allowing us to discuss and debate many areas and journal articles. These sessions were sometimes conducted by guest lecturers, such as Professor Mike Hughes and companies like Prozone, Sportstec and Catapult, which were always enjoyable and insightful. We also had Research Methods lectures which covered an extensive range of statistical testing. Again, these lectures were hands on where we could use SPSS to conduct statistical tests on different data sets so we could apply the theory learnt in the session.

Rob: How is the course structured in terms of contact hours?



Ali: The idea at post graduate level is to conduct a great deal of work away from university. Lectures on Thursdays, 3 hours each with the morning dedicated to PA and the afternoon Research Methods. For me, this was ideal as working full time at Brentford FC took up every other day in the week for me. Having the work placement module and the extra days meant we could all apply ourselves fully to the clubs we were working at. The units involving individual research, such as the dissertation project, did not

have any designated contact time but having the opportunity to see Matt pretty much when you wished was extremely helpful. The support Matt provided was unbelievable really and I think we all were very lucky to benefit from that.

Rob: Being a brand new course what were the PA facilities like?

Ali: Chichester is very much a sports university. They have pumped masses of money into the facilities and development of those facilities. Considering the size of the campus, the quantity and quality of laboratories, sports pitches, astro turf, gyms, sports halls, rock climbing walls (if that's your thing) and the new sports dome are very impressive. From a PA perspective, the programme was new to the 2013/13 academic year. The university has a partnership with Sportstec so we all had a MacBook Pro with SportsCode Elite for our personal use for the year. This was used in some way or another by all of us and considering the price of the MacBook and the software. Matt had also invested in the Catapult outdoor system so we had practical sessions with the software, which we could also use at our respective clubs should we wish. We also received training using Focus X2 (which I used throughout the year at Brentford FC) and also were fortunate enough to complete the Prozone Level 1 course which was included in our course fees.

Rob: Did the University help with work experience or was it necessary as part of the course?

Ali: We all completed a work placement unit which required us to complete a placement at a sports team. I decided to accept my offer on the MSc programme after starting my position at Brentford FC so this acted as my placement. Matt did help out some of my course mates in getting their positions for the year. I think the work experience gave us all the chance to work in our respective sports and was beneficial. I was U18 and U21 analyst at Brentford and believe that the combination of both has left



me in good stead. Brentford don't have endless pots of money but the set-up of the analysis department is incredible when considering the tight budget.

That really is testament to the Head of Performance Analysis and First Team Analyst at the club and the brilliant work they do, and also how well the first team and academy coaching staff have bought into the analysis process. Having the chance to use Focus X2, build comprehensive match and individual reports from scratch using Microsoft Excel has taught me how the whole process works from start to finish and that good analysis doesn't have to be that expensive. Also being left to my own devices and being able to implement my own methods was a really useful experience. It was a lot of hard work but it is a great club and to be involved with the success of the U21's and how excellent the first team did was a fantastic experience.

Knowing the club were successful in gaining Category 2 status in the EPPP audit is also excellent and well deserved by everybody at the club who worked so hard to get that status. It's also satisfying to know that I was part of that process. The skills I learned at Brentford have become all the more important for me now as a consultant, where I have had to source software and technology affordably, and manage myself, for my work with the rugby teams at Wellington College.



Rob: Do you think the MSc has helped prepare you for 'real-world' analysis?

Ali: One of my undergraduate lecturers told me "The job may require an MSc, but the MSc doesn't get you the job". I feel the combination of the MSc and the working in industry alongside is very beneficial. Having the academic understanding and knowledge of key practices allows you to go and apply those that you believe in. For me, being able to prepare a research project for journal publication is also a great experience and something I never expected to do. The quality of the academic side is testament to Matt and his unwavering belief and support.

I won't lie, working and studying full time is extremely tough. Ultimately, you need to make the most of your opportunities and do the best you can in each situation. With the quantity of "analysts" there are now, having an MSc on your CV may help separate you from the crowd and is a "requirement" on most job specs. It shows you've committed to studying and worked towards securing a job in the industry. The job however is no guarantee, so doing all you can to give you the best chance is imperative. I believe the opportunities aren't closed to just professional clubs, institutes etc and people looking for a job in performance analysis shouldn't feel constrained to that. There's teaching, lecturing, research, application of knowledge into business/office type settings, and consultancy work to name some possibilities. I decided to approach the consultancy work avenue as I feel it's a new challenge for me and analysis provision in private schools is pretty rare. It's just a matter of believing in yourself, trusting what you do, working hard and you'll fall into the job that's right for you.

Sports Performance Coaching Tour

The All Blacks have a saying that is ingrained in their philosophy that **Better People make Better All Blacks**. With that in mind I am pushing to find ways to learn new things (not always sports related). As I wrote [here](#) and [here](#) the need to invest in yourself is crucial and if done correctly will stand to you as an analyst, coach and person. I caught up with [Ross Munro Williams](#) about his recent Euro Coaching Tour (2 months, covering 3 countries) and asked him what he got from the experience.

1) What made you decide to do the Euro Tour?

Ross; Living in Cape Town can at times be very sheltered, because we are so far from the rest of the world I sometimes find that we merely copy each other and seldom think outside of the box. Schools, clubs and professional sides are doing much of the same thing in terms of playing style, coaching style, physical preparation and analysis.

But my question has always been why are we coaching like this and is there not a better way to prepare our youth players so that our adult professional players benefit? My belief has been that our desire to win youth games has had a mostly negative impact on our players development as coaches have seemingly forgotten that coaching is about player development not solely the teams, and by extension, the coaches own win/loss record.



Win At All Costs - Is There A Better Way?



What I have yet to come across with many of the coaches I have met in Cape Town is their desire to find out how to coach players better, to explore the various ways of ensuring players are learning more not merely performing the game plan or the technical aspects better. Most coaches I have come across have a huge desire to learn more about the technical and tactical

side of the game so that they can impart this knowledge onto their players for the sole purpose of winning more games.

Finding out (mainly through Twitter) that there are other coaches like me and entire organisations that asked the same questions many years ago had a real impact on me so I decided to see for myself how Europe was evolving their coaching methods from coach centred to athlete centred, drills to games, following orders to problem solving. Without a shadow of a doubt Europe are well ahead of South Africa in their coaching the coaches

programmes and as a result I met so many coaches at all levels of the game that are actively trying to be better coaches for their players benefit not for their egos need to win more game

2) In total how long were you gone for and how many club/people visits did you get into that time?

Ross; I was gone for exactly 2 months, covering 3 countries: England, France & Scotland. I cannot put an exact figure on the amount of coaches I met as each person/organisation I went to had assistants or other age group coaches that were of similar mindsets, but I actively travelled to meet about 30 coaches and professionals involved in sport all over those 3 countries.

3) What was the main thing you got out of the whole trip?



Ross; Confidence. I have been advocating a different method of coaching than the one we actively do in Cape Town and South Africa as a whole, but have received many negative comments about my beliefs as it does not correlate to our culture where winning matters hugely, training to compete at youth level is accepted and the coach is the all knowing, dictatorial, don't question me type guru.

I advocate a vastly different approach where winning should be a by product of a great culture and environment where **the players individual development is the focus, the coach is a facilitator of learning where the players are active participants in their own learning.** This is almost a complete opposite of what is the norm in coaching in South Africa so as a result the comments I receive on a daily basis have not been constructive, thus now that I have seen the 'new' approach being promoted, used and have actually seen it working in professional organisations has been a massive boost to my confidence levels as a coach as well as a person.

I believe once we can show that it works we will see a change in South Africa, but it will not be an easy road!

4) Was it expensive?

Ross; Massively expensive as the exchange rate is currently at around 17 South African Rand to 1 British Pound. I received no funding from anyone, I paid for this trip myself as I truly believed in what I was going to learn and experience and in hindsight it was one of the best decisions of my life. I have some serious sacrifices to make this year to make up for the trip but it was worth it!

**To invest
in yourself
is the best
investment of all!**

5) How did you have so many contacts?



Ross; Twitter. Social media is hugely powerful, more so than I think many know or fully understand yet.

I liken Twitter to having a beer with someone, which are you more likely to accept – a random email from a stranger asking to meet up for a coffee or to shadow your organisation; or someone you follow, know what they are about from their tweets or have tweeted each other before? Its a no brainer. The people I emailed knew exactly who I was, what I believe and what I was wanting to gain from the meeting.

The more I tweeted about my trip, where I was, who I was meeting etc, the more offers I received to meet up. I actually had to extend my tour to fit everyone in and as it turned out I could not meet with another 5 or so coaches as I ran out of funds in the last week. Even when I returned to South Africa I received emails saying how sorry some coaches were that they did not realise I was in the country.

What is surprising is that I am merely a 20 something coach that has not done anything of note in my career, I am an amateur coach just like most of the coaches out there, but I happen to tweet my experiences and journey of learning and discovery. I suppose it just resonates with others out there who are going through the same journey, we are all helping each other develop by exchanging ideas and views.

I can categorically say that I would not be the coach I am today without twitter and the people that I follow. The amount of knowledge I have gained from people like Mark Upton, Lyn Kidman and Nick Levitt to name a few examples has changed my outlook on coaching as well as my life. It sounds strange that twitter can do that, but it just goes to show how powerful it is!

6) How did people respond to you asking to visit them?



Ross; Overwhelmingly positive!! Everyone went out of their way to meet me; I got fetched, dropped off, taken for coffee or meals and I got accommodated! I could not believe how supportive every single coach was, it was great to experience that as I will endeavour to always do the same thing no matter where I end up coaching.

The humility of the professional coaches was exemplary and went a long way to confirming how arrogant so many youth coaches are in South Africa, for if these guys at the top of their game can be so humble and accommodating why can't everyone?

7) If I pushed you what was your favourite experience from the whole trip?

I think I had two, although the entire trip was amazing as was every single coach I met.

The first was shadowing Nick Levitt at Fulham FC's training ground. Watching Nick in action confirmed everything I had read and believed up to that point. The way he stepped back and allowed the academy players to simply play was a great learning experience. My goal is to now get my coaching up to that level, although I see now that he is changing his methods... coaching, always changing! What was interesting from this experience was that Nick is a football coach, and I actually learnt more from the other sports than I did Rugby... goes to show how much you can learn from other sports!



The second was spending a week with FC Grenoble in France. I had the time of my life being with the coaches, the players and then being on the field for the warm up of their Top 14 clash against Toulouse. What struck me was how happy everyone was at the club, the way everyone greeted each other with a handshake and a "How are you?" – in French of course, was something

that struck me. I have been with the Stormers set up in Cape Town a few times and never saw such an atmosphere. All the coaches were amazing to me, especially Bernard Jackman who organised my stay. He was hugely helpful and still is, by sharing his resources with me, being completely honest and open to everything that goes on in the club.

Both experiences have gone a long way in giving me an ideal to strive for.

8) Is it something you would consider doing again at some stage in the future?

Ross; Yes definitely!! I am looking at going to America either at the end of this year or next year. I love their sporting passion, but their sporting culture is very similar to South Africa's so I would love to see how they do it. My aims are to also shadow as many basketball, NFL and Rugby coaches as possible, as well as just meet anyone who thinks outside the box and is trying to change the game in some way.



Another area I would love to find out more on is the baseball statistics that influence selection, ie Moneyball, to see how that has changed the game or not.

I love meeting different people and being inspired by thinkers and I believe America is somewhere that I can experience this!

9) If somebody wanted to organise one of these trips what advice would you give them?

Ross; Build a relationship with people online first, calling in cold was the hardest things I did on my trip, although the people I met through recommendations was hugely beneficial, they did not know who I was or what I was about. This meant we could not just get into the topics I wanted to discuss like I did with the other coaches as they did not know me at all. The difference between meeting a twitter follower and not was huge, but not without any benefit however, it just was not as easy.



I don't think my tour would have gone as well as it did if I went with the wrong attitude, the amount of new people I got to meet from recommendations and the help I received hopefully goes to show I gave a good account of myself.

At the end of the day you are a guest in the country (although I am half English) and you have come there to see what they are doing, but you only get out what you want

to, and if that is to learn you will, but often not in ways you expect. I learnt something from everyone, often it was not directly coaching orientated, one of the things I learnt from a youth Rugby League coach, Lee Cunningham, was how damn happy he was to be out there coaching his sons u12/13 side on a pitch made solely of sand, surrounded by horses and their droppings and poor lighting. That made me realise how ungrateful coaches in South Africa can be when they don't get a full pitch to work with, the grass is not green or flat enough or the conditions are not perfect – yes that used to be me too!

Thanks to Ross for sharing his story, you can follow him on twitter [here](#) and I suggest you do.

Performance Analysts Perspective

Thanks to Prozone for allowing me use this article.

Working in an industry that requires continual learning and adaptation, skills training and continued professional development are essential for performance analysts looking to make an impact in elite sport.

To provide an insight into what it takes to become established in this competitive industry, we've spoken to three analysts to hear how they broke into performance analysis and discuss the skills and qualities that they believe are essential for success in this unique line of work.

Can you provide a brief overview of your own route into performance analysis?

Paul Fernie (Head of Performance Analysis, Blackburn Rovers): I first became aware of the profession while I was studying at the University of Hull. The chance arose to work with Doncaster Rovers for a six-week block which was part of an initiative the university had with the club, as they also did with Hull City, Barnsley and Scunthorpe United.

I was fortunate enough to go into a club which had a great infrastructure and some very good people working within it which made my transition both into the role and the club an easy one. As the six-week block ended, the club decided to extend it until the end of the season on a unpaid basis which then resulted in a full-time contract the following season.

I enjoyed four action-packed seasons at Doncaster Rovers in which the role developed greatly, as I did too as an individual. Sean O'Driscoll and Richard O'Kelly were fantastic mentors who greatly helped me and continue to do so to this day.

I also pursued a coaching career alongside my work with Doncaster Rovers, and was working with Leeds United at the same time with the young players in the academy. I felt the two roles complimented each other really well, particularly when considering the application of analysis into everyday football.

Olly Gage (Operations Assistant, University of Virginia): I would say my route is one of the more unusual ones. I went to America for two years playing on a football scholarship and when I returned I contacted an old friend who works in the academy at Sheffield Wednesday.

When we were out having dinner one night I mentioned another one of my friends who was an analyst at Middlesbrough and told him how his job sounded perfect. Two days later I got a call and he asked me if I would be interested in doing some work for Wednesday as he trusted I knew the game and he knew me personally.

I absolutely fell on my feet and just happened to be looking for a career at the right time and knew the right person. I was at Sheffield Wednesday for about six months before I decided I wanted to give it a go as an analyst in America and began contacting clubs over here.

Sam Lawson (Director of Performance Analysis, University of Missouri): My route into performance analysis started at the end of my first year at university. An opportunity came up at Ipswich Town's academy and I jumped at the chance to work in a professional football environment. I worked there for two years, filming games, coding events for the team and individual players as well as producing highlights videos. My time at Ipswich was a great start and I learned a lot from it.

Coming out of university, and after completing three Prozone courses, I tried searching for a full-time position. As most analysts know, this is not easy, so I decided to take a working holiday in New Zealand and volunteer at a couple of clubs while I was there. This was my first true experience of analysis as I was meeting weekly with the managers and talking in-depth about stats and trends throughout the season.

From there, I saw a Graduate Assistantship advertised online for a role as Director of Performance Analysis in Missouri, USA. This was another stepping stone and improvement on my last position, so I left New Zealand early to come to the USA where I am currently gaining my masters as well as getting invaluable experience at a high level.

In your opinion, what are the three most important skills for analysts to possess?

OG: I think the most important skill is knowing how to relate to the players and coaches. If you can't work with people or don't know how to best get the information over to them, there can be a huge disconnect and often a very important piece of information can be ignored.

Second for me would be understanding the sport you're working in. I've heard many stories of guys who are brilliant at what they do, but the inability to convert that into positive results and effecting performances is a problem. This is usually more of a problem on the statistical/analytical side of the job.

Third is probably organisation and time management. As an analyst, you are almost always working to a deadline of some sort due to fixtures. If you can't learn how to

organise your data and videos, and end up spending hours on a task that can be done in a few minutes, you're not going to last long! Coaches usually aren't very understanding when a video you've had two days to get done is sloppy or incomplete.

Which educational pathways would you recommend for aspiring analysts?

SL: Personally, I think the three Prozone courses I attended were the best thing I could have done to prepare myself for the world of analytics. I feel the Prozone courses not only teach you how to use the software but provide insight into what you could focus on, different ways to interpret events and the endless possibilities of analytics. You feel the passion and you make connections that last.

A Bachelors or Masters in Performance Analysis would be advantageous, although I have neither and this has not held me back. Your passion and dedication are what will eventually get you opportunities. Also, if you have the possibility to attend a football or analytics conference, definitely go. The people you meet and talk to could be invaluable in your career.

Which professional qualities do you look for when hiring analysts and interns?

PF: I think the givens are qualities such as hard work and good time-keeping, which should go without saying in any line of work. When hiring new analysts or interns I look for reliability, commitment, honesty, willingness to develop, the ability to adapt under pressure and strong social and communication skills.

When hiring for a specialist position, the qualities would be more refined, such as knowledge of analysis software, the ability to prepare and deliver detailed analysis, presentation skills, and an ability to innovate and strengthen the department.

I also believe that relationships are vital and having the ability to work as part of a team is imperative, whether that be as an opposition analyst working closely with scouts, analysts working with coaches and players, or even relationships across other departments. Good relationships greatly aid the implementation of analysis carried out each day within the training ground environment. Without good rapport, analysis could be in danger of being lost and unusable.

If you could give aspiring analysts one piece of advice, what would it be?

PF: Football has evolved so much over time and continues to do so. I fear that people who stand still will risk getting left behind. The advice I would give is to be adaptable and willing to learn every single day, maintain an open mind and continue to keep high standards for the work you produce. Also enjoy what you do each day and remember that a smile is infectious!

OG: Be the Head of Analysis somewhere. It could be your local Saturday team, cricket club, tennis club...it doesn't matter so long as you're in charge. You might learn a few technical things working as an intern, but you'll never truly learn time management, how to get a point across to a coach or how to build working relationships until you are the one the coach relies on. You will learn ten times faster and have more valuable experiences by being the Head Analyst somewhere.

SL: Never stop trying. You may get turned down multiple times, but you only need one yes to start something great.

To find out more about Prozone's range of educational courses, visit <http://www.prozonesports.com> or email <mailto:education@prozonesports.com>.

An Interview with Catapult's new Head of Europe and former Carling Cup winning Performance Analyst Paul Boanas

Rob: *You have recently been made Head of Europe for Catapult sports. Can you give us a bit of background on Catapult and what your new role involves?*

Paul: Head of Europe is a newly created role, we are investing heavily in this region increasing the staff numbers from 2 to 12 over the past 3 months bringing in Sports Scientists and Product Engineers to ensure we provide the highest order of care for our customers. It sounds very corporate, but my role is to ensure that we grow our position in the region...and ultimately to ensure that our current customers receive the highest level of service and support.



Rob; *You spent 14 years at Prozone and must have seen a lot of changes in that time. Can you give me an idea of the biggest changes you have seen in PA over that time and the most important lessons you picked up along the way?*

Paul: My first day at Middlesbrough FC (where I spent 3 years as a PA under Steve McClaren) I was recording video to video with the classic "fuzz" between recordings that this generation know nothing about! I was showing that to multi million pounds worth of talent...what Prozone (other providers are available of course ;-)) did was bring accountability and efficiency of process that wasn't there previously. The changes in technology in general have massively benefitted "our " (I still feel I can use the royal "our") community: Video to DVD to Digital, Size going up and price coming down of storage, speed of connectivity, size of capture equipment etc etc...I could go on all night. The "new" generation don't know they are born sometimes!

We can't live in the past...most people who treat the new generation with disdain because they haven't had the hardship of the early days of analysis are generally just bitter and jealous that they didn't have the tech we now enjoy in their early days...having said that, the work commitment of some these days is definitely less than it was; there is an expectation that they can learn quick and get a job straight away...its the Sky+ generation...those who have never had to actually sit through an advert break!



Most important lessons I have learnt along the way was to be nice to everyone. Those you are nice to on your way up will be nice to you on your way down! Make contacts and stay in touch with them...make an impact. Listen to their needs, not yours. Read business books where you can. Learn from other industries. Stay updated on new technologies...even if you are the happiest club on the planet with the systems you have, still look at what else is out there, it will make you appreciate what you have and you might learn something.

Rob: *You were a PA with Middlesbrough when they won the Carling Cup - that must have been an enjoyable experience?*

Paul: I bore everyone with my Carling Cup experiences. Loved it. Amazing journey and an amazing day. It was great to see that last year I was credited with playing a major part in the success in a 10 year anniversary book of the win. Parents were happy! There are few and far between analysts who get to experience winning something...and it means more when it's your home town. It allowed us a route into Europe as well which was tremendous...especially for me as my role became even more important...sprisingly they weren't aware of Banik Ostrava!

Rob: *GPS and Physical data have always overlapped between traditional sports scientists and Analysts - do you think it's important that there is good communication between the technical/tactical analysis and the physical parameters?*

Paul: Anyone who doesn't believe that good communication between all departments is important shouldn't be working in professional sport. I think the development of the Technical/Performance Director roles will increase this further. The rise of the Data Scientist (with Data Engineers and Data Artists hopefully not far behind) will also increase the need for departments to communicate. There is some really good work going on between match day and training data...watch this space.

Rob: *Concussion has become a big issue in sports recently - do you see sensor technology playing a big role in being able to monitor this?*

Paul: Yes, it will play a part. There are numerous companies who are seeing an opportunity to develop sensors/devices in this area. It's incredibly difficult though. It's a hugely under resourced and under researched area...we are involved in several research projects in this area given that the accelerometer can demonstrate impact on the body...but of course our

unit is not on the head, thus it can only go so far. We shouldn't forget video technology as well to actually help us monitor closely what is going on and as a record of what happened for review and education. Something like Google Glass is being used/trialled by some Football physios so they can relay live footage back to the doctor on the bench.

Rob: *Since Prozone started offering their services Football has always had access to large amounts of data. Do you think clubs are getting better at asking the right questions, rather than just collecting data for the sake of it?*

Paul: Still too early to tell to be honest. Having at least an idea of what you want is important....but it is about identifying the needs of the manager...too many analysts take the first answer given to them and start analysing without actually getting to the depth of what the REAL issue might be (I like the 5 whys...more analysts should probe http://en.wikipedia.org/wiki/5_Whys ...but I am not naive enough to think that this is easy given the likely age and experience difference and the manager is likely to get annoyed...but the concept is right). The first step then is to filter and sort the data to understand what you have...there is far too much noise. The collecting data also sometimes come from fear..."what if we need it in the future...". In fairness, with the sheer amount of manager changes, it not a surprise we aren't getting to the core of what is going on...

Rob: *Technology is only part of any solution - Do Catapult help their clients make more sense of the data?*

Paul: It's fundamental. A necessity. We are employing 5 Data Analysts who will specialise in different sports. But on a day to day level, we have product engineers and sports scientists who are on hand to help our customers maximise their investment. Education sometimes sounds like a dirty word in our industry, but its key to developing. We recently came No.1 in Big Data and 12th overall in the Fast Company Most Innovative Companies worldwide. Massive accolade. If the data we provide, and the service we provide to help them interpret the outputs, helps keep the players on the field for longer, everyone is happy.

Rob: *With that in mind injury analytics is obviously a huge area for development - I don't expect you to give away what individual clubs are doing - but you must see some great work being done in this area. Do you think clubs are getting better at managing both the quantity and quality of data in this area?*

Paul: Absolutely. Players are generally returning quicker from injuries than ever before...but sometimes this is a bad thing, there are examples where teams' want a player to come back to full training but the data has shown he isn't fully fit, and thus needs more rehab. We focus on RISK, READINESS and RETURN TO PLAY...each are essential to an overall

programme of asset management. Partnerships with universities is key in this area for clubs from a research and experience perspective. We work with 85+ uni's and research centres worldwide as our data is seen as the most highly validated.

Rob: *For those sitting in a Uni class - What advice would offer to any aspiring analysts/sports scientists - what can they do to make themselves more employable?*

I have been asked this a lot over the years. Be bold. I recently did a presentation to 75 Sports Science students at a university and only 2 students came up to me at the end; I was very disappointed. The 2 that did make contact are coming in to Catapult's office for a chat next month. Ask questions, learn the industry, learn the environment, experience different sports, and consider every conversation an interview.



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Lightweight: Weighing only 7.5kg, Vantage Point is the lightest video tower on the market making it so easy to move, transport and assemble. It's made from the latest premium grade materials so you don't sacrifice strength for weight either.

Compact: Vantage Point folds up smaller than other portable towers, meaning it will fit in any car but can still extend over a full range of heights to 18 ft., so you can always find the perfect angle for your shot.

Simple: We've all been there, freezing fingers and complicated mechanisms make setting up portable towers a painfully slow and frustrating process. Vantage Point comes with simple fittings that allow you to assemble or take down the tower in a matter of minutes.

All-weather: Vantage Point comes with a complete all-weather kit included in the price, so you get a sun cover, rain protection gear and no added fees to enjoy all weather action.



Key features

Portable: End the constraints of fixed locations such as the press box or scaffolding normally provided at the grounds. Vantage Point allows you to transition from the goal to the half way line with ease.

High Definition: Capture every second of the action in crystal clear HD, Vantage Point makes sure you see every tiny motion and emotion in super fine detail.

Great footage: Every time you use Vantage Point you are setting yourself up for success as the unit has been designed to support the production of the best quality footage possible.

Safety first: No more perching on unsuitable ledges or shaky scaffolding, Vantage Point allows you to safely and effectively capture game footage without risking injury from falling.



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Chapter 4

22. Lessons from the Opta Pro Forum 2014

23. Opta Pro Forum 2015 Review

24. Journal of Performance Analysis in Sport

25. Lessons from Performance Analyst Bill Gerrard

3 Lessons From the Opta Pro Forum



Thursday 6th saw the first **Opta Pro Forum** (#optaproforum). A mix of clubs, bloggers, statos and executives were present to hear 9 presenters take to the stage and present their research findings. The 9 presenters had to beat off some stiff competition to get to the stage.

Judged by Ian Graham (Liverpool FC Director of Research), Blake Wooster (21st Club CEO), Chris Anderson (Co-Author of The Numbers Game) and OptaPro

Advanced Data Analysts Sam Green and Devin Pleuler.

The presentation were videoed and I am told will go live at some stage soon. Rather than concentrate on any of the talks themselves which you will be able to watch for yourself I thought it would be better to give you an outline of my 3 take-away's from the day.

Context - Context - Context

Every single presenter stood up and said they wished they could have added more context to their work. I will repeat that - every presenter mentioned context! Despite the media bashing of statistics and statisticians trying to define everything in football by numbers, none of the presenters were suggesting this. They all realised the limitations of their work both in terms of being able to add context and not understanding the sport to the same level as coaches and managers involved in clubs. Most presenters said their work would be advanced by being able to work closer with experienced coaches who understand the ins and outs of the game.



If nothing else I (and many others) would love the media to pick up more on these points. Rather than trying to explain everything, analytics is trying to explain more than we can by just watching and with the partnership of coaches, managers and owners the analysis done could be infinitely better.

Plausible - Simple - Actionable

One of my favourite talks on the day was by David Hastie (and Martin Eastwood, Daniel Edwards) from OnSide Analysis. Despite the title which was definitely not simple the presentation gave a fascinating insight into the possibilities of applying what if analysis to football and getting some reasonable conclusions. Something very similar to this work in

Basketball; <http://grantland.com/features/expected-value-possession-nba-analytics/>



But my favourite 3 words of the day, which were said by David, were **Plausible, Simple and Actionable**. You can apply these 3 words to any analytics work you do at any level. If it's not Plausible, Simple and Actionable you really have to question its value.

Actionable - can you actually do anything with the findings? If not why did you bother doing the research?

Simple doesn't mean it has to be simple research but it does mean you have to make it simple for people to understand.

Translators



Pedro Marques from Manchester City was one of the presenters and it was really great to have someone from a Premier League Club present. Again I'm not going to discuss the actual content of Pedro's talk rather the brilliant method he showed how the analysis team get from Data Analytics to the Pitch. Pedro described himself as a coach first and now feels like he has a foot in both camps - this is probably why the delivery of the analysis works so well. In a nutshell the work revolved around passing patterns and

looking at influential players when scouting opposition.

With data collected by Opta, Pedro and some data scientist geeks conduct in-depth research - a quite detailed and possibly ugly report comes back to Pedro within a few days. Pedro turns this into something much better looking which he can then present and explain to the coaches. Pedro then showed a clip of a training ground exercise where the players were practising what they were likely to face next weekend.

What I loved about this is that **despite some detailed and no doubt complex data analytics being done - by the time it gets to the players, this 'data' is a relatively simple training ground exercise**. In this case the Performance Analyst is acting as a translator - someone who understands both worlds and can communicate effectively with both. Perhaps the future role of performance analysts at clubs is not to be data scientist, video analysts and coaches but rather the conduit that brings all these elements together - as Pedro and others are doing at Man City?

P.S - One other lesson I learned is that statistically speaking to get from the Marlborough Arms to Heathrow in 1.5 hours with the underground on strike and no Taxi's available is statistically unlikely - luckily I was an outlier and made it.

Pigeons, Ageing Teams and Parking The Bus – Opta Pro 2015



This year there were a lot more attendees and whole day worked really well. 30 minute presentation are a perfect length, not too long but enough time to get across the research done.

Opta are quite brave in how they organise this event. Effectively you get selected to present based on an idea. You get 6 weeks to produce the work. So Opta put you up to present in front of a room full of Club Analysts & fellow bloggers without ever having seen the finished product. Very brave! But for the most part the presentations are of a high standard and well received.

So what about the presentations. I won't go through them all - but here are my highlights in no particular order.

Parking The Bus

Garry Gelade made a very entertaining presentation about whether goals actually change games. Despite this clichéd line being used over and over again in punditry, are we sure it is actually correct? Gary has made his presentation available [here](#) and I would encourage you to check it out. If for nothing else than 'Goals Change Games Video'.

His key findings were;

- Goals do change games
- They affect different teams in different ways
- There is a bigger change in shots attempted when behind than when ahead
- Chasers score more goals (maybe not a good idea to park the bus)

Beyond Shots

In a very polished performance Daniel Altman looked at a new approach to quantifying scoring opportunities. Although there was plenty of detail and complexity in the analysis it was easy to follow and understand all the points being made. Daniel has made his presentation notes available [here](#) and they are well worth checking out. The key premise of Daniel's work was to find a player rating system that could award players for the contributions they make and not just simply rely on crude measurements like goals and assist.

Further development: a five-zone system



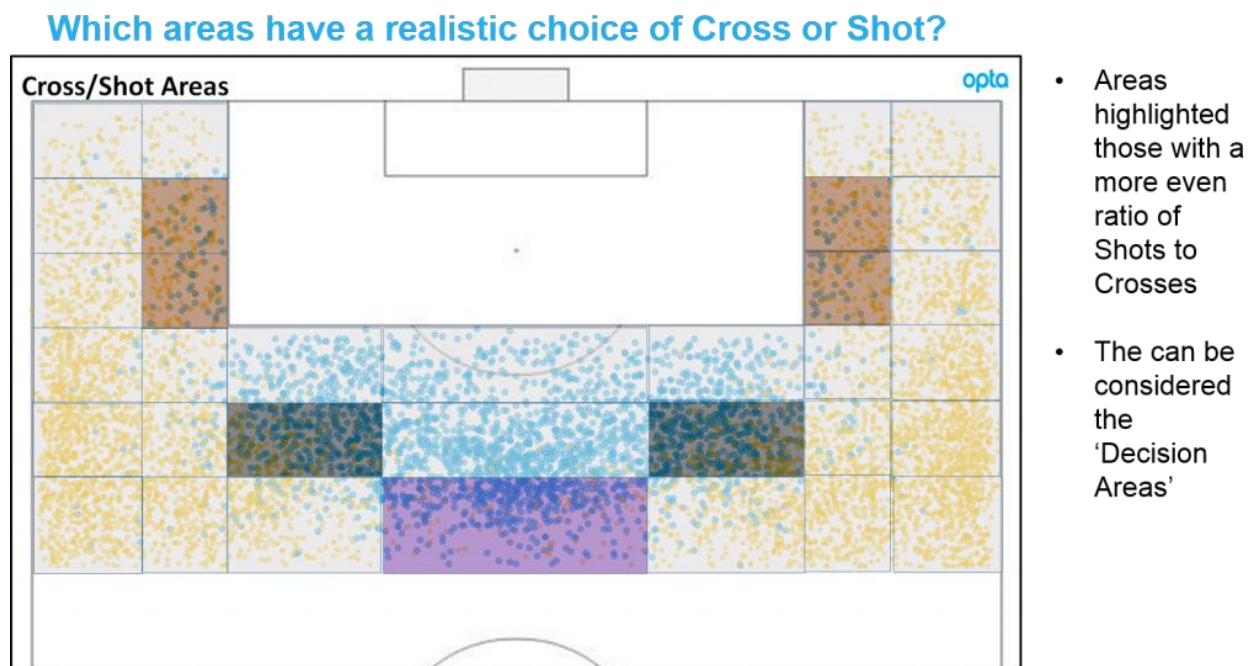
The key points;

- Metrics for individuals should sum to a team metric that is correlated with results
- It should be consistent year - year and it should have some predictive power
- His analysis led to a 5 zone system (attacking half)

- Each of the zones has an expected goal weighting (see image) and players get credit for advancing forward from 1 zone to the the other (increasing the teams likely-hood of scoring).
- He also has developed a system of demerits
- Using tracking data and a fancy algorithm he can identify key situations like 2 v 1 or 3 v 2 - even if a player never touches the ball in a 2 v 1 situation shouldn't he get credit for helping create that situation? I think so and that's what this work was trying to show.

Attacking Free Kicks - Cross or Shot

Based on 8,000 free kicks Daniel Barnett had some great visualisations of the return (or lack of) from Attacking Free Kicks. His work looked at whether it was better to shoot or cross. His presentation is available [here](#). This was a very visual presentation so you should definitely check out the notes. Daniel's work showed that teams have very different strategies;



- Lyon shot 71% of the time in the decision area
- Atletico Madrid shot just 6% of the time.
- **Bundesliga teams shoot directly 77% of time for 'Decision Area' free kicks compared to 54% in Premier League**

- Side of the box free kicks had a higher conversion rate when shooting than crossing - I thought this was a surprising result.

Extra Time

There was plenty more to write about,

- Simon Gleave & Mark Taylor looked at the ageing game and had some good visualisations, Simon will put his work online next week so best to discuss that then.
- Abel Lorincz did a great presentation but it was very visual so again best to discuss that when the presentation becomes available.
- There is a serious gender imbalance in PA!
- There was a video shown of the flight path of pigeons! That's always going to be hard to describe here - best to wait until Opta release the videos.
- The rule of not discussing a woman's age should also apply to Technical Scouts! Doh!!
- I should have left the bar earlier than I did (I blame my genetics on that one).
- And finally don't get on the wrong train to Gatwick!

All in all a great event, well run, and I'm sure it will go from strength to strength. The opportunity to meet analysts, bloggers and the like is priceless. You can also read some good summaries (and much better written than this) by Mark Taylor [here](#) and OptaPro [here](#).

Journal of Performance Analysis in Sport

I've decided to give the best tweets of the week a miss this week and instead highlight the fact that a new issue of the International Journal of Performance Analysis in Sport is out. This journal is not free but most students or academics should have access to it. There were 25 papers published in this journal so you should check out the full journal issue [here](#). The Journal is now on twitter and you can follow them [here](#).

I have listed my 5 pics from this issue.

1. Performance profiling in sports coaching: a review

Authors: Butterworth, Andrew; O'Donoghue, Peter; Cropley, Brendan



Abstract:

Performance profiles have been developed to provide a collection of information about sports performances. The developments in the area include presentation methods for profiles and ways of interpreting performance indicator values within profiles. However, performance profiles need to be considered in the context of sports coaching. This paper presents a review of performance profiling techniques within the coaching process. The information needs of

coaches attempting to manage this inherently complex process need to be served by performance analysis and performance profiles fulfil part of this role. The types of information used within coaching are reviewed before performance profiling techniques are critically examined with respect to coaching information needs. The review leads to the listing of a set of criteria for performance profiling techniques within sports coaching.

2. Skill-Based Differences In Visual Search Behaviours And Verbal Reports In A Representative Film-Based Task In Volleyball

Authors: Afonso, José; Mesquita, Isabel

Abstract:

A desire to increase understanding of the mechanisms underpinning expert performance has motivated a large body of research. We examined the processes supporting skilled performance in a complex film-based volleyball task using a representative simulated environment. Participants were presented a complex,



game-like volleyball task. We combined eye movement recording with immediate retrospective verbal reports of thinking in fifteen elite female volleyball players, ranked into skilled and less skilled groups. Skilled players employed longer fixations than their less skilled counterparts, and spent a greater amount of time fixating the receiver and functional spaces between two or more players. Skilled participants generated significantly more condition concepts, and presented a superior level of sophistication in their verbal reports. Data suggests that it is relevant to use tasks that simulate real-life environments. The definition of functional spaces, aiming for locations that stimulate retrieving information from more than one cue at a time, affords researchers to use eye-tracking devices to analyze peripheral vision. Based on collection of verbal reports researchers could assess if those functional spaces were relevant for the subjects. Researchers need to be thoughtful when designing representative tasks in order to accurately simulate competitive contexts.

3. Measuring Collective Behaviour in Football Teams: Inspecting the impact of each half of the match on ball possession



Authors: Clemente, Filipe M.; Couceiro, Micael S.; Martins, Fernando M. L.; Mendes, Rui; Figueiredo, António J.

Abstract:

The aim of this study was to inspect the influence of each half of match and the ball possession status on the players' spatio-temporal relationships. Three official matches of a professional football team were analysed. From the players' locations were collected the team's wcentroid, wstretch index, surface area and effective area of play at 9218 play instants. The results suggested that the values of teams' dispersion and average position on the field decreases during the 2nd half of the match. In sum, this study showed that the half of match and the ball possession status influenced players' spatio-temporal relationships, in a way that significantly contributes to the collective understanding of football teams.

4. Inter-operator reliability of live football match statistics from OPTA Sportsdata

Authors: Liu, Hongyou; Hopkins, Will; Gómez, Miguel A.; Molinuevo, Javier S

Abstract:

The aim of the study was to evaluate the inter-operator reliability of OPTA Client System which is used to collect live football match statistics by OPTA Sportsdata Company. Two groups of experienced operators were required to analyze a Spanish league match independently. Results showed that team events coded by



independent operators reached a very good agreement (kappa values were 0.92 and 0.94) and average difference of event time was 0.06 ± 0.04 s. The reliability of goalkeeper actions was also at high level, kappa values were 0.92 and 0.86. The high intra-class correlation coefficients (ranged from 0.88 to 1.00) and low standardized typical errors (varied from 0.00 to 0.37) of different match actions and indicators of individual outfield players showed a high level of inter-operator reliability as well. These results suggest that the OPTA Client System is reliable to be used to collect live football match statistics by well trained operators.

5. The effect of substitution frequency on the physical and technical outputs of strikers during field hockey match play

Authors: Lythe, John; Kilding, Andrew E



Abstract:

We aimed to determine the effects of substitution frequency on physical and technical outputs of strikers during competitive field-hockey. Five matches were played involving the same two teams, during which three different substitution frequency conditions were assessed: three strikers with no substitutions (Sub3), four strikers with a moderate amount of

substitutions (Sub4); and five strikers with a high amount of substitutions (Sub5). Physical outputs were measured using GPS and HR monitors and technical outputs (positioning and possession ratings) were determined using video-analysis. There were no significant differences between conditions for total distance covered per position₇₀ (Sub5=8414±125, Sub4=8422±34, Sub3=8282±0m) and high-intensity ($>19\text{km} \cdot \text{h}^{-1}$) running (Sub5=701±46, Sub4=685±28, Sub3=723±0m). There was a tendency for greater substitutions to result in less decrement in total distance and high-intensity running when 1st and 2nd halves were compared. Greater substitutions increased total technical outputs compared to less substitutions (Sub5=241±35, Sub4=207±38, Sub3=173±0). In conclusion, while a greater substitution frequency does not increase the physical outputs of strikers, a higher substitution frequency appears to offsets decrements in physical outputs due to fatigue, as well as increase the technical contributions of strikers during competitive play.

10 Lessons from Performance Analyst - Bill Gerard

A couple of weeks ago I had the pleasure of attending a Performance Analysis Interest Group meeting here in Ireland. It was really the first time 'most' of the analysts in Ireland got in the same room. Considering the size of the country and the number of analysts it's surprising it has taken this long. But thanks to Johnny, Denise and Alan for organising it.

Bill Gerrard



The day opened with a talk from **Bill Gerard - Technical Analyst at Saracens Rugby**. Bill is a great speaker and has a long history in Sports Analytics. The talk was over 90 mins but here were some of the key points Bill shared.

1. Don't waste time with Sceptics
2. What does a perfect performance look like? - That's how you define your KPI's
3. Always ask WHY - and help coaches ask better questions.
4. The key with opposition analysis is can we know them better than they do.
5. At Saracens the coaches spend 20-30 hours on 'coding' the game as well as the analysts time.
6. Analysis = Analytics without purpose & influence
7. Analytics = R&D, Practical Application = Making a difference.
8. Saracens are evidence based but people centred. They put a huge emphasis on personal development and in 1 season had up to 29 players in further education whilst playing.
9. Bill's role is to exist outside the 7-day cycle, staying out of the short-term and trying to exist in a medium to long-term perspective. This can often give him a more reflective role with the coaches.

There were also 2 bigger points I thought were worth giving more than a simple bullet point to.

10. Bill was invited into Saracens via the front door - so he was not trying to influence up from an intern position or there were no layers between him and the director of Rugby. This immediately gave him a much more central role and meant his opinion was valued from day one. Sadly this is not often the case.

The other thing I really liked about his initial meeting with the back-room staff is that he met each coach on a one-to-one basis. The coaches gave that time to Bill to explain their KPI's, how their post game review went and they types of things they looked for. This is such a vital step in the analysis - coach relationship. The more routine the analyst can take out of the coaches day the better, understanding as much as possible about what the coach is looking for makes you a more valuable analyst. The fact that the coaches deliberately set

aside this time is testament to the culture at Saracens and no doubt improves Bill's effectiveness as an analyst.

11. Perhaps the most important thing I took out of the day was how Bill broke down the actual coding of the game. With regards to individual player performance they have two very distinct phases.

First they do the '**Contribution Data**' - this is the tally information, the actual activity the players did. Ball contacts, that sort of thing. 10 passes, 6 Tackles etc... This information is important but it is very limited. This is the type of information that a 3rd party could probably collect.

The second stage is what Bill called '**Intensity/Accuracy Data**'. This is effectively how well the contribution data was done. This is the bit the coaches do and it mostly relates to things like decision making and how well the technique was performed. So the pass was successful (contribution data) but was it the right pass, was there a better option (accuracy data).

Although I'm sure this goes on in most teams - I thought it was a great idea to actually break it out into 2 distinct categories. But here is the danger. If an analyst gets stuck only ever collecting Contribution Data - are they really doing anything more than just coding games? The real value is in the addition of specifics contained in the 'Intensity/Accuracy Data'. This is data that is coach and team specific, it relates directly to how that team plays and is almost impossible to replicate from outside the team because only the coaches on the inside knows the intent or purpose behind some of the calls and actions.

For me as an analyst I try to add as much value as I can in the Intensity/Accuracy Data. That's why I think it's vital you spend as much time with coaches understanding their philosophy, what they want the players to do and how they think the game should be played. The more you can understand what the coach wants the more value you can add. It won't happen overnight - but if you want to do more than Capture-Code-Copy you have to move beyond Contribution Data.

All in all it was a great day and I will do a follow up post on some of the other aspects of the day soon. Any comments or anything to add would be great to hear from you?

Chapter 5

26. Will Jones – How to Improve your Employability
27. Why Unpaid Internships are Wrong
28. What is a performance analysis Internship worth?
29. Invest in people not things
30. Hand up, who has a coach?
31. Performance Analyst Jobs Survey
32. The CV is dead... Are you ready?
33. How to Cold Email and Get a response?

Tips on improving Your Employability

Will is a Senior Performance Analyst at Prozone Sports, working within the Performance Lab to provide support and consultancy services to professional football clubs across all areas of performance analysis as well as education services to develop individuals within the industry.

Knowing that a large number of 'the video analysts' readers are students and young individuals looking to forge a career in performance analysis, Rob has asked me to share some of my thoughts and experiences regarding employability within the industry. I will state now that these are subjective opinions; however, I base these on a number of years' experience within the industry as a performance analyst, but also acting as a recruiter of analysts for both Prozone and a number of football clubs. I also work closely with a number of universities and manage the company internship and placement schemes with a focus on student development.

EDUCATION



Whilst people from all different backgrounds are looking to work within analysis, the majority of individuals are those currently studying within a sport related field. There is debate surrounding the importance of a degree. For me it is important. Of course there is great importance in practical and real-world experience; indeed some analysts within the industry have not studied to degree level themselves. However, with the level of performance analysis increasing and recognised as a discipline of sports science, we would be undervaluing the industry by not looking for graduate level candidates. It is important to recognise the importance in the theory of performance analysis subconsciously used on a daily basis by analysts in the field. There is a big difference between learning to undertake specific tasks on the job and gaining an actual education within the area.

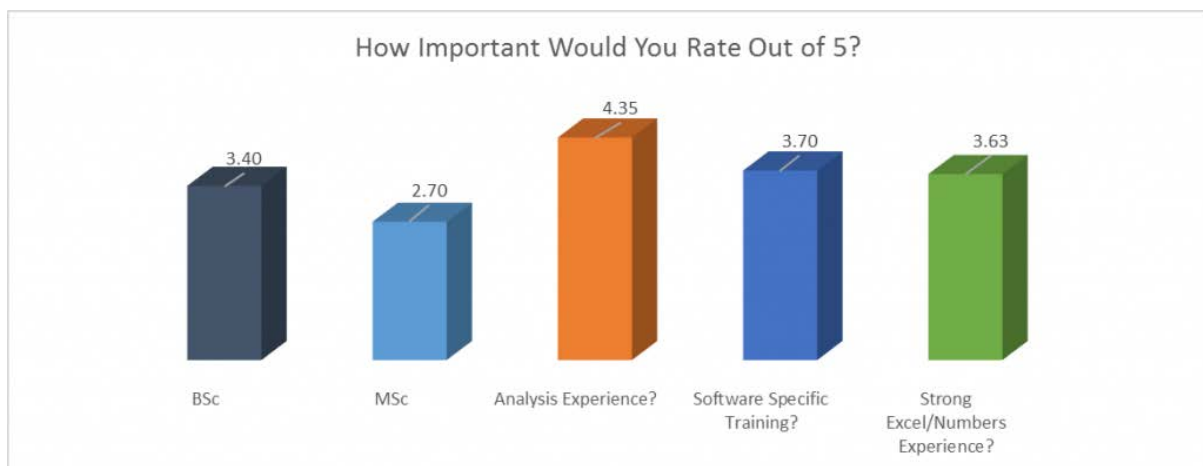
A misconception of the role is that analysts work with very basic technical statistics and are no more than a glorified armchair fan. In reality, analysts are an essential part of a support structure working with professional and elite athletes. Work with large and complex datasets, to a high standard in a pressured environment, as well as the handling of physical performance data is not uncommon. It is important that working closely with so many sports science support staff, the analyst does have a good sports science and coaching understanding.

Furthermore, individuals who undertake studies, demonstrate a number of personal skills that they should be using to sell themselves. Whilst a degree is more common these days, to achieve a good grade is still an achievement and puts you in the minority of the UK population. It requires great dedication, organisation and an ability to read, write and work with data to a good level, all key skills within an analyst role.



EXPERIENCE

Whilst this education and knowledge is important, recent studies have shown that employers within analysis rate practical experience as the most desirable attribute for a candidate. While many see a vicious circle where it is hard to obtain voluntary opportunities without any initial experience, there are other possibilities that you should consider. More and more universities now are investing in a range of analysis software's, performance labs and sports science equipment. As a student, you should be able to gain a level of familiarity and practical experience with a range of these. There is also free software out there to download and practice with and similarly a number of publicly available and affordable courses that can benefit your development.



Similarly, I think that a number of individuals can end up over thinking things and missing some of the basics. As a candidate it is imperative to have an understanding of the role and personnel profile. With lots of new and exciting features within analysis, many seem to forget that actually the role as it is today involves a lot of work on everyday software's such as **Microsoft PowerPoint and Excel**, as well as a level of video editing and media ability

through things like Photoshop. With this in mind, there is little reason why a candidate should not be of able ability within these areas.

We can all get access to these software's and should spend time developing our skills on this. There is nothing more frustrating than finding candidates who have a number of great skills and abilities but still fail to reach the minimum standard in Excel; something that I seem to find myself preaching to university students who don't receive much formal training within the software. YouTube is a great resource that we should all utilise. If I'm ever stuck with an excel function there is always a video that will help me. If you can't get that experience with a unique piece of analysis only available to professional football clubs and too expensive to buy yourself, you can still develop your basic skills and do some impressive things in everyday software.

PERSONALITY

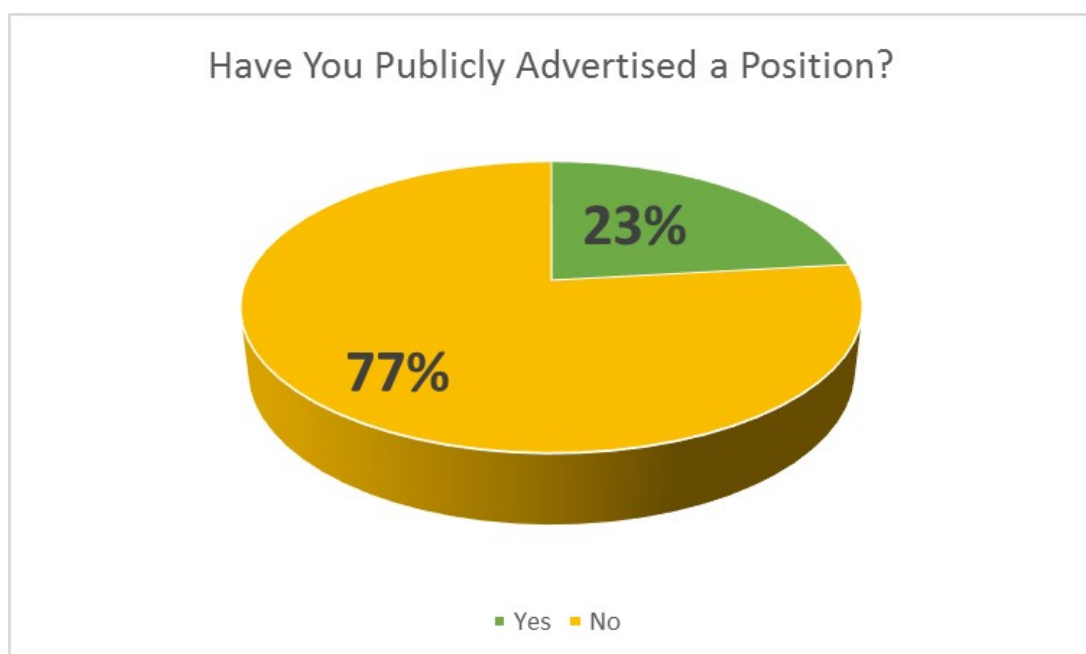
In demonstrating practical experience to an employer, you are essentially showing that you have experience of doing the job. People can be trained on software and how to undertake daily tasks; what your experience shows an employer, is that you have been able to operate within the sports environment, working with professional athletes, managers and coaches and conducting yourself appropriately. It is this level of professionalism that you cannot necessarily judge from an interview and hence this experience confirms this. It may be cliché, but there really aren't many environments that can prepare you for working in professional sport. The pressure, the intensity, the ego's the competitive and fierce nature; this is what you should be taking from any practical experience that you can gain.



With these experiences, especially where voluntary or minimally paid, you are using these opportunities to develop yourself. Do as many different tasks as possible, interact with different people and see the different sides of the sport, don't be satisfied with just sitting in the corner and using a video camera. **Ultimately if you don't feel you are developing, seek another opportunity.** The experience should be beneficial to you. These are the times to practice, try things, make mistakes and learn from them. This is where you pick up all the little things that don't get taught. I remember my first academy match I was sent to film only 2 days into a voluntary internship. Having not used the video camera before I thought I had done well to get setup and ready to go, only to find that 1 minute into the game, after I'd hit record, a message popped up to say video tape full!! I hadn't rewind the previously used tape, nobody told me to. I made a mistake, learnt from it, and never made that mistake again!

NETWORKING

Through your personal development, education, training and experience you may appear a good candidate for a role, however, you need to then sell yourself and elevate your status into these positions of opportunity. Networking is key within this industry. From experience there are numerous times when knowing the right person or being in the right place at the right time has resulted in securing a job. It is tough for those outside the industry, but again there are opportunities.



No longer do we need to send a speculative postal letter to a potential employer asking for a job; now you can have a full contact list with whom you are connected through sites like LinkedIn. You have a direct platform to interact and influence decision makers. I would

advise that you should not be directly asking for jobs, rather engaging individuals to make positive impressions, receive advice and promote your brand. Someone once told me that you should treat every conversation as an interview. You never know when you will run into these people again, it's a small world. There is a fine balance between engaging and annoying, remember your audience and their workload, but also remember that these people have been in your situation, they can relate to it and see that you are being proactive and positive.

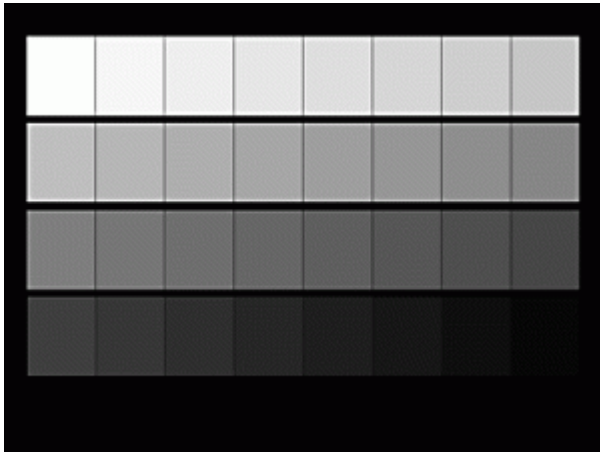
APPLICATIONS

Finally, when it comes to the application process, make sure that your CV and covering letter are both up to scratch. **A CV will never get you a job, but it could certainly stop you getting one.** The content on the CV is important and sells yourself as a candidate, but regardless of your content make sure that you construct a 'good' CV. Select the appropriate content relevant to the role, don't be happy to use the same template for every application.

Make sure that the CV is well formatted and easy to understand and check for spelling and grammar. The number of CV's that come from good candidates of a graduate level that are let down by silly mistakes is staggering. When a football club have 300+ CV's to read for a single position (which is not uncommon), rightly or wrongly, they will spend a minimal time reading each one and look for reasons to exclude you from the shortlist. Stand out from the crowd; make it engaging and memorable so that the reader wants to read the whole thing.

Competing against others to obtain a job is not easy, and certainly not currently within sports analysis. I sympathise with these individuals and am grateful for my bit of luck and the chances I was given. But there are certainly opportunities to develop yourself further and increase your chances of obtaining a role. Take time to consider your goals and potential pathway to that point. Everyone is different with what they can commit to and the opportunities that may be available to them. But be proactive, persevere and be positive in your approach, your hard work will pay off.

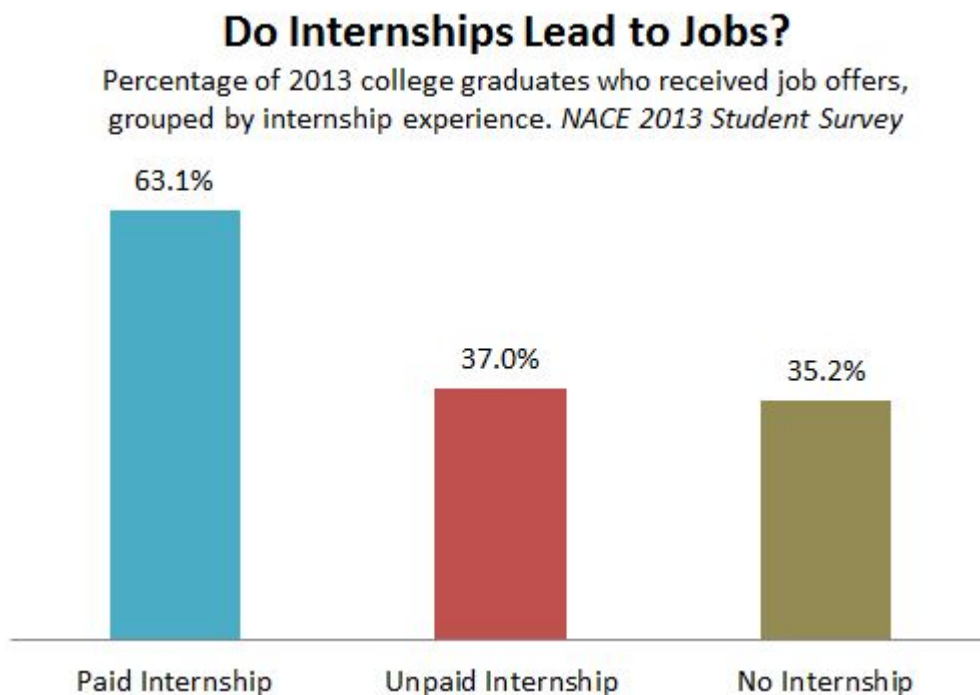
Why Unpaid Internships are Wrong ... Almost all the time!



Not many things are black & white in life and despite the headline of this article, there is some room for grey in this debate. However, I still believe firmly that people should be paid for their work (even the fact that you need to state that should raise alarm bells).

I feel sorry for performance analysis departments that are under-funded. It must be difficult knowing the job you could do if only you had an extra pair of hands. I get that, but I think until the personnel in clubs make a stand it won't change. Students are (wrongly at times) being sold a dream that if you do this free work there is a job at the end of it - but how often is that happening.

I read this article [Do Unpaid Internships Lead to Jobs? Not for College Students](#), and it had the following graph from a very interesting research study



The Exceptions:

Ok so there are some exceptions where interning can be a win-win for both clubs and students. Here are my 4 exceptions to working for free;

1. Requirement of an Undergrad Degree
2. Short term contract - not longer than 3 months

3. If there is a genuine internship programme, clear aims, reporting and a development pathway (>12 months)
4. Amateur club genuinely looking for a volunteer

After these 4 I can't come up with a legitimate reason to hire someone for free. I honestly think anything other than those listed just isn't right. Last month, British MPs voted overwhelmingly for a motion to end unpaid internships and for a "four-week rule" which would cap unpaid work experience to four weeks, after which interns would automatically become "workers" and entitled to pay. It will be interesting to see if this makes it's way into law!

Supply and Demand

The truth is that there are more and more students chasing those dream jobs and while the number of analysts per club is probably on the rise - The supply will always outweigh the demand. As long as someone is willing to work for nothing, there is less pressure on Performance Directors to use up some of their budget actually paying for staff.



I have been fortunate enough in my business to hire staff for the last 3 years. Often these are short-term contracts from 2 - 6 months. I'm sure I could have people 'intern' (and I get no shortage of offers) but I just wouldn't feel right. As an employer I feel I get more from staff that are paid. And it allows me pick from a bigger pool of people, not just those who can afford to work for free.

Things Have Changed

I can see that things have changed a bit. More of the jobs advertised on this site now come with some sort of salary, often it can just be minimum wage or perhaps just stating that there will be a salary. While not ideal - I do think this is very different to 12 or 18 months ago when the majority of jobs were Unpaid!! For the time being any payment is better than none.

Who knows how this will play out. While it will be interesting to see if any laws are passed - I'm sure there will be loopholes and ways to get around it. The change has to be a shift in mind-set and funding from the top. If that's not forthcoming - well doesn't that tell is everything about how the 'front office' views Performance Analysis???

Got your own thoughts? I would love to hear them.

**Please note that this is not a go at any one club or particular job (no situations are black and white) - rather it's a comment on the industry in general and how it values staff. This is not a unique situation to Performance Analysis or Sport but that doesn't mean we should just ignore it.*

Invest in People not Things – Please

Why is the investment always in facilities or equipment but not in the people? Look through the local or national newspapers in almost any country and you will find countless stories of clubs, NGB's & Governments announcing the dawning of a new era with X or Y facility now being built. This facility will undoubtedly lead to better players and that can only be good for the game/sport/development - right?????. Has anybody actually looked at the correlation between facilities and performance? I lifted the following quote from the English FA's website about their new facility St Georges Park;

"Everything is the best; there is the best equipment, the best facilities, the best medical facilities, the best food and hotels. Every one of the pitches is of the highest quality of anywhere in the world" - Sir Bobby Charlton.



I'm not having a go at the FA in particular, they seem to do a lot for Coach Education but it still amazes me that the quote above should get prominence. It may not make the papers but wouldn't it be great to see a headline like "XYZ Association is delighted to announce a £1m investment in staff training and upskilling". Maybe this does go on and just doesn't make the papers, but I doubt it really. When Chairman and CEO's retire they want to leave a legacy and unfortunately a picture of a brand new facility is much easier to put in a frame than other peoples skills.

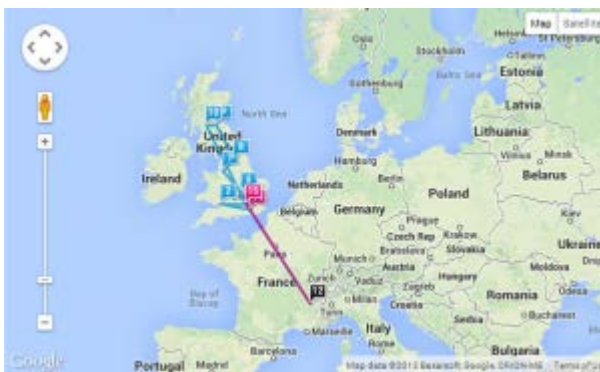
You Are Your Greatest Asset

In every business book or business interview I have read the founder/owner/CEO talks of the importance of hiring the best people. The all cite how hiring A grade people made there business completely different. Clubs hire endless coaches and sports scientist to improve their (on-field) staff but how much is spent on training and mentoring the off-field staff? The extent of this training usually means trying to sneak away from work (probably on your day-off) to attend a one day conference. There is no great scrutiny put on the content or the learning but as long as it doesn't seem expensive you can probably manage one or two a year.



I have seen snippets of clubs go above and beyond the norm, professional presentation coaches are one example; We are all presenting something, whether it's to a team or our bosses so, this is a good idea but I do wonder how much of this really goes on. Most analysts I speak with tend to learn by doing. Most (like myself) operate in a bit of a vacuum, the very odd time bumping into another analyst and trying to pick their brains for a few minutes. But shouldn't clubs put in more rigorous training structures for the off-field staff? Shouldn't there be a budget for CPD training? Shouldn't that CPD training consist of more than going and listening to people talk at conferences? Even a quick scan of the [EPPP Academy Plan](#), launched by the English FA recently, refers to the fact the analysts within a club should receive CPD training but it's very light on any detail after that. What format, how much, quality control, preferred skills etc... are all left to the clubs (to do or not do I suppose). CPD shouldn't be about ticking a box.

Euro Rugby Tour



Professional Development can be expensive and time consuming but if done right isn't it worth it? Perhaps 'high-performance' sport doesn't allow for such medium to long-term thinking so perhaps we have to take responsibility ourselves. One idea I really love is the recent tour undertaken by Ross Munro Williams who is a Rugby coach in South Africa. He packed up his things and decided to tour around England, Scotland and France to learn from other coaches who were willing to share ideas. If you don't already you should keep track of Ross' progress and experiences through [twitter](#) or his [blog](#).

The tours purpose is firstly for me to grow as a coach before I tackle new challenges next year with Villager FC in Cape Town, and secondly for me to meet, connect, learn and share with as many coaches that I meet along the way so that we can all hopefully learn something from each other that can aid in our own coaching.

For me there is probably no better way to learn new things (or reaffirm your own beliefs) than this type of trip. Ok not everyone can take off for a month but social media means this type of experience is easier to achieve. Personally some people have been very generous to me with their time and people always like to be asked for their opinion & help.

The 80/20 Rule of CPD

Perhaps the 80/20 rule is a good place to start. The next time the analysis department sits down to budget for the year work out what the split is in terms of equipment v staff training? Rather than rush out and buy the latest toy with all the features, think about what an extra training and development spend might do for you or your team. **Maybe being better at your job is more important than having better equipment??**

*U.S. businesses spent
\$171.5 billion on
learning and
development in 2010.
What does your club
spend?*

I never profess to have all the answers, Ross' example is just one idea for developing you as an analyst or coach, I'm sure there are numerous other great examples. Don't just plod along to the next analytics conference, think about pushing the boundaries and doing things that seem outside of your remit as an analyst. Some of the best learning can happen in informal settings and you never know what skills might be useful.

Hands Up Who Has a Coach?



New Year, New Resolutions... Most readers of this blog are involved in analysis & coaching, we all profess the need for good quality coaches and know the difference this can make to performance; so **hands up who has a coach?** If you believe so passionately in the need for a coach shouldn't you have one yourself? Maybe coach is the wrong word, perhaps mentor is better; "an experienced and trusted advisor". Somebody to bounce ideas off, examine your performance from a distance, someone who is not involved in your day-to-day personal or professional life who can give you some honest feedback.

Believe in The Coaching Process?

All of us have seen or quoted the coaching process, highlighting the need for good quality observation and feedback. So why not apply the same thinking to our own performance. As analysts or coaches we are performing and we all know how hard it is to accurately monitor your own performance. Sure some self-reflection is a great step forward, I have seen numerous coaches speaking highly of the process of spending a little bit of time after a session putting their thoughts on paper. But is that really enough, while we might encourage it, we wouldn't leave our athletes to analyse themselves 100% of the time.

I have had a coach since 2009. The primary reason was to help me with my business and I can point to a number of opportunities that simply wouldn't have happened without the advice I got. My coach [Peter Nolan](#) is a business coach with a background in sports and he has helped me develop both my business and as a Performance Analyst. Being an outsider can be an advantage. Often you come to the realisations yourself, simply spending 2 hours talking about your career, job, last session you realise what you need to work on. But a lot of the time your mentor can guide you in different ways, highlight points of view you didn't think about and most importantly push you outside your comfort zone.



Make it a Priority

So as the New Year gets going perhaps it's time to practice what you preach and find a coach or mentor. With tools like Facebook, LinkedIn and Twitter it has never been easier to reach out and ask for help. Not everyone will have the time or skills to help you but it is worth spending the time to find the right person. The main thing is it needs to be consistent, meeting every month or two is a great start. I can speak from experience and say having a good coach will improve you, but as a coach you already knew that right???

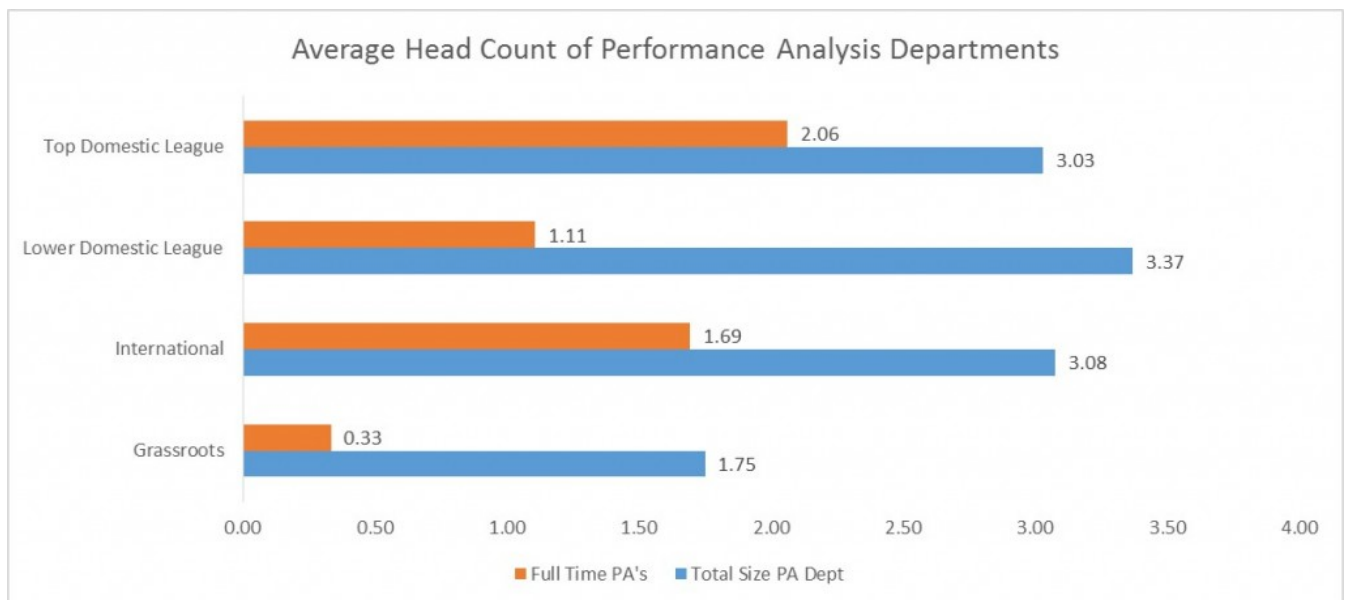
Performance Analyst Jobs Survey

Getting a Performance Analyst Job

There is so much talk about jobs in the performance analysis industry that I thought it would be worth getting the views of those that do the hiring. Below are the results of a survey I conducted asking for the views of those responsible for hiring the next wave of analysts.

Head Count

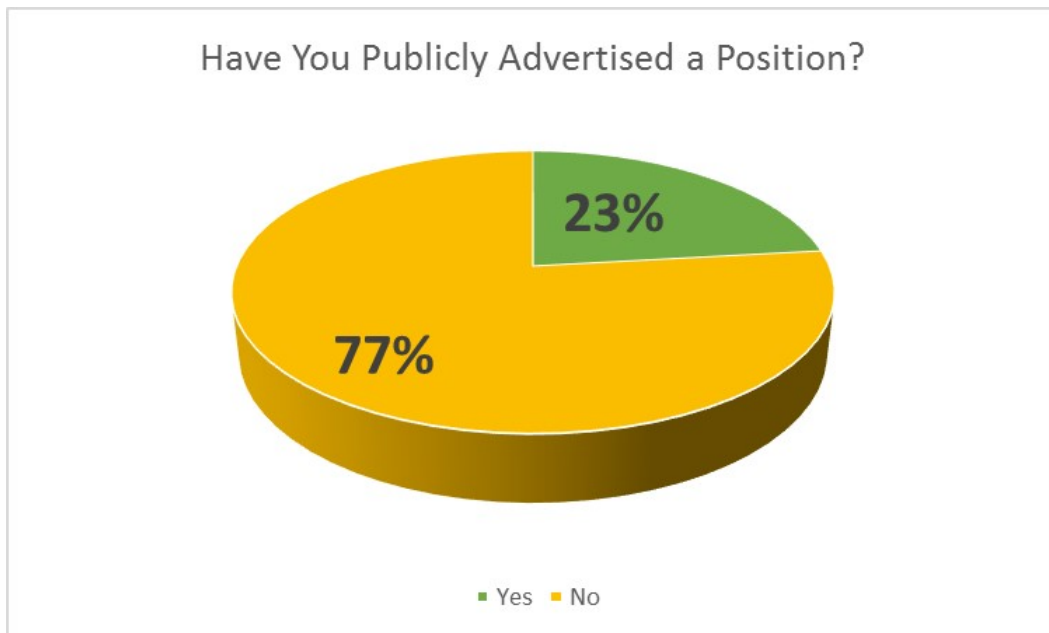
The largest Analysis department topped in at 16, with 10 of them being full time staff. However the average are much more modest. Most Analysis departments, regardless of the level surveyed average a total of 3 analysts but the number of full-time analysts does vary slightly.



It's not what you know...

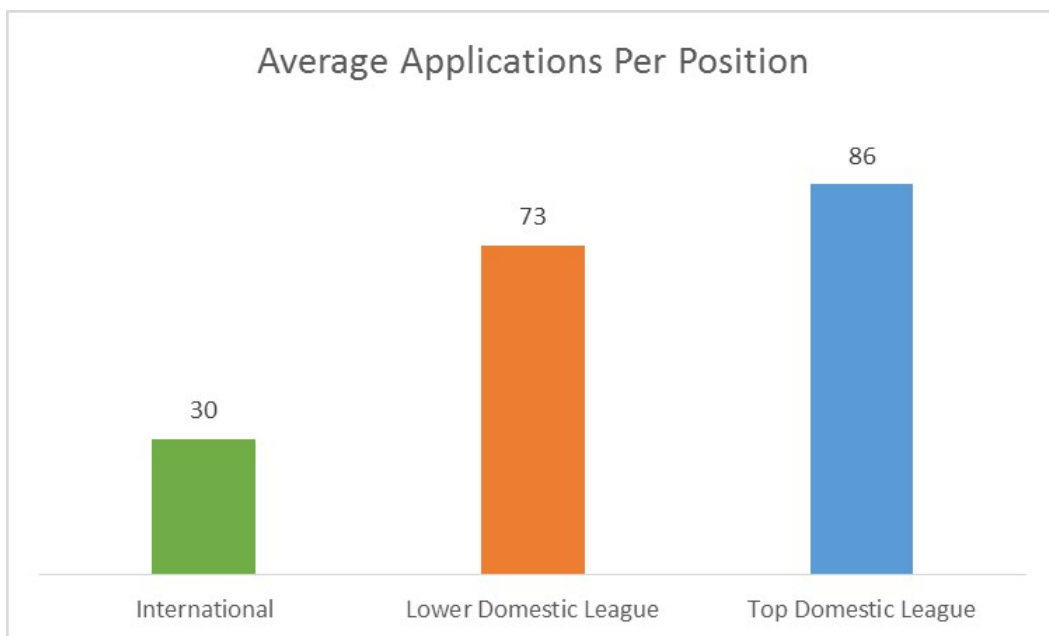
Perhaps the biggest finding (although not surprising) is that only 23% of those surveyed have advertised a job publicly. This shows the importance of having or making the right contacts. It's not enough that you have the right credentials to do the job, you need to get that interview and while searching job sites will give you some opportunities - most are being filled by other means.

So if they are not advertising positions how are they getting them filled? Well the Local University proves the most popular followed not far behind by Internal and Word of Mouth. This probably shows that the value of your education might be more than just the qualification you get. More reason to impress your lecturer and get that all important recommendation.



Applications

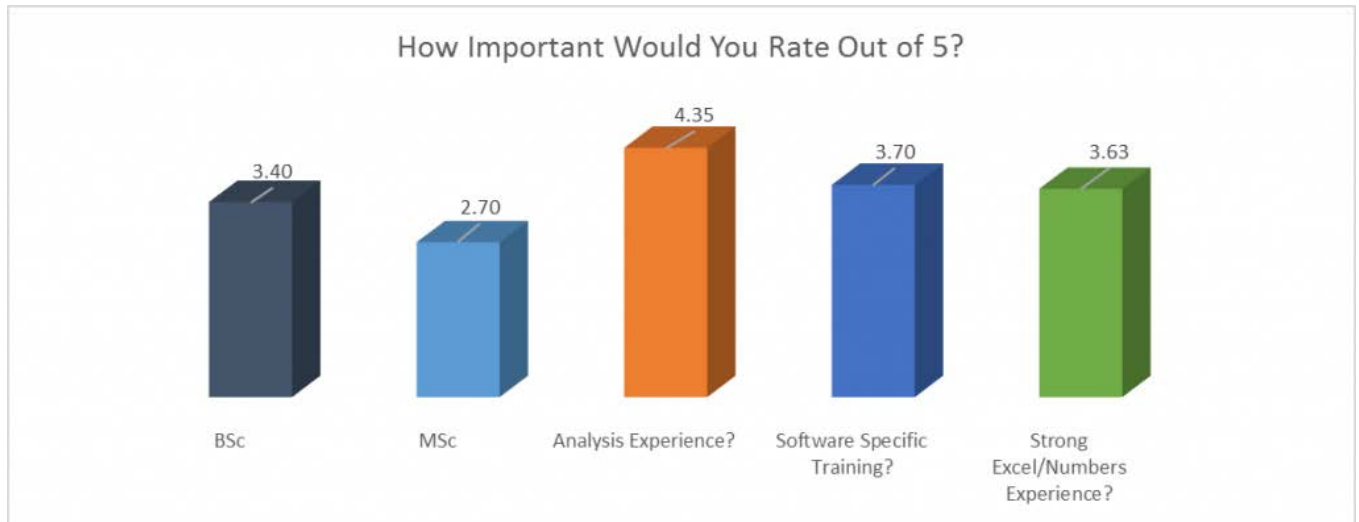
Asked on average how many applications are received for each position the numbers are staggering. At international level the average is 30, at Lower Domestic League it's 73 and rises to 86 applications per position at Top Domestic League level!!! Granted one return quoted an average of 400 applications per position which might skew the data slightly but there were still plenty of returns with 100+



How Important Is....

Although a few people did state that they just prefer to meet people, getting selected for an interview still depends very much on the traditional Cover Letter & CV, although some form

of skills test was required in a god few cases. But what about what goes onto your CV, how important to employers rate your various from of education and experience?



Out on top by quite a margin was Analysis Experience, scoring an impressive 4.3 out of 5. Interestingly having a Masters scored the least important at only 2.7! The University you choose does seem to have some bearing on the perceived quality of your qualifications. When asked would the university attended in gaining an Academic Qualification effect the value you place on such a qualification?

- **Maybe: 35%**
- **Yes: 20%**
- **No: 45%**

Social Media



Interestingly 61% of employers do research potential candidates on social media sites with 12 respondents reporting that it negatively impacted the potential hiring of a candidate.

The lesson here is certainly to check how you conduct yourself on Social Media, but

except for a few it seems most candidates aren't getting caught out!.

Survey Notes:

Sample size is 69 respondents. These come from a mix of sports and countries.

The CV is Dead....Are You Ready?

I saw [this blog](#) post recently on Seth Godin's blog '[Are You willing to build a trail](#)'. You really should sign up to Seth's blog - it's a great read and in this ADD world it doesn't take long to read, at times the entire blog post isn't much longer than a tweet. Seth posted a job advert a few years ago and below are the application questions;

1. Point to your personal website
2. Show us some of the projects you've led that have shipped and made an impact
3. Show us work you've done on the clock, and how you made it work
4. Are you restless? What do you make or do in your spare time that leaves a trail and makes an impact?
5. Find a particularly lame example of UX on the web and fix it into something better than good
6. What's the best lesson you've learned from Steve Krug or Steve McConnell?
7. Point to a blog post that changed the way you think about connecting with people online
8. Have you created anything worth watching on Vimeo or YouTube?
9. Where do you work now? What's great about it?

(click on my head)



I love this idea and I think you will see much more job applications that look like this. Obviously there will be changes from industry to industry but the idea is brilliant. Leicester City were one of the first jobs I saw advertised this year that didn't ask for CV. Performance Analysis is a practical industry and job applications should be asking to demonstrate skills. Even if the job doesn't ask, how great would it be to point a future employer to a blog post, YouTube video or any proof that you can actually do the job. As Seth finishes his post;

If you saw an ad like this today, would you be ready to apply for it? Of course, not everyone posts jobs like this, but if you had a portfolio like this in hand, would it help?

If you work on creating this sort of digital trail and point of view for an hour a day, you'll be ready in six months... No matter who is running the ad.

How to Cold Email and Get a Response

Connections matter and the more you can make in your chosen career the easier you will find it. Don't believe me... take a quick look at what [Seth Godin has to say on the matter.](#)

Cold Emails

Starting out in your career can be difficult but sending cold emails, asking for a job, to a load of people you have never met is not the answer. Social media can be a great way to find people and start interacting with them (see below for don't ask for a job) but many analysts are guarded on those sites and it would be much better if you could just email them. Below are some tips that I have tried and tested over the years.

Keep It Short & Have 1 Ask



People are short on time and they get hundreds of emails a day. The shorter your email is the better chance you have of getting a reply. Even with the best will in the world if people see a long email they might hope to get back to it tomorrow but it never happens. You should be aiming for 3 - 4 sentences max.

Make sure you have 1 ask. That means just ask for 1 thing not 3 or 4. Invariable what happens is that they will reply to just 1 anyway. There might be loads of information you want but remember that this is your first email - so take it slow.

Make it easy to respond to your email. If you get a response, a follow up email will be much easier.

Don't Ask for Job, Work Experience, Trial or a Visit

Remember we are talking about the first time you are talking to someone, you wouldn't go up to them in the street and shout '**please, I am really dedicated can you give me a job?**', so don't do it by email. I would suggest that you ask for some advice, people like to be asked for advice. Maybe down the line you can see if they have any openings but again I would be much more laid back about it. After they get

back to you maybe sign off the email with 'if you ever have any work experience or openings coming up please let me know'.

You have let them know you are looking for work without being in their face. If you are writing to a lot of analysts you only need 1 to remember your email for this to come off.

About the ask: Make sure what you are asking is not googleable - meaning it should be unique and not something that is available online (see research).



Have a Compelling Subject Line

'Hey' is a terrible subject line, instead;

- Touch on what your message is about (what you need or what you can fix)
- Don't pretend you've met them! Be transparent – use words like 'Introduction'

The key with cold subject lines is to be direct, honest, and speak to what you are hoping for. You haven't earned their trust yet or given them a reason to give you their time, so don't be vague or use tricks to their attention.

Show You've Done Your Homework



I can't stress this enough. People like to feel special. Receiving an email addressed to "Dear Analyst" certainly doesn't make someone feel like a unique snowflake. Use their first name.

In your emails, do all you can to demonstrate you've done your homework and that you're not sending a canned email.

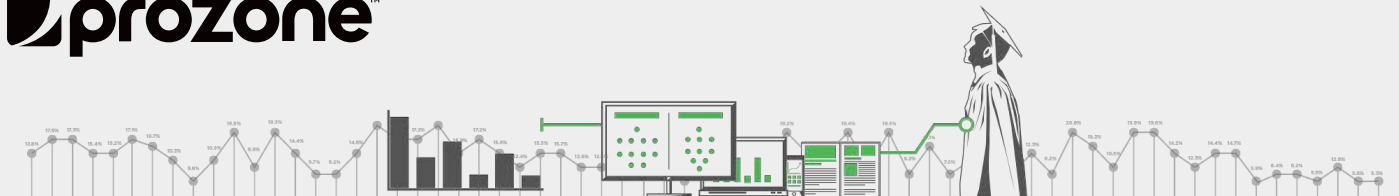
- Mention something unique about your recipient or their organisation,

- Link to something on their website, a recent conference they spoke at or maybe they went to the same college as you?
- Mention a recent news item that's relevant to them.
- Do some social media stalking. People leave clues everywhere. You are not looking to be some internet stalker but having a couple o bits of information will come in very handy.

By showing you're not blasting the same email to hundreds of people, your email will automatically stand out from the thousands of mass emails people receive each month.

Get Out There

Alright! What are you waiting for? Make a list of 20 analysts who you would love to talk to and get some advice from. Start doing your research and send out those emails.



TRAIN WITH THE PROFESSIONALS

Committed to supporting analysts with professional development opportunities, Prozone offers unique educational pathways for those working or aspiring to work in performance analysis.

Designed to help you develop key analytical skills, our new range of courses hosted in London and Liverpool deliver valuable industry knowledge and essential practical experience.



PERFORMANCE ANALYSIS EDUCATION

Reveal the Nature of Performance

- Level 1: Introduction to Performance Analysis
- Level 2: Physical Analysis
- Level 3: Data & Recruitment



ADVANCED ANALYTICS

See Data in a New Way

- Apply advanced techniques to performance data
- Understand the concepts of repeatability and luck
- Translate data into action for scouts and coaches



ATHLETE MONITORING

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- Learn about the benefits of athlete monitoring technologies
- Incorporate athlete monitoring into training and matches
- Better understand the day-to-day application of sports science

To find out more about our range of courses, visit www.prozonesports.com or email education@prozonesports.com.

Chapter 6

- 34. Understanding Video Formats
- 35. Luck, Skill & Sport a tricky relationship
- 36. SQL for Performance Analysis – What is it all about?
- 37. Combining MP4 files
- 38. GOPRO DIY Stabilizing Kit
- 39. Excel is dead long live...
- 40. Marginal gains v Exceptional gains
- 41. Recording Sky Box

Understanding Video Formats



Is there anything as frustrating as trying to open a video only for it not to work? You open your analysis software of choice but the video format just isn't supported. Below is an explanation of something that drives people mad and frankly is something that is hard to get your head around.

2 Parts to Video Formats

You need to think about your video format in 2 parts. **Containers and Codecs**. Containers are like shipping boxes while codecs are what's actually inside.

What does a codec do?

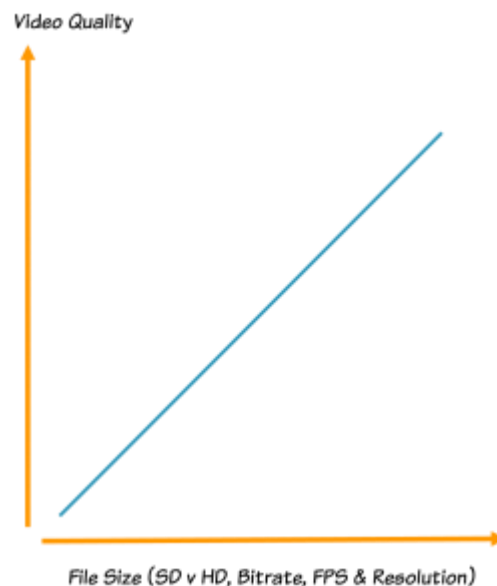
Codec, which comes from **CO**mpress **DE**compress uses some magic algorithms to make the original video smaller while keeping as much of the quality as possible.

Why do we need codecs?

We need to make the video smaller because uncompressed HD video runs at about 400GB per hour, making it almost impossible to share with anybody.

Does compression mean we lose quality?

Yes, although there are some rare exceptions, in reality there is always a trade-off between size and quality. Some codecs are better than others at reducing the file size while maintaining a good level of quality. It's all about picking the right one for your situation.



File Extension - Container

So let's deal with this one first. At the end of all your video files you will see a file extension; something like .mov or .avchd. The file extension refers to the container the video is in. It actually gives us very little information about the video itself.

Here are some of the most popular Containers;

- .AVI – very old container and doesn't support H.264
- .WMV – Very windows based and can be difficult to play on other devices
- .Mov – Can use most codecs but still very MAC specific

- .AVCHD – This was developed by Panasonic and Sony and was designed specifically for consumer electronics. If you have bought a camera recently you probably have this container.
- .MP4 – This container can be used in most operating systems, handles H.264, works on mobile devices and is easy to upload to YouTube and Vimeo.

It's very likely your videos are using one of these containers, with .MP4, .MOV and .AVCHD being the most popular.

File Codec



The amount of different codec's is almost endless, hence why so many people find this all so confusing. I am going to just deal with 2 codecs and offer some general advice on how to manage your workflow.

- MPEG-2, is the most common format for all DVD formats. If you rip a DVD it is likely to be an mpeg-2 codec.
- Fastly becoming (if not already) the most popular codec is H.264 or you might also see it as mpeg-4. This offers the best

balance between quality and file size and is the best format if you are uploading content to the web.

Encoding Video

So the problems can lie in the fact that we buy a camera that uses AVCHD container and some codec that isn't workable with your current system. There are a number of ways to deal with this.

1. If you are buying a new camera, try and find out what container and most importantly what codec the camera will produce. Double check with the software company if you are unsure.
2. You can buy devices that encode the video as it records onto your laptop. However if you are not running the video live into your laptop this option isn't best. But for those that do check out Blackmagic boxes or check with your analysis suppliers.
3. It might be possible for you to work with whatever format the camera produces without any encoding. This way you only need to encode the videos until you need to share them. Depending on what you are using to distribute your videos – if it's something like YouTube or Vimeo, they will convert the videos as you upload them. Also commercial packages like Dartfish and Replay Analysis have online video platforms that will take the raw footage and convert the videos to a usable format.
4. Lastly you might need to download a video converter, these should allow you choose the original file and then choose a new format to export it as. This can take time and be a bit of pain, but it's important so might just be unavoidable.

Anything To Add?

This is my understanding of Video formats and codec's - if you have anything to add I would love to hear it.

Luck, Skill and Sport – A Tricky Relationship



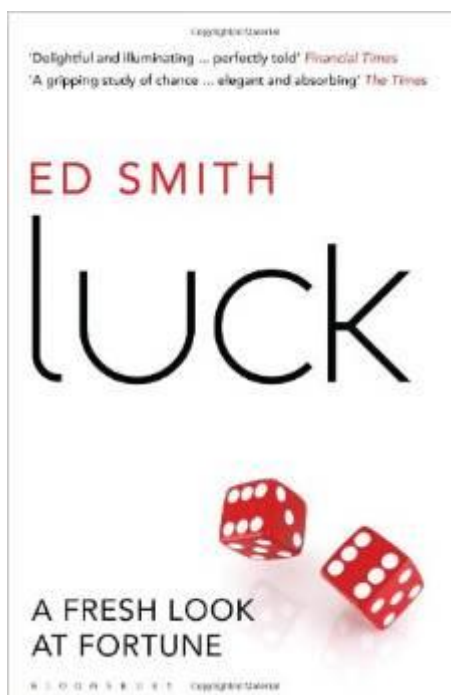
Luck has a very tricky relationship with sport. I remember once sitting down with a coach and mentioning the word 'luck', it was in relation to one of his players having won a game with a last minute shot from a tricky angle. It was a fantastic shot and led to an exhilarating win, but there was an element of luck involved in the shot. It was from an area of the pitch that the average player can expect to score about 40% of the time.

When I mentioned that there was a large chunk of luck involved in that shot and hence the win - I may as well have called one of the coach's children ugly for the reaction I got. The word luck seems to

imply that the shot was 100% luck rather than **some skill AND some luck**. I was not saying that the player involved isn't skill-full or that he hadn't worked hard to reach his level of proficiency. But rather there is an element of randomness about that shot. Some weeks it will go over some it won't.

Despite the reaction I got in that instance, luck or randomness is something that needs to be considered by all management teams. How much and how often will vary from sport to sport but nonetheless it is always present. How I convey that message with the teams I work with in the future will probably change but improving my understanding of luck is important. So with that in mind below are 4 great reads on understanding more about luck.

1. Luck, A Fresh Look at Fortune, Ed Smith

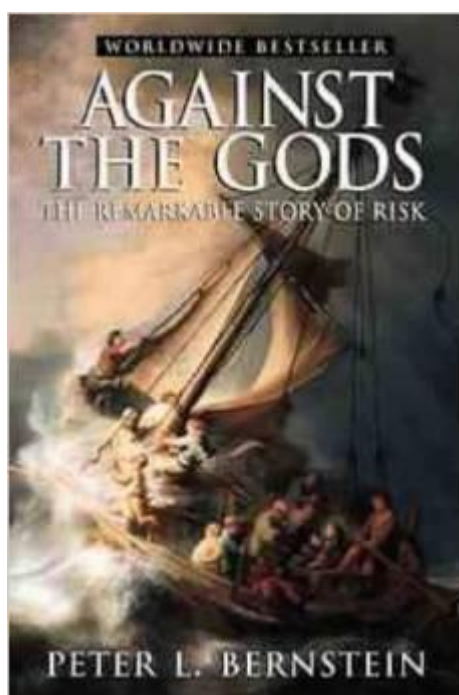


This is my current read and I'm loving it. In fact most of what Smith writes these days is a must read for me. Here is what Amazon say about the book;

For aspiring cricketer Ed Smith, luck was for other people. Ed believed that the successful cricketer made his own luck by an application of will power, elimination of error, and the relentless pursuit of excellence. But when a freak accident at the crease at Lords prematurely ended Ed Smith's international cricketering career, it changed everything - and prompted him to look anew at his own life through the prism of luck.

[Check it out on Amazon.](#)

2. Against The Gods, The Remarkable Story of Risk



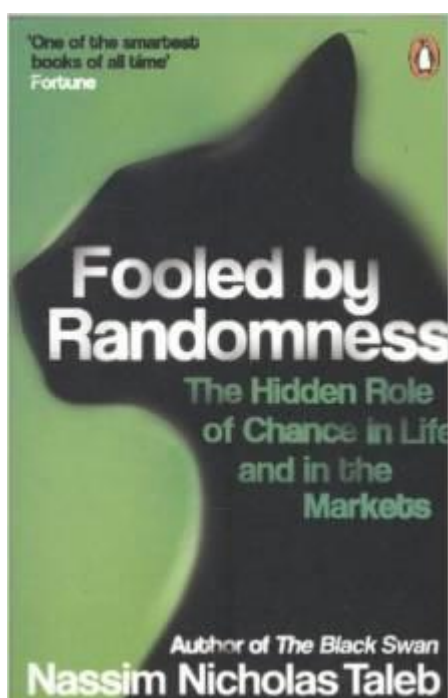
It's a long time since I read this, in fact this book was published in 1998 and it makes me feel a lot older than I am to think there will be people reading this blog that weren't born when that book was published!!

A Business Week, New York Times Business, and USA Today Bestseller "Ambitious and readable . . . an engaging introduction to the oddsmakers, whom Bernstein regards as true humanists helping to release mankind from the choke holds of superstition and fatalism." — The New York Times "An extraordinarily entertaining and informative book." — The Wall Street Journal "A lively panoramic book . . . Against the Gods sets up an ambitious premise and then delivers on it." — Business Week "Deserves to be, and surely will be, widely read." — The Economist "[A] challenging book, one that may change forever the way people think about the world." — Worth "No one else could have written a book of such central importance with so

much charm and excitement."

[Check it out on Amazon.](#)

3. Fooled By Randomness, The Hidden Role of Chance in Life and in Markets

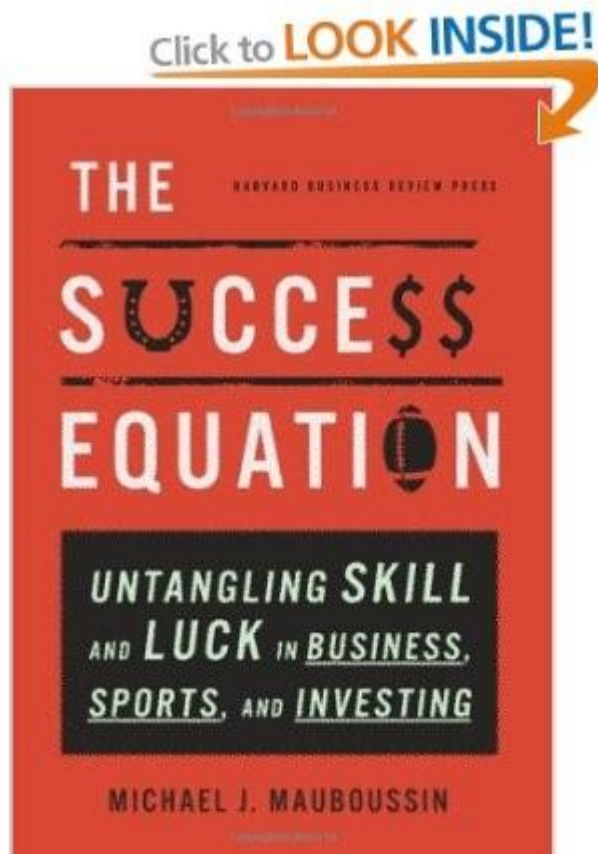


I'm yet to read this one but by all accounts in a must read in the luck genre. It will be in my next Amazon order.

This book is the word-of-mouth sensation that will change the way you think about business and the world. It is all about luck: more precisely, how we perceive luck in our personal and professional experiences. Nowhere is this more obvious than in the markets - we hear an entrepreneur has 'vision' or a trader is 'talented', but all too often their performance is down to chance rather than skill. It is only because we fail to understand probability that we continue to believe events are non-random, finding reasons where none exist.

[Check it out on Amazon.](#)

4. The Success Equation, Untangling Skill and Luck in Business, Sports, and Investing. Michael Mauboussin



I've written about this book a few times before here and here. It's a must read and there is a large focus on sports throughout this book.

What role, exactly, do skill and luck play in our successes and failures? Some games, like roulette and the lottery, are pure luck. Others, like chess, exist at the other end of the spectrum, relying almost wholly on the skill of the players. But in every other domain--from business, to investing, to sports--skill and luck seem almost hopelessly entangled.

[Check it out on Amazon.](#)

SQL for Performance Analysis – What's it All About?

SQL isn't new but it is finding its way into more and more job applications. If you want to separate yourself from the 1,000's of other applying for positions having programming and SQL skills can be a big help. In fact Ben Alamar (who knows a lot about sports analytics), said in a recent piece titled [So you want to work in sports analytics...](#) stated that 'SQL is must these days '.

Q & A with Kris Wenzel

So with that in mind I wanted to give you an idea of how to get started. Below is a Q&A I did with Kris Wenzel, he runs a site called Essential SQL and it's full of great advice and even a training programme to get started. Enjoy and check out Kris's site and [training programme](#), which is free.

Rob: A lot of sports teams in Europe still manage all their data in Excel/Numbers what are the main advantages of a Database?

Kris: Excel is a great tool to for analyzing facts and figures; however, it is best used for reporting and not necessarily storing and managing the data. There are a couple of reasons why it is better to use a database to store your information:



1. **Definition** - A database provides structure for your data. The database can be set up to enforce that only certain data is allowed in fields. This can be done by restricting input to certain data types, such as a date, or limited to set of values using foreign key constraints. These constraints simply mean you can define that a field only can use values found in another table.
2. **Concurrency** - A database allows multiple people to modify and access the database at the same time.
3. **Consistency** - A database can use transactions to ensure that only whole sets of data are entered. For instance, we can set it so that only games statistics are saved only if both the home and away team entries are completed.
4. **Scalability** - As your data grows, a database makes it easier to manage the data.

Rob: Can you explain to a complete beginner what SQL is?



SQL is short for Structured Query Language. It a language specialized for querying and managing databases. The language has its roots within IBM. In general SQL is split into two major pieces: 1) DML – Data Manipulation Language, and 2) DDL – Data Definition Language. DML is used to query and modify data. DDL is used to define the database.

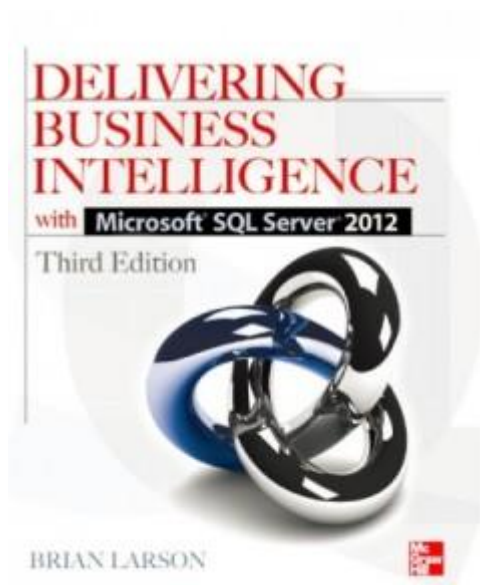
Familiar statements, such as SELECT, INSERT, UPDATE, and DELETE are considered DML Statements; whereas, CREATE and ALTER are considered DDL. This is a general standard for SQL, and for the most part it is consistent across database vendors, such as Microsoft SQL Server, and Oracle; however, each vendor has introduced their own flavor into the language.

Rob: For someone starting from scratch where should they start to learn SQL?

It makes sense to first start to learn how to query data. Just by focusing on the SELECT statement you can touch upon so many database concepts. This only helps you learn other new concepts.

Start out with a simple select statement and build on to it by incorporating the WHERE clause, ORDER BY, GROUP BY, HAVING, and then ultimately JOINS.

Rob: Do you have any good SQL based resources you would like to share?



For MS SQL Server administrative topics I really like [Brent Ozar's](#) site. The topics are spot on and they really have a great sense of humor, which I appreciate. Regarding the SQL language, I frequently refer to the [Books Online for SQL Server](#). They are somewhat dense, but, if you need to figure out a statement's syntax, they are spot on. For general questions I also like [StackOverflow.com](#)

Rob: Is database a good field (good skill) to be entering today?

I think the database fields is a really great field to enter. There are so many areas opening up that require database skills. In particular, Business Intelligence is a hot topic. SQL skills are a good foundation for this. I recently saw an article on [mashable.com](#) where DBA's are one of the top eight tech jobs of 2014.

But SQL isn't just for DBA's!

I generally feel that developers and system administrator alike can benefit from learning SQL. Obviously, the more developers understand databases, the better queries they'll write, and the more efficient their apps will be. If you get good at SQL you can get some really cool data that isn't available in canned reports. I done this with tools such as Solar Winds as well as Microsoft SCCM.

Rob: Can you tell me a bit about your site?

I want essentialsql.com to be the “go to” site for beginners. I’m hoping to attract anyone who has a desire to learn SQL. My goal is to tackle explaining some of the fundamental concepts in simple English.

I enjoy explaining things, and have always had a knack for breaking down complicated subjects into simple parts. I’m trying to steer clear of jargon, for the sake of jargon. Of course you have to talk in DB terms, but jargon, for jargon sake, has no value. I want to steer clear of that.

The site’s current focus is on SQL, I’m trying to keep it vendor neutral and just focus on the basics such as the SQL SELECT statement, normalization, and joins.

When visiting the site, I recommend checking the [Getting Started](#) page first.

Rob: And your training course?

I currently have a free training course I’m offering that covers the basics of SQL. The course contains written materials, instructional videos, and exercises.

The course is still being developed, but so far it covers the basic elements of the SELECT statement. I recently published a module on the GROUP BY clause, which is used to summarize data. I’ve received a lot of feedback from readers, and it seems most people get hung up on sub queries and joins. Those will be the next two topics I cover. I’ve also put together some modules on database normalization. I feel it is important to understand the why a database is split up into many tables in the first place. If you understand the gist of that, then it makes more sense when you try to join, or piece it back together.

Over time I’ll cover other statements, such as INSERT and UPDATE. My goal is to provide my readers with a free resource learn the fundamentals of database queries.

If you’re interested in the training, you can [find all the modules here](#).

Combining MP4 Video Files



Short & Sweet post today. An issue that can always crop up is merging multiple files into one single file. Trying to analyse multiple video files relating to the same game can be a real pain and really slow you down. I came across this handy tool - My MP4 Box the other day and wanted to share it with you.

[Click here to watch the Video:](#)

Instructions;

1. To download the My MP4 Box software you need to go here; <http://www.videohelp.com/tools/My-MP4Box-GUI> and click on the download direct link on the right hand side.
2. This downloads a file format ending in .7z (had never seen this before)
3. So to extract this file you need to download this as well; <http://www.7-zip.org/>
4. Open 7 zip once it's downloaded and extract the My MP4 Box software
5. Open My MP4
6. Go to the join tab
7. Add the files you want to join
8. Make sure they are the same resolution
9. Click join
10. Enjoy!

GOPRO Camera DIY STABILIZING RIG

Guest Writer: The PA Guy (Gunnar Mattiasson): This post originally appeared on his website www.thepaguy.com



BJ Botha of Munster Rugby coaching young talents at Munster Talent Camp, Rockwell College, Ireland and of course – a DIY stabilizing rig in action!

When you've spent a small fortune on a good camera and you find that watching the movie clips you shoot with it makes you seasick, since it's shaking so much, what do you do then? Camera equipment can be ridiculously expensive, so you're wondering **"How can I fix this problem without spending too much money?"**.

When I want to come really close to the rugby action and want to study individual technique in, say breakdowns, or want a good wide-angle view of the defence from behind, I use my GoPro Camera.

To keep it from shaking when I move I need a stabilizing rig for the camera. Buying a metallic rig -even a fairly cheap one – like the Fotodiox GoTough Wedge (though certainly not the only option available) can set you back a hefty \$150 or more. So instead I've built a small rig from plastic sewage pipes which you can get in any hardware store for around \$20.

Since I built it last summer, lots of people from both local amateur clubs as well as players and PAs from major professional european rugby clubs have asked me about it and encouraged me to patent the design.

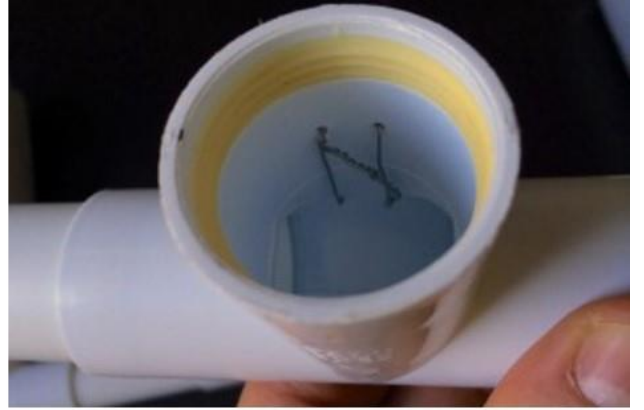
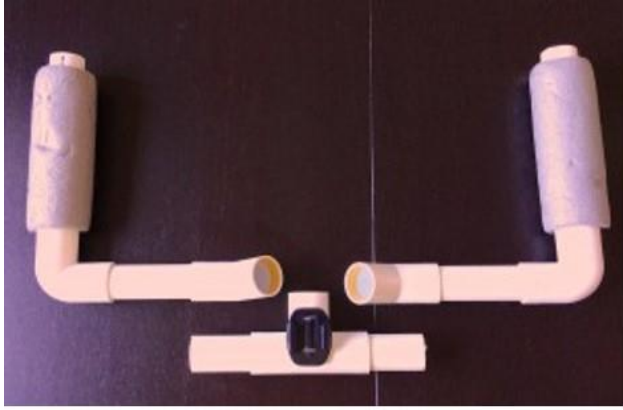
Well, to be honest, I got the idea from YouTube (where else!?) so I can't patent it and it's really so simple to make that anyone can do it.

This is how you make a DIY \$20 GoPro stabilizing rig:

Just cut a sewage pipe into 6 parts and use 2 90° connectors, 2 45° connectors and a T-shaped connector to put it all together.

I also added some padding just to make it nicer to hold (and it also floats in water, making it easier to stabilize if you dive with it. Just make sure to seal it well to keep the water out of the pipes.)

Easy!



Excel is Dead Long Live...

I came across an interesting tweet a few weeks back from [@data_monkey](#) , it read

"Very interesting times for analysts! Those stuck with only MS software experience will seriously regret it in a few years."



Excel is dead long live...

For the better part of twenty years, Microsoft Excel has been the most popular spreadsheet application on the planet. In a very real sense, it is *the* driver of Office revenues, because while office workers will use alternatives to Powerpoint and Word, you can pry Excel from their cold, dead fingers. It's an interesting thought, most organisations would probably crumble if you took away spreadsheet tools like Excel. No

matter what systems organisations seem to use everyone ends up in Excel. While this might work fine for basic tasks like auto sum and filtering data, the sheer quantity of data we are nor producing is staggering and Excel can not handle what's coming. A common estimation is that 90% of the worlds data was created in the last 2 years and this pace is only set to pick up as our devices become smarter.

What does this mean for analytics?

Well sports teams are no different, players are wearing more devices, more data is being externally and internally collected than ever before. While Excel will continue to be used on a regular basis most of the top sports teams and organisations will have already invested in tools that go way beyond what you can do in a simple spreadsheet.

Below are some concepts, programmes and software that are (or going to) become much more prevalent in the sports analytics world in 2014 and beyond. For some this list will be outdated, to others you may have heard of a few but not others. It's not a definitive list by any means, merely an overview of the type of skills analysts will need and if you go no further than remember the terms you won't be bluffed when they get mentioned in the next meeting.

Data Warehouse

A data warehouse is a database used for reporting and data analysis. It is a **central repository** of data which is created by integrating data from one or more sources. In plain English Data Warehouses are place where all the data an organisation has gets dumped. They can be as small or as big as your imagination and while the technical design and building of these is way beyond anything I can explain it's important to at least understand the concept.

Programming Software/Languages

R - R is a free software environment for statistical computing and graphics. It compiles and runs on a wide variety of UNIX platforms, Windows and Mac OS. This is a software tool to help you with statistics. Every tried to graph and check if a data set is normally distributed in Excel? Not an easy task! Still getting to grips with this myself but one that's certainly on my to learn list.

SQL - SQL or MYSQL is a special-purpose programming language designed for managing data held in a relational database management system. The best way to think if this is its how you get the data out of your data warehouse. I have had a MOSQL database for the last few years and the basics are relatively straight forward. I would be surprised if a skill like this wouldn't come in handy at a big club.



These are just two I would recommend you check out but there are others that are equally important if you want to improve your skills.

BI Tools - Business Intelligence Tools

QlikView

Business Intelligence Tools are basically like Excel x 100. These are software packages like QlikView and Tableau that offer you a much more user friendly interface than learning code. These tools take a feed from your data warehouse and allow you create custom reports and dashboards which can then be pushed to the entire organisation. Rather than expecting each individual to create their own reports or worse - you to create a report and email it to everyone, these systems can be live and update once the source data has been updated. Both [Qlikview](#) and [Tableau](#) offer free trials of their software. Again even if you have no immediate need for these skills they are worth knowing a little about. I recently saw an advertised analysts position where Qlikview was explicitly mentioned as a desired skill.

An advertisement for QlikView. It features a rowing team in a yellow boat on a body of water. Various data categories are listed in speech bubbles around the boat, including: Physiological Data, Monitoring Data, Sport Science, Medical and Injury, Video, Admin Data, Race Data & Performance Analysis, Load and GPS Sensors, Training Programs, and Travel schedules. The main text reads "ALL YOUR DATA IN ONE PLACE" in large yellow letters, with "ANYWHERE ANYTIME" below it. A small "+ learn more" link is at the bottom right.

SI Tools - Sports Intelligence Tools

This is a word I have just made up but you will start to see more and more of these over the next few years. While these replicate a lot of the functions of the BI tools above they are designed specifically for sports. They have a better understanding of the type, quantity and nature of the data produced by a team. These programmes tend to act as both the warehouse and the front end dashboard tools and hence can save in both development time and expertise required. Programmes like [Smartabase](#) and [Edge 10](#) to name but two.

Marginal Gains v Exceptional Gains



"If I'd asked my customers what they wanted they'd have asked for faster horses". - Henry Ford

Steve Jobs & Henry Ford have understood the philosophy of exceptional gains probably better than anybody else in business. 2 genuine visionaries who were not interested in making marginal improvements - they gazed into the future

and saw something the rest of us couldn't. The Henry Ford quote really sums it up for me; While it's clear from both men that they didn't hold much weight in what customers asked for, they were very much in the business of thinking about the impossible and then finding a way to make it happen.

Dave Brailsford, Performance Director of British cycling and mastermind behind back-to-back Tour De France victories & numerous Olympic Medals, takes a different approach. He has made famous the term marginal gains and to quote him;

"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".

Brailsford puts so much weight in the marginal gains approach that it's an actual job in the backroom team - Head of Marginal Gains.

Balance

But is there a balance? Most people have worked with teams where doing any sort of marginal improvement would be a big step forward. But if everybody is just looking at the marginal gains aren't we likely to miss the exceptional ones? The world of business is littered with stories of companies seeking marginal gains and suddenly being left behind. While Nokia were busy trying to improve their predictive text software...

somebody thought bigger and wanted to build a phone with only 1 button. Not all improvements come from small incremental improvements.



Tim Harford (Undercover Economist) described a competition that the British Air Ministry held in the 1930s to find a new modern, single-seat fighter plane -- an incredibly unusual request given that most fighter planes were two-seater to allow for one pilot and one gunner. There were lots of entries, but the a civil servant named Air Commodore Henry

Cave-Browne-Cave decided to commission on design for £10,000 as a "most interesting experiment". That plane turned out to be the Supermarine Spitfire.

Exceptional Gains in Analysis?

So while we all look for ways to progressively improve our performance and that of our team let's not just concentrate on better ways to do what we currently do. If I had the answer I would be off developing it!! But while cameras have got cheaper, laptops faster and software more accessible we have to consider these marginal gains. We could easily look back in 5 years time and laugh at what we have been doing, the same way people will laugh at the look and feel of a Nokia phone.

Faster ways to capture, code & analyse, finding better KPI's and ways to present information are all important but they are not the only things we should be looking at. We should always be looking at marginal gains in everything we do but we need to keep an eye on the big improvements, maybe even those gains that seem unimaginable from today.

Record Sky Box Remove HDCP

View HD HDMI Splitter



I posted a link to this little box on Twitter and everyone wanted to know more. If you are trying to record from a Sky Box you will find that the signal is encoded (meaning all you will get is a blue screen). For the last few years I have been recording to a DVD recorder and then transferring from that.

This device below, which you can get from [Amazon here](#), strips out the HDCP encoding. Couldn't be easier.

This will only split the HDMI feed and you will need something like [this](#) or [this](#) to get a live feed into your software - but a great piece of inexpensive kit.

Enjoy!

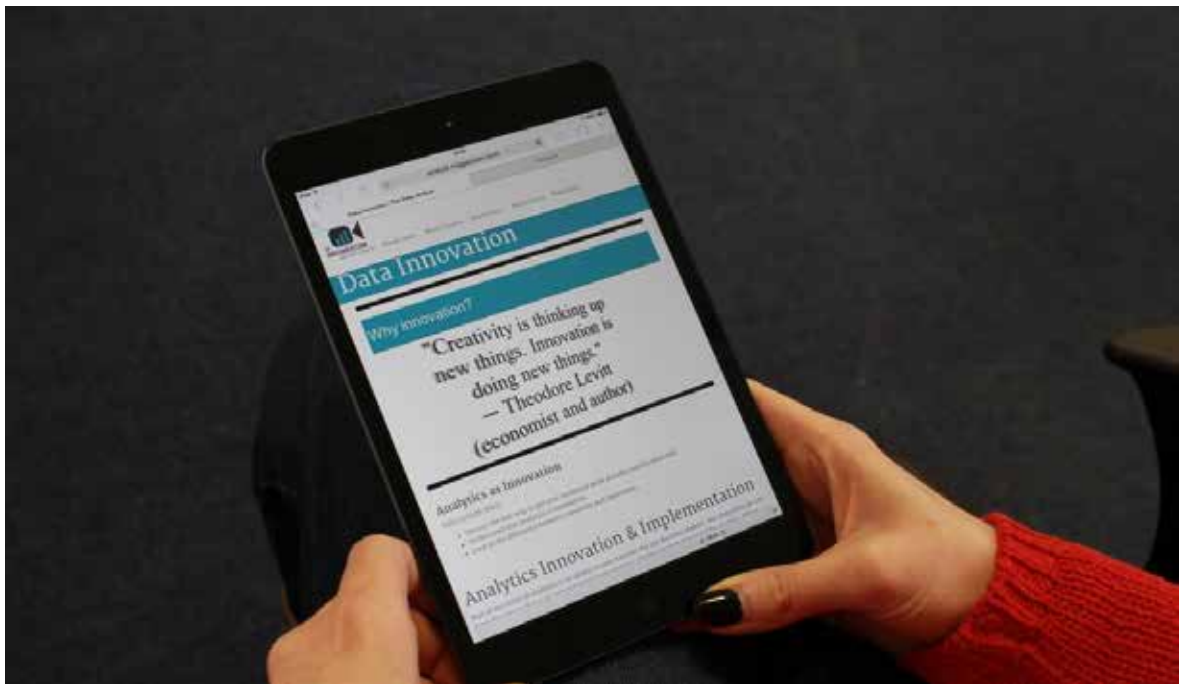
Online Performance Analysis Course

I have now launched an Online Performance Analysis Course. I've lost count of the number of coaches and analysts who are starting out and want to learn more about analysis but can't afford the money or time to go back to full time education. At present there are very few education opportunities available outside the UK & Ireland and even fewer online options.



Rather than build an off-line course that forced you to get to a certain venue on a certain day I wanted to build something that coaches could 'attend' from anywhere in the world. Online offers the chance to share my experience with as many people as possible. But it's not just me, **I have enlisted the expertise of Stuart Lierich and Ben Alamar** who are all specialist in their areas and have a wealth of experience to share with you.

The course is broken into a series of video lectures (over 400 mins of video) lasting between 5 and 15 mins and you can login and watch them whenever and wherever you want. The key to me is that you can continue your learning and you won't have to leave your house! I really wanted to build a strong community around the course so it's filled with opportunities to ask questions and chat with other coaches (and me) from around the world.



Week 1: An Introduction to Performance Analysis

- Why do we need Performance Analysis?
- What does a Performance Analyst Do?
- Choosing the right Camera
- What Equipment do we need?
- Tips on Videoing Games
- Week Summary & Assignment

Week 2: Performance Indicators & Performance Profiling

- What are Performance Indicators
- The Importance of Defining Performance Indicators
- Performance Profiling Part 1 & Part 2
- Notational Analysis Overview
- Week Summary & Assignment

Week 3: Purchasing Software & Analysis Tips

- Choosing The Right System
- Overview of Systems & Advantages
- Players Gaming the System
- Analyzing off the Ball
- Week Summary & Assignment

Week 4: Technique Analysis – Stuart Lierich

- What is Technique Analysis
- Mechanics or Decision Making
- The Technique Analysis Process
- The Set-up (Equipment)
- Analysis App Tour
- A Case Study
- The Specialist Position
- Week Summary & Assignment

Week 5: Sports Analytics – Ben Alamar

- Sports Analytics Introduction
- Good principles of Data Management
- Data v Information
- Analytics as Strategy
- Data Innovation
- Week Summary & Assignment

Week 6: It's All About Feedback

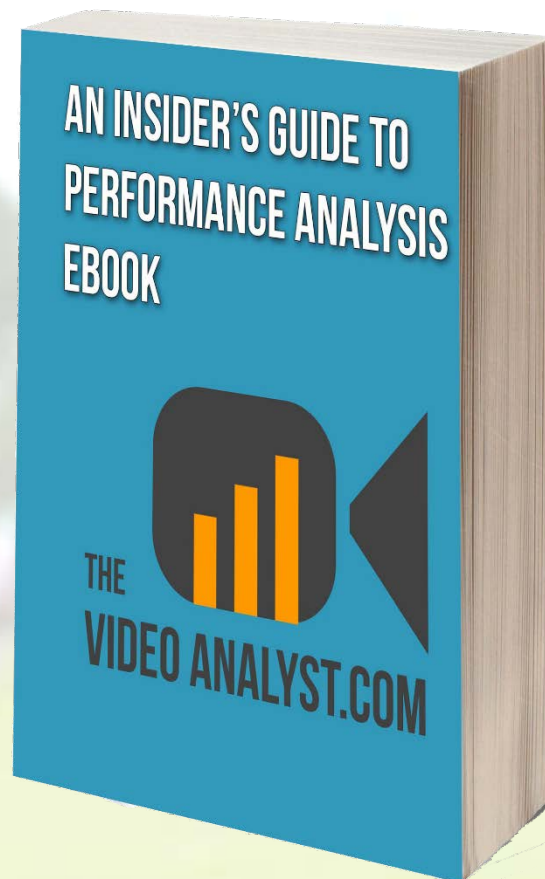
- A Delivery Feedback Model
- Traditional Feedback
- The Science of Feedback
- Analysing Your Coaching Skills
- Google Drive Your Performance Analysis
- Week Summary & Assignment

To learn more about the course and see some sample content check out;
www.thevideoanalystcourse.com

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