Professional Doctorate Programme: Sport D.

Performance Management and Analysis in Tier Two International Rugby Union.

Huw David Wiltshire. BA(HONS) M.Ed

ST10005557

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Director of Studies: Dr. P.G. O’Donoghue

Supervisor: Professor J.S. Fleming

This research project was undertaken under the auspices of Cardiff Metropolitan University.
Abstract.
This thesis was concerned with a performance management and analysis case study intervention with an International Rugby Board (IRB) tier two international squad, focusing on change. An initial interview study investigated the concept of Performance Management (PM) in elite rugby union from the perspective of eight leading high performance managers. The findings highlighted the importance of people management, possessing a strategic vision, achieving simplicity and clarity from complex issues, and creating and managing change in order to save time for athletes and coaches. The second interview study explored the nature of Performance Analysis (PA) in elite rugby union. The findings identified that PA involved interpreting and filtering large unwieldy data sets, the coach-analyst relationship was critical to success, and player-centred analysis needed to promote learning through behavioural change. Collectively, the findings highlight that PM and PA have a number of conceptual similarities that include a reductive approach to identify impact metrics (measures with direct relevance to performance) that provide a basis for context-specific feedback. Both PM and PA provide a structure and agency to a performance learning environment by connecting the multidisciplinary components, and improving the performance empathy of managers, coaches and athletes often in an intuitive and instinctive manner. The critical similarity and function, however, relates to outputs in both areas that save time for those most directly involved with performance decision making.

In order to support the case study intervention, an integrated model of PM and PA was designed to help investigate how change could be implemented within a tier two international rugby union environment. The findings demonstrated the importance of a performance review in creating a context-specific strategic plan, and the need for performance standards that move from exceeding organisational best (peak performance) to a level that is consistently higher than that of the majority of peer organisations in the same sector, and over a prolonged time period (high performance). PM creates a currency of feed forward, generates outputs that can always be traced back to the underpinning strategy and performance philosophy, and allows for a cut-edit-paste strategy as opposed to the blind imitation of cut and paste. Integrated (qualitative and quantitative) performance analysis provides impact and
saves time for both the performance manager and the concomitant learning environment by translating key trends from a reductive analysis of large data into key performance outcomes.

The overall findings of the thesis have facilitated a greater understanding of the development of performance management and performance analysis as a prerequisite for performance success in elite rugby union that can be used to initiate change. In addition, the findings have been utilised to re-design a national governing body elite coach award course, and to develop a level six module for final year undergraduate students.
Declaration

This work has not previously been accepted in substance for any degree and is not being concurrently submitted in candidature for any degree.

Signed: (Candidate)

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Statement 1

This thesis is the result of my own investigations, except where otherwise stated. Other sources are acknowledged by footnotes giving explicit references.

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Statement 2

I hereby give consent for my thesis, if accepted, to be available for photocopying and for inter-library loan, and for the title and summary to be made available to outside organisations.

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Finally, heartfelt thanks to Ruth, Megan, Sam, Matt and Joe for their consistent love and encouragement.
Dedicated to the two R. Wiltshires in my life.

One was there on the day I was born, and the other on the day I found out why.
Chapter 1. Introduction.

The aim of this chapter within the Professional Doctorate (Sport D) is to identify my personal and professional development, and highlight how this has underpinned and impacted upon my research question. At the outset, I defined my personal identity as an applied academic, performance coach and manager, and performance analyst, which prompted three initial, fundamental questions: Are the identities distinct? Do they merge? What are the transferable skills that may bridge all of the roles? In essence, I was initially attracted to the Professional Doctorate (Sport D) route due to its distinct focus on practice development and change, as opposed to outright research (Lester, 2004). This type of doctoral programme required a project design based firmly upon a change management intervention, and as such had the scope to develop a level of holistic learning that would help me draw coherent links between my academic, professional and personal identities, and in doing so answer the initial questions relating to identity. In addition, I viewed the Sport D as a means of balancing the potential tension “when engaging in critical reflection as a student whilst also inhabiting a practitioner world” (Fenge, 2010, p.651). In turn this allowed me to identify the reasons behind good professional practice within my study (Edelenbos et al., 2006).

With regard to my experiential knowledge, a current skills and experience audit suggested possible strengths in planning, hands on coaching and teaching, strategic management and conflict management. The latter was a skill that came to the fore (on a daily basis) as a Performance Manager (PM) in a National Governing Body (NGB) where, initially, I actually doubted that I possessed the necessary skill to execute it. The reality was that the skill was dormant in the sense that it was rarely if ever, used in my higher education roles compared to professional sport. Within an NGB role I was exposed to an external business expert who undertook an analysis of my management capability via a 360° exercise (appendix A). The results of the process indicated that I scored myself lower than my peers but higher than my line manager in most facets which suggested that I lacked a balanced level of self knowledge. The feedback also highlighted relative capability in relation to knowledge sharing, communication, decision making, social responsibility, leadership, self management, process management, information management and managing for results. I perceived
all elements as transferable skills that have impacted to a greater or lesser extent, upon all of my professional practice, irrespective of role or job description. However, this personal audit exposed a number of gaps in my skills set that would be critical to the successful completion of a Sport D. Primarily, I needed to mature as a Performance Manager and Analyst and become far more consistent in my application of reflective practice to my own professional practice. The audit itself highlighted potential areas for development that included seeing opportunities rather than problems, gaining a greater understanding of the political structure of organisations, maturing teams with complimentary styles, creating more comprehensive succession plans, continuing to support individuality, generating not so obvious solutions, differentiating better between efficiency and effectiveness, and recognising my own strengths and weaknesses.

1.1 Personal Background.

As someone born in the Eastern Gwent valley my upbringing was traditional in many ways due to my early educational experiences. I attended a local primary school that instilled an early passion for literacy, numbers and sport, and from there I progressed via an eleven plus examination to the all boys grammar school in the town where my father was Head Teacher. From the outset, my outlook on life had a decidedly multifaceted perspective that was definitely reflected in many of my early decisions, and non-decisions. For example, following my first year at secondary level, I decided to opt for Music and Technical Engineering as subject option choices, but following a discussion with my Dad changed these to Latin and Classics; the argument I latched onto was the quality of the teaching in the latter areas would be better. Hindsight would indicate that the choice was the wrong one, based on an evolving lack of interest in the subject matter and the fact that I didn’t stand my ground (which was perhaps an unrealistic challenge for a twelve year old). As an aspiring cricketer, I was spotted in a county game and asked to attend Glamorgan Colts winter nets which I jumped at. After an enjoyable first month in Cardiff at the National Sports Centre, I was presented with my next key decision that I made off my own bat, so to speak. I was selected for the county Basketball squad that clashed with the cricket training. Suffice to say I opted for the relative comfort of a basketball squad that contained three of my close school friends, and the county cricket set up quite rightly, dropped
their interest. The subsequent years provided opportunities for me to represent my county in five different sports, without ever really committing fully to one in particular. This attitude I feel reflected my innate interest in a variety of things, as opposed to a desire or rage to master one of them. The most enjoyable educational experience I had at Grammar school was my A level Chaucer class delivered by my Dad. The text and hidden meanings and connotations in the General Prologue was inspiring and I liked the fact that my mates would take the mick out of my father’s attempts to read in a middle English accent. In essence, it was my father who instilled an early passion for the education world and his influence on my values was substantial. Basically, I respected his ability to be economic with his praise (if I had ‘done alright’ I knew that I had delivered something decent) fair with the way he dealt with me, and keen to guide me toward developing a strong work ethic. I started a law degree at Nottingham following my A levels but found that I was uncomfortable with both the nature of the course and the fact that the discipline embodied substantial uncertainty over the most critical element of criminal law. The law on murder at the time was the Hyam v DPP (1975) case that ultimately went to the Lords who delivered a 3:2 verdict; hardly a cause for inspiring confidence or certainty in a potential future career. Whether I used this as an excuse or a reason, I took a quantum leap that required an element of personal critical appraisal and simple self reflection, and opted to study a sport and human movement studies course that led to a marked change in identity and focus. This was very much my decision that I presented to my Mum and Dad as a fait accompli over lunch on St Marys Street in Cardiff. My father’s response to this reflected his role as the bedrock of my life, and he simply smiled and said, “Well, I’ll have a poor PE teacher as a son and not a rich lawyer. No issues.” In my eyes, this was complete support for a personal decision that could have created considerable anxiety within my family.

1.2 Professional Development: Academic.

My professional educational career initially involved briefly teaching at secondary and primary level and then lecturing in higher education in sports science and coaching, spanning two distinct periods that total nineteen years (fourteen years from 1991-2005 and 2010 – to date). My immediate skill sets were, therefore, developed around teaching and coaching process skills, and my focus at the initial stage of my
lecturing career was firmly set in the management and delivery of learning and teaching that encompassed a logical and progressive range of roles from module leader, to year tutor and programme director and finally, coordinator of a portfolio of undergraduate degree courses. I completed a M Ed at Cardiff University at the start of my lecturing career which ultimately focused on paediatric physiology but also contained a stimulating section on problem solving and problem-based learning. Mayer and Wittrock (2006, p. 287) defined problem solving as “cognitive processing directed at achieving a goal when no solution method is obvious to the problem solver.” Undoubtedly, I became very engaged in this higher order form of learning due to its focus on science and design technology skills. This early postgraduate experience broadened my conceptual understanding whilst enhancing my critical awareness. I undertook two External Examiner roles at the University of Strathclyde and Reading, respectively, over a seven year period. This experience taught me a number of things but in particular I learned that my own students at Cardiff were actually much better and more capable than I thought, which actually forced me into some early and crude benchmarking exercises. In addition, my personal parental experiences further developed a level of empathy for the student experience in my own, and other places of work. Basically, my academic roles clearly nurtured a desire to manage programme and discipline teams, and also manage staff and students to succeed.

1.3 Professional Development: Sporting.

In order to work at the highest performance level within elite rugby union, be an integral part of a winning national team, design strategic player development plans to redefine policy, and really test my management skills I spent six years in professional sport working for an NGB as a High Performance Manager (2004-10). This experience improved existing, and developed new, management skills prior to a planned return to the HE sector. I had also worked within professional sport over twenty years as a fitness coach at international, regional and club levels in rugby union. In addition, I fulfilled the roles of a Performance Director and latterly, a Performance Manager, becoming the Welsh Rugby Union’s (WRU) first National Fitness Director and then first National Performance Manager. Both roles allowed me to work from a blank canvas in the sure knowledge that I would need to manage
expectation, conflict, parochial attitudes and myself. This experience allowed me to understand that knowledge and experience can be perceived as a threat in the sense that if you meet, and exceed, your personal performance indicators, it is still possible to get sacked in the fickle world of high performance sport. To an extent, being removed from the role of National Performance Manager left me with a strong feeling of unfinished business with regard to how such a role can evolve and impact upon a performance environment. Perhaps my biggest ‘take home message’ though related to the requirement for role clarity in terms of what your job was, but most importantly what it wasn’t. For me, this notion of role clarity constituted the first building block for success in elite sport. However, the period that followed provided me with accelerated learning about myself and others (in particular, who picked the phone up at this stage, and equally who didn’t) particularly with regard to trust. Having to provide an empirical evidence base for decisions within high performance sport demanded that I used Performance Analysis techniques on a daily basis to make and justify key decisions, without ever fully understanding the process quite as much as I should have. However, Fletcher and Wagstaff (2009, p.433) concluded a review paper by stating that, “there is currently no rigorous research that specifically addresses performance management . . . in elite sport.” This justification formed the basis for my Sport D thesis.

This professional experience became the focus for my return to higher education and the desire to work within the area of performance analysis, with individuals and teams that I could fully trust. The three performance highlights at this stage of my career allowed me to feel some sense of achievement that I hadn’t experienced at a national level previously. National age grade success at an IRB Under 20s world cup, grand slam experience in the Six Nations in 2008 (on top of grand slams with Wales A and Wales Under 19s) and winning the IRB Sevens World Cup in 2009 all emphasised the narrow margins between winning and losing at those levels. However, identifying and appointing appropriate managers and coaches were key to creating a high performance culture and environment, and this raised a key question of what strategies are necessary to enable all involved to feel that focusing on the root cause of success is just as important as learning from failure? The whole NGB High Performance experience was incredibly formative and positive in teaching me to evaluate the process as much as the outcome. When asked, did I enjoy my job at that
time of my life, the usual response was ‘the job is fantastic, the politics less so.’ This naivety gradually eroded to the point where I realised that you will never divorce politics from a high performance sporting environment and as such you should accept this fact, and just manage their influence. In my case, political pressure was something that you could never eradicate, but instead use to help prioritise areas that would give you the greatest performance impact. Cruickshank et al. (2015) referred to the importance of establishing a wider understanding of political matters when managing performance, whilst Collins and Cruickshank (2015) highlighted the need to reconcile the political dynamics that often exist within performance teams.

Having returned to the HE sector in 2010, I was contacted by some longstanding friends in the Irish Rugby Football Union in 2012 to visit them with a view to creating research links. Upon walking into the meeting in their Dublin Headquarters, I quickly realised that the presence of the Chief Executive Officer and National Team Manager equated to something more significant than a collaborative relationship with my place of work. With two significant others (National Team Captain and Head Coach live on a conference call) privy to the conversation, the dialogue moved quickly around to whether I would like to take on their role of National Fitness Director. Their approach to packaging the offer was very understated and sensitive, but compelling nevertheless (their people-centred, family focus and salary would secure a number of things for me as they eloquently put it). The following six weeks underlined a fact that I had reached a point in my life looking for a moment of complete clarity in order to make a decision, and quite simply I was unable to do so. Having discussed the matter with a small group of people who embraced my university, rugby union and family contacts, I was still unsure of the way forward. In some respects, I may have been looking for someone else to make the decision for me, but my wife’s input was invaluable. Her exact words were ‘Don’t think about the family or the salary. Ask yourself is that the job you actually want to do?’ Having reflected back on this feedback, I realised the message or question was, do you want to go back to being a one trick pony, or a National Fitness Director with a sole focus on one aspect of performance? My interest in managing a range of disciplines was a key consideration at this juncture.
Probably, reaching a point where I couldn’t make my own decision, a friend suggested I consulted his brother who was an independent executive life coach. The discussion and process I went through was very much the tipping point in terms of making a balanced and informed decision. It also made me grow up regarding the need to be more self reflective and give myself worthwhile advice, as well as others. The purpose of the chat (as he put it) was to use my values, beliefs and experiential learning to highlight my ideal job. The exercise was demanding and made me re-visit and question my guiding values, and establish where I obtained them in the first place. The actual process used by the life coach involved three elements embracing question, situation and rules. In other words, the importance of asking the right question in the first place was embodied in, what are the key considerations for me to help gain an objective view on how to differentiate against job opportunities that I will consider. The situation was explained as, I am likely to have been having multiple thoughts both positive and negative and possibly worried a reasonable amount about why, what and how I can progress my career situation by making the best possible decision whilst freeing myself from all the uncertainty. The rules were simple and involved answering honestly and spontaneously at all times. In essence, my forty five minutes chatting about my upbringing, professional background and personal values led to the identification of twelve criteria that could be applied to evaluating the value of my current role and the job offer at hand. The process helped to identify the three most important components of a job that I look for: managing people in groups, organising them to perform and seeing them achieve; variety in the role; and, planning to achieve long term goals. Whilst examining the three most important non-work things that I do (spending time with the family, socialising with my wife with the family, and there is nothing else that is significant) it became apparent that I possessed a fundamental flaw, in the sense that I lacked a work-life balance with regard to broader interests. In addition, the greatest risk that would impact on my well being and ability to perform to the best of my ability, was the fundamental need to respect the person I reported to, and their values. The outcome (table 1) was heavily weighted toward the job offer:
The final stage of the process for me was taking my three children out for dinner to explain the situation and get their opinion. My daughter and youngest son were adamant I should take the job due to the salary and kit sponsor, respectively. However, my middle son asked me how much time I would spend away in Ireland? When I outlined the extent of it, his response was ‘well, that’s not happening.’ The ultimate deal breaker had been tabled. Hindsight has emphasised that the correct decision was reached (time lost with your children is something that you can never buy back) but the process I took to get there exposed a number of frailties in my personal and professional make up, particularly regarding the need to become more self aware and self sufficient through reflective practice.

1.4 Professional Development Planning: Link to the Research Question.

My personal and professional development has been aligned closely with these academic and sporting roles incorporating three broad types of professional training (short courses, workshops and conferences promoting practical information and developing skills), professional education (long courses and secondments that highlight theory and research-based knowledge) and professional support (activities that aim to develop ‘on-the-job’ experience). In essence, my continuing professional development (CPD) gradually moved from academic postgraduate study, to highly

<table>
<thead>
<tr>
<th>Criteria affecting the Ideal Job Role</th>
<th>Ideal Role</th>
<th>Potential Job IRFU</th>
<th>Current Job Cmet</th>
<th>Dealbreaker</th>
</tr>
</thead>
<tbody>
<tr>
<td>Managing people in groups, organising them to perform &amp; seeing them achieve</td>
<td>10</td>
<td>8</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Variety in the role</td>
<td>10</td>
<td>9</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Planning to achieve long term goals</td>
<td>10</td>
<td>10</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Spending time with the family</td>
<td>10</td>
<td>1</td>
<td>9</td>
<td>✓</td>
</tr>
<tr>
<td>Socialising with my wife with the family</td>
<td>10</td>
<td>1</td>
<td>9</td>
<td>✓</td>
</tr>
<tr>
<td>£120k per year as opposed to £42k</td>
<td>10</td>
<td>10</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Being at home with the family; &lt;4 days a month away</td>
<td>10</td>
<td>1</td>
<td>8</td>
<td>✓</td>
</tr>
<tr>
<td>No groundhog characteristics in the role</td>
<td>10</td>
<td>9</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>I must respect the person I report to and their values</td>
<td>10</td>
<td>8</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Need for a framework to work within</td>
<td>10</td>
<td>9</td>
<td>10</td>
<td>✓</td>
</tr>
<tr>
<td>Fit with your values and your ethics</td>
<td>10</td>
<td>8</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>I want to be a really good change manager who is a people focussed</td>
<td>10</td>
<td>8</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>120</strong></td>
<td><strong>82</strong></td>
<td><strong>68</strong></td>
<td></td>
</tr>
</tbody>
</table>

Table 1: Personal Rating of Employment Options.
applied coaching process skills and management development, and back to a postgraduate study of how best to manage performance. My knowledge base and interests moved from one aspect of a multi-disciplinary support system (physical preparation and performance) with regard to coaching and strategic management, to a wider multi, and inter-disciplinary focus as a performance manager. This transition in role and focus has formed the basis of my research question.

In relation to my personal and professional development to date, I felt that elements of my CPD had exposed the ineffectiveness of formal settings that often lack the requisite levels of interaction and, reinforced the ongoing challenge of synthesising a complex concept into a brief course. That said, some formal courses improved my efficacy by helping me understand how to develop athletes as people and self manage more effectively in order to avoid burnout in an intense performance management role.

The purpose of my own research question involved an analysis of performance management in elite rugby union with specific reference to performance analysis. Key underpinning aspects of my research incorporated an exploration of performance management in a sporting domain that potentially differs markedly from a business or clinical environment. Attempting to define a performance management and analysis concept and model that has practical application exposed me to conceptual design thinking that was akin to placing a non-swimmer in deep waters. The case study element embodied the Russian National rugby team’s first appearance in an IRB Rugby World Cup in 2011 and involved the analysis of a performance management and analysis change intervention, that raised a number of fundamental underpinning questions:

- What is performance management in elite rugby union?
- What is performance analysis in elite rugby union and can it be used as an accelerator for change?
• What is the best way of providing athletes and coaches with inter-disciplinary feedback on multi-disciplinary data?

In April 2011, I received an invitation from the National Head Coach of Russia to undertake some Performance Management work with the National team and NGB, which was five months out from their first appearance in an IRB Rugby World Cup tournament. The acceptance of this site of study supported Sparkes and Smith’s (2014, p.68) criteria of “availability, accessibility and theoretical interest.” In addition, this presented a potential opportunity to undertake a change management intervention away from my Higher Education workplace, where we were in a state of flux due to a potential merger from the reconfiguration of universities in Wales, and pending staff redundancies.

Rugby union is one of the most dynamically developing sports in the world. Since the sport went open (professional) twenty years ago, rugby union has been on an extended growth curve; global participation has risen in excess of two million players to a total of around 7.2 million worldwide (World Rugby, 2014). The Rugby World Cup is now the third biggest sporting event in the world after the Olympics and the FIFA World Cup and commercial revenues and investment in the Game have grown exponentially (Wise, 2015).

Within Russia, sport is a source of national pride that underpins national identity (Gorokhov, 2015). Russia became a member union of the International Rugby Board (IRB) in 1990 and currently has almost twenty four thousand registered players (World Rugby, 2014). The Russian Federation is the largest country in the world by territory, and ranks eighth in terms of population (one hundred and forty three million). The capital and the largest city in Russia is Moscow (more than twelve million inhabitants). Russian Rugby has a long history starting from 1923 when the first within Russia rugby match was recorded officially (Riordan, 1997). The original USSR Rugby Union was founded in 1936, and USSR Championships were regularly played through 1935 – 1939 (Edelman, 1993).

Traditionally the structure of domestic rugby in Russia is based on a club infrastructure, with the Russian National Championship (Super League) a key
competition (RUR, 2011). Internationally, Russia is 22\textsuperscript{nd} in the World Rugby rankings. The broad structure of Russian Rugby disaggregates into:

![Diagram of Russian Rugby Structure]

Figure 1.1: The Structure of Russian Rugby (RUR, 2011).

The Rugby Union of Russia (RUR) governs national team performance and rugby participation and is licensed by the Federal Agency for Sports and Physical Education and recognised by the Russian Olympic Committee (RUR, 2011).

Upon arriving in Russia, I discovered that the RUR Mission Statement was:

- To foster and promote the game of rugby and its core values of participation, comradeship, competition, teamwork and fair play throughout the community;

- To make Rugby one of the top tier sports in Russia, in terms of participation, audience, enjoyment, popularity and international success; and,

- To govern effectively with stable structures and financial viability in order to provide the investments required to meet its objectives and obligations (RUR, 2011).

This background set the context for my habitus (or place in a social structure; Fenge, 2010) that related to my professional values or behaviours which were firmly rooted in a professional sporting context. Specifically, honesty, integrity, resilience, family, and enjoyment.
With regard to the Sport D itself, I felt that it could expedite my research skills and reflective practice qualities. Williams and Jordan (2009, p.125) indicated that a Professional Development Portfolio (PDP) provides “a format for self reflection on practice and goal planning.” More specifically, a Sport D could promote productive reflection (reflection within work settings) in relation to my applied conceptual understanding of key themes such as teaching, coaching and management strategy. My initial taught module on change management allowed me to analyse the effectiveness of my own change interventions and use the findings to feedback into the development of my teaching (Elliot, 1991). A key implication from this module related to the fact that performance change can potentially result from simply listing the things that players, coaches and managers might need to know and understand.

Reflection can be defined as a process of critically examining one’s past and present practice as a means of building one’s knowledge and understanding in order to improve practice (Bolton, 2010). Moreover, reflection should enhance self-knowledge to support on-going professional development (Loughran, 2002). Therefore, I consider the framework of sense-making and habitus as key in regard to the extent to which the Sport D could enhance my capability as a reflective practitioner. This potential benefit is reflected in Fenge’s (2010, p.645) own experience of a Sport D:

Reflexivity involved situating myself in the different research and practice development elements of the DProf program on which I studied, disclosing my value base, and developing a critical awareness of the way that my research and practice worlds influenced my thoughts and actions.

Ostensibly, to evaluate via reflexivity moves the research justification away from some form of a badge of merit (Barbour, 2001) toward a process that potentially supports a meaningful end product that in this case was my PDP (appendix B). Through more sophisticated, and context-specific reflective practice, the Sport D might help me better answer five key guiding performance questions (adapted from Race, 2010):

1. What are we trying to achieve as a performance team?
2. What do players, coaches and managers need to learn?
3. How is analysis linked to management?
4. What are players and coaches going to do?
5. How are we going to use feedback to ensure learning?

Managing knowledge and information is central to a range of learning environments. Miley and Read (2011) argued that word clouds assisted the learner in clarifying instances where the breadth and depth of information could be viewed as overwhelming. In addition, this technique has been applied to develop literacy skills (Hayes, 2008) and identify conceptual themes in a more coherent manner (McNaught & Lam, 2010). The following word cloud is a frequency tabulation of the key words that emerged from my initial notes regarding a potential research question,

![Word Cloud Image]

Figure 1.2 Initial Conceptual Framework.

This simple cloud was used to inform an initial conceptual framework that highlighted a need to manage the common challenge in elite sport of selective abstraction (Charlesworth, 2001) or seeing what you want to see. I was conscious of some limitations to the use of clouds in the sense that they prioritise words by frequency of occurrence, and consequently some key areas may be excluded due to their appearing infrequently, whilst alterations may only be made within pre-set
parameters. However, as a flexible learning tool in its design and application to a range of disciplines, I found the exercise really useful in distilling a range of concepts down to my focus on multi-disciplinary performance management.

1.5 Aim and Objectives.

1. Aim: To undertake and evaluate a performance management and analysis case study intervention with an IRB tier two international squad, focusing on change.

2. Objective: To perform an interview study with performance managers that informs the concept of performance management in elite rugby.

3. Objective: To conduct an interview study with performance analysts that explores the nature of performance analysis in elite rugby.

1.6 Deliverables.

This thesis presents four deliverables:

A contextual model of Performance Management in Sport was developed from the preliminary interview study to help focus the research aim within the case study. A conceptual feedback model was designed that integrated an instructional and motivational framework based on new data gathered from the second interview study.

Theory building through the design and development of a multi-disciplinary integrated model of Performance Management and Analysis.

A high performance management system and performance analysis process that have been developed and the related contribution to knowledge based on recommendations for professional practitioners in elite rugby union.

A published book chapter during the period of the project.
Chapter 2. Literature Review

The previous chapter outlined my research aim and described the context. This chapter reviews the existing literature relating to performance management and performance analysis and how they link into, and contextualise change. The research base has incorporated concepts such as performance measurement and management, however, there is an expanding and explicit interest in how these issues apply to elite sports organisations. This chapter is divided into five main sections that establish the relevance of the research issue, the basis for defining the research question and a summary of the existing theories underpinning the research issue. The first section explores the nature of performance by focusing specifically on two distinct concepts of sports performance, and the performance of sports organisations. The second section examines the concept of performance management and discusses how we best manage for sporting success. The third section discusses the factors affecting the design of performance management systems. The fourth section deals with the concept of change management, and the final section examines the concept of performance analysis. Findings from the literature review are then translated into a functional method in the next chapter.

2.1 The nature of Performance.

Successful sports performance means different things to different nations although Fricker (2013, p.xi) highlighted a common link where performance translates into “international competitiveness which is seen as a mark of prestige and national pride.” The central purpose of competitive sports can be viewed as identifying the best performance at a specific point in time, which suggests the context sensitive nature of all forms of athletic performance and the standards by which excellence is judged (Damisch & Mussweiler, 2009). The context sensitivity may refer to both the performance itself and the standards by which it is judged, appraised and regulated.

Performance can be defined as both a behavioural and an outcome dimension and is dynamic and multi-dimensional. It is a concept that is open to judgmental and evaluative processes (Sonnentag, 2002) and constantly evolves. Moreover, performance is affected by personal, lifestyle and environmental factors. The term is
interpreted differently across disciplines such as psychology, economics, political science and managerial sciences, and is a multi-faceted concept that has as its base a range of measures that tend to vary in significance for differing stakeholders (Bovaird, 1996). Lebas and Euske (2002) considered performance to be a social construct resulting from defining and sharing a causal model. Performance may include a cognitive ability to perceive the intentions of others that in competitive sport equates to successfully reading the intentions of opponents (Reilly et al., 2000) which is a factor integral to successful performance (Carling et al., 2009). From an organisational perspective, a realistic argument can be made for the success of any sports organisation being largely dependent on the quality of their strategic performance management decisions (Hoye et al., 2012). In this context, performance comprises span and depth, and is often synonymous with the speed or efficiency of outputs and decisions. This serves to highlight the two fundamentally separate issues of ‘sports performance’ and the ‘performance of sports organisations.’

“Predictability and certainty……are goals to be aimed for in the commercial world that are not always valued in the sporting world. Sport fans are attracted to games where the outcome is uncertain and chaos is just around the corner” (Hoye et al., 2012, p.182). In addition, sporting performers may actually target and strive for unpredictability in performance as a critical success factor. Whilst the commercial strategy for an organisation will refer to year on year improvement with regard to turnover and profit, those outcomes tend to be based on some uncertainty. In contrast, coaches and managers in elite sport constantly search for techniques and strategies that actually reduce the unpredictability of sporting outcomes. In turn, this paradox translates into high performance sports environments where the aim is to positively disadvantage a competitor. Barker et al. (2014, p.1) argued that “high performance sports attract enormous popular attention and affect relations that are global and local, cultural and economic,” but remain inherently unpredictable (fast changing and highly volatile) in nature. Financial and performance polarisation often accentuates differences between sports organisations with regard to marked change and evolving competitiveness.

Despite the frequency of use of the word performance in business, engineering, management and sporting contexts, its precise meaning is rarely explicitly defined.
Performance is invariably equated with efficiency and effectiveness which are frequently used to underpin future results, and serve as a potential measure or indicator. Within business, performance embodies concepts such as lean production, competitiveness, cost reduction, job and value creation, growth and sustainability (Paladino, 2011) which have a transferability and relevance to sports performance contexts. Madella et al. (2005) viewed performance, in a broad sense, as the ability to acquire and process human, financial and physical resources to achieve the goals of the organisation. Therefore, measuring multi-dimensional sports performance may require a specific systematic model but this contrasts with Bourguignon (1995) who highlighted managers and organisations that often use performance as an umbrella term that embraces a variety of concepts suiting the individual need, and where the context actually precedes the definition. Lebas and Euske (2002) suggested that whilst a basis of understanding can be established with such an approach, the scope for ambiguity is considerable and potentially dangerous as the direction for improving performance standards becomes less clear.

More specifically, Sotiriadou and De Bosscher (2013) viewed elite sports performance as the net result of a combination of the broader environment and physical circumstance, genetic qualities, sport system opportunities, and other athlete related issues. Further analysis reveals that sports performance as a multi-faceted concept (Mackenzie & Cushion, 2013) is linked to many different external factors such as the opposition, weather, venue, playing surface, rule changes, competition and situational factors (Lago-Peñas & Lago-Ballesteros, 2011). The inter-relationships and influence of these factors can be a management challenge but potentially measurable through Performance Analysis. For example, differentiating between performance and excellence (Lyle, 2002) may identify those who are integral to the raising of performance standards. Within team sports such as rugby union, there is a balance between rehearsed play and improvisation, and the former can be both predictable or unpredictable in nature depending upon the performance objective (Hibbs & O’Donoghue, 2013).

A further distinction must be drawn between performance and results, in the sense that, to manage for results, you start with measuring performance (Kamensky & Morales, 2005) suggesting that performance is a tangible operationalisation of results,
and in particular the underpinning process (Bouckaert & Halligan, 2008). Sports performance may be viewed as a pipeline or ‘input-throughput-output’ system that can be both sport specific and country specific in relation to cultural, economic and political influences (De Bosscher et al., 2009). It has been argued that performance represents the sum of all the individual stages of the sequence of action, from intention to actual result (Albu & Albu, 2003). However, a result is unlikely to be based on a single cause, so these research sources would indicate that the main facets of performance are success, the result of an activity, and action indicating that performance can be analysed by focusing on both inputs and outputs. This point is substantiated by Shibli et al. (2013) in figure 2.1, who identified five key aspects of a performance process:

![Figure 2.1 Dimensions of Performance (Shibli et al., 2013).](image)

The value of this model is its simplicity in highlighting valid potential measures of performance that should be embedded at the heart of a Performance Management System (PMS). The critical element of the model is the qualification outputs section that actually stresses the need for alternative measures of success in contextualising performance, particularly as athletic talent is never distributed evenly within any environment. Whilst inputs emphasised the substantial investment in time, personnel
and money within High Performance (HP) sport, the throughputs encapsulate how effectively these inputs are used. Finally, outcomes related to the relative level of impact that international competition has on national funding and structure. However, from an economic perspective, Shibli et al., (2013, p.37) considered “the measure that gives the truest indication of performance is market share” although overall, combined performance measures may provide a better basis for interpreting results. Whilst measurement techniques are generally straightforward, the key skill from a HP management perspective is to apply the right measure to the right context-specific circumstance. The main performance indicators in computing have relevance to the measurement of a performance continuum in terms of throughput, response time, resource utilisation, and the time between failure and rate of failure occurrence.

From a wider conceptual perspective, Lebas and Euske (2002, p.67) argued that performance is potentially, “measureable by either a number or an expression that allows communication; a means to accomplish something with a specific intention (e.g. creating value); the ability to accomplish or the potential for creating a result; the comparison of a result with some benchmark or reference selected (or imposed) either internally or externally; a surprising result compared to expectations; and, a judgment by comparison.” This reflects the view of Bourguignon (1995) that performance embraces simultaneously the action, the result of the action and the success of the result compared to a benchmark. It can also be a comparative judgment but here a judge must be selected and criteria for the judgment defined. This argument stresses that performance is achieving an immediate outcome, which will lead to a longer term measured valuable outcome. Performance viewed in the context of future results will be dependent upon a causal model but past results are not necessarily good predictors of future performance due to the inherent unpredictability of sports performance (McGarry, 2009).

The foremost way in which performance can be measured is through the use of performance indicators. Sports performance is invariably defined and measured via the application of performance indicators which embody three key characteristics: variables that are demonstrated to be valid measures of important aspects of performance and which possess the metric properties of having an objective measurement procedure; a known scale of measurement; and, a valid means of
interpretation (O’Donoghue, 2010). From an applied perspective, analysts and coaches use performance indicators to assess the performance of an individual, a team, or units of a team to determine the success of the outcome (Hughes & Franks, 2004). Ultimately, the key to establishing clarity is to argue a case from first principles, and to that end, “performance is constructed by the management system and the managers” (De Bosscher et al., 2013, p.45).

Within elite sport, Gilson et al. (2001) proposed Peak Performance Organisation (PPO) Theory that basically explains how to organise for sustained peak performance. The latter is defined as, “constantly exceeding organisational best in pursuit of the organisation’s purpose” (Gilson et al., 2001, p.368). Having analysed ten of the world’s leading sports organisations from three continents, Gilson et al. (2001, p.399) alluded to the idiosyncratic nature of many elite sports organisations by suggesting that experiential narrative was a critical mechanism for analysing theoretical construct and implementing change, “purpose replaces vision and mission, flow replaces motivation and inspiration replaces leadership. Storytelling, not change management provides the pathway to peak performance” (Gilson et al., 2001, p.399).

Rynne and Mallet (2014) highlighted the fact that high performance sport embodied a range of complex support services such as management, sports science, sports medicine and coaching that had to be applied to an ever evolving framework. Scott (2009) defined a paradigm for these elements to be placed within an effective high performance management (figure 2.2) model that is athlete-centred, coach-led, and science and medical supported:

![Figure 2.2 Paradigm for Effective High Performance Management (Scott, 2009).](image-url)
Whilst apparently clear and logical in nature, the fundamental criticism of these layers of performance, centres on the second tier which appears contradictory, in the sense that a high performance sports environment invariably seeks to nurture self-sufficient and self-aware athletes. The question of who ultimately manages the high performance learning environment whilst applicable to all sports, often generates an answer that differs between, and within those sports.

It is possible to view both the performance environment itself and the people performing within it as being of equal importance. This highlights the need for a validated model that links the performance environment itself to high performance. This need is further accentuated by performance psychology research that has examined both the team and individual, as opposed to the performance environment that has often been disregarded or neglected altogether (Jones et al., 2009). On a similar theme, business research has often linked success to having high quality individuals, rather than analysing the environment in which they function. What is clear is that undoubtedly the high performance management context of sport is a complex one (Sotiriadou & De Bosscher, 2013) that creates difficulties in measuring success or outputs. In building an argument from a management and development perspective, Houlihan (2013) outlined the complexity of high performance (HP) sport via his environmentally encased model (figure 2.3):
The merit of this model lies in its emphasis on two areas that mould current contemporary elite sport in the guise of commercial and political factors. In addition, it highlights key power relationships and concomitant potential for conflict. For example, systematic governmental intervention into HP sport has occurred for diplomatic as opposed to performance reasons. Socio-cultural factors disaggregate into three fundamental areas that influence high performance management with regard to long standing values, current characteristics and beliefs, and recent transformative events (Houlihan, 2013). This manifests itself in the way that HP sport has become something of an arms race, which has created a situation where sustaining
national identity in relation to HP sport is becoming more of a challenge, alongside a convergence in approaches to HP sport management (De Bosccher, 2007).

However, the most accurate definition of the term high performance sport entails performance that is consistently higher than that of the majority of peer organisations in the same sector over a prolonged period (Jones et al., 2009). This definition differentiates high performance from peak performance and suggests that the former is consistent and sustainable, and relative to, and affected by, the performance of other organisations. It is viewed as the apex of the performance pyramid (Sotiriadou, 2013). This is best reflected in Jones et al.’s (2009) performance environment model (figure 2.4) that promotes a high performance standard that is proposed to be both inevitable and sustainable:

![Performance Environment Model](image)

Figure 2.4 A Performance Environment Model (Jones et al., 2009).

The practical merit of the model reflects its capacity to assess existing strengths and weaknesses of any performance environment, and consequently, highlight strategies for potential improvement. It may also represent a means of objectively assessing predictors of organisational performance. That said, the notion that the model is a
blueprint for inevitable and sustainable high performance is highly contentious in the context that all participants within a high performance environment constantly aim to positively disadvantage their competitors.

High performance sport resembles other service industries with its plethora of multidisciplinary support teams (Reid et al., 2004). Multidisciplinary practice is premised on the idea that individuals and groups work coherently toward the same issue. However, this often occurs in silos that create potential conflict and incoherent working patterns. Whilst multi-disciplinary support teams have been prevalent in service sector industries for many years, paradoxically, their relative success hinges on the fact that, a “climate of cooperation and collaboration needs to be actively fostered in what is potentially an environment that fosters competition and conflict” (Reid et al., 2004, p.205). Moreover, Taylor and McEwan (2012, p.41) alluded to new professions feeling the need to “secure their own occupational space through definition and recognition as the legitimate practitioners within that particular field.” This issue is something verging on a daily occupational hazard that needs to be regulated through coherent performance management.

Fricker (2013, p.xi) highlighted “the need for experts to provide the services and the support required for excellence in competition, especially with sport being recognised as a national enterprise.” Such experts are derived from a variety of support disciplines that often have underpinning links with education. In elite sport, multi-disciplinary teams (M-DT) embody professional practice that may well have “continuous interplay at the level of decision-making and athlete management” (Reid et al., 2004, p.205). Within elite sports environments, conflict can be personal, idiosyncratic, a function of the group dynamic or specific to the sport. However, the subsequent results may create escalating conflict, deadlocks, impasses and group decay (Neeley, 2007). That said, conflict may be predictable within specific types of group climate, structuring and functioning and consequently manageable.

In a sporting context, conflict ranges from the interpersonal, to individual-group conflict (one individual’s needs differ from the group) and more commonly, to a much wider conflict between groups. Multidisciplinary teams (M-DT) can encapsulate differing philosophies, approaches and treatments within one discipline.
Moreover, coaches and managers that integrate data from many sources, often utilise their own opinion to influence the final stage of the decision making process (Neeley, 2007). For example, conflicting strength and conditioning advice may place the athlete in a position where he or she feels they have to choose the appropriate option. If such disconnect becomes prevalent, patterns of athlete-practitioner or practioner-practioner alliance emerge which can create instability within the M-DT (Aldag & Kuzuhara, 2015).

Structural risk factors impinge upon the M-DT in the sense that resourcing may often mirror the coach’s perception of the efficacy of the service. Consequently, competition for resources is created in a highly accountable, short-term contract environment. The problem is accentuated by implicit or explicit pressure that stems from “discrediting an alternative approach in an effort to justify one’s own” (Reid et al., 2004, p.207). For example, if athlete recovery becomes an issue, invariably a resource competitive culture resorts to blame and over-simplification. Further issues may arise through task interdependence and jurisdictional ambiguity (Reid et al., 2004). That is to say, there is a lack of clarity in terms of the weight of relevance of each practitioner in dealing with one athlete, which in turn may create a situation where practitioners feel their contribution is not valued. Integrated performance management data must provide empirical evidence that highlights the value of the many components within an elite sporting environment. The key is to promote the concept of a team and develop the characteristics of high performing teams. The concept of a team involves “three or more people who operate in an organisational context” (Van Vijfeijken et al., 2006, p.98) with mutually accepted performance targets (Weinberg & Gould, 2015) and clear understanding of concomitant levels of accountability (Katzenbach & Smith, 1993).

In profiling relative team performance and outputs, Blanchard (2006) identifies seven characteristics of high performing teams: performance; empowerment; relationships; flexibility; output; recognition; and morale. These criteria highlight the fact that performance measurement will incorporate both qualitative and quantitative factors in order to arrive at a meaningful perspective.
Roles such as Director of Performance, Head Performance Coach, and Coaching Systems Manager, absent in sport governing bodies’ staffing fifteen years ago, are now far more commonplace and deemed critical to achieving successful performance. However, any success must be based on complete role clarity and a precise professional identity that promotes knowledge of other staffing remits without taking on any of their actual responsibilities (Taylor & McEwan, 2012). Thus, an initial target for any M-DT relates to the induction process into the strengths, challenges and key processes of working within a team.

Proactive M-DTs have impacted in sport but their existence raises a number of practical questions: What are their outputs and deliverables? Are they an incidental bi-product (Reid et al., 2004) of larger budgets, imitation, or the need for more individualised athlete support? Are the backroom staff isolated or integrated within the environment? Do the elements function within silos? What constitutes the key elements of a M-DT? These questions have relevance to both participatory and performance environments which by their nature are diametrically opposed but inextricably linked.

2.2 Performance Management.

Having defined the nature of performance, it is necessary to pose a fundamental question: What is sporting success and how do we best manage to achieve it? Generally, performance management relates to the whole environment within business, and the athlete-support or backroom staff within elite sport. Two initial conceptual points prevail within broad definitions of management: defining strategic goals and coordinating resources; and managing the organisation’s relationship with its environment (Houlihan, 2013). Whilst effective management and governance remain a core component of high performance sport (Chelladurai, 2007) the concept of high performance sport management itself has begun to evolve steadily (Arnold et al., 2015). Criticisms and doubts in relation to the efficacy of performance management query whether it is functional or merely fashionable in nature. Moreover, additional doubts stem from a wider science-practice gap in performance management (Smither & London, 2009) that could be resolved in part via high quality research.
Performance management is conceptually underpinned by the three key constructs of goal setting theory, expectancy theory and motivational theory (Atkinson & Shaw, 2006). When designing a performance management process, it has been argued that goal setting and expectancy (individuals alter their behavior in relation to the potential satisfaction in attaining goal; Vroom, 1964) theories which are based upon the premise that humans think in an individual, considered and rational manner (Clarke, 1998) are key considerations. Whilst defining realistic goals (Locke & Latham, 1984) may enhance motivation and performance levels (Mitchell et al., 2000) unfortunately these theories make assumptions regarding the performance management strategy and the context in which it operates. More specifically, cultural differences can make the standardisation of performance management processes extremely difficult (Atkinson & Shaw, 2006).

Performance management has been defined as a complex system (Mondy et al., 2002) through which organisations set goals, determine standards, evaluate work and distribute rewards (Varma et al., 2008). It is a system where managers set expectations, measure results, and reward performance, to ultimately improve organisational success. Armstrong and Baron (2004) summarised performance management as a process that contributes to the effective management of individuals and teams in order to achieve high levels of organisational performance. It is a concept that establishes shared understanding and should be strategic and integrated in nature, in order to provide an accurate and informed direction for raising performance standards. Moreover, it should incorporate performance improvement, development and cohesive behavioural management, in order to avoid an unbalanced focus on measuring performance to the potential detriment of managing performance.

It has been strongly argued that “a systematic approach to performance management is an essential tool for identifying strengths and weaknesses, and revealing the ways in which overall organisational performance can be improved” (Hoye et al., 2012, p.183). The critical factor is that the environmental context plays a major role in the process of performance management (Levy & Williams, 2004). It involves continual measurement and development of individual and team performance linked back to strategic goals that embody recognition and rewards (Smither & London, 2009). However, the issue within elite sport would seem to be how to best balance tangible
against intangible rewards. Applying performance management to a sports context should generate meaningful context-specific performance standards. However, the basis for a successful outcome is identifying what aspects of performance management translate effectively into high performance sport as opposed to blind imitation from business contexts.

Performance management capability has also been summarised as the ability to develop appropriate performance monitoring, evaluation, and control systems to guide managerial actions (Bourne et al., 2002; Kaplan & Norton, 1992). The vital ingredient is that quality assurance can only ever be the starting point, and major focus has to be quality enhancement. In a business context, Wyatt (1994) identified a set of best practices that could facilitate the design, implementation, and monitoring of performance management: internal and external alignment; simplicity; flexibility; decentralised control; a measurement process; greater association between pay and performance; feedback from multiple sources; senior management involvement and employee development. Such best practice criteria suggest that performance management is vital to the sustainable success of sports organisations and should align with key external stakeholders (Hoye et al., 2012).

Whilst performance management structures may be fundamentally important, their actual success links closely to the quality of the people that reside within the system. Thus a people-centred management approach was promoted by Haines and St-Onge (2012, p.1159) who suggested that “performance management engages managers in an ongoing process in which they are expected to get involved in performance planning, coaching, assessment and review.” Therefore, initial definitions would suggest that coherent performance management is a vehicle for implementing two critical aspects in the guise of strategic initiatives and managing people (Lawler & McDermott, 2003). Undoubtedly, elite sporting success has evolved into a multi-component challenge (Arnold et al., 2015) and Fletcher (2001) highlighted the need for research on cultural differences and how they relate to performance management. His study examined a facet of organisational culture that reflects the extent to which employee engagement is critical within an organisation. The findings suggest that more positive performance management outcomes occur when employee engagement is recognised and valued within the organisation.
Any performance management framework must define strategic goals that are paired with related long-term performance goals and annual performance goals (Chelladurai, 2007). Ultimately, outputs and outcomes are the bedrock of performance management. Although some of the aims of performance management are to implement strategy and to foster corporate values, in reality little systematic empirical research has addressed variables of these types in relation to overall performance management effectiveness (Levy & Williams, 2004).

A variety of contextual variables of performance management have been examined and in particular organisational culture, the employee relations climate and the strategic integration of human resource management (Haines & St-Onge, 2012). Fletcher and Arnold (2011, p.234) referred to the “multifaceted nature of orchestrating elite performance involving the development of a vision, the management of operations, the leadership of people, and the creation of a culture.” This research strongly highlighted a need for performance management to embody a clear cultural identity that can be used to facilitate leadership traits within an environment. However, the research base needs to evolve with regard to exploring specific factors affecting performance management (Arnold et al., 2015) and in particular the role of feedback.

MacKie (2015) argued that multisource feedback may provide meaningful outcome measures within a performance management process due to the variety of internal and external feedback issues. As a constructive developmental response (Smither et al., 2005) it has been suggested that “seeking feedback proactively builds on the premise that one can have more control over getting feedback and in being in a position to respond to it by giving up control and allowing others to have a voice” (Hafford-Letchfield & Bourn, 2011, p.503)

The management-measurement debate is raised by Smither and London (2009, p.20) who suggested that “before an organisation can even begin to think about the more lofty practice areas like individual assessment, talent management, or succession planning it must be able to nail the basics of measuring day-to-day performance.” Invariably, performance management precedes performance measurement, and gives the latter a clear contextual meaning (Lebas, 1995). This principle impacts directly on
high performance management which Sotiriadou (2013, p.4) considers to be “a collection of phenomena that consists of management, performance, measuring management performance, and excellence in high performance sport,” and a new branch of both applied and academic learning.

Cruickshank et al. (2015) argued a case for exploring management initiated cultural change in elite sport. The manager’s almost pivotal role embraces the manner in which “leadership is initiated in a high performance sport environment to ensure positive team and athlete culture, teamwork and success” (Sotiriadou 2013, p.1). Moreover, the potential impact of the manager can be as meaningful as a coach with regard to performance outputs (Collins & Cruickshank, 2012). However, there is a marked need to differentiate between high performance management and managing high performance. The roles of High Performance Manager (HPM) and National Programme Director (NPD) are not synonymous due to the greater scope of activity of the former. The latter manages their respective programme, whilst the HPM may manage a whole group of the former. Ostensibly, the broader High Performance Manager roles embrace concepts such as overall accountability for international success, strategic development, policy review, succession planning of all athletes and staff and ultimate leadership.

Three core skills are fundamental to the effective delivery of a HPM role in relation to communication, decision making and impartiality (Arnold et al., 2015). These skills should be applied to both people management and the performance management process inherent the following framework that highlights six clusters of key roles:
Figure 2.5 A framework of high performance manager roles and responsibilities (Sotiriadou, 2013).

This model highlighted the significance of the HPM serving the role of a broker with the external collaborative environment, in relation to partnerships that have an external focus. Such an external awareness will enhance benchmarking procedures that in turn may provide a more meaningful context approach for ongoing reviews and the monitoring of high performance objectives stated in strategic plans to confirm any measureable outcomes.

In summary, Sotiriadou’s (2013) work proposed three key aspects to the High Performance Manager role: collecting data in programmes; monitoring athletes, coaches and other key staff; and assessing results and initiating quality assurance protocols, via coordinated systems. However, what this research fails to identify is that quality assurance is nothing more than a start point, and that the key to driving high performance environments is the concomitant quality enhancement mechanism. Fletcher and Arnold (2011, p.235) argued that an HPM’s overarching role reflects a level of performance leadership and management that translates into “developing, inspiring, and challenging others to look beyond their own personal goals to the delivery of the team’s vision.” O’Boyle and Hassan (2014, p.301) developed this
point and suggested performance management should be promoted “as a holistic approach to performance that spans numerous performance dimensions that may be fundamental to the effective delivery of an organisation’s mission.”

2.3 Performance Management Systems.

It can be argued that performance management systems utilised by HPM’s should be context-specific and context-shaped (Cruickshank & Collins, 2013). Taylor and McEwan (2012, p.39) observed that “performance systems are often characterised by complex and interdependent support networks where coaches and Performance Directors (PDs) are but part of a wider and multifaceted operation which in itself generates newly experienced tensions and considerations”. Performance management systems are often under utilised and also misused (Aguinis & Kraiger, 2009) although any system can potentially provide control and direction (Sotiriadou, 2013). Specific direction stems from a contextual data analysis and decision making function, and Schlafke et al. (2013, p.110) argued that systems should be implemented “to capture and evaluate performance data, and to identify key success factors within an organisation.”

For many HPMs there is an ongoing challenge of how to best manage the individual within a team context, and importance must be placed on promoting an ethical approach to measuring and managing performance that embodies mutual respect, procedural fairness, and transparency of decision making (Winstanley & Stuart-Smith, 1996). These principles should lie at the heart of any performance management system. Brumback (2003, p.167) supported this argument via the concept of tall performance and suggested an ideal performance standard that reflects “consistently competent, ethical and energetic behaviour that always succeeds in producing the best results.”

Ultimately, mainstreaming accountability for ethical conduct into the entire process of performance management is far superior to relying on traditional means like separate codes of ethics, which are usually perfunctory and forgotten. (Brumback, 2003, p.168).
General critical appraisal of performance measurement encompasses a traditional managerialist perspective that refers to lack of success in meeting objectives, inadequate design, undesirable side-effects and bias. More radical critique equates performance management with boundary control that provides flexibility in how the work is achieved, but engenders a feeling of a ‘police state’ in the ‘appraised’ (Winstanley & Stuart-Smith, 1996). This point links to criticisms that indicate performance management is often a one dimensional intrusive control mechanism, or a process that is ‘done to’ the individual and anathema to upward or reverse appraisal.

A performance management system whilst scientific in many facets, actually translates strategy and results into an innovative, evolving process via a framework that defines a strategy and process to enhance performance whilst managing knowledge optimally (Paladino, 2011).

From a broader perspective, systems require inherent flexibility to deal with cultural differences and in defining best practice, reference should be made to global perspectives on performance management. Fundamental to any system design will be the need for balance between measurement and management of performance; problems occur with over-emphasis of the former. Varma et al. (2008) referred to the impact of technology-enhanced globalisation in relation to performance management of differing settings, cultures, motivations and expectations; the primary requirement relates to context-specific understanding. The definition of performance displays significant differences between countries and as a consequence, management and strategic approaches and system designs are equally diverse (Varma et al., 2008). This point is particularly relevant and applicable to high performance rugby union cultures.

An important consideration is whether a system can be designed to improve and create value via identifying critical indicators or key success factors that accurately reflect an organisation’s goals (Hoye et al., 2012). The interface for converting performance management into performance measurement is the design of a bespoke, functional system that in addition to measuring 'what' the performance of an organisation was, 'how' performance was achieved should also be identified in an ongoing manner.
De Bosscher et al. (2006) proposed a Sports Policy Factors Leading to International Sporting Success (SPLISS) model (figure 2.6) that supports HP managers in benchmarking, measuring their own organisation and evaluating national policies.

Figure 2.6 The SPLISS model (theoretical model of nine pillars of sport policy factors influencing international success (De Bosscher et al., 2006).

The SPLISS model was designed due to the absence of a cogent empirically generated theory regarding the factors affecting international sporting success. It is important to consider how an organisation's performance is measured and how it can be communicated to the relevant stakeholders, whilst optimising a limited resource base and benchmarking one’s own environment against others. A good performance measurement system cannot merely constitute a control mechanism that enforces individuals and units into compliance with a pre-defined plan (Kaplan & Norton, 1992). Instead it should form a learning system that effectively communicates and informs. Design of performance management systems may benefit from alignment with educational principles relating to knowledge management and sharing. Long
term benefits of a PMS include: core activities of an organisation aligning closely with the primary aim and goals; the motivational climate setting transparent targets that are rewarded when attained; promoting accountability; completion of a management cycle by monitoring processes, and outcomes against a type of minimum performance standard; and, forcing management to define “quantifiable measures of its key outputs, and eliminate aims and nebulous objectives” (Hoye et al., 2012, p.189).

Hoye et al. (2012) designed a nine point system of performance management by adapting the four basic aspects of Kaplan and Norton’s (1992) Balanced Scorecard. The nine aspects incorporated:

- wins, awards and successes;
- financial sustainability;
- market distribution;
- market size and share;
- customer satisfaction;
- internal procedures and processes (basically, the integrative element of “key links in the value chain, and how each stage is performing relative to the others” (Hoye et al., 2012, p.193);
- product improvement;
- staff development and learning; and,
- the economic, social and environmental impact that the sports organisation exerts on its community.

The merit of this system design is that it is broad and inclusive, and by its nature conducive to a sporting environment. However, it would need to be adapted in a context-specific manner with the organisation and its functional remits. High performing organisations have recognised that an effective performance management system can be a strategic tool to drive internal change and achieve desired results.

System technology contributes to firm performance by supporting the individual, the process and the overall performance management capability (Mithas et al., 2011) of the organisation that offsets unrealistic reactive measures. The key aspect in high
performance rugby union relates to achieving continuous measurement that provides a basis for formative feedback.

An overly financial focus to a performance management system, particularly in a sporting context, can be criticised as it encourages short-termism, lacks strategic focus and fails to provide data on quality, thus failing to promote continuous improvement (Neeley, 1999). The key question at this juncture relates to whether a coherently designed performance measurement system with concomitant key performance measures can be correlated with performance success? It has been argued that many systems for improving performance measurement fail, and resulting performance effects often remain below expectations (Ittner et al., 2003). This raises the recurring issue of whether a system is a functional metric that possesses breadth, strategic fit and performance impact (Homberg et al., 2012; Singh, 2012). High impact practices can differentiate the quality of the performance management process within elite rugby performance environments with regard to both reach and significance.

DeNisi and Pritchard (2006), in their expectancy based motivation model for individual performance improvement, presented a number of further implications for the design of an ideal performance management system that included simplicity, clarity of standards, an inclusive design that enhances understanding of performance through balanced feedback. With regard to design development, Rao (2008) proposed the idea of decentralisation of performance management systems by making it a responsibility of all line managers. Such an inclusive style would have significant value in an elite rugby union environment, where collective leadership and dual managed set-ups are integral to high performance success (Hodge et al., 2014). However, this should be balanced against Haines and St-Onge’s (2012) reference to widespread dissatisfaction with the actual functioning of performance management systems. This incorporates falling short of expectations and not improving organisational performance, underlying misalignment of scholarly knowledge and actual performance management practices (Aguinis & Pierce, 2008).

With respect to the outcomes of a performance management system, a number of critical desirable outcomes have been identified including superior organisational team and individual performance (Armstrong & Baron, 2004) assisting cultural
change, increased feedback via more accurate performance measures, and opportunities for upskilling individuals (Singh, 2012). On the other hand, negative outcomes include: scepticism and resistance to performance management; cynicism due to high expectations related to practical implementation of a PMS; and, stress associated with performance evaluation (Winstanley & Stuart-Smith, 1996). However, substantial research indicates that performance management systems, if well designed and implemented, lead to positive individual and organisational outcomes (Armstrong & Baron, 2004; Smither & London, 2009; Paladino, 2011; Homberg et al., 2012). Due to these research findings, there is a clear need to examine the mutual influence of practices and context on performance management effectiveness in elite rugby union.

The conceptual link between performance management and a system that generates analysis, is information management capability, or quite simply, the basic recognition of what data requires analysis. Schlafke et al. (2013, p.111) proposed the concept of performance management analytics (PMA) that involved “the extensive use of data and analytical methods to understand relevant business dynamics, to effectively control key performance drivers, and to actively increase organisational performance.” Mithas et al., (2011) defined this type of capability in terms of coherent utilisation of the IT infrastructure to provide accurate, timely, and reliable data and information to integral users. They proposed a two-stage model (figure 2.7) based on three organisational capabilities (customer management, process management, and performance management) that generate firm performance (results):
Such a model highlights the critical inter-relationships that exist between information, analysis, and performance management. It also acknowledges the fact that the management of IT assets and information flows are prerequisites for tangible success. It was designed with the intention of highlighting the key organisational capabilities and processes that might mediate the links between information management capability and outputs (Mithas et al., 2011).

Whilst “performance management systems are pervasive worldwide, cultural differences affect how such systems are designed and implemented, as well as their relative effectiveness” (Aguinis et al., 2012, p.385). However, across all cultures, and from an elite sports perspective, the process should provide data and information that connect an environment to emerging performance questions.

In summary, the key research has indicated that information management capability heavily influences performance management as well as process and customer management (Mithas et al., 2011). The critical implication here relates to the fact that
information management capability underpins and enables a sporting organisation’s capabilities, in a manner that is sometimes not recognised by those applying it.

2.4 Change and Performance Management.

Although under-researched, elite sport may constitute a meaningful perspective on change management (McGaughey & Liesch, 2002). It has been suggested that “the effective and efficient implementation of change is often required for both successful performance and management survival across a host of contemporary domains,” (Cruickshank & Collins, 2012, p.209). By its very nature elite sport is primarily concerned with winning and change, and effective performance management systems may be used as an accelerator of the latter. It has been suggested that there exists a basic inability of academic change literature to inform practice that invariably creates a rift between the theorists and change agents themselves (Young, 2009) and there is no universally accepted definition of change as it is not a distinct discipline (Burnes, 2009). At a simple level, change could be perceived as any alteration of the status quo (Bartol & Martin, 1994). However, the potential nature of change is better reflected in Strickland’s (1998) view that it may embrace transformation, development, metamorphosis, transmutation, evolution, regeneration, innovation, revolution and transition. This reflects the pluralism within change, and the fact that it is a trans-disciplinary concept that has historically incorporated economics strategy, history, psychology, philosophy, sociology, management and organisational behaviour (Hughes, 2006). Thus, change possesses a natural aligned, identity with the similar trans-disciplinary concepts of performance, performance management, and high performance sport management.

Change is a fact of life within human systems generally and sports organisations more specifically. Siegal et al. (1996) suggested that contemporary organisations are often enveloped in rapid rates of change as they attempt to cover the escalating demands of both domestic and global markets. From an outcome perspective, Hughes (2006) considered that change processes could be applied to three main levels that incorporated organisation, group and individual. This approach supports Burnes (2009) who highlighted three broad schools of thought with regard to change management: individual perspective, group dynamics and open systems. Within elite
sport, change management would need to translate clearly to the individual, group and organisation in relation to both the process and outcome of situational (new people, systems and policy) and transitional (psychological process of people coming to terms with change) elements (de Caluwe & Vermaak, 2003). Balogun and Hope Hailey (2004) argued that change may be facilitated if not controlled, yet it is clear that the extent and rate of change can often be manipulated more directly than this implied. Effective change management is often reliant upon a people-centred approach that emphasises the key requirement for emotionally self-aware, analytical change agents (Goleman, 2005). Young (2009) discussed variables that can be applied to analysing change including size and speed, nature of event sequence, continuity and degree of complexity and uniformity.

Given that seventy percent of most change interventions fail (Wheatley, 2006) it is necessary to establish which key factors affect change most directly (Young, 2009). Cruickshank et al. (2015) examined culture change within performance departments and suggested, “an effective approach is deemed to be based on an initial evaluation, planning, and impact phase that is enacted alongside the enduring acquisition, negotiation and integration of internal and external stakeholder perceptions.” This argument took into account the work of Cruickshank and Collins (2013) who concluded, “elite team culture change is not focused on changing a whole sport organisation……but instead a critical and distinct part……which may then impact upon the others.”

As Gilmore and Gilson (2007, p.412) stated “recent change management theories now typically include not simply what has been done, but how such activities should be successfully carried out.” Lawrence (2015, p.233) indicated that “facilitated interactions” involving reflective political dialogue and power were central to the process of making sense of emergent change.

A model of change may constitute a logical framework, but frequently ignores the fact that change is a process and not a hypothetical parameter. For example, Boddy and Patton (1998) outlined a model that emphasises that change requires clearly defined objectives as a focus, possesses a number of inter-dependent facets, and relies heavily on people and culture to deliver an effective and efficient end product. In
contrast, Cummings and Worley (2000) proposed a model (figure 2.8) that outlined the systematic and cyclical nature of the change process and the need to re-evaluate consequences throughout the organisation by backward chaining from the actual change outcomes:

![The Change Cycle (Cummings & Worley, 2000)](image)

Figure 2.8 The Change Cycle (Cummings & Worley, 2000).

In terms of individual change within elite sport, there are broadly four approaches: a behavioural approach in terms of how one individual can influence another’s behaviour through rewards and punishments; the cognitive approach that creates results through positive reframing; a psychodynamic approach involving understanding and relating to the inner world of change; and, humanistic psychology which encapsulates development and growth in maximising potential and emotional intelligence (Goleman, 2005). As a manager of change, or change agent, there is a requirement to be sensitive and empathetic to the situation to be fully effective (Cameron & Green, 2009).

The two broadest philosophies of change management refer to continuous and punctuated equilibrium (Balogun & Hope Hailey, 2004) but specific categories of organisational change highlight the potential for more strategic approaches or combinations of approach: revolutionary v evolutionary; continuous v discontinuous; episodic v continuous flow; transformational v transactional; strategic v operational; total system v local option (Burke, 2002). This extensive research base emphasises the critical factor that the change itself must be context-specific (Hughes, 2006) and avoid the over-simplification derived from formulaic models. With regard to provision of a structure and a base for coherent change, Balogun and Hope-Hailey (2004) defined a diagnostic framework (figure 2.9) that they referred to as the kaleidoscope of change:
The merits of this model embraced the notion of dynamic evolving configurations that link coherently. In practical terms, the outer ring constitutes the strategic context for organisation, whilst the middle ring identifies the potential components of the change context. Finally, the inner ring offers a menu of design choices available to change agents. Change is invariably initiated by people and the need for a people-centred approach is at a premium (Balogun & Hope Hailey, 2004). Relative effectiveness of change will invariably hinge upon the relative levels of individual and organisational empathy. In addition, it is often the management of the process elements of organisational change that are least considered during change initiatives (Siegal et al., 1996) which reinforces the relevance in applying a kaleidoscope that also proffers the critical questions in elite sport of whether the environment possesses the organisational readiness to change and understands why. This model is clearly the most relevant to elite sport and flexible and functional in terms of its structure and process.

In relation to rate of change, Burnes (2009, p.351) viewed the incremental model of change as “a process whereby individual parts of an organisation deal incrementally and separately with one problem and one goal at a time.” Such a conceptual approach in sport, may promote a silo mentality that creates an unintended disconnect within an organisation which is a common practical outcome within a rugby union environment.
However, such an approach that occurs via successive, limited and negotiated shifts (Pettigrew et al., 1992) is a prevalent, and a successful strategy within Japanese companies. Burnes (2009) views this strategy as a compromise approach in the sense that it potentially offsets both inertia stemming from fine-tuning and brutal, rapid corporate transformations. However, the historical reality may involve long periods of incremental change juxtaposed with brief periods of rapid revolutionary change (Mintzberg, 1978).

From a critical perspective it is extremely important to identify factors that lead to the failure of change interventions, and there are two that are common: inappropriately conceived future states and resistance by organisational members. From an operational perspective, faulty implementation strategies during ‘ongoing’ transition periods and a basic lack of knowledge regarding change management by managers and executives detracts substantially from the end product. In some cases, the cultural content of the change initiative itself (wrong values applied to the wrong environment) and a fundamental lack of shared values undermines worthwhile interventions. However, at the heart of many failed change strategies is poor management of the change process itself and a simple lack of desire to implement change in the first instance (Cameron & Green, 2009).

In essence, the literature base underpinning change management is consistently fragmented. Cruickshank & Collins (2012, p.225) argued that change management “is both an applicable and highly pertinent construct for the optimisation of elite sport team performance.”

Gilmore and Gilson (2007) explored seismic change in performance as opposed to coercive leadership and concomitant radical internal restructuring. Understanding the context-specific change needs to be monitored in relation to any strategic and business alterations. Their research advocates an asset maximisation approach rather than traditional processual or design-based approach to change management and argues for holistic incorporation of strategic decision making. By implication such approaches would strengthen the strategic base to high performance rugby union environments. At a national governing body level, research indicates that “both the
planned and emergent approach to change are effective ways of bringing about change” (van der Voet, 2014, p.380).

2.5 Performance Analysis.

Identifying both the components of performance, and a performance management system itself, provides the framework and focus for subsequent performance analysis strategies. O’Donoghue (2010) expressed a view that any research where actual sports performance is being analysed counts as performance analysis research: measurements such as heart rate responses taken during actual sports performance; qualitative observational research and self-report if used with respect to actual sports performance; and techniques that are analysed in a laboratory situation, may still count as performance analysis of sport. This definition and conceptual summary best encapsulates the true nature of the discipline, as it highlights the fact that successful sports performance analysis has real potential for multi-disciplinary application, and is rarely the result of single cause and effect.

Initial questions for any sports performance environment include: What types of data exist? How are these data used? Does the information either inform or impact upon performance? What are meaningful performance trends? How can the data be analysed to evidence performance progression? One certainty is the gap between winning and losing in modern day professional sport diminishes annually, and sport science support is now evident across all professional and elite level sports due to the notion that it can help to deliver sporting excellence (Carling et al., 2009). Within elite rugby union environments Performance Analysis (PA) is prevalent, and firmly established within the area of athlete support provision.

Performance Analysis is aligned to, and a constituent element of, the coaching process (Groom et al., 2011). With the coaching process based upon analysing performance outputs (Brown & Hughes, 1995) all disciplines will analyse performance via a different lens but with the overriding common objective to improve performance (O’Donoghue, 2010). There is an additional contextual link between coaching and performance management as outlined by Thorpe and Holloway (2008, p.88) that implied a critical need for feedback,
The basic aims of performance management are to share understanding about what is to be achieved, to develop the capacity of people and the organisation to achieve it, and to provide the support and guidance individuals and teams need to improve their performance.

From a wider perspective, Sampaio et al. (2013, p.1) argued that the “aim of performance analysis is twofold: to advance scientific understanding and to assist sports practice by providing the coaching process with augmented information.” An over-riding justification for PA is to make an informed decision by those seeking to enhance sports performance (O’Donoghue, 2010) and in doing so balance the long standing subjectivity inherent to coach and educator observations that have limitations with regard to reliability and recall (Laird & Waters, 2008). The most compelling definition of PA referred to “the investigation of actual sports performance or performance in training” (O’Donoghue, 2010, p.2) which highlights the ecological validity of the data generated.

In general terms, PA “is now widely accepted among coaches, athletes, and sport scientists as a valuable input into the feedback process” (Drust, 2010, p. 921). Performance feedback is an important part of many organisational interventions, and leaders frequently assume that giving employees feedback about their performance increases the likelihood that performance will be enhanced. Feedback plays an essential role within the sports coaching process and has been recognised as a vital part of skill acquisition (Jenkins et al., 2007) and may also be a key factor affecting learning potential and actual performance. However, despite the prevalence of feedback mechanisms in management interventions, the specific feedback is not always as effective as is typically assumed (DeNisi & Kluger, 2000) and as O’Donoghue (2010, p.8) stated “rather than assuming that supporting the coach with feedback will enhance performance, we need evidence to support this theory.” In the context of elite rugby union, performance analysis feedback is delivered through a range of outputs including tactical analysis, technique analysis, reviewing technical effectiveness, evaluating coach behaviours and integrated time-motion analysis.

Feedback can be defined as involving “sensory information from a particular movement” (Maslovat & Franks, 2008, p.1). However, it has been suggested that
extrinsic feedback may promote optimal performance development via accelerated learning, and may be a complementary adjunct to intrinsic feedback. In addition, accurate formative player feedback is critical to performance development (Weinberg & Gould, 2015) and the athlete development pathway (Biddle et al., 2001). Performance Analysis has the potential to provide “objective description of sports behavior action variables in practice and, or, competition” (Sampaio et al., 2013, p.1). However, it is vital that feedback provision is utilised economically which dispels the myth that augmented feedback from a coach should be frequent, detailed and immediate (Hendry & Hodges, 2013). At any stage of the athlete development continuum, high frequency feedback may create an undesirable dependency (the guidance effect) that detracts form the ability to perform effectively when extrinsic feedback is limited (competition arena). The precision of the feedback is of paramount importance and as the athlete’s skill level increases so must the precision of the feedback (Maslovat & Franks, 2008). Performance analysis is often a ‘turn-key’ solution to delivering accurate and reliable feedback and in doing so can define the performance reality.

Numerous models of performance analysis in coaching have incorporated feedback including those models that link to the nature of the sport (Mayes et al., 2009; Lees, 2008; O’Donoghue, 2006) the performance level of the athletes and application of technology (O’Donoghue & Mayes, 2013). A key decision for a coach or performance manager is how and when feedback should be presented. Underpinning considerations include: experience of the athlete and skill complexity; instructional feedback is more effective when athletes request it, as opposed to frequent provision; and, is feedback a requirement or should athlete’s be allowed to use sensory information to establish discrepancies themselves? (Janelle et al., 1997).

That is to say, can a performance analyst support the coach’s ‘skills-set’ in terms of leadership, relationship management, political awareness and coordination? The non-negotiable element in elite rugby union environments relates to the fact that key performance decisions cannot be underpinned by incomplete intelligence, and athlete confusion in relation to who actually makes those decisions. Therefore, the performance analyst may constitute a secondary form of prevention to such obstacles,
and as a consequence, support and improve the overall performance learning environment.

A strong argument relates to the importance of involving the coach and athletes in the development of a performance analysis system to ensure that all the requirements are met and that there is co-ownership of the system (O’Donoghue & Longville, 2004). Moreover, “coach-athlete engagement can be seen as a partnership within a vision of holistic structured support” (Taylor & McEwan, 2012, p.39) which reinforces the need for integrated performance analysis. It is known that coaches take on a multi-dimensional role but the development of an athlete’s technical, tactical, mental, physical or biomechanical attributes by the coach over a period of time can be seen as the basis of the coaching process (Cassidy et al., 2009).

With regard to process, Pohl (2001) discussed a translation journey from data to information and through to knowledge. Such processes are in-keeping with both performance analysis and coaching process skills. The model Pohl (2001) proposed concluded with data interpretation, so within performance analysis this equates to ultimately integrating coach and athlete understanding to provide an accurate performance context for the data (McGarry, 2009). Moreover, coaching knowledge may accelerate the significance and reach of the impact of the data and provide the key interface for integrating theoretical and experiential knowledge. However, such knowledge requires effective management and Carroll et al. (2003) argued that knowledge management should embrace three levels of knowledge flow: tangible to intangible (team and individual performance indicators); activity plans (performance plans and targets); and, material prototypes (innovation). However, it appears logical that performance feedback should, and arguably, must align with the athlete’s Multiple Intelligences that encompass: verbal and linguistic; visual and spatial; kinesthetic; musical and rhythmic; mathematical; interpersonal; and, intrapersonal (Gardner, 1983).

Clearly there are routine stages of performance analysis that occur once a system has been established and accepted by those using it (O’Donoghue, 2010). In debating the relative merits of both hand notation and computerised analysis, the compelling factor is that the method or combination of methods, must actually meet the coach and
performance needs as precisely as possible. Computerised performance analysis systems have been developed to create information outputs on which objective feedback can be based. The use of computerised performance analysis systems, make feedback information more manageable, efficient and specifically adjusted for each individual’s need (Lieberman & Franks, 2008). The development of computerised analysis software, such as Sportscode (Sportstec, Warriewood, NSW, Australia) Nacsport (Nacsport, Las Palmas, Spain) ProZone (Prozone Sports Ltd, Leeds, UK) and AMISCO (Amisco, Nice, France) has widened access to objective sports analysis mechanisms (Carling et al., 2009) and has been applied within individual and team based sports (Jenkins et al., 2007). However, a potential fusion of both quantitative and qualitative techniques in performance analysis may result in a more meaningful and realistic outcome whilst the real key to improved performance may lie in establishing at the outset, an integrated link between performance management and performance analysis.

Blaze et al. (2004) investigated the prevalence and perception of performance analysis within English Premier League football clubs, and discovered that seven out of the ten responses were scored as ‘very much’ for performance analysis being able to improve performance. Unfortunately the study did not extend to investigating how performance analysis might improve performance. Hughes (2008) identified five purposes of notational analysis that included tactical analysis, technical effectiveness, movement analysis, coach/athlete education, and modeling of performance. Carling et al. (2005) reinforced five key different aspects: technical; behavioural; physical; tactical; and critical aspects. In this context, the application of critical aspects and how the feedback may be delivered would be linked to the decision of the coach. Notation and biomechanics are the historical bedrocks of performance analysis, and have both impacted upon the coaching process (Maslovat & Franks, 2008) and were perceived to share a number of common facets:

(i) the aim of enhancing performance; (ii) the analysis of movements of sport performers; (iii) the extensive use of information technology and communications equipment; (iv) the provision of objective feedback to sport performers and their coaches; (v) the importance of producing valid and reliable data; (vi) the need to normalise, scale or non-dimensionalise data; (vii) the use of ‘performance parameters’ or ‘performance indicators’ that are derived from theoretical models of performance; and (viii) the opportunity to
exploit and apply more fully recent developments in artificial intelligence (Glazier, 2010, p.626).

An obvious criticism of such issues is that they are not unique to notation and sport biomechanics (a slightly forced symbiotic relationship) but possess wider application to other sport science disciplines. Performance analysis functionally draws upon several science disciplines and has the distinct potential to adopt a multi-disciplinary approach to investigating sport performance (Sampaio et al., 2013).

Mackenzie and Cushion (2013) correctly stressed a core concept of reductionism within performance analysis that is embedded in the positivist paradigm; essentially the attempt to understand the functioning of the whole through an analysis of its individual parts. Such a strategy perceives human behaviour as measurable, past orientated and thus predictable and controllable (Smith & Stewart, 1999) which has limitations. An initial fundamental question concerns where performance analysis sits conceptually. A common criticism over many years relates to notational analysis data tending to be retrospective and unique to particular matches, lacking in experimental design, and constituting a method as opposed to a scientific discipline (Hayes, 1997). Sharp (1997) argued that notational analysis is simply a research tool for gathering descriptive information; specifically, a collection of tools for observing, monitoring, collecting data from dynamic and complex situations (such as sports performance). He suggested that the debate needed to focus on the purposes behind the method (e.g. applied sport or coaching science). Some have extended this argument to suggest “that much of the work being conducted in performance analysis lacks sound theoretical rationale and, consequently, is descriptive rather than explanatory” (Glazier, 2010, p.628) which in some instances has been a very fair criticism. Hayes (1997) considered that real-time intervention predates notational analysis and there is little, or no, evidence that notational analysis helps coach decision making in the sense that tactical changes can be initiated in supreme ignorance and in isolation from notational analysis. However, eighteen years on, this argument is somewhat inadequate when compared to the current reality of elite rugby union where real time analysis is both the norm and expected service provision for the coaching team.
James (2007) explained that the most common form of performance analysis data is from the media, although the reliability of the data has been found to lack accuracy (O’Donoghue, 2007; Worsfold & Macbeth, 2009) and clarity. This issue is certainly applicable to elite rugby union environments, and media data constitutes a performance management challenge for all stakeholders. PA research has apparently reflected a further lack of clarity through the notion that it is a systematic unproblematic process where assumed knowledge is conveyed from coach to athlete, without directly acknowledging the complex and social aspects involved (Cushion, 2007). The research has attempted to establish causal relationships between isolated performance variables that can predict outcomes. The main limitation involved linking “an independent variable that is directly associated with match outcome in isolation without acknowledging potentially confounding variables or providing sufficient context to the variable itself” (Mackenzie & Cushion, 2013, p.640). Whilst this commentary has some relevance to poorly executed PA research, it lacks wider application due to PA outputs that fully link key performance indicators to pertinent underpinning action variables (Mackenzie & Cushion, 2013, p.640) went on to argue “PA research consistently reduces the complexity of performance by presenting it in overly descriptive, systematic and unproblematic way.” Once again, there are some examples of poor research which corroborate this view but this becomes invalid where quality PA research has a clear context that is applicable to coach and athlete, and impacts directly upon performance itself. Perhaps the most compelling criticism highlights situations where PA has used variables out of convenience rather functionality (Mackenzie & Cushion, 2013). For example, in rugby union environments, losing performances have been accompanied by a profile that exhibits a high rate of success across key performance indicators despite a negative outcome. Invariably, this has resulted in a revision of the metrics being applied to the analysis process.

It has been suggested that PA research can enhance career prospects of analysts and biomechanists but may not enhance performance from a coach or athlete perspective, whilst performance indicators promote rudimentary understanding of human motor performance (Glazier, 2010). Naively, this has led some critics to conclude that PA constitutes merely an “apparent dumbing down of the theory and methods of biomechanics” (Glazier, 2010, p. 625); and whilst this may have some relevance
previously, it is less relevant currently. McGarry (2009, p.129) succinctly summarised the value of context when stating that presently sports behaviours, such as those identified through code windows, tend to focus primarily on description although “in order to gain a more complete understanding of the sport under investigation we require service from the two missing servants; why and how.”

Mackenzie and Cushion (2013, p.640) felt,

the test of the utility and value of research to a community is the extent to which its findings are (a) used as recommended practices in the preparation of practitioners, and (b) incorporated by practitioners in everyday practice.

This research constitutes a balanced and honest appraisal that PA may not always be effective, although ironically, PA actually fulfills their main criteria with regard to utility and value. Borrie (1997) considered that many criticisms of PA may apply equally to other fields such as clinical medicine, social science, educational research where observational analysis is applied. He argued that notational analysis could determine general characteristics of sports performance as well as specific characteristics of individual performances. In terms of tangible delivery, predictive models of sports behaviour have been developed, whilst real-time analysis and feedback systems exist; quite simply, ample evidence exists that indicates PA is research (O’Donoghue, 2001) that adds impact to elite sport, and is hugely valuable if not always valued. The latter highlights a consistent theme where PA has searched for an identity and credibility that equates to achieving a standalone status. Moreover, it can be argued that as one of the most significant elements in an athlete support network, it needs to position itself at the forefront of sports science rather than the periphery (Lyons, 1998). In addition, and most importantly, it may constitute the critical multi-disciplinary catalyst for an inter-disciplinary performance outcome, or the sine qua non of the performance continuum.

There has been exponential growth in the amount of performance analysis research (Lago, 2009) and its application in the field. O’Donoghue (2010, p.xiv) asserted that “the role of the performance analyst working with coaches and athletes is to help enhance performance through a cycle of observation, analysis, reflection, planning and action.” The issue is whether this applies to all analysts in all sports in practical
output terms. The evolving nature of PA is reflected in significant areas for future research that include athlete recruitment and opposition analysis (Groom et al., 2011), dissemination and use of PA research in applied settings, and crucially the impact PA has on athlete learning and information retention as part of performance feedback (Mackenzie & Cushion, 2013). Perennial targets should encompass sports behaviours and sports outcomes (a potential support for talent identification and development; Davids et al., 2010) and the significance of contextual sports behaviours (McGarry, 2009). In addition, team interactions and game behavior, and methods for cutting down the volume and redundancy of the data being collected should be explored. It is necessary to develop a more inclusive research agenda that expands beyond high performance into the long term athlete development pathway, and in doing so promote a greater multi and interdisciplinary perpective, exploration of the coach-analyst relationship, and data visualisation techniques. Such areas will translate into a theory-practice bridge that has direct relevance to performance contexts. For example, the phenomenon of home advantage in sport has been well documented over the past few decades and is hugely relevant to a number of sports. The extensive findings incorporate home winning percentages of approximately 60% across all tiers of English and Scottish soccer (Pollard & Pollard, 2005). Significant home advantage has been found in boxing (Balmer et al., 2005) and tennis that has served to emphasise the advantage for male competitors playing at home (Koning, 2011).

The analysis of tactics is one of the dominant areas in performance analysis (O’Donoghue, 2010), and is essential when depicting match results in, for example, soccer (Carling et al., 2005). In addition, understanding tactics in a team sport environment, allows the analyst, coach and athlete to better enhance coaching outputs through the analysis of performance (James et al., 2002).

Sports performance variables are unstable with opposition quality being the main source of player variability (Franks & McGarry, 1996). However, opposition effect can be modelled via a regression-based approach that allows performance indicator values to be compared with expected values for the given strength of opponent. In essence, models are for expected performance indicator values given the world rankings of the players involved in the match. Residual values can then be defined to determine how much better or worse a player did than expected for each performance
indicator. The residuals can be mapped onto percentage evaluation scores that address opposition quality, and as a consequence, these interpretation scores can be used to interpret individual performances, determine performance profiles and general trends in performance.

One criticism relates to the same model for a given performance indicator being used to evaluate performances against any opponents; however, this is the most practical solution at present, and as an example, a performance profile of technical effectiveness in a team game has content validity if it is composed of technical effectiveness variables for all of the key skills of the sport (O’Donoghue, 2010). Both strategy and tactics are related concepts in sports performance; the former is typically planned in advance of action, considering a great deal of available information, whilst the latter involves more moment to moment decisions made under time pressure as situations arise (Hibbs & O’Donoghue, 2013). Although strategic and tactical decisions are mental processes that cannot be directly observed, patterns of observed behaviour can be used to make inferences about the decisions that have been taken. Whilst coaches invariably design future decisions and actions via information gathered from observations based on past behaviours (McGarry, 2009) logical, performance-specific inferences about tactics and strategy can be arrived at via the application of a balanced model (figure 2.10):
The main benefit of this model lies in its ability to negate selective abstraction (Charlesworth 2001); in performance terms, the fault of seeing what we want to see. It also highlights the fact that sports actions observed may not be of equal merit, the context of behaviours of players with and without possession is vital, and in team sports there is a balance between rehearsed play and improvisation. Interestingly, rehearsed play can be predictable or unpredictable and is possible when players have a shared understanding of the tactics used and their specific roles within them (Hibbs & O’Donoghue, 2013).

McGarry (2009) stressed the importance of the interface between theory and practice of PA as it supports two key research approaches: a deductive research tradition involving the development of an idea from an existing theory which can then be tested through the collection of data and then applied to practice (i.e. theory to practice); and, an inductive approach that first collects data, then analyses it (practice to theory) to develop a theory, model or explanation (Gratton & Jones, 2010). Developing methods like performance analysis which link theory to practice may generate a greater awareness of learning from practice, which allows practitioners to
more effectively generate experiential knowledge which is required for more effective practice (Knowles et al., 2005). Practical application may also drive and generate theoretical constructs (Jarvis et al., 2003) as performance analysis demands the creation of transferable process skills. The key is taking a simple yet focused approach by being outcome orientated in the approach to, and application of PA; if the outcome being generated does not impact upon an aspect of performance, then why measure it in the first place? A critical view of technological advancement helps avoid excessive and invariably redundant PA outputs.

Kolb (1984) proposed the concept of experiential learning theory whereby the process of applying the theory in practice facilitates learning. It has been proposed that learning should integrate two different processes to be most effective; ‘external interaction’ with the ‘social, cultural and material’ environment and an “internal physical process of acquisition and elaboration” (Iilleris, 2003, p.396). These two processes can occur separately but it is argued that the convergence of the methods enhances the learning process. Resnick (1987) and Brown et al. (1989) proposed that when learning occurs in the realities of the situation, implicit knowledge and task-specific competencies are gained by the learner which are integral to problem-solving strategies. Smith and Betts (2000) found that learning through experience, often described as ‘learning by doing’ is frequently acclaimed as a superior form of learning. Arguably, PA can promote a balance of opportunities for what Schön (1983) termed reflection-in-action (a process undertaken during practice that may influence decisions and change learning) and reflection-on-action (retrospective processing of experiences). From an educational perspective, reflection has been identified as a key process involved when assessing aspects of learning from experience (Irwin et al., 2004) and this has equal relevance to performance analysis. Reflection has to ultimately be self-directed and an individualised process and outcome (Cropley et al., 2007). During the past two decades, the focus on reflection, or on becoming a reflective practitioner, has gained popularity in a wide variety of contexts including education, graphic design, art, engineering, medicine and increasingly in sports coaching (Werthener & Trudel, 2006). The major advantage of video within reflection is that it reduces the emphasis on memory and allows for a greater range of behaviours to be analysed. Practitioners have suggested that video reflection identifies incidents that have occurred during a session, highlighting errors that had gone
unnoticed before (Jones et al., 2004). Reflection transforms experience and theory into knowledge and enhances the transfer of learning (Macaulay, 2000). Significantly, Smith and Betts (2000) identified that the quality of the learning is not dependent on the quality of the experience, but on the quality of the process of reflection. Facilitated reflective practice involving the experiential component aims to provide opportunities to transfer the theoretical skills developed to a real environment (Fleming & Martin, 2007). Basically, practical knowledge replaces abstract theoretical constructs that are often meaningless without a context for application (Edginton et al., 2009).

The need for feedback is especially pertinent in a team sport such as Rugby Union because many things can be happening on the pitch at any one time, making it very difficult for an observer to view and digest everything that is occurring. Rugby teams are constantly exploring new techniques and methods to gain an edge over opposition (Prim & van Rooyen, 2013). Performance analysis and video feedback are now being utilised by most professional clubs to try to gain an advantage over their opposition. Recently the ‘contact area’ has become an increasingly important area within Rugby Union, with teams trying to come to terms with the recent law interpretations. Numerous studies have reported the increasing importance of the ruck area in the ‘modern game.’ Eaves and Hughes (2003) suggested that the game has shifted towards a faster, ruck dominated game involving more phases of play. This theme was further supported by Eaves et al. (2005) when they found that the frequency of rucks in a match had increased since the pre-professional era, due to the improved organisation of teams’ defence, which remains true today. Van Rooyen et al. (2006) investigated whether there was a relationship between the frequency of rucks formed by a team and the relative success or failure of that team in the 2007 Rugby World Cup. It was found that during the group stages, the team with the greatest number of rucks won the majority of matches, however during the knockout stages the opposite was found. These findings highlight the importance of the ‘contact area’ to the outcome of matches and it is clear that the ability to retain the ball or to ‘turnover’ opposition ball has a serious impact on a team’s ability to win rugby matches.

The ongoing developments in rugby union have resulted in an increased demand for technical support to aid the coaching process. The developments in behavioural
analysis, via match and notational analysis, has become a large part of this process (Lyons, 1998). Although there has been research in some areas of rugby union, like patterns of play and physiological demands of positional work rates of individual players (e.g., Deutsch et al., 2002; Duthie et al., 2003; Cunniffe et al., 2009) there are still many areas that require further investigation and in-depth research. Rugby union, similar to other football codes, is a complex sport for performance analysis. Set-piece moves (scrum and line-outs) and match activities such as rucks and mauls present a set of problems for match analyses unique to rugby union (Lim et al., 2011). It has been suggested that researchers should focus on the development and utilisation of performance indicators (Hughes & Bartlett, 2002). Further studies have been carried out to look at performance indicators in professional rugby union (Jones et al., 2008; James et al., 2005). However a limitation of using key performance indicators to look at performance links to the assumption that all athletic behaviour is invariant. Rugby Union is a game with complex chaotic situations (Greenwood, 2003) and therefore this needs to be taken into account when analysing performances to predict future play.

An ongoing challenge in elite sport involves the need to compress unwieldy multi-disciplinary data sets into meaningful individual and group performance feedback; Gardner’s (1983) definition of a synthesising mind (selecting key information from copious amounts of data). One potential solution is a performance analysis dashboard that equates to a form of knowledge generation and an all-embracing fusion of key performance data trends. McCosker and Wilken (2014, p.163) considered that visualisation should be explored as an “actualisation of new ways of problem posing.” In other words, in mining big data sets, the key formative outcome should relate to generating knowledge via context-specific performance problems. The condensing of salient information to one screen enhances what Few (2006) referred to as the simultaneity of vision; viewing all data together facilitates comparative analysis and possible recognition of key cues. A dashboard approach may also enhance an organisation’s ability to arrive at accurate, informed and rapid decisions by integrating data from all of its constituent parts on to a single centralised platform in order to obtain an accurate, holistic view of performance.

In summary, future improvements in elite sports performance may well continue to rely on improved technology and coaching (MacDougal et al., 1984). The latter relies
on coaches being better developed scientifically, and more effective in their use of performance management and analysis systems. Performance analysis technology may well potentially act as an accelerator, but should never constitute a centre-piece, for successful performance.

The last chapter examined the literature on performance management and analysed the additional concepts of change management and performance analysis. The performance literature has clear implications for understanding how performance management may impact upon elite sporting organisations. This chapter explores the research design in terms of the actual method employed (what I did) and the concomitant methodology (or justification for the method that was applied) itself. The aim of the project was to undertake a performance management and analysis case study intervention that focused on change. Due to the lack of previous research in this area, within an elite rugby union context, an exploratory approach was undertaken. The case study was an appropriate method as it aimed to generate comprehensive information and understanding of a single case. Underpinning the case study were two unstructured interview studies, one that informed the concept of performance management in elite rugby, and the other that explored the nature of performance analysis in elite rugby.

The chosen research design was best suited to an inductive research approach where theoretical development arose after the qualitative data collection. The chapter initially examines the qualitative research tradition and then goes on to discuss some key evaluative techniques employed in the chosen method. The chapter also discusses the areas of reflective practice, the nature of the participants and some issues relating to ethics and risk. The next sections deal with data collection (interview and case study intervention) reliability and trustworthiness. The chapter finishes by presenting an outline of the data analysis techniques applied within the thesis.

3.1 Initial Considerations

In defining the nature of the research design it was important to reflect upon two broad approaches to the nature of knowledge generation; specifically, positivism and interpretivism. In general terms, positivists align with the tenets of the natural sciences and consider behaviour as a measurable and explainable concept. Hennink et al. (2011) synthesised some fundamental criticisms of positivism that relate to the assumptions it makes with regard to objective measurement that separates the
researcher from the researched, its inability to recognise the interactive and co-constructive manner of data collection from a human dimension, and the failure to recognise the contextual influences on human experiences (due to an over-reliance on capturing facts). In contrast, Guba and Lincoln (1995) argued a case relating to the subjective nature of knowledge and the possibility that multiple forms of knowledge can coexist and be of value. Moreover, knowledge that is based on experience can, by its very nature, be personal (Schwand, 1997). The interpretist approach constitutes an alternative method that “seeks to understand peoples’ lived experience from the perspective of people themselves; the emic or inside perspective” (Hennink et al., 2011, p.14). Basically, the focus is on understanding subjective experience and the context of social actions (Snape & Spencer, 2003).

In essence, interpretivism and positivism are the underlying paradigms of the qualitative and quantitative research traditions representing a fundamental debate in the production of knowledge. This is particularly the case in relation to a methodology, where the terms can be confusing, divisive and limiting (O’Leary, 2009). Quantitative and qualitative approaches essentially differ in their ability to ensure the validity and reliability of their findings, although this difference may relate more to degree than type. The problem of the relation of a piece of research to some presumed truth applies to the conduct of any form of social research. Quantitative and qualitative research has been presented as opposing fields, but their respective frameworks can merge. Both can also be combined in a project, and can complement each other. In simple terms, the quantitative paradigm concentrates on what can be measured; collecting and analysing objective (often numerical) data and is based on a belief that society can be studied as a natural science. In essence, it is predicated on scientific method, hypothesis testing, deductive logic, objectivity and quantification (Hennink et al., 2011). However, qualitative data can be used to support and explicate the meaning of quantitative research (Bryman, 2012). Moreover, O’Leary (2009) alluded to a qualitative tradition that challenges quantitative assumptions and premises inductive logic, subjectivity, multiple truths, the political nature of research, and the value of depth over quantity.

Qualitative techniques have great potential in the analysis of sports performance (O’Donoghue, 2010). The aim of the current project was to explore perceptions of
performance management and analysis and, thus, potentially develop improved insight and knowledge. The study sought to apply this knowledge and insight to a change management case study intervention. Denzin and Lincoln (2005, p.2) considered “qualitative research as a field of inquiry in its own right that crosscuts disciplines, fields and subject matters.” Moreover,

qualitative research aims to capture qualities that are not quantifiable, that are reducible to numbers, such as feeling, thoughts, experiences and so on, that are those concepts associated with interpretive approaches to knowledge. Qualitative research (often) uses non-numerical data and analysis to describe and understand such concepts (Gratton & Jones, 2010, p. 22).

In defining a type of window on the world (Holstein & Gubrium, 2003) a qualitative approach may allow the researcher to avoid pre-defined analytical categories, and evaluate the issue in depth to enhance understanding and knowledge. Qualitative data can occur in many different forms but most importantly must possess credibility (Coffey & Atkinson, 1996). More specifically, qualitative research must encompass sampling, data gathering, analysis and trustworthiness, whilst emphasising its strength of not being confined to a predefined set of events (O’Donoghue, 2010). In short, qualitative approaches to research are conducive to social studies as they address aspects that are relative, contextual and changeable which tend not to be focused on statistics and quantifiable assessments.

Therefore, a qualitative approach was identified as the method most consistent with my own research intent, as there was a need to gain a more fine-grained understanding of performance management and analysis in elite rugby union, and then apply this knowledge to a high performance rugby union environment in order to implement a change management intervention.

With regard to broad strengths of effective qualitative research it can embrace authentic common sense, knowledge and experience, it can be an effective means of compressing and analysing large volumes of complex wordy information, and it is invariably cost effective. Such techniques also embody the potential to be innovative and creative, and can address issues that are not conducive to description via variables (Denzin & Lincoln, 2005). Broad limitations, on the other hand, may encompass
limited memory recall, attentional focus, personal bias, emotion and personal interpretation. Some qualitative work can generate outcomes where the justification of conclusions from data is often less clear, whilst the whole area can make some physical scientists uncomfortable. The latter argue that some qualitative approaches are soft, unscientific and atheoretical. However, these issues are more linked to poor research technique rather than qualitative approaches, per se (Hennink et al., 2011). Moreover, Anderson (2010, p.141) suggested that “qualitative research is often criticised as biased, small scale, anecdotal, and lacking rigour; however, when it is carried out properly it is unbiased, in depth, valid, reliable, credible and rigorous.”

From a critical perspective, the notion that quantitative approaches are objective, impartial and value neutral has also been questioned vigorously (Denzin & Lincoln, 2005; Coffey, 1999; Guba & Lincoln, 1995) and the belief that the criteria for evaluation of quantitative research (i.e. reliability and validity) are appropriate in a very similar format for evaluation of qualitative research is similarly contentious (Morse, 1999). In reality, evaluative procedures are central to a coherent research design and do not undermine levels of creativity.

3.2 Evaluative techniques

Evaluation is a process applied to the research method that informs decision making (Denzin & Lincoln, 2005). It can be used to interrogate the plausibility of the research design (methodology, methods and analysis) and the overall interpretive community (the alignment with a pre-existing body of literature or theory). The initial evaluative process needed to differentiate between the terms evaluation, rigour and evaluative criteria. The concept and cultural framework of evaluation has evolved (Patton, 2002) beyond the traditional summative (analysing the relative success of a project) and formative evaluation (identifying how the project may be enhanced) techniques. It has been legitimately viewed as creative (Patton, 2002), participatory (Bryman, 2012), utilisation-focussed (Patton, 2002), constructivist (Guba & Lincoln, 1995), empowering (Hennink et al., 2011; Fetterman, 2000) and a mode of action research (Whyte, 1991). However, it should be acknowledged rigour does not purely refer to the level of satisfaction with criteria such as validity, reliability and objectivity (within quantitative research) but in a wider context can incorporate the principles of
academic integrity (Flick, 2014). More specifically, responsibility and honesty, which are central to the self reflective aspects of the present study.

Basically, the issue is no longer whether qualitative methods are valuable but how rigour can be assured or enhanced (Barbour, 2001). Evaluative criteria can be used to define the integrity or trustworthiness of a study, and by their nature resemble flexible foundations as opposed to prescriptive standards. This relates particularly to the present study as the methods utilised, included passive observation and personal reflection, through to specific intervention. The links between these methods were the shared meanings and subjective understanding (Bryman, 2012) that developed over time. The key areas of evaluation included the findings, actual interview protocols, specific analysis techniques, the level of immersion within the case study, the verification by respondents and ongoing comparisons of emergent data (that promotes early analysis as a means of refining the research questions). Rigour within the research was underpinned by the performance context of an authentic international environment and underpinning interviews that were conducted in an unstructured manner with current high performance managers and analysts.

It is possible to evaluate qualitative research using four criteria (Guba & Lincoln, 1995): credibility, transferability, consistency (or dependability) and confirmability. However, Popay et al. (1998) went a stage further and outlined three applied, inter-related criteria for the evaluation of qualitative research that embraced interpretation of subjective meaning, description of social context and attention to lay knowledge. This translated into an evaluative technique that ensured the participants’ views were situated as the bedrock of a project, and the background information defined context precisely. Basically, criteria applied in a coherent fashion may constitute an evaluative approach that supports ecological validity, although it was critical to differentiate between similar principles and different practices, when evaluating rigour in the present study.

Credibility is central to reviewing qualitative research, and Jones (2015, p.107) suggested,

This relates to how believable the findings and interpretations of a study are, and are related to the idea of internal validity. Do the findings accurately
reflect participant’s experiences? Would participants recognise the story presented by the researcher as an accurate representation?

My own role as a qualitative researcher evaluating personal interactions (as a positioned subject; Rosaldo, 1993) was a clear evaluative strength that promoted a better understanding of meanings in specific contexts (how others see their respective worlds).

In the present study credibility was the authentic research environment and the nature of the sample identified. Credibility was also achieved by thoroughness (i.e. saturation) crystallisation, prolonged engagement, persistent observation, broad representation and peer review, and confirmation (i.e. triangulation, member checking, and full explication of method). More specifically, all of which are consistent with Guba and Lincoln’s (1995) advice. Constructive evaluation of these principles can define the level of rapport and the nature of the culture, whilst exposing possible misinformation. However, prolonged engagement needs to be evaluated for the potential danger of the researcher going native and contaminating the data; as a Performance Manager with clear functional capacity, I needed to concentrate on fulfilling a performance role whilst recognising political and cultural influences within the environment. To support this challenge, I used triangulation which, “in it’s most common form refers to the use of multiple means of data collection to explore a single phenomenon” (Jones, 2015, p.135).

In simple terms, confirmability refers to the neutrality and accuracy of the data (Tobin & Begley, 2004). In the present study, this involved focusing on the degree to which the findings were determined by the respondents and conditions of the inquiry and through using triangulation to reduce any investigator bias (Miles & Huberman, 2002). The use of audit trails through transcripts, field notes and reflexive observations further strengthened the overall level of confirmability. Ultimately, confirmability was examined by reviewing the extent to which the written records, informal conversations and participant observation (triangulation) all led to similar conclusions being established.

Due to the nature of an authentic change management case study intervention, the
concept of dependability was highlighted within the evaluation process. Jones (2015, p.106) emphasised the fact that dependability,
refers more to the consistency of methods by which the data were collected……
and the key is to ensure sufficient detail is provided so that the study could be
repeated by others, even if the findings would not be exactly replicated.

Finally, transferability refers to the extent to which research outputs may be congruent
with other contexts and environments (Sparkes & Smith, 2014). It is common for
qualitative researchers to generate data that may facilitate transferability (through the
judgments of others) as opposed to articulating its presence (Malterud, 2001). The
nature of the present study was reflected in Merriam’s (2009, p.19) observation that,"the procedures of qualitative research, or its methodology, are characterised as
inductive, emerging and shaped by the researcher's expedence in collecting and
analysing the data.”

3.3 Reflective Practice

Researchers in social science need to acknowledge the personal on a much deeper
level than at present (Gratton & Jones, 2010). This is achieved by combining
quotations from the participants in studies with thoughts about our own experiences,
as the reality is that the two are not separate entities. Therefore, at moments
throughout the research process it was appropriate to reflect on my own experiences
as change management was the core focal point of the case study. The reflective
process entailed dual scrutiny by of the data and my own actions, and role within the
research process. Sparkes and Smith (2014, p.19) asserted,

In qualitative research it is not only the subjective experiences of the
participants in the study that are important but also the subjectivity of the
researcher. This includes how they themselves affect the ways in which the
research is conducted and the findings are interpreted. The connections between
the self and study are often powerful forces in shaping many aspects of the
research process, from the topic selection to the way data are reported and how
these are interpreted.

Neil et al. (2013) considered reflexivity as critical to legitimising, questioning and
validating the research process, and in my own study it was viewed as a continual,
ongoing process. Previous research that promoted reflective practice measured emotions of participants within a problem-based learning environment (Keville et al., 2009) and addressed the challenge of writing as a reflective practitioner (Newnes, 2006). Huntley et al. (2014) identified that both practical and theoretical experiences can help to develop tacit knowledge. In turn, reflective practice can assist in building self-awareness that demonstrates an authentic learning style of practice to theory. Applied to my own research, reflective practice had a broad impact and was used to promote four elements: individual (personal understanding of what I thought I knew regarding performance management and analysis) contextual (what I needed to know in order to advance my understanding, and making sense of new information and feedback) relational (new data in the context of my own experience) and developmental (guided choices for further learning regarding my case study intervention).

Reflective practice can be viewed as "a set of abilities and skills, to indicate the taking of a critical stance, an orientation to problem solving or state of mind" (Moon, 1999, p.63). This applied to all aspects of my data collection, but particularly the change management interventions in the sense that “reflective practice involved the critical analysis of everyday working practices to improve competence and promote professional development” (Clouder, 2000, p. 211). It therefore had the potential capacity to transform existing knowledge into new knowledge and beliefs regarding performance management in elite rugby union that was central to my research project. However, I needed to ensure that the research did not lapse into self-affirmation but actually attained a transformative level. The case study process involved reflection linked specifically to action that stresses an evaluative approach that developed unconscious reflection.

In essence, reflective practice was central to my research method as it was problem-oriented, data-driven, involved cognitive processes (analysis, synthesis, and evaluation) and used to identify and implement change. The reflection embodied a core purpose that ultimately allowed me to reflect both in action, and on action, whilst developing a personal theory of practice (Cropley et al., 2007) which was my intended outcome.
3.4 Participants.

Within the current research design, the study sample was identified both at the start of the study and during the emergent research design. Samples in qualitative research may not necessarily be defined by the initial research question and may not be static in nature, but rather can be recurrent and emergent in nature that creates an iterative process (Bryman, 2012). A purposive sampling technique was employed to solicit participants that were either performance managers or performance analysts within elite rugby union, as it was the intention to generate information-rich data, which suggested a potentially smaller sample. There was a limited range of people that have experience or expertise in the research area and a purposive sampling approach was applied to identify participants with specific characteristics and features that would comprise the interview studies. Specifically, they were individuals who have, or had, carried the role of performance manager or performance analyst within a high performance rugby union environment. In line with the study of Mellalieu, Hanton and Thomas (2009) and under the influence of Guba and Lincoln (1995) and Patton (2002), the participants were chosen with the intent of providing information rich cases who were perceived to experience relevant personal demands regularly.

All participants were male and provided informed consent and were made aware that they could leave the interview at any stage during the process which, according to Andrews et al. (2005), is one of the most important rules that interviewers need to respect. In order to investigate a broad range of perceptions regarding effective performance management, a variety of performance managers (coaches, managers and elite coach educators) were included in the sample. The characteristics of the performance managers included a minimum of ten years experience in a High Performance rugby union environment, and experience of having worked in two different national environments. The actual sample consisted of seven current male PMs who ranged in age from 48 to 62 years ($M = 54.85, SD = 5.78$). The participants had worked in elite sport for between ten to 25 years ($M = 17.57, SD = 5.25$) and as a PM for between six to 16 years ($M = 9.85, SD = 3.67$). Categories of performance analysis interviewee included current and former international Performance Analysts in rugby union. The six Performance Analysts ranged in age from 32 to 60 years ($M = 41.5, SD = 9.66$). The analysts had worked in elite rugby for between three to 22 years.
(\(M = 11.33, SD = 6.74\)). Patton (1990) identified purposeful sampling as a strategy used most often by qualitative researchers and highlighted the need for these information-rich cases.

Sample size was evaluated in the context of, and determined by, saturation (the point at which no new themes emerge) which means credibility need not be undermined by low sample sizes. Arguably saturation can be the key guiding principle that refers to the idea of a diminishing return on qualitative samples, in the sense that it cannot be assumed that more data will automatically generate greater levels of information (Mason, 2010). Moreover, whilst one data occurrence or code ensures inclusion in the data analysis, it should be noted that frequency of occurrences should not necessarily equate to improved meaning (Crouch & McKenzie, 2006) and the temporal challenges in undertaking qualitative research may occasionally be prohibitively impractical. However, Bowen (2008) suggested that claiming saturation has been attained, does not automatically equate to proof as it is an erroneous concept relating to a matter of degree, and can lead to research being closed overly early with subsequent partially coded data (Strauss & Corbin, 2008). It has been suggested that expertise in the chosen topic may diminish the number of participants needed in a study (Jette et al., 2003).

As a practitioner, I had twenty years of experience in elite rugby union which was a significant factor in securing the final, overall sample. The critical question related to whether the sample size was simply a numerical indicator, and Guest et al. (2006, p.59) argued that, "although the idea of saturation is helpful at the conceptual level, it provides little practical guidance for estimating sample sizes for robust research prior to data collection". Therefore, I needed to apply a degree of practical judgment in arriving at a meaningful outcome, in an emergent fashion. For the purposes of this project, I was able to access seven out of the eight leading Performance Managers in elite rugby union, and six out of the seven main performance analysts. This was positive within the overall constraints that arise when attempting to secure access to elite level practitioners, and saturation was reached as I had full access to the key groups of individuals who met the criteria.

In terms or establishing sample sizes, Kingston et al. (2010) referred to qualitative research as a way in which collecting and interpreting information about some
situation without concern for quantities; a key factor where sample sizes may prove challenging. A range of factors exist that affect the potential size of a sample, including,

- the heterogeneity of the population; the number of selection criteria; the extent to which 'nesting' of criteria is needed; groups of special interest that require intensive study; multiple samples within one study; types of data collection methods use; and the budget and resources available (Ritchie et al., 2003, p.84).

The case study intervention was undertaken with the Russian National Rugby squad and comprised the RUR National team management and players, some club coaches and management personnel, and ex-international players. Interview and focus group interviews were undertaken over a two-week period, in order to generate key data.

### 3.5 Ethics and Risk

Ethics relates to how we behave, or should behave with participants to promote a relationship of trust based on respecting integrity and human dignity. Broadly speaking, this research aimed to do good (i.e., beneficence) whilst avoiding doing any harm (i.e., non-malfeasance). In practical terms, these principles dictated that informed consent was obtained, risk of harm minimised, confidentiality and where relevant anonymity protected, deceptive protocols avoided and participants were given the option to withdraw.

A range of ethical issues can impact upon research into professional practice, and a broader ethical problem relates to the nature of qualitative research itself. Two common objections involve the idea of sample sizes that are too small to be useful, and the researcher’s subjectivity that compromises the objectivity of the qualitative studies (McNamee et al., 2007). In countering these arguments, the present study was not striving for a culturally neutral position, and qualitative studies (whilst often subjective) possess a natural and inherent avenue for reflexivity. The latter relates to researcher self-awareness that contextualises the interactions during the research process, so that participant priorities, experiences and relationships are underpinned by mutual respect when sharing information.
Understanding what ‘doing no harm’ equated to within this research was critically important when reporting the data. A relationship of trust developed over time may create situations where a participant inadvertently reveals something that was not intended. In this instance the researcher cannot unintentionally misuse the information and exploit a degree of vulnerability that places the participant at risk or feeling disempowered (Fleming & Jordan, 2006). Such situations can be resolved through an empathetic dialogue (Etherington, 2007) and adopting an approach to research with people (Simons, 2009). From a researcher perspective, there was a potential for career harm if the interventions used were detrimental to the performance environment, and to the squad as a whole.

As with all interventions, there is a risk that they may not work and as a result makes things worse, not better. To guard against this type of outcome, the change interventions were designed to be context-specific to the group and any potential change was discussed fully and debated with those that it actually affected. Hammersley (2014, p.530) outlined “a range of ethical issues that have been raised about the use of interviews in social science work, whether to do with the need for informed consent, and how or whether this can be achieved, or with the invasion of privacy, or the requirements of reciprocity.” It is vital that ethical frameworks are applied to both the data collection (interview questioning) and data analysis stages (Dowling & Flintoff, 2011).

Whilst absolute confidentiality is almost impossible to guarantee, the research issue revolves around balancing the individual’s right to privacy and the public’s right to know which is based on an inter-relationship between confidentiality, negotiation and accessibility. Confidentiality can support the development of trust and the environment necessary to collate valid data. Negotiation involves the process through which non-harmful data can be disseminated for public knowledge, whilst accessibility refers to the need to communicate to audiences beyond the case itself and in a manner they comprehend (Simons, 2009).

Two minor categories of risk involved a potential decrement in national team performance caused by my change interventions, and as a consequence, damage to my reputation and credibility. Such factors could be perceived as ambient (present in
the actual research setting) or situational (where the presence of the researcher in the
environment may create potential danger) in nature (Bloor et al., 2010). However, it
was very unlikely that emotional risk factors would emerge for the researcher, as
there was little danger of role conflict, trauma or isolation. Normalising risk would
necessitate reflection upon the ethics of the interview questioning, as well as the post-
interview use of data. Finally, pseudonyms were used throughout the research to
protect the identity of the participants.

Ethical clearance was formally applied for with the relevant University Ethics
Committee (appendix C).

3.6 Data Collection

3.6.1 Interview

As a commonly used method in qualitative research (Jones, 20015) the interview
process can be viewed as one,

in which both the researcher and the participants co-construct their knowledge
about the world and about themselves, acknowledging that the researcher is
most likely to experience the world through specific theoretical lenses
(Dowling & Flintoff, 2011, p.65).

Cresswell (2007, p.126) maintained that "critical cases provide specific information
about a problem and convenience cases represent sites of individuals from which the
researcher can access and easily collect data." The two distinct interview studies
constituted the basis for exploring a conceptual framework for performance
management, and performance analysis within elite rugby union; this was perceived
to have potential intra, and inter sports performance application.

With regard to the procedure, the participants were interviewed at a venue of their
choice to minimise work related interference with the interview process and their
responses (Mellalieu et al., 2009). Providing a choice of location for the interview
facilitated the participants feeling comfortable, and may provide reassurance in the
confidentiality of what is being stated (McNamee et al., 2007). Interviews lasted
between forty and fifty minutes and both interview studies resulted in a total of one
hundred and nine pages of text (63,844 words; Performance Managers created 59
pages and 33,727 words and Performance Analysts 50 pages and 30,117 words). Operationally, the interviews were conducted either face-to-face or via Skype (2003; a telecommunications application software) where logistical challenges existed. All interviews were recorded in their entirety and subsequently transcribed verbatim (Patton, 2002) whilst the transcriptions were returned to participants for the purpose of member checking the entire interview data (Guba & Lincoln, 1995).

Seidman (2013, p.9) argued that “at the root of in-depth interviewing is an interest in understanding the lived experience of other people and the meaning they make of that experience.” Consequently, an unstructured interview was utilised to ensure the interviewee had the freedom to provide in-depth, detailed answers from their own perspective (Cresswell, 2007). As an unstructured process, it is important to acknowledge that the direction of the questions can change depending on the preliminary responses of the participant (McNamee et al., 2007). The interviewees were individuals working within high performance rugby union and as such, were commonly used to being interviewed by news media. Quite often, such exchanges can lead to the interviewee being extremely circumspect, often scripted in their responses and erring on the side of conservatism that contrasts directly with the type of open interview environment that I aimed to create. In terms of focus, “interviews can collect data concerned with concepts that are difficult or inappropriate to measure, tend to allow respondents much more freedom in terms of their answers, and tend to explore questions of ‘why’ and ‘how’ rather than the ‘how many’ and when” (Jones, 2015, p.176). Interviews are also potentially credible mechanisms for exploring valuable cultural knowledge via the subjects themselves.

As Sands and Krumner-Nevo (2006, p.69) pointed out,

in a way, subjects are like onions. Layers are peeled away, and the informant reveals not only more of his or her personality but also layers of cultural knowledge…in these opportunities of lengthy, almost free-flowing discussions…the layers will be exposed and knowledge will fortuitously come to light.

Some common criticisms of interviews hint at the limitations of what may be inferred and vary from whether the interviewee’s narrative has stability across situations and perspectives, the potential for incompleteness within interview data (compared to
participant observation) and the core tension between what people say and actually do (Sparkes & Smith, 2014). An additional limitation relates to data analysis that becomes overly speculative and too context-specific.

In some instances, an interview may generate a fragmented narrative with the potential to touch upon multiple themes and in doing so create a “messiness of interview talk” (Dowling & Flintoff, 2011, p.65). Although some researchers may look to avoid such an outcome, it may actually add a level of meaning and context to the process. An additional problem relates to a situation where the participant thinks “that they have to provide the ‘right’ answers, rather than their own views” (Jones, 2015, p.179) and in this case, Dowling and Flintoff (2011) allude to a streamlining and almost manufactured type of interview.

Seidman (2013, p.9) suggested “the purpose of in-depth interviewing is not to test hypotheses, and not to evaluate as the term is normally used.” With regard to choice of actual interview approach, an unstructured interview approach was utilised as Klenke (2008, p.125) stated,

Unstructured or open-ended interviewing is designed to elicit an authentic account of the interviewee’s subjective experience. Unstructured interviews aim to delve deep beneath the surface of superficial responses to obtain true meanings that interviewees assign to their experiences and the complexities of their attitudes and behaviours. The interviewer uses open-ended questions that emerge from the immediate context and asks in the natural course of things instead of relying on a predetermined sequence.

The unstructured approach also allowed the interviewer to define reality and meaning as opposed to merely generating knowledge; the target was an interactive free-flowing exchange environment that allowed each interviewee to expand and elaborate on their thoughts of performance management and analysis. Referring to Patton’s (2002) guidelines, all interviews followed the same structure of allowing the interviewee to talk freely and have freedom to provide answers that may relate to other issues or questions. The unstructured nature of the interviews enabled the researcher to explore pertinent information in line with the research aim yet still allowed for additional information to be collected from topics. Also, the interviewer would have the flexibility of creating new questions based on the answers being produced by the
interviewee. The very broad areas that were incorporated in the interviews included from a performance management perspective: What type of person best fits a performance management role in elite rugby? What are the key responsibilities? How would they measure their relative effectiveness? With regard to performance analysis general themes might touch on: What is performance analysis? What is the role of an elite performance analyst? What are the future directions for performance analysis in elite rugby union?

The current study utilised interviewees who were exposed to antagonistic interview approaches through the media, and as such had the potential to react negatively to such an approach. Due to my background in high performance sport, the concept of mutual disclosure required consideration, specifically, “to what degree, and when in the interview, should an interviewer share her/his own views and justifications” (Dowling & Flintoff, 2011, p.76).

The interview is a guided conversation that defines a reality as opposed to one-way information gathering. However, what fundamentally matters is that the method actually fits the purpose (Flick, 2014). Generally, a qualitative researcher will actively reflect on how they interact with their sample and the wider research process; the concept of a positioned subject (Rosaldo, 1993). This is a major strength as it promotes reflection upon the relationship with a subject, what is implemented and how the data is generally interpreted.

3.6.2 Reliability and Trustworthiness.

Sparkes and Smith (2014, p.180) argued that, “qualitative researchers who are concerned with reliability have dealt with it in the form of dependability” which relates to the consistency of the data over time (Veal & Darcy, 2014). This study looked to follow the guidelines of external reliability where any researcher will be able to re-create this study. Before any of the interviews were conducted, a pilot study was carried out in order to test the interview process and provide rehearsal for the interviewer. It was implemented to establish its functionality and the potential for any ambiguity or omission. Gratton and Jones (2010) suggested that pilot studies are
usually referred to as trial runs that can reveal deficiencies in the design of the proposed procedure that can then be addressed before the study continues on a larger scale. In addition, Thomas et al. (2010) suggested the use of a pilot study establishes operational communication patterns and exposes any issues within the interview process. It has been reported that the use of pilot interviews enables the interviewer to gain vital experience in refining and practising interview skills and techniques (Hare et al., 2008). Thus, pilot interviews were conducted on an experienced performance manager and analyst. Minor revisions to the interviewer’s technique were made following reflection upon the pilot interview that incorporated a more relaxed introduction to the interview, and less frequent prompting.

The aim of qualitative research is not to produce replicability in the same manner as quantitative research, but to provide results that are consistent with the data collected (Merriam, 2009). Reliability within qualitative research is problematic when dealing with real world situations (McFee, 2009), because they are typically unrepeatable. In response, the work of Guba and Lincoln (1995) suggested that criteria such as reliability and validity are incompatible with the methods of qualitative research. If we accept that there are multiple realities, then repeatability is not essential (Sandelowski, 1993). Consistency of results was ensured by triangulating data collection and analysis, and developing an audit trail of accounts that outline and authenticate how data were collected. The researchers’ goal may be to expand and generalise theories or to generalise findings from a single case into a multiplicity of similar cases rather than making statistical generalisations.

Trustworthiness related to the quality of interview data regarding the accuracy with which research portrays the attitudes, motives and knowledge of the participants (O’Donoghue, 2010). The trustworthiness and reliability of this method was potentially reliable and trustworthy as the data was coming directly from the coaches, managers, analysts and players. It is recognised that in qualitative research the knowledge and skills of the researcher are essential to the trustworthiness of the data (Miles & Huberman, 2002). Suggestions have been made that the primary researcher should be cognisant with the topic of investigation (Miles and Huberman, 2002). The study aligned with a number of Guba and Lincoln’s (1995) criteria for establishing the credibility and trustworthiness of qualitative studies. The completion of member
checking was likewise employed to enhance the trustworthiness of data (Guba & Lincoln, 1995). This involved the transcripts being sent back to the participants, which gave the opportunity for confirmation or amendment by the researchers’ interpretation of the data. Miles and Huberman (2002) suggested that this process enhanced the credibility of the study in conjunction with increasing trustworthiness and reliability.

Once each interviewee had confirmed the accuracy of the information and that they were happy with my coded interpretation (no concerns identified), the content analysis informed the representation of findings to be used for this study.

3.6.3 Case Study.

A strong case has been made for qualitative research to be valued for the potential it has to inform policy and practice (Popay, 2006) which linked directly into the case study intervention that focussed on change management. Initial justification for undertaking a case study lay in the broader definition of qualitative research as,

a situated activity that locates the observer in the world. It consists of a set of interpretive, material practices that make the world visible. These practices transform the world. They turn the world into a series of representations, including field notes, interviews, conversations, photographs, recordings, and memos to the self. At this level, qualitative research involves an interpretive, naturalistic approach to the world. This means that qualitative researchers study things in their natural settings, attempting to make sense of, or to interpret, phenomena in terms of the meanings people bring to them (Denzin & Lincoln, 2005, p.3).

The present study adopted a research strategy that used a case study to undertake qualitative data collection and analysis. This strategy was used to explore the dynamics evident within a single setting (de Weerd-Nederhof, 2001). The underlying objective for conducting case study research is to gain a better understanding of complex phenomena such as change processes (Stake, 2000) and “the use of case study research is based upon the argument that understanding human activity requires analysis of both its development over time, and the environment and context within which the activity occurs” (Jones, 2015, p.119)
Sparkes and Smith (2014, p.54) asserted that the, “case study is not a methodological choice, but a choice of what is to be studies. That is, by whatever methods used, we choose to study the case of something.” Gerring (2007) referred to a case study as an intensive study of a single unit with an aim to generalise across a larger set of similar units. However, case studies based in qualitative paradigms attempt interpretive as opposed to statistical generalisations. Thus, the case study method is correctly understood as a particular way of defining cases, not a way of analysing cases or a way of modeling causal relations. The problem of generalisation is also relevant to quantitative case studies due to the inherent nature of the single case project. The objective of the study was not to dictate interpretation, but instead provide an environment that generates a range and complexity of narrative that is not constrained by predetermined themes. My function was to negotiate respondents’ views, as a basis for creating narrative which can be an evocative form of writing, often resulting in personalised and revealing texts in which stories are told about their own lived experiences (Sparkes and Smith, 2014).

The rationale for utilising the case study methodology was that it potentially facilitated an in-depth, detailed understanding of a specific phenomenon within a clear systematic framework. Yin (2013, p.23) defined a case study as “an empirical enquiry that: investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used.” Through a case study an attempt is made to illuminate decisions and the rationale for their application as well as their results. It has the ability to illustrate decision making processes thus providing a rich, multi-dimensional picture of the organisation being studied. In this way, it enabled the identification and exploration of detailed interactive processes crucial to understanding that would be transparent to other research approaches (Veal & Darcy, 2014).

The case study utilised participant observation with the researcher immersed within the environment, focusing on subgroups and roles, how status is achieved, how work is completed, the distribution of resources, how, when and why people communicated. The prolonged engagement, persistent observation and analysis
required a high level of reflexivity. Within the case study prolonged engagement involved acknowledging the “multiple influences and mutual shapers and contextual factors” (Guba & Lincoln, 1995, p. 304) whilst persistent observation adopted a focus on the ‘things that count.’ It is also closely linked to purposive sampling since both may involve exploring a range of respondents to ensure that relevant experiences and data are not omitted. When individuals tell self-narratives they draw upon the available stories or discourses in their social world, in this case an international rugby union performance environment. The road map for evaluating my case study strategy equated to reflecting upon the question, was I staying true to my original research aim and objectives? It should be acknowledged that a case study is not a methodological choice, but a choice of what is to be studied (Hodge et al., 2014) in this case the Russian national rugby union team.

A narrative is a “specific kind of prose text (the story) and to the particular kind of configuration that generates a story (emplotment)” (Polkinghorne, 1995, p. 5). The storytelling element of the case study incorporates the Russian National rugby team’s first appearance in an IRB rugby world cup and the manner in which a performance management change intervention impacted upon the process and outcome. The case study was informed by the findings of the interviews and focused on three key aspects: the structure which related to how performance management was implemented, specifically the core activities and management of the program; the process or how the service (performance management based on performance analysis) was delivered, which encompasses individual delivery style, philosophy and personnel capability; and, outcome which entailed the evaluation of performance management and analysis for effectiveness.

Due to the nature of high performance sporting environments, informal conversational interviews (Dewalt & Dewalt, 2002) provide a common type of research technique due to the intense time constraints and variable demands placed on players and management. Within this study both informal conversational interviews and formal semi-structured skype or telephone interviews were conducted (Patton, 2002). No interview guide was used for the informal interviews that were conducted; the questions were formulated from the participant observations as represented by the field notes. The participant observation process highlighted those individuals with
whom to conduct, informal conversations within an interactive and negotiative process based on trust (Mazzei & O’Brien, 2009). Observation was defined by Smith (2001, p.1) as “describing or representing a setting” and was adopted in my research in an unstructured and informal way (Robson, 1993). I developed notes at any relevant time, and squad members were fully aware of the fact that I was conducting research but were not necessarily aware of each specific occasion that I made my observational notes. The main justification for generating data using the observation method was to improve the validity and reliability of the study through triangulation.

The use of informal interviews potentially promoted better trustworthiness of the data by gaining trust of the participants and a potential consequence of increased honesty. In the follow up to the project study (4-6 weeks post-RWC), telephone interviews were conducted to collect further information from key management personnel. Five candidates were chosen, using purposeful sampling (Patton, 2002), as a representation of the differing roles within the management and playing group.

Within this study, inductive content analysis was used to generate new meaning and understanding (Hsieh & Shannon, 2005) and took place at all stages of the data analysis process, from participant observation, to informal interviews. Qualitative researchers report their findings in different ways and use different rhetorical strategies (Sparkes & Smith, 2014). Reporting qualitative data is a very productive process and there does not need to be one transparent or agreed upon approach on how to report research findings (Hammersley & Atkinson, 1995; Miles & Huberman, 2002).

The data for this case study were collected using multiple sources and techniques (Stake, 2006) including document analysis, unstructured and informal conversations and interviews, and participant observation. The essence of a case study is that it tries to articulate the decisions and motivations that underpin the observed and detailed interactive processes (Yin, 2013). Whilst the dangers of single cases are noted (Remenyi et al., 2002) difficulties regarding conflict of interest, access and comparability with other international rugby union environments prevented a similar degree of focus on multiple cases. As the observations are of a real sporting campaign, the study will achieve high ecological validity (O’Donoghue, 2010) and, as
the observations are cross-referenced with real sporting preparation and competition, the issue of performances being contaminated by the presence of an investigator are negated (Berg & Latin, 2008).

Case study reporting requires rigorous evaluation to ensure it translates into a coherent analytical process with collaborative outcomes (Veal & Darcy, 2014) and the purpose of this evaluation was to integrate methods coherently, in conjunction with collating and appraising narrative that evidences change.

3.7 Data Analysis

The explicit recording of the development of themes was central to the empirical work. “A typical approach in qualitative analysis is to search for emergent themes – the equivalent of variables in quantitative research” (Veal & Darcy, 2014, p.430). In the current study, themes were identified within the interview studies from the data themselves (an inductive approach) which contrasted with the case study where my own prior theoretical understanding of performance management and performance analysis derived from the interview studies (an a priori approach) actually informed the change management intervention. The inductive thematic analysis involved the searching across the data sets to recognise repeated patterns of meaning, whilst at the same time avoiding coding the data into a pre-defined coding framework, or within the parameters of the researcher’s preconceptions. A latent thematic analysis was undertaken that allowed the defined themes to be generated from an interpretative perspective, and the subsequent analysis was therefore, not purely description. Dixon-Woods et al. (2006) argued that thematic analysis lacks transparency due to its failure to distinguish between data-driven or theory-driven approaches. However, Boyatzis (1998, p.4) observed that thematic analysis is “not another qualitative method but a process that can be used with most, if not all, qualitative methods.” It is flexible and can be used to define, analyse and interpret recurring themes that emerge from the data but it is clearly not a passive mechanism. The researcher is active in the sense that they identify the themes of note in the first instance, but avoid giving voice (Fine, 2002) whereby narrative evidence is parachuted into the text to frame pre-conceived arguments. In contrast, thematic analysis must define reality or at least provide the
framework for reality, which can be extremely challenging in light of Ryan and Bernard’s (2003, p.87) assertion that “themes are abstract (and often fuzzy) constructs that link not only expressions found in texts but also expressions found in images, sounds, and objects.”

The analysis itself was a recursive (as opposed to linear) process that entailed moving back and forth between the relevant data sets. A theme highlighted an important aspect of the data that linked to the original research question, and also constituted a degree of patterned response within the overall data set. However, the prevalence to which the theme recurred was not equated with its relative significance (Jones, 2015). Ultimately, my own judgement was central to identifying a higher order categories and lower order themes.

My methodological approach to the thematic analysis adopted six distinct stages:

- initial immersion in the data to establish meaning and patterns;
- transcription that promoted early familiarisation with the data and constituted an interpretive process that facilitated meaning and early analysis;
- cross referencing the transcriptions with the original audio and my own Dragon Dictation (Nuance Communications 2013) outputs;
- a concerted search for categories and themes;
- applying thematic maps (appendix D) to review and refine the themes; and finally,
- precise definition of the finalised themes (Vissak, 2010).

In applying this six stage approach, the identification of categories and themes involved both observational and manipulative techniques. Repetition was a clear indicant of themes via occurrence and re-occurrence (Guba & Lincoln, 1995) whilst reference was also made to Patton’s (2002) indigenous categories or expressions that sound unfamiliar, which can link into metaphorical language and analogies (Miles & Huberman, 2002). In addition, naturally occurring shifts in the interview content were also viewed as a meaningful indicant of categories and themes (Ryan & Bernard, 2003). Comparative analysis across units of data was also used to establish thematic meaning. Finally, it was acknowledged that themes could be established by inference,
in terms of what data were actually missing, via an intentional or unintentional avoidance of a topic.

Each higher order category related clearly to the research question, but was distinct in nature. The framework set the scope and diversity for each theme, which moved from a descriptive to an interpretative level (often relating the findings to existing literature). Interviews were transcribed verbatim and were then sent back to the participants for verification (Sparkes & Smith, 2014).

Once all participants had confirmed the accuracy of the content within their own transcripts, the researcher read the transcripts several times for familiarity, and the data were then analysed inductively. Following confirmation from the participants that the transcriptions were accurate, I read and re-read the transcripts to improve my understanding of each of the participants’ unique experiences (Strauss & Corbin, 2008). Tesch (1990) suggested that in order to develop an organised system from relatively unstructured data, two separate phases of analysis are required; data organisation and data interpretation. This occurred via a content analysis that identified: each manager or analyst by pseudonym (names only identifiable by the researcher); the category of each given quotation (i.e., performance management or performance analysis); higher order category under each general category (e.g., role purpose, philosophy, process skill, measuring of effectiveness, challenges and way forward); the lower order themes categorised under the higher order category (e.g., ‘feedback’ under the higher order category of measuring effectiveness); and, finally, the actual quote from the transcript. Gratton and Jones (2010) suggested that themes should be valid and accurately reflect what is being researched, and should also be mutually exclusive and exhaustive. However, some lower order themes were relevant to more than one higher order category which merely highlighted the relative importance of the issues and the fact that the research topic had inter-related conceptual links. In terms of identifying themes, “there is no ultimate demonstration of validity, but we can maximise clarity and agreement and make validity more, rather than less, likely” (Ryan & Bernard, 2003, p.103). Thematic discovery was perceived to be vital during the exploratory phase, otherwise the descriptive and confirmatory stages would be completely compromised. Within this case study, the data analysis and data collection developed simultaneously as an iterative process (Hartley, 2004,
p.220) as perspectives and themes occurred whilst the data were collected. The findings from the participant observation, field notes and unstructured informal interviews were documented and content analysed in relation to the change management intervention generally and the specific performance management and performance analysis strategies employed. The data in this section were presented in a narrative format with interpretational analysis employed to “build up interpretations from the experience, perceptions, and beliefs of those involved” (Hoque et al., 2004, p.62).

Data analysis consisted of "examining, categorising, tabulating, testing, or otherwise recombining both quantitative and qualitative evidence to address the initial propositions of a study” (Yin, 2013, p.109) to establish patterns within the data, in order to move from description to a more general conceptual grasp of meaning. Three specific techniques were used for analysing the case study: “pattern matching (relating the features of the case to what might be expected from some existing theory); explanation building (often an iterative process whereby a logical/causal explanation of what is discovered …… is developed by to-and-fro referencing between theory / explanation and data); and, time-series analysis (explanations are developed on the basis of observing patterns of change over time” (Veal & Darcy, 2014, p.376).

Attempts were also made to establish links to the existing literature and hence to raise questions about whether the researcher's findings were consistent with, or different from, the extant research base. The case study provided a multi-dimensional perspective that generated a shared view of the situation being studied (Remenyi et al., 2002) which offered an "opportunity for a holistic view of a (change) process" (Patton & Appelbaum, 2003, p.63) through performance management and analysis.
4. Findings and Discussion.

This chapter reports the findings of both interview studies and the change management case study intervention in turn, which constitute the three main sections. The first two sections constitute interpretational thematic content analyses of performance management and performance analysis interviews. Both sections constitute a conceptual underpinning to the project aim of a performance management and analysis case study intervention with an IRB tier two international squad, focusing on change (section three). This final section disaggregates into four sub sections that cover a performance review, the identification of performance standards, analysis of performance, and reflections on the IRB Rugby World Cup 2011.

4.1 The Nature of Performance Management in Elite Rugby: An overview.

Five higher order categories emerged under the following headings: role purpose, philosophy, key process skills, measuring effectiveness and barriers. Frequency analysis indicated that the managers considered how they measured their own capability to be a vital aspect to the role.
<table>
<thead>
<tr>
<th>Lower Order Themes</th>
<th>Higher Order Categories</th>
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<tr>
<td>Role clarity (4)</td>
<td>High Performance (6)</td>
<td>People management (5)</td>
<td>Structure; Finance and selection; Staff (4)</td>
<td>Culture (3)</td>
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<td>Promote learning (2)</td>
<td>Save Time (2)</td>
<td>Leadership (3)</td>
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<td>People management (4)</td>
<td>Clear Performance philosophy (4)</td>
<td>Strategic vision (3)</td>
<td>Player conversion rates (3)</td>
<td>Innovation (2)</td>
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<td>Strategic vision (4)</td>
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<td>Leadership (2)</td>
<td>Reductive approach (2)</td>
<td>Succession planning (3)</td>
<td>Culture (2)</td>
<td>Too operational and not strategic enough (3)</td>
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<tr>
<td>Synthesis (1)</td>
<td>Clarity of environment (1)</td>
<td>Talent development (3)</td>
<td>Relationship management (3)</td>
<td>Financial constraints (2)</td>
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<td>Troubleshoot (1)</td>
<td>Knowledge management (1)</td>
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<td>Change agent (1)</td>
<td>Leadership (3)</td>
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<td>Coaching (3)</td>
<td>Parachuting staff in (1)</td>
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Table 2: Higher Order Categories and Lower Order Themes within Performance Management.
4.1.1 Role Purpose.

At the outset, the results derived from the data analysis suggested that the background of the performance managers reflected a variety of professional pathways and experience that ranged from performance coaching and coach education, to information technology, logistics and management, conditioning and medical management, recruitment and performance management in the armed services. In relation to person specification Dean Jump (DJ) suggested “most people don’t get it and don’t see the full picture. They see a very limited bandwidth of the picture, because to performance manage the system is a complex activity.” Such complexity needs to be addressed in order to both educate and provide a frame of reference for those within, and externally linked to the environment who are unable, or choose not to, see the picture of performance. Such an approach is really conducive to managing expectation, and also creating a positive learning environment.

All managers’ narratives provided a clear insight into the importance of role clarity and purpose (the initial higher order category). Without the former it was likely that potential impact of the role would be lost. However, the notion of role clarity was questioned initially by Seth Job (SJ) and Paul Hockey (PH) as the latter suggested “the whole concept of a high performance manager has never really been worked out. They’ve sorted of borrowed bits and bobs, thinking it’s the right idea to put in the programme, but never given the appropriate mandate to the position.” Conceptually, this aligned to the multi-faceted nature of performance, performance management and performance analysis and the concomitant need for coherence and alignment between these areas. Kris Ball (KB) PH, and DJ all emphasised the need to have accountability residing with one individual who understands the depth and breadth of the performance environment which suggests that clarity must translate into overall responsibility when managing performance. As KB suggested “we should not be too hung up on the definition of the role – really it is down to ultimate accountability residing with one person” whilst PH was less convinced about a sport-specific specialism being a critical need and commented "wherever your core skills come, in the end you’ve got to manage people and you need to know how to set a programme.” A range of data highlighted people management as a critical purpose for performance managers as they have "to develop their role awareness and get the athlete support
people to understand the human aspect of the role" (KB). This supports the research findings of Armstrong and Baron (2004).

David Train (DT) considered his primary purpose to lie within a value proposition with regard to enhancing value on a daily basis,

> What is the one thing we cannot afford to burn in sport? It is time - so my role is to save time. Also, the value to a coach is how can you turn complex into simple.

In achieving simplicity and clarity from complex situations, it is clear that a PM must possess a reductive capability in terms of compressing unwieldy information into clear feed forward for the organisation or individual. This view was reinforced and developed into an ability to prioritise, in the context that "You don’t have to be simplistic in your competition. You’ve just got to be simple. In other words focus on everything you need and nothing you don’t" (PH). There is evidently a leadership demand within the PM’s primary purpose, as DT commented “one of the traps that we have as performance directors is that we do way too much, and we lead way too less” which echoes previous research (Arnold et al., 2015).

DJ highlighted that the importance of becoming a change agent but provided a cautionary check by asserting,

> Cultural change is extremely difficult. What you have to do is conduct root and branch reform on behaviours and the processes and the structures and leadership style and the people and skills, and ultimately shared values. And if you haven’t done all that, you're not going to get the cultural change.

An important distinction was highlighted by Cruickshank and Collins (2013) who suggested that the type of change initiated, needed to be “context-dependent, context-shaped and context-specific.” Whilst it might be a critical challenge for most environments, Armstrong and Baron (2004) considered cultural change to be a positive bi-product of an effectively designed performance management system. Matt Ruck (MR) further highlighted the importance of affecting and managing change,
when stating “it comes down to your belief - say ‘Even though we’re winning, we need to change this’ and have the balls to move the philosophy to a different level.”

PH underlined a fundamental need to manage by values (Dolan & Richley, 2006) within an elite performance culture, “by getting across what are your values and what are the competencies required for the organisation.”

Strategic vision and planning were consistently discussed as a fundamentally important purpose, supporting the findings of Houlihan (2013). This helps define a strong performance culture but this should link with role clarity. DJ suggested that "we’re going to have to have the right goals, the right objectives, which need to be metricated. Then they need to be drilled down into roles and responsibilities." This perspective emphasises the need to link goals and performance indicators with role objectives in the planning stage. A high performance programme should translate into a key section within the overall strategic plan, whilst the overall quality of that plan, reflects the PM’s ability

to write a strategy, change the strategy into goals, turn the goals into objectives, and the objectives to performance metrics, and turn those performance metrics into roles and responsibilities (PH).

The approach is clear but sporadically applied in elite rugby union, and DT underlined the final need within planning that involves "driving strategy around coaching." The argument here relates to the idea of a coaching management group owning the plan, and understanding their responsibilities in executing it. However, in elite rugby, coaches may view the implementation of a performance plan as the responsibility of a manager, and as such the managers lapse into micro managing in a reactive manner.

For the interviewees, emotional intelligence underpinned the philosophy and strategy,

A big challenge is to be an emotionally intelligent PM, by tuning into yourself. A basic level of self-awareness and empathy will help you deal with the only constant – change. (KB)
The more effective performance managers have a higher order capability to identify, comprehend and manage their emotions as well as the emotions of others which supports the work of Goleman (2005). In an applied context, this equates to a performance manager expressing emotions accurately in order to facilitate a challenging performance environment that promotes proactive decision making. It is realistic to use emotions to motivate teams by promoting a wider understanding of different perspectives and in doing so create the relationships that are required to lead change interventions (George, 2000).

Therefore, in terms of role purpose, the ability to initiate and manage change was interpreted as an effective time saving output that must be allied with people management skills, as KB suggested "there is a strong argument for a Performance manager being a synthesiser, in the sense that there can be up to twelve different athlete support staff." Consequently, it is key for a PM to display leadership characteristics in the way that they support a coherent and challenging performance learning environment. In analysing factors affecting successful markers of performance at a management and leadership tier, Arnold et al. (2015, p.299) concluded that, “self-related factors (i.e., personality, health, skills, experience) and environment-related factors (i.e., development opportunities, operations, personnel) are perceived to influence these outcomes.”

4.1.2 Philosophy

A philosophy is a personal statement that is based on the values and beliefs that direct performance management practice and should be flexible and functional in nature as it may change over time. Performance management behaviours reflect a set of values about performance and human relationships, although the actual management practice may not always correspond to the philosophy, as there may be differences between public and privately stated values that are actually deliberate. Values are a means through which a manager can evaluate personal and professional experience and the potential conflict between organisational values and management values. DJ emphasised the fact that "your culture fundamentally comes from the collective behaviours and practices and the collective values of whatever that team is." Like coaches, what managers actually do in their professional practice, is inextricably
linked by their personal values and attitudes (Jenkins, 2010). Defining a philosophy underpins best practice and provides clear direction on how to undertake a role (Cassidy et al., 2009).

With regard to broad philosophy, substantial debate developed around the concept of high performance. PH suggested that

This is how I see high performance as a concept. It’s all about best possible performance. So winning something. It’s all about an outcome. You have to have a clear pathway where the athlete sits, and you need to articulate this – are there visible entrance and exit points within the pathway?

In high performance sport, the overarching philosophy should invariably account for both the process and outcome (Sotiriadou & De Bossher, 2013),

The philosophy should reflect seeing what players do and not just what they don’t do, which means focusing on performance as well as results. (KB)

DT stressed a key distinction that “high-performance in general, is the concept of cut, edit and paste versus cut and paste. It has to be about editing it to meet your context and then you've got a fit for purpose solution." This firmly suggests a monkey see, monkey do approach within some elite rugby environments that promotes a negative under current of imitation. SJ stressed the environmental context and system, "every time we use the word ‘elite’ everyone gets stuck on the professional end, the pointed end, but it’s everything else that underpins it. If you're talking elite it’s a system that’s elite. Not the elite performers." In essence, high performance is a system that creates a consistent and sustainable culture (Brumback, 2003).

With regard to personal philosophy, KB emphasised a non-negotiable: "if you are going to grow as a PM you have to commit to learning and to excellence, set high standards and not compromise on your personal philosophy." Analysis of the interviews revealed that a coherent philosophy was a key underpinning factor affecting performance management. Context-specific strategies had to equate to a cultural fit with the organisation, in order to maximise impact. The key to examining the performance management philosophy is to highlight aspects that sometimes occur unseen as the manager is concentrating on the performance environment and people
within it. This allows an observer to examine what a manager’s philosophy is, and how this may inform practice. In doing so a manager may start to reflect on the cultural and value-based factors that mould their professional practice (Smither & London, 2009).

A philosophy should constitute a key underpinning reference point when making decisions that aim to impact upon the performance environment. It can also allow the creation of a coherent performance learning environment that negates reactive behaviours. However, DJ emphasised the need to have “knowledge management of a proper communications strategy and a learning system in place, to continually learn.”

In elite rugby union environments, communication can be somewhat taken for granted even when an individual may carry the title Communications Manager. The key is to reflect on how groups and individuals can communicate better on a consistent basis.

4.1.3 Key Process Skills.

A key higher order category emerged in the guise of key process skills inherent to the role of a PM. KB alluded to the need for a "strong personal coachability alongside a knowledge of the athlete support services" combined with a "strong grasp of management, leadership, team building and synthesis skills." MR reinforced the multi-faceted nature of the role through the notion of having to wear "different hats," and to an extent be able to apply them differently with different people. A range of data stressed the fact that a people-centred management approach was a hugely important process skill. In addition, DJ indicated that performance managing HP environments relied on “collective team dynamics to make the right decisions, and interpersonal skills” applied in a timely manner. This highlighted the need to be able to adopt effective talent identification techniques and place these in the context of a coherent succession plan, as DT pointed out "really it's all about people. If you get the right people, the rest of it is just tools." The importance of having the right people with the right skills cannot be over-emphasised for "as long as you have people around who are good people that you trust, then that becomes your barometer" (DT) for success. The more effective PMs exhibit the personal skill of listening, or at least appearing to do so, in order to manage pressure and expectation whilst establishing strong trust with the key audience of players, coaches and management.
A PM has to apply a range of process skills to the talent development environment which encompasses robust talent identification (as opposed to the common fault of talent selection) and most importantly, coherent and formative talent development. Empathetic management of this process is arguably one of the critical deliverables for a PM. DT argued a case that there is a need to have really good talent ID, get the athletes coached and supported by quality people in a quality environment and it needs to be done at the right time. If any of those variables are out then it is unlikely that we are truly going to maximise our potential, so in terms of the way we work, we are compromised.

The way the talent development environment is designed can sometimes constitute an automatic compromise, and as SJ observed regarding Australia, “I always felt they were perhaps wrong when they viewed their elite pathway, if you call it that. They would have young coaches with really young players.” The counter argument here relates to placing your most experienced and capable coaches with the next generation of elite athletes in order to accelerate their learning. Broader process skills emerged in the guise of communication, commercial awareness and leadership. For many, the latter aspect of the role impinged heavily upon succession planning for management and athletes,

I need to ensure that the Arrows get what they need, what they want and that we are developing the talent that you are going to want to select in five years time and in ten years time (DT).

This supports the finding of Fletcher and Arnold (2011, p.235) who referred to a range of key skills in performance management that embraced “recruiting, supporting, and developing people who are able to contribute in a meaningful way to the team’s functioning.” The use of leadership was highlighted on several occasions as an integral building block for the role of a PM which supports a range of previous research (Hodge et al., 2014; Fletcher & Wagstaff, 2009; Kellett, 1999). MR referred to the strategic need to help people understand "the difference between coaching, managing and leading" further emphasising the key need for role clarity. In terms of developing ownership within the performance environment a manager will "need the right leadership systems in place, which again fits into the goals, objectives, roles and
responsibilities, and how you create that empowered team environment” (DJ). KB reinforced this argument and suggested a proactive philosophy to performance management, "really I think a PM can lead by helping to create the right environment, and by supporting people to plan, communicate and empower."

From a strategic perspective, KB reinforced the need to bring “clarity and credibility” to the learning environment, and highlighted the fact that PMs should have a clear point of difference that reflects their specific capability. It is imperative that this in turn should translate into creating a learning environment based on proactive formative feedback, and "a manager can do this by being a facilitator, avoiding a blame culture and developing a system where players perceive feedback as information as opposed to criticism" (KB). One of the more sophisticated skills for the PM is therefore, being able to be inclusive enough to allow the feedback to strengthen accountability in the context that,

everyone’s contributing to information, because information is key. Like my Dad always used to say ‘A river without banks is just a big puddle.’ And the best way you can get a river, if you like, is to embank it. So you get as much information as you can so there is no escape route for a player (SJ).

Consistent with the work of Sotiriadou and De Bosscher (2013) the strategic planning phase was deemed to be a cornerstone for successful performance, but in particular, longer term strategic planning was deemed to be critical, as PH asserted,

it’s pretty much the 7 – 8 year rule, and you might have heard about that, about success? So if you’re planning and you’ve only got 3 years to the next World Cup, it’s unlikely you're going to be successful in that World Cup and you’ve got to plan so much wider ahead, so if you take into consideration that Jake White took 7 years to win the World Cup and the previous year the quarter final; you take Woodward, he came in and it took him about 6 or 7 years to win a World Cup, quarter finals previously – same goes with Graham Henry, it took him 8 years to win a World Cup – same thing!

Whilst financial management was perceived to be a prerequisite skill for the role, money tends not to be the real problem in high performance rugby union, although it is sometimes used as a convenient excuse. The real issue for the PM regarding finance is being able to adopt an outcome-driven investment approach where the answer lies in the ability to actually spend appropriately.
The applied implications of this interview study highlighted that a PM needed to apply higher order learning or problem solving skills to a troubleshooting remit that “prevents environmental road blocks” (DJ). In a more specific sense, DT argued

I look at complex issues and help rugby coaches that I work with define what the issue is because we're not very good at that but we are pretty good at putting Band-Aids on symptoms and then once we figured out what the issue is we craft a better solution.

These data clearly indicate that higher order problem solving skills are fundamental requirements for a PM that necessitates a balanced conceptual understanding of scientific and design technology skills, as well as a predictive capability. The latter leads into the discipline of data analytics, or at least the ability to manage outputs from the area. As DT outlined,

It's actually about developing the places to play tomorrow's game, today. We spend a fair bit of time thinking about where we feel the game is going to go and then hopefully we can stay ahead of the curve.

Performance management in rugby union should deliver an ethically sound and key strategic transition from performance management to performance measurement,

most of them (PMs) are so far away from the environment they don’t know what’s important in the environment; they don’t know how to measure the environment, they don’t know the antecedents of the environment. What you need is somebody who’s quite strategic, being able to relate all those pieces together, to understand the fit, the knit, and then how it's related actually to the strategic ethics of the organisation (DJ).

That is to say management must precede measurement, and the interface that converts the former into the latter is the design of a performance management system (Lebas, 1995). The system should constitute a learning vehicle and not a control mechanism (Kaplan & Norton, 1993) that is based on both lead and lag (primary and secondary) performance indicators or critical success factors. If the metrics underpinning the system fail to reflect the context or environment, then the high performance standard is lost and outputs remain well below expectation (Ittner et al., 2003). Performance measurement will necessitate an ongoing audit and review capability, that allows an
assessment to be made against the original strategic vision and programme, as DT commented,

in relation to the Zips I have to maintain my objectivity and the only way I can do that is to distance myself away from the group so I can be through four times a year for a block of time in order to reconcile everything that I'm seeing and everything that they are doing back to strategy and if I can't find my way back to the strategy then I ask a few more questions.

This supported one of the key findings from the work of Collins and Cruickshank (2015, p.74) who emphasised a skills-based need to, “(a) negotiate complex and contested socio-political dynamics both within and outside their performance department; (b) make impactful and consistent real-time decisions; and, (c) continually reinforce and protect their programme.”

4.1.4 Measuring Effectiveness.

The higher order category of measuring effectiveness was topical for all managers interviewed. In a general sense, there was a need for context specific measures established by the performance group themselves (MR) but the start point for a PM in rugby union is to actually measure performance against predefined strategic objectives,

So for us we would go with a strategy that would take us through to 2016 that gives us details on six areas (technical, tactical, physical, medical, holistic and mental) that we pretty much have to have nailed and that is really what we are measuring ourselves against (DT).

Measures need to be applied to the strategy once it had been translated into an annual operational plan each year, “with KPI’s which normally sit across 8 – 9 key areas, international competition being one, programme management and governance; sports science and sports medicine etc” (PH). However, it is important to balance the measurement of process and outcome, DJ explains, “in a typical rugby environment, you look at scores at the end of the day, but performance is often more important and that’s where the metrification is key.”
The metrication may need to incorporate aspects that may require qualitative assessments that take you into an area of adapted performance indicators, such as “leadership and management, on-field performance, improvements in teamwork, relationship management and culture” (KB).

Such findings have important implications for three key performance measurement targets: (i) structure (assessment of management capability and stability); (ii) process (measurement of the investment into implemented programmes); and, (iii) outcome (reviewing the quality and impact of the metrics applied to the staffing and the environment). This approach translates into a rigorous performance review technique that actually supports a constructive assessment of knowledge. The simplest and most perceptive argument is that sports performance is concerned with three things: what did we do well? and not so well? and, why? Such a PM approach has a clear synergy with the basic conceptual approach of Performance Analysis. PH argued that to measure effectively "you have to understand the game, you have to understand what you're delivering, but you don’t have to be an expert in it." This empathy underpins the context-specific understanding that allows a PM to assess both the likely relevance, and actual impact of the interventions.

DJ argued a case based on motivational benefits derived from performance indicators, you’ve got to get that group motivated, and that motivation is controlled in a number of different ways. That’s when you use your performance indicators; that’s when you use your performance management system, and you can do that for an individual component, a team component, you can show where people have come from and gone to.

These motivational benefits must link into to a measure of the capability of staff against their ability to “self-manage and independently make decisions” (KB). This option to measure independent decision making also resonates with DJ who argued that "actually what you want is transference of the attributes. This can give us instinctive performance, either within the military dimension or within the rugby dimension, it’s what people do." PH suggested that the key is, "you have to get the right people in and it’s the conversion on this investment." Promoting ownership breeds engagement and this type of developmental behavioural output.
The findings indicated that rugby union environments need to measure the relative quality of their player and coach development pathways,

you know some programmes they want to do cryotherapy, they want to go and do altitude, or they want to go and do all these bits and things, but if they don’t get the coaching right, they don’t have the competition structure they’re going to play in and they don’t have a daily training environment that’s conducive to performance, it doesn’t matter what you do (PH).

The measurement process provides both clarity of feedback but more importantly feed forward in the shape of a specifically generated action plan that should ultimately focus back on people, as PH asserted,

In a raw sense, if you go and invest in a rugby high performance programme, in the end you want the best available players to be produced from an academy system into a national team, or into your top squad. Otherwise, what’s the point of actually investing in a programme like that? (PH).

It is vital to measure the impact of a change intervention within the parameters of the strategy from the standpoint of a cultural fit within the environment, which relies on the coherent alignment of staff and skills with structures and systems. In this case, it becomes possible to measure effectiveness by the degree to which "established behaviours” can be changed (MH) that are not conducive to high performance success.

Performance Managers should adopt a balanced general ethos that offsets the pitfall of excessive measurement and insufficient management (Smither & London, 2009). In many ways excessive focus on metrics equates to a complete abdication of management responsibilities. MR argued

spending too long looking at performance and doing too much reviewing and trying to predict what is ultimately a very dynamic invasion game played over 80 minutes with a referee who’s a human being, and ultimately I think it’s got to be about a certain framework and a certain philosophy and a game you want to play that particular day.

Ultimately, outcome driven investment is the critical measure,
the final is all about return on investment – and what I mean by return on investment is that for every dollar you put in, there needs to be a return on that. So if you invest in a player that player needs to perform, so whether that makes it to a national team or whether you're investing in a product it’s got to give you an identifiable input, which is the best result (PH).

4.1.5 Barriers.

A consistent higher order category emerged that acknowledged the importance of identifying barriers to performance management. Cultural issues were perceived to be a major limiting factor as PH asserted "if you don’t get your culture right and you don’t get the right people to buy into what you're doing, you’ll never succeed. They’ll actively work against the grain." A common problem linked to inappropriate recruitment, for example, "in the military it has been a long-term career, where people have come up through various elements to understand the whole system in place. Not so in rugby, because people are just parachuted in" (DJ). This type of situation often compromises principles of talent identification and succession planning, so conflict management becomes a major focus for the PM. As DT suggested that "you need to be very secure in who you are in that you can't be after the coach's job so you need to manage that potential conflict very carefully." On the other hand, a proactive organisational culture encourages and regulates healthy conflict (Haines & St-Onge, 2012) in delivering results that meet the group’s cultural ethics (Sotiriadou, 2013; Fletcher & Wagstaff, 2009; Varma et al., 2008).

KB referred to the key "challenge of working out the line between empowering people and abdicating your responsibility." This highlights the need for a process where you educate initially, prior to empowering (Kidman et al., 2001). The former provides the base for the latter to develop into a cultural characteristic, in the sense that it needs to be both learned and shared in order to highlight both congruent and deviant behaviours.

In some senses, the structure of rugby union environments is not conducive to generating high performance outputs. DJ argued that rugby by its very nature, can be,
just one big barrier, because it’s very, very difficult to introduce any real change and the politics of the system, the governance of the system, is so democratic that I don’t think any one individual can really lead a major change.

Quite often, governance cultures can be top heavy, ineffectual and ambiguous with regard to strategic planning. Moreover a lack of role clarity within this governance further accentuates a barrier, as SJ commented "this is where the crossover is - I don’t think we’ve got these role priorities right, because there's never consistency as it’s often at the whim of a private person." A more fundamental challenge relates to an organisation that spends very small amounts of time actually solving complex problems. So the tendency is to engage in operational issues rather than strategic priorities, and consequently “they are feeding something which hasn’t been through the due process of analysis" (DJ).

Intentional and unintentional miscommunication, and non-communication, are common barriers in elite rugby union and PH stressed the importance of alignment, as in the case of "the coach will go to the CEO and come up with a decision but ‘forget’ to bring in the high performance manager and discuss it. So then you get this breakdown of decision making and what happens is that it becomes paralysed."

In relation to cultural barriers, DT asserted "another word that should be banned in high performance sport is fear." KB reinforced this view when he stressed the "performance environment should support players (athletes) to make decisions without a fear of losing." In contrast, Mel Hat (MH) viewed high performance as an "absolute desire to not be bettered by anyone; but (and I know this isn’t necessarily politically correct), most of them had a fear factor" which related to the fear of personal, and collective failure.

The focal point for measurement in MR’s eyes should "link everything to my philosophy and what I want to see in my environment." Understanding the group and individual philosophies within a performance environment is critical for success and a PM helps to avoid a situation where "we haven’t really understood each other’s philosophy or what we were aiming for; or appreciated each other’s philosophies enough" (MR). Whilst developing a multi-dimensional leadership programme
(Chelladurai, 1984) within performance may create a culture of collective leadership and promote a dual managed environment, there can be an inherent danger linked to timing, as reflected in MR’s view that "sometimes what I've found is that if you give a little bit of leadership too early, too soon, it dilutes the philosophy, and you move away from the philosophy a bit." However, it should be acknowledged that success may be generated from environments that are sometimes less than optimal, which is reflected in the following quotation:

We've got some pretty decent coaches but our challenge is to try to shift them into coaches of people. I am sure that we are great at developing head coaches, and developing technical and tactical coaches, but our environments are pretty average really (DT).

It is relatively straightforward to initiate change but somewhat challenging to control the rate at which it occurs. However, too many environments and people adopt a ‘change for change sake’ ethos, which sometimes cuts across the need to take time to measure the original plan, and allow it to mature. As PH intimated, "we throw the baby out with the bathwater before the actual programme settles - we need to set the structures in place and the systems for you to achieve this success."

All interviewees suggested that the solutions the PM looks for invariably exist within the environment itself. It is not about looking at different things (external factors) but looking at things differently, and in an integrated manner (examine the whole and then backward chain into the specific challenges) that allows for focus on managing people and controlling politics and personalities. Ultimately, the interview findings were used to generate the following contextual model of performance management in sport that links the key management qualities and processes to the environment,
Figure 4.1: A contextual model of Performance Management in Sport.

The applied benefit of the model is that it highlights the three critical factors that underpin a PM achieving high performance outputs in elite rugby: creating an aligned purpose; managing the process strategies; and, initiating context-specific change. The latter would need to link closely to the development, communication, and application of change strategies.

Having utilised this interview study to inform the concept of performance management in elite rugby, it was vital to establish how best to analyse those key areas that required management.

4.2 The Nature of Performance Analysis in Elite Rugby Union.

From the second interview study with six high performance analysts, six main higher order categories emerged that reflected role purpose, philosophy, key process skills, measuring effectiveness, barriers and future directions for Performance Analysis (PA).
Table 3: Higher Order Categories and Lower Order Themes within Performance Analysis.

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4.2.1 Role Purpose.

The interviewees were wide ranging in nature which reflected differing environmental demands, and the most common route or background was that of a general sport scientist who migrated toward PA. One individual possessed a computing background, and one was a physical educationalist who touched on two key, initial concepts, “because of being a teacher, I was really interested in differentiation and what in Australia they call personalisation” (Kris Luck; KL). This suggests that PA
has the capacity to highlight differentiating factors in performance, and by implication common patterns or trends. With New Zealand and Australia appointing analysts from an IT background, there are some generic skills that can be applied to the role, and Andy Stat (AS) suggested,

number one is very much linked to my IT background and the way I can look after an organisation of fifty plus people where if something happens I can sort things out quickly due to my background. That's number one but also having a knowledge of rugby, and the software.

In a broad sense, Alan Count (AC) suggested that when looking to appoint an analyst "you need someone with a leadership capability who’s been able, I would say, to break down and project manage what people do." However, perhaps the key person specification related to “someone with a feel for numbers, and an empathy for sports performance” (AS) that displays a very strong work ethic. Ray Lob (RL) highlighted the need for coachability and a "willingness to learn" within a sport-specific context when aligning closely with a coach’s needs. At the outset, these data suggest that key personal skills include communication, numeracy, a strong work ethic and acute attention to detail. In my experience, elite rugby union environments require an individual who can lead the analysis area, whilst managing relationships and data. A non-negotiable characteristic of all performance environments is the need for a balanced workload, as RL argued "is just about getting that pattern right of how much information you get from PA compared to what you would give in a normal working week that makes the information accessible to players.” The veiled issue here is the danger of data overload as opposed to information overload that can be managed (Pohl, 2001) and Richard Binary (RB) pointed out "it's not just a case of collecting more and more, it's about understanding what those figures mean and what those figures mean to your coaching group as well."

An early higher order category emerged in the discussions relating to role purpose. The main reason for doing Sport Performance Analysis is to develop an understanding of sports that can inform decision making by those seeking to enhance sports performance (O’Donoghue, 2008). Initially, an analyst will need to display a performance empathy that helps define the nature of training and competition for coaches and athletes, and use these outputs to educate via formative and summative
feedback. Understanding the performance context will necessitate a grasp of principles and systems of play that can be applied to the analysis process. As DC commented,

I don’t think you necessarily need to know about the movement patterns and the intricacies of the line-out; but you do need an understanding of shape, width, depth, phase play, sustaining shape over a period of time, identifying where potentially their opportunities are arising or could arise, and detecting how that’s being communicated.

Consistent with Groom et al. (2011) AC reinforced this idea by emphasising that

it’s quite heavily linked in with the coaching process, so for me it’s certainly about creating an information base that will aid decisions, and aid learning as well – that’s a big one. So I think it can accelerate, not only an athlete’s learning, but a coach’s learning as well.

Similarly, RB referred to a core purpose of enhancing rugby performance by "adding the fact based evidence to individual thoughts and feelings” whilst AS differentiated between elements of the coach-analyst axis, “from my perspective the coach looks at the pictures, and we look at the numbers. We provide feedback normally to backup their instincts."

KL was the only analyst who identified links into performance management, and emphasised the importance of strategic vision:

I was thinking the benefit of experience now is that if I was a performance manager – if I had the big picture in my head of where I’d like you to go – not the small picture of what we’re doing this week – what I think I would do is, I’d apply bandwidths of performance management.

Thus an analyst has the capacity to define the actual bandwidths themselves (what we actually manage, and to what extent) or synthesise their differing outputs. Moreover, KL suggested the primary purpose of the analyst was to take a player-centric approach that promotes learning through behavioural change. Thus, PA becomes central to the overall performance learning environment by highlighting a range of behavioural changes that impact upon actual performance outputs at varying tiers or bandwidths. In essence, “it’s all about coaching that empowers an athlete to make
remarkable decisions so that they will have a level of autonomy, but that has responsibility" (KL).

Within elite rugby union, the single most important aspect to the role reflects the more sophisticated need for an analyst to filter and interpret “the top layer of information” (RL) in order to contextualise and provide bespoke feedback that meets a coach’s requirements. As identified by numerous interviewees, the end product must be extremely context-specific and geared around impact upon competition performance.

4.2.2 Philosophy

The participants identified a clear philosophy as a critical underpinning factor in relation to the primary purposes of a modern day analyst in elite rugby. The data indicated that this required flexible alignment with a wider performance coaching philosophy, as RB pointed out "I just think you have to be adaptable because every coaching philosophy is different." This flexibility filters into the ability to modify analysis workflows and templates in order to make the feedback as bespoke as possible. Thus, much of the PA intervention links to the coaching process, particularly with regard to systematic observation (DC, AC, RB). However, there is a clear start point in relation to understanding “what that coaching group are trying to achieve" (RB). This response hints at the multi-disciplinary application inherent to PA, as RB highlights, "our environment works very closely with physios, and conditioners and we will try and underpin and add value to what they are doing." PA is therefore the one athlete support service, that has the potential to impact upon all of the other athlete support services in elite rugby union.

As a feedback mechanism KL “wanted to bring an educational perspective to performance, not a compliance model." In other words, PA outputs should not equate to a prosaic formula that creates feedback for feedback’s sake, but instead, generate data that provide a clear performance direction that in turn, create a stimulus and not a habit. In elite rugby union the analyst’s focus can often relate to invariant performance that may equate to placing a context on critical incidents. This context essentially relates to quantifying performance indicators that create a chain of events (KL) that generate critical performance questions. Ultimately, the questions allow the
individual contribution to be placed in the framework of the team plan, and equally, the team issues that have implications for individuals.

The most consistent feedback on philosophy related to the proximal nature of the coach-analyst relationship which reflects previous research findings (Thorpe & Holloway, 2008) or what RB referred to as the

underpinning of thoughts and a coach’s instincts - you are actually boiling it down and trying to find the truth behind the instinct and really you apply that to the three key areas of training, match performance and opposition performance.

The process of searching for the truth behind the instinct can be challenging due to the diversity of coaching philosophy and expectations, there are: “a lot of different demands. So the best analogy I heard in terms of the coach-analyst relationship is a golfer with a caddy” (RL). Typically, the analyst is almost a filter or valve who encourages the coach to think correctly or more objectively, about the performance process due to well timed feedback, that is very much geared around positive behavioural change. This approach has value in balancing limited coach recall (Laird & Waters, 2008) and as RL highlighted, after one test match, "the coaches crudely went through the team and gave each player a score out of ten. I think there was 30% accuracy rating when we waited two days later after the watching the game, and did the same exercise." Having experienced a range of elite international rugby union environments, there is an occasionally misguided tendency to assume people know how and why they are analysing performance. One solution to this type of situation lies in the observation that an environment needs to “embed it as part of the fabric of the team" (DC) so it becomes a key building block within a cyclical performance learning environment. However, DC suggested that coaches and analysts need to establish whether players “learn better from being in a bigger group or a one-on-one, or a mentor environment with a senior player?” Quite simply, the structure of the feedback must not undermine the temporal aspect which can often reflect a drip feed approach (RL).

The interview data highlighted an interesting debate around the balance of time devoted to analysing training and competition, as AS observed,
I spend most of my time with the coaches analysing training - if we get the process right, the outcome looks after itself. My match analysis is given to the players and coaches to digest, but we put an onus on the players to lead the post game reviews with coaches intervening occasionally.

The idea of developing athlete ownership of the performance process is based on “a culture of analysis and improvement and continual improvement at individual and group level linked to the team principles” (DC). This type of philosophy potentially creates a more bespoke end product, if combined with a qualitative almost intuitive approach to analysis that actually factors in the leadership characteristic of gut instinct. It also allows clearer closure on a given performance. Further value can be added to the environment by this team approach to PA where “everyone having a part of that process, that analytical process (becomes) quite a powerful message" (AC). However, in order to ensure impact, it is vital to assess the level of understanding generated by the analysis, particularly with regard to change interventions. Recruiting the right staff and deploying them appropriately within the environment further emphasised the importance of a team approach to PA in elite rugby union. As a National Lead Analyst, RL referred to a responsibility "to develop a team or bank of analysts for the coaches. The way we've modelled it is it is that caddy-coach relationship so each coach has his own analyst - he becomes that coach’s assistant."

This type of philosophy allows the lead analyst to adopt a more strategic approach. AC identified a further advantage to a team approach with regard to flipped learning (Walvoord & Anderson, 1998),

So, let’s say that the performance analyst is deemed the expert, because they have the technological understanding, they should know inside out how the tools work, how to trouble-shoot the tools and how it works. So they should be the expert on that front; but actually they should then be used to educate people within to actually undertake some of their own learning. So flip the learning."

Flipped Learning may have a common sense and natural link into PA in the sense that it moves from a group learning strategy to more individual learning space, and which changes the performance framework into a dynamic, interactive learning environment.
4.2.3 Process Skills.

The general dimension of key process skills linked to performance analysis, constituted a higher order category for all interviewees. At a simplistic level, the skills revolved around data capture, coding and analysis, and feedback. In terms of the focus on what to analyse, RB referred to a broad analytical skill that applied to three main strands of “your own performance in game, opposition performance prior to it and also training.” However, KL was the one analyst who again linked PA with PM and highlighted the importance of using data to define reality,

So I was thinking that, part of my discussion was that the starting point for any performance management had to be understanding what the demand of the game was; because we mythologise this.

An analyst therefore helps to define reality, raise awareness and educate, to achieve a degree of transparency and avoid anomalies. This underpins much of the work undertaken by the analyst in interpreting the coach’s needs, and creating feedback resources to support learning. Identifying what information to present to athletes is a key purpose within the role that reflects "a judgment call and it is part of the skill of the role and of the coaching staff really" (RB). The concomitant communication skills required to deliver this feedback was perceived as an area that is sometimes taken for granted. A strong Coach-Analyst relationship is paramount or the sine qua non “because you can have the best idea in the world but if that contradicts directly the coaches philosophy he’s not going to use it and it's going to be inefficient use of time really" (RB).

Ensuring the analyst and coach use the data to “ask the critical questions” (AS) was a key skill identified as the start point for educating players. A range of data suggested that embedding PA into the performance pathway was the key to properly empowering the coach-athlete relationship to the point where analysis outputs would be created by the athlete, for the athlete. This highlights both a potential management skill, and inter-personal capability for the analyst in nurturing players to become part of a performance solution.
For many participants, interpersonal skills differentiated the overall quality of the analyst, "I think the technical skills are a pre-requisite, they're non-negotiable and the people who will survive in the industry will be the ones who have the personal skills to deliver, develop, maximise those parts to stick in a team" (DC). Clearly, these communication skills form the basis for developing and strengthening the coach-analyst relationship and also allow some negotiation with regard to evolving analysis templates and workflows, as AS highlighted "I can suggest development specific performance indicators to the coaches constantly." Moreover, RB stressed the importance of the “the soft skills and having that ability to work in a coaching group. That is a vitally important part of it."

However, certain skills appeared to differentiate the more advanced category of performance analyst. AC considered two prerequisites for developing the more advanced skills in the sense "you have to have the ability to be able to listen and interpret information" whilst developing an understanding of how people learn. RL argued a case for a reductive or synthesising skill that compresses large data sets into key performance indicators. Further benefits of this skills set link into defining thematic trends, and profiling of team and individual performance. RB extended this idea of filtering information by suggesting,

in some respects you’re almost like a translator, you take a load of data that nobody likes the look of or wants to sift through, and just pull out pertinent bits and reduce it down to things that are going to have practical importance.

This equates to a data mining skill that has applied relevance to the profiling process. The participants with most international experience highlighted the importance of real time analysis during competition that promotes in game feedback and change interventions. RL highlighted just how focused coaching teams have become on in game impact when he pointed out, "what we are trying to do is put microphones on our water carrier so we can analyse what messages were sent and what messages actually got relayed."

This relies on an analyst’s higher order learning and specifically their problem solving capability which requires the application of scientific and design technology skills. This impacts positively on the analyst’s ability to troubleshoot which RL feels is "the
kind of thing when you're going well past the post-game work and this tends to equate to 60% of my workload but it’s necessary.”

Senior performance analysts clearly have extended role remits that require a wider skills set to embrace, for example, the analysis of coach behaviors, as RL observed,

Yes, we film our coaches in our box. Two days ago Fred wanted to look at his presentations - all our reviews and previews - I just put a database together from Fred two days ago to go through all the Six Nations work. So he looks at the way he communicates, where he is looking, what he's saying in terms of what was said in preview, and did this actually work out in games.

The role of the analyst has now expanded into analysing qualitative themes, for example RL outlined a situation where "I would be going through it every five minutes looking at momentum swings." This analysis of increased or decreased momentum in a performance can add meaningful qualitative data to the understanding of successful and unsuccessful performance. The benefits of this approach from RB’s perspective, has allowed the analyst to "have a licence to act on instinct as opposed to just looking at things that will be used." Whist slightly over stated, DC argued a case for the qualitative angle being most important, "I just think it’s always been qualitative. The qualitative analysis is actually looking at the detail, replay and watch it again, so to me that is just the qualitative analysis of performance. That’s where you understand performance. The stats aren’t going to give you the understanding of it."

The wider remit of the analyst in elite rugby union has also extended into the area of recruitment and scouting. This area raises the question of whether or not the PA should indirectly influence the recruitment and selection process. O’Donoghue (2006) made reference to one of the four purposes of match analysis identified by Brackenridge and Alderson (1985) as team selection, and suggested that detailed analysis can inform the selectors by identifying positive and negative play. Trninic et al. (2008) identified three strategies where PA can impact on selection. Initially, the tactical approach is defined and then the players selected, or the best players are selected and the tactics then designed around them, or finally a combination where the player application of the tactics can be modified before and during competition. Therefore, PA data can clearly inform and support the selection process by achieving transparency and avoiding anomalies, and it can also be used to provide formative
feedback for the non-selected. PA data allows most players to pick themselves, if the data are objective and compelling due to the integration of qualitative analysis.

The process skills within PA and coaching are complementary which creates “a crossing of the boundary into the coaching realms” (RB). However, some data indicated that the line between the role of the analyst and coach needed to be preserved in order to avoid mixed messages. RL argued, "I mean we are not trying to promote analysts into coaching but for me it's about whether you want to be a coach’s analyst or the guy who just wants to produce game day stats."

4.2.4 Measuring Effectiveness.

The higher order category of how to measure the effectiveness of the process and outcomes of PA emerged for many of the participants. The sustainability of the PA process highlighted the extended nature of potential measures, in the context that "it’s just about it being a longitudinal, cyclical process and not a quick fix" (DC). However, RL was far clearer in his perception of the key metrics or performance indicators when he referred to the quality of five stages, “it’s got to be code, produce, analyse, filter, look and go back to the coach with three or four points saying this is right." This point emphasises strongly the need for the output to link directly with decision making, if PA is going to be deemed effective. The integration of quantitative and qualitative measures was highlighted by AS who asserted, "we have three KPIs one of them is game-related numbers wise and the other two aren't." The two additional measures utilised were the quality of the contact skills used in three quarters of all training sessions pre game and intensity which combined Global Positioning System (GPS) data to establish higher velocity movement patterns.

Profiling data can be viewed as an efficient and cost effective approach in defining performance trends and also providing a performance direction. KL suggested “what I would do now is, I think if I saw something in you that it was important to me to look at, rather than feeding back to you, I’d be feeding forward to you and encourage you to think about the behaviour you're going towards; and how I could use that." With regard to the analyst as opposed to the product of the analysis, RB proposed the value of peer appraisal,
I think it's really good that there are a few of us in the department because we bounce ideas off one another and it means we are almost reviewing each other's performances I guess and if things aren't up to scratch I mean we know about it and realise it really quickly.

4.2.5 Barriers.

With the high pressure time demands in elite rugby union, RL considered initiating change as the biggest challenge, "it's just about that time and when you can affect that change. That's the difficulty of it." In terms of key barriers to effective PA, AS emphasised the importance of avoiding over-analysis, "is not the be all and end all, it only gives you an indication of what is likely to happen and what has happened and I think if you do over analyse you certainly do become bogged down by the numbers." Moreover, AC referred to this problem in the manner in which it works against the spontaneity of sports performance.

Whilst athlete burnout is tantamount to mismanagement or even non-management, RL suggested that analyst burnout was a very real issue in many rugby environments, as supported by DC,

when I look at analysts coming through the system, the good ones are going to get burned out due to the level of work being pushed onto them. This links to a deeper rooted problem of analysts being paid on a match by match basis, so the quicker they get a match done, the more matches they get done, the more they get paid is the wrong message.

The fundamental challenge of role clarity remains, and as RB suggested, "to start with there needs to be a clearer understanding of the job description of an analyst." This argument was extended by RL who intimated “we know what we do but at what level, what scale and how do you break those roles up?” The problem is further accentuated by the notion of environmental blockage,

I think there aren't enough good analysts out there to show people what a good analyst would bring to an environment. That would differentiate it. I think it’s a historical blockage thing, that people got the jobs ten years ago and they're still there and they haven’t moved on, even though the technology has (DC).
4.2.6 Future Directions.

A critical higher order category related to future directions for PA. Linking to the key higher order skill for both a Performance Manager and Performance Analyst, KL asserted,

what I'm thinking now is the next generation of people are going to do a very interesting thing. They're going to make an infinitely complex problem, simple. So what we're going to do is say 'We've got all that data but actually there is a macro pattern.' Taking the key skill and nature of the process and doing it better.

RL suggested a move away from timeline based outputs to establish "more intuitive ways of asking performance related questions from data sets." The idea of a more integrated team approach to improve the transition from data to performance decisions emphasised the importance of player understanding and their central position within this,

the future’s going to be about micro-concentration, micro-focus, because what’s happening now is vital. So I think that the next great wave will be less is more with really powerful patterns that are embedded in the guided discovery of training environments that themselves are dynamical systems. So players are making decisions (KL).

RL also suggested that “you can do less but actually give players more.” This offsets the reactive nature to many performance environments where coaches dwell on the granularity of detail in performance, or in a reactive manner “each week, you try to change something that happened last week” (KL). In contrast, RB alluded to the predictive value of data analytics, but placed firmly in the context of performance,

I think the whole money ball phenomenon for want of a better word seems to have grasped peoples’ attention and it's become quite a romantic notion. Ultimately in terms of future directions, we may need things along those lines but I still think it needs to be developed closely with coaching needs.

AC also referred to the need for a more longitudinal almost predictive approach to become more commonplace. RB referred to the search for performance solution formulae whilst RL asserted “we want to look for qualitative stuff like off the ball work rate and decision making things. That’s where the next level of analysis is.”
Clearly, the role of the analyst in elite rugby union needs to be re-defined for many of the participants,

I had it clear in my mind so if you are a notation analyst then you work on pen and paper, if you're a video analyst you are a coder - if you are a performance analyst you are starting to provide feedback to coaches and players, and that is the thing at the top. You've got strands of analysts going everywhere and you could put it in those bandings but someone almost needs to design a model to come up with where people actually are (RL).

However, in elite rugby, the lead analyst is almost synonymous with an assistant coach, and will now need to place outputs in a holistic, behavioural and environmental context, which is reflected in KL’s view that,

for me one of my big feelings for the last decade in fact, is this idea of less being more. So I now have three models of behaviour. So the front office is the players’ performance and the coaches’ relationship with them. The back office is the support staff that enable those two to do their jobs for the team. And the deep back office is all the people who are working on these patternings of behaviour.

This perspective highlights just the importance of the holistic element as a means of negating the weakness of deferring too much to the knowledge expert, at the wrong time.

From the overall performance analysis interview findings, it is apparent that four tiers of analysts emerged within current elite rugby union environments,
Figure 4.2: Categories of Performance Analyst in Elite Rugby Union.

Tier one analysts are head roles that equate to an assistant coach position within a management group and define strategy, workflow and analysis template design and are ultimately responsible for all PA data ranging from weekly outputs to more longitudinal and predictive trend analysis. They take a lead with regard to the parameters of the real time data, change management and data synthesis, whilst managing the outputs of the match analyst. Tier two practitioners are very much senior roles with significant responsibility for competition data; this role may have assistant analysts feeding into them and the overall process in the shape of in-game and post-game analysts. Prior to competition, the role will evaluate the outputs of an opposition and pre-game analyst. Tier three and four roles are operational remits that deliver distinct elements of the performance analysis provision, ranging from technical elements, technique analysis, time-motion data integrated into the computerised PA data, through to basic data capture and simple coding tasks. In essence, recognition is accompanied by the significance, breadth and depth of the role responsibilities. However, where resources are limited, the areas managed by the match analyst can be undertaken by the assistant technical coaches, as they align with
the final aspect of any coaching process model. In addition, RL referred to the increase in player involvement in the analysis process, where young academy players "are doing stuff that coaches were doing three or four years ago" which allows an analyst to divert focus into other performance areas. On this theme, DC highlighted the fact that capability needed to be deployed differently because,

the main thing that’s missing is an investment in the future and by that I mean an investment in the talent of the future. So, where do we put our best coaches? Where do we put our best analysts? And they should be in the academies.

Strategically, the future progression for PA will need to reconcile an inherent paradox. On one hand, as KL argues, "where I believe coaching is vital, is if an invasive team-field game is uncertain, then our training environments have to have a fidelity towards uncertainty." As a consequence, PA should create uncertainty by posing performance problems but also provide a resource that coaches and players can use to generate solutions and new problems. On the other hand, real time analysis that carries greater impact has immediate value to the performance learning environment in relation to promoting player understanding, in the sense that,

we need to be able to have patterns of behaviour that we can recognise. If we are losers, we need to use probability to get us into the game; if we’re winners we need probability to amplify our gap. So the idea about controlling the game. So what I'm thinking then is that there are some real time issues, which I believe are to do with the other players understanding the game (KL).

The translation of large data sets into tangible performance decisions is relevant across sports and cultures. The requirement is not so much big data as "big useful data" (DC). With regard to optimising feedback, RL suggested "everybody is talking about big data and best data but nobody is looking at what type of data players absorb and also how to present it and how to give it to them." The added implication relates to how these data are presented to varying audiences but undoubtedly data visualisation is key in relation to generating summary dashboards. However, this technique sometimes creates a tension between functionality and aesthetics and as a consequence, “I think as much as data visualisation is important, I just think it needs to be kept simple, to deliver the key message that it’s trying to put across" (DC). In relation to technology advancement,
progress needs to be made hand-in-hand with performance and I really think that is the key for me as technology increases and access to data improves, it will become more about how smart you are gathering the data and how you manipulate it to get the performance gains that are ultimately effective and passed onto the pitch (RB).

With defence dominating international football and rugby union, the performance progressions may actually lie in attack which places an educational responsibility on PA. As KL asserted,

what I'm now thinking is that I do know, from say, the vectors of how the game is played, I understand that we can position ourselves to be in certain places at certain times. And my question always to any team now is, how would you score? So what is the gold chip move you’ve got that will score?

RB argued a case in relation to the theory and practice interface in elite rugby union as, "PA is slightly behind in applying the influence of research and advancing the area in comparison to the fitness and medical sides." With regard to future research directions, RB would like to see "academic studies that have a practical relevance”, linking into talent identification models (KL) 3D footage that becomes “mission-critical and immersive" (DC) learning styles linked to PA feedback and ultimately, AS observed, “it could go anywhere because every coach may actually have a different philosophy on it."

It is very much still geared around doing things better, but as RB pointed out "fundamentally things haven’t changed, it’s not what the analyst looks at so much as how they look at it." In summary, elite rugby union needs to initiate some cultural change and "flip the mentality of, is it an expenditure or is it an investment?" (DC). Outcome driven investment into PA will form the nucleus for a challenging, proactive performance learning environment that links training to the game context and in doing so completes the "performance circle” (RL).

KL referred to the importance of utilising performance analysis to manage performance,

all the time my feeling was that performance management is possible, because we have some data about what that performance is. Because before we started, people had flash-bulb memories of what was going on. So the evidence seems to be that because the human eye/brain system loses 80% of what we’ve seen
within two hours, the 20% that’s left now starts to become highlighted or flash-bulbed.

In summary, what is the link between PM and PA? In simple terms, an inter-dependent relationship exists that is based on the need to pose, and answer critical performance questions through feedback that is integrated, specific, and reductive in nature. Both sets of interview data suggest that a model of feedback can be designed within a motivational and instructional framework that constitutes a cornerstone within the performance learning environment,

![Figure 4.3: A Model of Feedback.](image)

This feedback model can generate outputs that provide a strategic direction (the need to set the objectives) that links into a multi-disciplinary management focus (managing performance to the objectives) that in turn provides a basis for the analysis of performance (measuring performance against objectives). Whilst the most common performance analysis focus in elite rugby union environments tends to encompass tactical evaluation, technical effectiveness and technique analysis, at the centre of the environment are the individual athlete and squad who benefit further from behavioural analysis and time motion assessment. This inter-relationship of factors was developed into an original multi-disciplinary integrated model of Performance Management and Analysis (figure 4.4),
Figure 4.4: An Integrated model of Performance Management and Analysis.

This original model has a people centric focus and is a cyclical (as opposed to hierarchical) strategic structure that better reflects a high performance sporting environment. It embodies the five constituent elements of any athlete profile and at its core, lies performance analysis which is the filter that both defines performance standards and also informs future strategic decision making in terms of enhancing performance. In short, such a model can be translated into a functional process that compresses large, unwieldy multi-disciplinary data sets into simple inter-disciplinary outputs that provide meaningful feed-forward for athletes and coaches. This will assist the change process in elite sport by answering key performance questions and monitoring relative progression trends. Player learning occurs within the inner ring as information management is filtered through from the outer rings.

Invariably, changes in sports performance necessitate a concomitant change in PA. However, in elite rugby union, PA can reverse this trend and be less reactive and more of an accelerator of change without having to be the central focus. Technological advances allow most of the performance questions generated by coaches and athletes to be answered (McGarry et al., 2013) but the analyst is becoming more prominent in elite rugby union as a mechanism for posing new
questions. This relates to the fact that most analysts understand the importance of communicating with their audience, be it the team, coach or an individual.

KL remained the one analyst making a link into PM and remarked

So the big thing for me is that if we know all this stuff, as a scientist, as a practitioner, then how would we embed our performance management in an ecologically valid model; where we could have realistic expectations that were informed by evidence and we iterated our discussions around what is possible?

The main findings from the performance management and performance analysis interviews were used to inform the case study by underpinning the initial change management interventions.

4.3 Case Study: Russian National Rugby Union Team.

The following case study is based upon application of the Integrated model of Performance Management and Analysis, in order to design a system for managing High Performance sport. The narrative focuses on the outputs or deliverables from the intervention, and starts by exploring the relationship between a performance review and the concomitant design of a strategic plan.

Gilson et al. (2001, p.399) considered the importance of narrative where “purpose replaces vision and mission, flow replaces motivation and inspiration replaces leadership. Storytelling, not change management provides the pathway to peak (sports) performance”. The purpose was related to the desire to clarify the concept of performance management in elite rugby union environments that essentially focus on the two targets of winning and change. The inspiration was the production of models in both performance management and analysis that provide a process that can lead and direct similar sporting environments. The storytelling element incorporated the Russian National rugby team`s performance development (including their first appearance in the IRB Rugby World Cup 2011) and the manner in which a performance management change intervention impacted upon the process and outcome. The study focussed on three key aspects: (i) the structure which related to how performance management was implemented, specifically the core activities and
management of the program; (ii) the process or how the service (performance management based on performance analysis) was delivered, which encompassed individual delivery style, philosophy and personnel capability; and, (iii) the outcomes which entailed the evaluation of performance management and analysis for effectiveness.

4.3.1 Performance Review.

From a Performance Management perspective, the first task was to carefully review the performance environment in order to establish the key strengths and challenges. My vision for the review process encompassed taking a people-centred approach, applying an ethos geared around sustained excellence, the need to provide leadership during and post review, and, a process undertaken with total transparency and integrity (i.e. implementation of a completely ethical and professional process). In broad terms the RUR perceived the competitive success of its National Team to be critically important for the following reasons:

- It helps attract high profile rugby union to Russia;
- It is a key financial factor underpinning the Russian rugby union environment;
- It is fundamental to the creation of a broader sense of national identity and pride;
- It encourages the nation to be more active and improves concomitant health-related fitness levels; and
- It develops a positive image to market Russian products overseas.

The aim of the review was to evaluate Russian rugby and recommend potential changes required to improve standards of performance. The stated objectives of the review were outlined as follows:

- A critical assessment of the existing governance, management, structure and performance standards of rugby in Russia;
- Solution-based recommendations to deliver improved performance standards and management structure for rugby;
- Identification of potential impediments that needed to be reformed and
strategies to overcome those impediments; and,
• A plan to implement the recommendations

The main assumption relating to this review process is that any pending new appointments might have an integral role in the definition of the strategic outcomes. In addition, it was assumed that no structural changes would occur within elite rugby during the review process data collection. The major constraints related to time, finance and resources.

In an attempt to start with the outcome in mind, the two main goals of the review were to propose new best practice structures or models, and, highlight strategic imperatives to move the game forward.

In terms of governance, there was a view that RUR were more professional than many other Russian sports in its governance, and the top end people were getting it right. However, there was a strength of feeling particularly from the clubs, that the RUR needed better governance and operational delivery of the game. Many considered that the current governance led to disjointed behaviours and the current constitution was a major obstacle to progression as it lacked specificity and function. From a national perspective there was a distinct view that the clubs heavily influenced the Union, and that there needed for a professional rugby board.

To move toward central playing contracts, there appeared to be a view that they were an ‘all or nothing situation’ although there appeared to be an issue with the club owners that needed to be reconciled through some form of central control. Some considered central contracts to be irrelevant, counter productive and actually negative in terms of possibly promoting a player drain out of Russia. Moreover, if there was better congruence between the national and club set ups, then central contracts would become an obsolete idea. From a positive perspective, the benefits of central contracts were perceived to include control of the controllables, a more even spread of the player talent base across Russia, recruitment of central coaches who could influence more than one club, a situation where only the top thirty players would be contracted, and a coherent mechanism to retain good staff.
The competitive structure was perceived to be a major limitation in the RUR system. One National lead role suggested that Russian Rugby did not have an appropriate competition structure at either International or domestic levels in order to achieve its objectives and become a high performance country. The idea of a participation agreement was mooted with a framework that was tight enough to exert control but flexible enough to facilitate accelerated change when necessary. Yet it was suggested that an agreement would not work for academies, and was just a smokescreen to make clubs more accountable.

The general consensus was there needed to be far more investment in academies (a ‘catch them young’ approach) with some club districts or regions possibly needing more than one academy and the notion that the National Academy should actually kick in at the age of nineteen. All participants agreed that more needed to be achieved pre, and post academy in terms of transition coherence.

The largest amount of feedback within the review process related to culture, which was both cost neutral and challenging due to entrenched values and perspectives. From a general standpoint, all participants agreed that there was a lack of an all-embracing vision that inspired and engendered a set of shared values between the national set up and the clubs. Management by Values is a strategic leadership approach that has three key objectives to simplify, guide, and secure commitment (Dolan & Richley, 2006). Applied consistently, there is clear potential to enhance a performance environment by the improved consistency and transparency of the decision making process (Kerwin et al., 2014). There appeared to be a strong blame culture that was potentially divisive, and all parties appeared to want to avoid this at all costs. There was also a clear recognition that everyone needed to establish a culture of excellence; with competitive excellence being the guiding principle. Some questioned whether the purpose of the environment was the performance and success of the national team, whilst most participants queried whether the performance environment was simply tough enough? There was a wider acceptance that this might prove to be a good juncture to introduce change that was aligned with the national set up and clubs working more closely together. National tier feedback suggested that the environment needed a structure and a process that was based upon achievement, and helped to define points of success. The fundamental question related to how
organisations are brought together, and everyone could be made to feel part of a process. One solution lay in the need for more accountability at all levels, that was task measured, with distinct outcome measures for all. However, the immediate challenge was to deal with excessive levels of self interest that translated into a lack of clarity or unity of purpose between the RUR and the clubs. It was suggested that the latter needed to compromise for the good of the National game, and the best marketing for the clubs was a winning Russia. A range of solutions were suggested to deal with this tension including dealing with pockets of player power, the need to breakdown the siege mentality, and enabling foreign coaches to integrate into a culture and not impose their own. The tensions were not viewed as purely negative due to the existence of tribal club based aggression that was highlighted as positive and different to parochialism.

There was a strong feeling that RUR needed a continuous improvement culture that extended to avoiding a ‘one size fits all’ mentality, and making a concerted drive to develop real leadership skills. Some performance staff identified the fact that Russian rugby needed a better feedback culture that highlighted the fact that high performance does not refer to a department, so much as a way of life. Moreover, they argued that all parties needed to break down the jaundiced club structure, and avoid quantum leap exercises that historically were nothing more than window dressing that possessed no performance impact. It was very apparent the national and club coaches were key to driving positive change but there was a need to re-examine the definition of the coaching experience in Russia. Ultimately, there was a consensus across the board that RUR had to aim to educate people far better, as everyone needed to understand the link, and differences between, the elite and community games.

In relation to rugby performance, generally many people failed to understand that elite rugby was about winning and not just development. My own view was that often the best way to develop is to start winning. A range of feedback indicated that amateur attitudes amongst older players would very soon be circumvented by younger, more professional, elite players. National feedback recognised that more attractive and stronger club sides would support the need for a stronger national team. Club and national participants felt there was a need to separate the function of player and coach development, in order to kick start both. Substantial feedback highlighted that more
skills development needed to occur at senior, professional level, which was reflected in variable national team performance. There was a strong feeling that the club game should firmly underpin the national team, and as such coaches needed to analyse more training so that players could be exposed to more intense rugby in a technical and physical sense. That intensity would also need to translate into competition for places within the elite game. Whilst players were apparently more knowledgeable and better conditioned than ever before, the standard was still insufficiently high in world terms. For a leading club owner it was clear, “we must concern ourselves as much with quality as numbers” particularly with regard to developing better young athletes. Many considered that RUR actually needed a ten-year player plan starting at ten years of age, coupled with high quality overseas players who would fast track the youngsters. The National Management Group considered that each club should have a dedicated centre of excellence, which would allow them to adopt a more coherent player-centred approach. All parties viewed sevens rugby as extremely important but selection of the individual was more of a crucial issue. Continuing to invest in the Sevens squad was vital, and as World Rugby recently stated, at senior international level, 58% of all players outside of the front five came through the sevens circuit (IRB, 2011).

In terms of general rugby development, a general consensus indicated that CPD underpinned elite development for all, but one senior figure posed the question, “do we currently have realistic appraisal or naive optimism?” Nationally, there was a suggestion that the player development at club level should be incentivised. In other words, if a club generated more players of a national standard than others, then they should receive financial reward for that. One major gap in the system related to positional and selection criteria that created a degree of ambiguity for players and coaches regarding the balance of competencies that needed to be developed.

In relation to feedback on coaching, general comments ranged from national coaching appointments needing clearer criteria, to coaches taking more time to know their players. On a positive note, there was evidence that some full-time professional club coaches could double up as national skills coaches, and more coaches could strive for a minimum level four qualification. On a negative stance, club coaches were perceived as being not good enough either technically or tactically. Moreover,
professional club coaches seemed to work in cocoons, which implied all elements of the elite game needed to adopt a more honest, transparent, inclusive and open relationship. The national view of coaching suggested that it needed more innovation but at the same time common sense. For example, Russian rugby needed to optimise small group coaching situations and ratios, and coach more through games as opposed to drills. Finally, there was a feeling that top club coaches were motivated by performance only and the RUR needed ‘bigger picture’ people in those senior roles, or aspiring coaches would need to move away and learn in other environments.

Feedback on strategy indicated that the RUR should adopt a top down approach to information-knowledge and policy dissemination. In other words, information and best practice improvement flow must come from the RUR down through the elite game. Both club and national staff indicated that there needed to be a clearer vision of high performance and the elite rugby pathway, as well as a more sustainable business model. One key club owner indicated, “we need to be more efficient to get more return. That starts with common shared values for all.” The senior managers within RUR were clear that the personnel line takes the longest to grow and is the hardest to manage, but raising capability was a perennial target and challenge. Both club and national feedback was adamant that there was a generic need for very clear strategies on how to arrive at the best staff and then allow scope for their development. This perspective translated into an ethos of being more innovative in the way rugby does its business. However, it was acknowledged that this will only occur through managing capability better, and as one participant asked, “will the RUR be an enduring capability in thirty years time?” An experienced rugby practitioner in Russia indicated that “uninformed people believe a major reconstruction needs to happen. The only issue is the RUR could further develop their leadership and strategy.”

In terms of staffing, there was a feeling that bridges must be built from the top and a lot of work must be conducted at that level. The concomitant issue related to appointing people with appropriate behaviours, mental strength, honesty and integrity. A range of feedback indicated that everyone in the system must understand their roles and remits, which by implication they did not. One key individual suggested that it was all very well placing the right people in the right jobs, but most staff working in
rugby in Russia had little or no recognition for what they did, which impacted upon morale.

From a system perspective, it was suggested by a number of participants that Russian rugby should be a business that is based on delivering a capability in relation to time, cost and performance. There was a clear requirement to examine policy, threat and environment (all heavily influenced by finance) whilst avoiding making political appointments at the top. Within the total rugby environment there was a perceived lack of accountability and discipline.

In relation to communications, there was a general feeling that although there had been an improvement, there was still a lot to be done in terms of getting the true message across and growing the RUR into a strong and respected brand. A view emerged that suggested there was an over-reliance on ‘spin’ rather than substance, and consequently, there needed to be a greater investment in more communications staff, who could potentially influence the media and hence, the public. The clubs argued that the RUR needed to listen more and join up some of the technology to improve communication between the two groups.

The review process was truncated due to time constraints but nevertheless meaningful due to the level of confidentiality applied to the outputs. In starting to apply some of the outcomes of the review, it was apparent that RUR required a rugby strategic plan and in particular a High Performance plan. The strategy would need to be built on three pillars, specifically a performance plan that was player-centred, development driven and competition underpinned.

The size of Russia is a significant challenge to the development of a professional league (comparable to the challenges facing Australia, China, USA and Canada). There is a strong argument in favour of Russia developing a regional representation rugby structure, however, the history and support of Russian Rugby is based on the club structure and a Russian championship and it is on this basis that professional rugby was launched. It would have been wrong for Russian Rugby to change this approach and indeed a club based professional game offers a stronger branded structure with greater flexibility, depth and attracts independent investment. However,
the real issue related to the geography of the club based professional game needs to be representative of the country as a whole and recognise both the European and Asian dynamics of the country. To date most of potential growth of professional rugby appears to be in the European region of Russia. The Super League (SL) should follow a policy of assessing the feasibility of establishing more Asian professional clubs to equalise their representation.

Figure 4.5: The geographical position of Russian Professional Rugby Clubs.

From an international perspective, ideally a pathway should exist to enable a country to progress to play regular competitive fixtures against other countries of comparable and better status in order to improve. Countries like Russia need to see a pathway for their ambitions, although the International structures in rugby union mean that outside of the Rugby World Cup, there are no clear pathways for aspiring countries to compete with the world's best rugby nations due to the ‘closed shop’ status of the 6 Nations. This issue is starting to be addressed effectively by World Rugby with Argentina added to the southern hemisphere Tri Nations competition, and Namibia being offered a place in the South African Currie Cup. Such tournaments have a very strong tradition and identity and can be used to resolve an issue that enables the IRB to meet its own objective of ten unions being capable of reaching the 2015 RWC final.
The RUR developed an adequate National Academy Centre, but needed to maximise its overall use. As part of this process the RUR would also need to discuss with the IRB whether this centre could be financially supported by the IRB to be an Eastern European Academy centre for CIS Countries who do not have the benefit of such facilities. The National Academy should oversee and direct the RUR Academy structures and processes. This should include the proposed Regional Development centres. The Russian Academy process was focused on the individual development of players, coaches and referees. The higher order categories that emerged from the performance review highlighted the following structure as a basis for strategic planning:

**Figure 4.6: The Structure of the Strategic Plan.**

Based on the priorities that would give the greatest impact, a five year strategic plan based on ten imperatives was designed as an outcome of the review:

1) A player-centred, development driven and competition underpinned performance philosophy.
2) A performance learning environment based on a High Performance Management System.
3) Capability Development through the appointment of a Performance Manager.
4) A Leadership programme to drive performance and cultural / behavioural congruence
5) World class physical and human resources
6) Outcome-driven Investment
7) Individual player development
8) Restructured competitive season
9) Inter-Disciplinary Athlete Support Provision
10) World class talent identification; avoidance of talent selection.

The general priorities emerging from the review were extremely clear having reflected on the process and outcome:

- To use the National Team to provide clear direction for the next five years.
- To be simple and focused.
- To be clear on what each department’s role is, and isn’t.
- To be more outcome-orientated.
- To identify the what, and the how.

From the National Head Coach’s perspective, the review highlighted four specific issues for the performance management of the group that aligned with “the development of a vision, the management of operations, the leadership of people, and the creation of a culture” (Fletcher & Arnold, 2011, p. 234). The management group arrived at a vision ‘to be respected as winners,’ which was aligned with the group’s mission to ‘build a team ethos that supports a group of players to do whatever it takes to win.’

![Diagram of Russian National Squad Vision, Mission and Values](image-url)

Figure 4.7 Russian National Squad Vision, Mission and Values.
As a PM, I would need to display “context-specific expertise as a critical marker of successfully …… disseminating the team’s vision” (Collins & Cruickshank, 2012, p.467). A broad strategy was designed by myself and the National Head Coach that was based on three key strands of Preparation (Physical, Mental, Technical, Tactical, and Lifestyle) Leadership (management on and off the field of both players and staff) and a High Performance cultural environment. With Kris Luck’s interview response resonating in my ears (“my question always to any team now is, how would you score?”) I discussed the identity of the group with both the management team and players, and arrived at a Russian (русский) style based on the following four beliefs,

- Play for the Team (ИГРАЙТЕ ОДИН ЗА ВСЕХ И ВСЕ ЗА ОДНОГО)
- Build the Game (УПРАВЛЕНИЕ ИГРОЙ)
- Heads Up Defence (АЩИТА)
- Build Phases in Attack (АТАКА)

The initial values of the management and playing group were defined as,

- Stick Together
- Team First
- Selfless
- Humility
- Discipline

The last value was a prominent one for the players and I detected a feeling from the group that they wanted to explore this further in order to develop as a squad. I asked the question what did people understand by the term integrity? The most telling comment came from the youngest squad player who was a Siberian and answered “it is when your behaviours match your values.” My response was “exactly – meeting closed.” The impact and newly found credibility for this player from a complete moment of clarity, was the kind of outcome you can’t plan for, but certainly need to capitalise upon. At the start of the next squad meeting, I thanked the player for his response and explained that I thought our culture was quite simply the environment that living our values created.
4.3.2 Identifying Performance Standards.

Gilmore and Gilson (2007) suggested that managing change involves aligning structures and processes with business decision making that realise value to the organisation. They identified four distinct, yet related value propositions in terms of time-scale (short and long term) and focus (internal and external activity). These parameters provided useful guiding principles at the start of the intervention. Arriving at the Olympic training Centre in Moscow in April 2011, it was very apparent that ice hockey and gymnastics were the key performance sports with rugby union something of an afterthought. In Russia, if a sport receives Olympic status then it is integrated into the school curriculum, hence rugby had no foothold in the sporting culture of the country. Planning processes to date within the national squad tended to work on an arrival at camp and then pre-plan on a daily basis which actually failed to even meet the requirements of micro-cycle plan. Therefore, a one hundred day periodised plan (appendix E) was designed to help the players understand the importance of peaking and tapering toward competition; a hitherto unmentioned factor in their environment. Players and management were involved in the process, and feedback indicated that this framework allowed them to set meaningful short and medium term goals with the coaches, which provided both direction and reassurance.

With regard to pre-existing data, the environment possessed some basic hand notation match analysis and some even more limited anthropometric ‘figures’ (that had been inaccurately generated through invalid protocols). I saw a further opportunity here to both elevate understanding of the player’s own individual development, but also against current world class benchmark standards in order to provide a motivational and instructional level of feedback that equated to a reality check for the majority of the squad.

Therefore, step one from a performance management perspective was to generate some physical data that could then be managed against world class physical performance benchmark standards (appendix F) to establish the type of demands that could be placed on the players. In short, the wider squad did not appear to excel in any physical component, and their basic running and lifting mechanics were poor. This actually gave the coaches some very easy wins with regard to raising
performance standards, and the latter created the need for some basic functional movement screening that could highlight both general and specific weaknesses in the squad. Baseline measures indicated that the squad, and particularly the front five forwards, lacked strength, power and speed endurance that would have a clear implication for the team’s defensive performance, although some of the backs possessed strong levels of reactive agility, acceleration and top end speed. The outputs from this activity constituted an important strand within the performance management system.

From a performance perspective, and as highlighted within both interview studies, there was a clear need to articulate and share coaching and performance philosophies, in order to set initial objectives. The National Head Coach was particularly strong in this department and articulated both his personal and rugby philosophies (appendix G). The exercise for the Backs and Forwards coaches respectively, was more of a challenge, and required that I undertook a session on what a coaching philosophy actually was, by presenting my own personal coaching philosophy (appendix H). The first step to success in elite sport is invariably built on role clarity, and role remits were then defined for each of the management group, once the philosophies had been discussed in detail. This process highlighted some interesting tensions. It was vital that key individuals were retained in order to promote the idea of retaining and developing Russian born staff to fulfill the management group positions. One individual was an experienced but technically limited coach who tended to take nothing more than an observer’s role in training sessions unless encouraged in a different direction. However, when the issue of selection was raised he became very vocal and animated and tended to base his arguments on player capability around historical labels. The latter translated into his assessment of players often contradicting those of the new National Head Coach, and the ambiguity stemmed from a lack of selection criteria and positional role remits.

Therefore, design of a simple selection criteria framework certainly helped get the coaches and players on the same page with regard to expectation of performance remit, but they required reinforcement in both practical and off field based sessions. At this juncture, the management group of coaches realised that there was a connection or continuum between selection criteria (appendix I) and positional role
remits (appendix J) their player appraisal chart (appendix K) and the ultimate succession plan. It has been argued that “team selection on the basis of good predictors of actual performance is a sensible strategy” (Hugh-Morton 2009, p.1601) and arriving at a point where all coaches accepted that all three elements needed to co-exist was a significant step forward for the learning environment with regard to increased clarity, and levels of, formative feedback. The Head Coach acknowledged that the selection process is a visible expression of how the group functions and written criteria and a policy would help eradicate some historical mistrust with the group. Trninic et al. (2008, p.16) proposed that,

a constructive selection of players based on a system of criteria which are features of the game tactics model formation is essential for the development of professional team sports and the teams' competition success rate.

Using this model, the approach was based on defining game tactics and then selecting the players that best suited that performance plan. However, as the players’ capability was more accurately measured via the positional criteria, the approach changed to one of selecting the best players available and then defining a tactical plan around them. In the context of the Russian environment, the latter provided a more effective outcome. In elite rugby, whilst the matter of opinion (coach subjectivity) must be balanced against objective selection criteria, there needs to be a final decision maker who can apply performance analysis data to inform the selection process (O’Donoghue, 2006). However, as the coaching group acknowledged, data should never replace human interpretation.

A major lapse occurred post publication of the criteria, when a final trial was held in Moscow prior to the RWC squad being announced which really revolved around finalising four positions. Prior to the final whistle, the coaches were clear on the composition of the squad, and once the game ended, and in front of Russian national television, a member of the management team sat the players down in a circle on the pitch and started to tell them, one by one, whether they had attained selection. We diffused this situation quickly, and apologised to the squad within the team room at the stadium. This episode was incredibly revealing with regard to the previous coach-player relationships and the basic lack of player engagement and ownership of the environment. Added to the review findings this highlighted that a leadership
programme would need to be implemented within the squad to promote a climate of more proactive performance management and to raise overall performance standards. In addition, the entire group would need to take a collective approach of managing by values. I led an initial values session that highlighted the following three priorities for the playing squad of disciplined people, disciplined actions and disciplined thoughts. I considered this to be a reaction to the on-pitch trial feedback and a feeling that the players felt we viewed them as lacking a professional ethos. To an extent the latter was true as the average salary for a squad player equated to 45k GBP, but many of the behaviours were verging on amateur. The challenge from a performance management perspective was to take an educational approach and utilise every intervention to raise the players’ awareness of why certain aspects might have been altered. The playing squad were very comfortable with a ‘tell us what to do’ approach which negated learning and accountability. With the players developing a gradual understanding, it was imperative that they understood where their role contribution fitted back within the team context; this connection is seldom made and frequently avoided by management groups. The leadership group itself, raised the question of why some teams perform better and more consistently than others. The characteristics of high performing teams were then discussed with the entire management and playing squad, and Blanchard’s (2006) seven parameters were used to allow a team profiling exercise to occur (figure 4.8) that became a focal point for the playing squad to self review team performance on and off the field. The playing squad were sub divided into four equal groups (‘Bears’ - медведи; ‘Reds’ - красные; ‘Strength’ - прочность; and ‘Unity’ - единство) and undertook the exercise on three occasions (May, July and September 2011; figure 4.9),
Figure 4.8: Team Profiling Assessment May 2011.

Figure 4.9: Team Profiling Assessment September 2011.
Practically, the team profile of September 2011 indicated that the playing group considered they had become more empowered to make decisions, and as a result their recognition was increased and the already strong morale strengthened further over the six month period. The advantages of this intervention included helping motivate the group and improve their adherence to the performance programme, identifying strengths and weaknesses and as a result it highlighted potential change interventions. However, its greatest value lay in the individual improving their role understanding by having to place that knowledge back into the context of the team. This improved the group’s perspective on the key characteristic of performance.

In addition, the players were tasked with nominating a leadership group which reflected experienced and novice international players. This was an incredibly good start, as leadership in elite rugby can be very assumptive and based on issues such as the best, most capped, oldest or loudest players, none of which are strong leadership criteria. The issue that needed to be overcome was that players clearly felt their opinion did not count and as such did not offer it. In an attempt to sell the notion to the players and management I raised some initial thoughts around leadership being critical to organisational effectiveness, the essential link between coaching and leadership, and that you can not assume leadership based on success of individuals and teams (not an issue for Russia at that point). I also suggested to the management group that they rarely described their roles in leadership terms but did describe players as leaders. In addition, I stressed that a coach’s leadership influence can extend beyond performance to personal development. I applied a Multidimensional Model of Leadership (Chelladurai, 1984) which advocated that the performance of the team and the satisfaction of the players are tied to three facets of leadership behaviour:

- the actual leader behaviour,
- the leader behaviour preferred by subordinates (i.e., athletes), and
- the leader behaviour that is required by the situation.

The theory predicts that when all three facets of leader behaviour coincide, athlete performance and satisfaction will be enhanced. In other words, a coach who is doing their job well will behave as a leader, in the ways that players prefer, and in a manner that is appropriate for the situation. However, my aim in introducing this strategy was
to use leadership to promote and facilitate player development, by building self aware, self sufficient and socially aware players. The whole leadership programme was based on a framework of standards that actually identified priorities for further leadership development. Having reflected on the initial process, and current player and management attitudes, I liaised with the playing leadership group to design a set of leadership standards under the following key areas:

- Creating strategic direction.
- Leading through rugby; tactical and technical.
- Developing and working with others.
- Managing the environment.
- Securing accountability.
- Strengthening the individual performance focus.

For each standard as a squad we needed to evidence how we were meeting it, and also what we were doing to address perceived leadership gaps in the learning environment. A range of strategies were employed but involving the players and leadership group in the planning and feedback processes created engagement and a level of ownership that had been previously lacking. Coach feedback indicated that a range of benefits had accrued over time including, a more coherent work ethic, stronger performance standards, a more resilient approach to dealing with adversity, less conflict in many ways and a policy to reduce weak behaviours. From a player perspective, they felt more organised and connected with the management, and found the environment more productive and motivational irrespective of outcome results. In terms of this performance management strategy, my take home message related to the importance of collective leadership via a dual managed environment that supports the findings of Hodge et al. (2014). The outcome was in keeping with the original discipline based values of the playing group, and also highlighted that the programme was a work in progress that certainly warranted further application.

In relation to elite player development, it was clear that players should receive a longer term management programme to improve their individual performance to the
benefit of both the national team and clubs. The targeted principle was the performance department should monitor, test and co-manage with the respective clubs the development of selected players in the areas of physical performance, skills, game sense, nutrition, psychology, medical management, and injury. None of which was actually occurring. From a national perspective, the ultimate objective was to create a squad of centrally ‘managed’ players that would be selected by a Director of Rugby and the National Coach. The National Coach or member of the Performance department would be able to arrange visits to SL clubs and, subject to club match and training programs, be able to spend time with the selected players in order to monitor progress. The design of this approach and its management was based upon the RUR National team coach and his support team visiting the SL Clubs rather than calling central training camps. This potentially had two clear benefits in terms of cost and improved interaction and communication with club coaches. The ongoing issue for RUR was being able to distinguish between governance of organisations and governance between organisations (Sotiriadou & De Bosscher, 2013) in arriving at a situation where the national cause, so to speak, came first.

Undoubtedly, the Russian National team did not play enough fixtures of the requisite quality and this needed to change in order to meet newer strategic objectives. One of the main constraints was the comparatively short length of the season due to weather. Within RUR’s future stadia plans, all new Stadia should be developed with under soil heating and 4th Generation synthetic grass. RUR should also develop feasibility plans for the long term development of three regional stadia with roofs. This would enable the staging of additional home fixtures outside of the domestic season. However, in the context of the RWC, Russia needed to arrange pre-tournament fixtures against sides that were of a higher quality which led to a three week UK camp that involved playing two Welsh regional sides (Dragons and Ospreys) and one AVIVA English premiership team (Gloucester). Whilst the performance outcomes were negative in terms of three defeats, clear developments were observed in performance and player development. This stage proved significant in relation to developing the player learning environment.

A key implication may be that performance change can potentially result from simply listing the things that players, coaches and managers need to know and understand;
highlighting key process skills and competencies also promoted more accurate and informed decision making. As a consequence, a job description (appendix L) was designed and accepted by the IRB to appoint a Russian based, National Performance Manager. This was based on a RWC 2011 experience for RUR that highlighted the fact that the performance environment the organisation creates is equally important as the individuals performing in it, which supports the work of Jones et al. (2009). Effective performance culture is based in part, by establishing role awareness (Fletcher & Arnold, 2011) so I designed the RUR job description for a Performance Manager around a purpose of leading edge high performance initiatives for players, coaches and team support, through the delivery of world-class high performance programmes that integrate sports science research and development and international benchmarking. In order to define role clarity the structure incorporated some key deliverables of performance leadership, strategic relationships, coach pathways and development, player development programme, talent identification and resourcing, athletic development, research and development, leadership and values. The first area became the key priority and supported the work of Fletcher and Wagstaff (2009, p.433) who asserted “the way individuals are led and managed will become an increasingly important factor in determining success.”

Experience within elite rugby union environments over a twenty year period, has identified a number of barriers to change within elite sport including an inability to prioritise; relative speed of decision making; lack of accountability and transparency; within-system tensions; self-interest; historical inertia; ex-athlete mentality; complicated strategy; uninspiring approaches to elite rugby performance and development; closed minds; ego; conservative strategies; and a lack of innovation. Such barriers whilst not prohibitive to change occurring, nevertheless can often negate the rate at which it occurs, which leads to a distinct regression in elite performance. Perhaps the outcome goal of PM in elite rugby union is to facilitate a performance environment that supports a coaching profession with enduring qualities and a lasting presence (Taylor & McEwan, 2012).
4.3.3 Analysing Performance.

In April 2011, I integrated into an environment where computerised software was used as a glorified editing tool and basic statistics were generated through hand notation of the coaching staff (appendix M). In general terms, performance analysis in the RUR equated to rudimentary match analysis, with no reference made to the analysis of meaningful technical effectiveness, technique analysis or time motion demands. Hughes and Bartlett (2002, p.739) described a performance indicator as “a selection, or combination, of action variables that aims to define some or all aspects of a performance,” arguing that their value depends on their use in being related or relevant to successful outcome (O’Donoghue, 2005). Whilst performance and success are interdependent in some respects, prior to an indicator being regarded as valid it must deemed important to success and that success standard must be clearly defined beyond being merely positive or negative. Both Choi (2008) and O’Donoghue (2008) highlighted that identifying key performance indicators was a critical decision in the design of a real-time performance analysis system.

O’Donoghue (2015) valued the significance of reliable data as being essential to high-quality PA research and increasing worthwhile insights into sport performance. O’Donoghue (2009) emphasised how tactics for certain opposition can improve the chance of winning, and by inference which key factors influence performance in international rugby union. Performances can further be discussed with reference to the outcomes and processes. The outcome of a performance not only refers to the outcome of a whole match but can be used at a more finite level, referring to other outcome indicators (O’Donoghue, 2009) such as the percentage of points scored from successful linebreaks in attack. Thus, the process of a performance is concerned with the way a team or individual plays rather than how successfully they play (O’Donoghue, 2009). Indicators are sometimes used in a comparative way, with opponents, or evaluated against peer-related norms (Hughes & Bartlett, 2002). It is important that these indicators are objectively identified and defined (Nevill et al., 2008) and also validated through coaching input, a review of coaching and performance analysis literature, and in relation to key outcome indicators that differentiate performers of different levels (O’Donoghue, 2010). Hughes et al. (2012) examined performance indicators in rugby union but did so in a slightly vague non-
reductive and non-scientific manner (quoting possession as an indicator). However, Prim et al. (2006) in their comparison of performance indicators between four South African teams and the winners of the 2005 Super 12 Rugby competition, identified five key performance indicators,

Table 4: Team performance indicators and definitions (Prim et al., 2006)

<table>
<thead>
<tr>
<th>Team Performance Indicator</th>
<th>Definitions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Defensive recycle times (s)</td>
<td>Time taken from when the opposing team’s ball carrier is held and goes to ground, to the ball becoming available</td>
</tr>
<tr>
<td>Offensive recycle times (s)</td>
<td>Time taken from when the ball-carrier (analysed team) is held and goes to the ground, to the ball becoming available</td>
</tr>
<tr>
<td>Fast ball obtained (%)</td>
<td>The frequency that the ball is obtained from offensive tackle situations in less than 3 seconds (analysed team).</td>
</tr>
<tr>
<td>Fast ball conceded (%)</td>
<td>The frequency that the opposition obtains the ball from their offensive tackle situations, in less than 3 seconds.</td>
</tr>
<tr>
<td>Unsuccessful tackles made (%)</td>
<td>Unsuccessful tackles made as a % of the total number of analysed tackles (analysed team).</td>
</tr>
</tbody>
</table>

In terms of prioritising in the areas that would provide the greatest impact, the focus was on an improved level of tactical evaluation that could enhance the player and coach learning environment. As emphasised within the interview studies, the analysis outputs must meet the needs of the coaching team. The initial competition period for the RWC preparation was the Churchill Cup being held in England. At the start of this
tournament, the National Head Coach outlined his preferred approach to analysing a game and the analyst immediately fell into the trap of explaining why his club system would be far simpler and clearer. Within a short space of time, the Head Coach explained that either the analyst delivered what he needed, or he would find someone who could. The analyst received the feedback positively and then worked with me in my role as Performance Manager to build a functional workflow and template.

At this stage it was important to highlight the fact that not all variables in performance analysis are performance indicators. There is a distinct difference between action variables and performance indicators (O’Donoghue, 2010) that guides the structure of the system design, and in discussions with the analyst a theory to practice theme and context was used to improve the functionality of the template. This involved the analyst reviewing a range of rugby union PA papers to inform the development of the analysis system. The new design factored in ruck frequency (Prim et al., 2006) the percentage of lineouts won on the opposition throw-in and the percentage of tries scored out of the total tries scored (Jones et al., 2004) as predictors of success. The original template had been based on hand timed territorial analysis and some tally mark passing assessment. The system development had then evolved into ten and then twelve factors based on attack, defence, set piece and general indicators.

Through a process of placing the Russian based analyst, the players and the Head Coach at the centre of the process, the following computerised template was generated that was perceived to be specific and reflective of the key team and individual indicators.
Figure 4.10: Computerised analysis team indicator workflow.

Figure 4.11: Computerised analysis individual indicator workflow
The template and data outputs were reductively analysed into sixteen key indicators that the players could apply to answering the core performance questions of what worked, what didn’t work and why? The performance analysis continuum moved from tactical analysis to a reductive outcome based upon technical effectiveness,

Table 5: Russian Team Key Performance Indicators

<table>
<thead>
<tr>
<th>Team Performance Indicator</th>
<th>Target (Technical Effectiveness)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Attack</strong></td>
<td></td>
</tr>
<tr>
<td>Number of Rucks Formed</td>
<td>70</td>
</tr>
<tr>
<td>Attack Recycle</td>
<td>80%</td>
</tr>
<tr>
<td>Restart Reception</td>
<td>80%</td>
</tr>
<tr>
<td>Collision Success</td>
<td>60%</td>
</tr>
<tr>
<td>Passing Success</td>
<td>86%</td>
</tr>
<tr>
<td>Kicking from Hand Success</td>
<td>75%</td>
</tr>
<tr>
<td>Goalkicking Success</td>
<td>75%</td>
</tr>
<tr>
<td><strong>Defence</strong></td>
<td></td>
</tr>
<tr>
<td>System Errors (5% of all tackles made)</td>
<td>5%</td>
</tr>
<tr>
<td>Tackle Completion</td>
<td>89%</td>
</tr>
<tr>
<td>Dominant Tackles</td>
<td>30%</td>
</tr>
<tr>
<td>Speed of Re-entering Game</td>
<td>90%</td>
</tr>
<tr>
<td><strong>Set Piece</strong></td>
<td></td>
</tr>
<tr>
<td>Lineout Success</td>
<td>89%</td>
</tr>
<tr>
<td>Opposition Lineout Success (steal)</td>
<td>15%</td>
</tr>
<tr>
<td>Scrum Success</td>
<td>89%</td>
</tr>
<tr>
<td>Opposition Scrum Success</td>
<td>20%</td>
</tr>
</tbody>
</table>
Using the targets defined for the team performance, the following dashboard output provided colour-coded feedback,

![Figure 4.12: Summary Dashboard (0% represents the target for each indicator).](image)

The quantity and quality of the data outputs provided the squad with a far more proactive learning tool, that actually allowed the management to change the feedback mechanism following the Italian world cup game. The squad were tasked with leading the game review process themselves and feeding back to each other (appendix N). With the coaches having undertaken their own analysis as a safety net, the process started to highlight improvements and ongoing gaps in the level of player understanding. As a consequence, of this exercise the coaching group decided to fade out elements of feedback to establish what information was most pertinent to the players. The four areas that were removed from the next feedback session were actually covered off by the players in discussion which confirmed their relevance and impact. Further discussion between the coaches, PM and analyst led to a revised coach review process that embodied far greater attention to detail as a consequence of player involvement in the feedback process (appendix O).

Time-motion analysis is an area of study within performance analysis that is concerned with fundamental analysis of movement (Hughes, 2008) and aims to gain an understanding of the physical and physiological requirements of a given sport (O’Donoghue, 2008). Results from time-motion analysis can enhance the performance empathy of the players, coaches and sports scientists by establishing the
exact demands placed on an athlete during competition. The use of time-motion analysis is most prevalent in team invasion sports. With regard to player learning there was a potential benefit in integrating time motion analysis into the process through player tracking technology and specifically, via a Global Positioning System (Minimaxx S4, Catapult Sydney, 2009). Time motion analysis and work rates of players have been examined (Deutsch et al., 2002; Eaton & George, 2006; Roberts et al., 2006; Deutsch et al., 2007) by using indicators such as ‘standing’, ‘walking’, ‘jogging’, and different higher intensities of running. Athlete tracking is increasingly common in elite sport, with a variety of techniques being used that include telemetry, GPS and video based tracking to measure velocity, distance and contact data. The questions that coaches and performance managers want answered from athlete tracking technology are becoming increasingly more sophisticated, although in the case of the Russian squad it was more a case of establishing some baseline data that would provide a better evidence based approach to squad preparation. Overall player load indicated three broad types of session ranging from learning (technique based) to adaptation (conditioning biased) and finally power (high intensity technical and, or conditioning).

With regard to the Russian squad basic use of player tracking technology allowed them to understand the parameters of work rate better in terms of total distance covered and the volume of high intensity running completed, whilst also gaining an appreciation of the extent of the tackle loading. There were clear feedback benefits for players and coaches, whilst the data improved the monitoring of training and competition demands. By highlighting the number and intensity of the decelerations, the medical team started to examine GPS applications with performance and injury. A range of benefits were identified by the players and management group that included being able to quantify all aspects of training so that the effects of each drill and game could be established. The medical team and conditioner suggested that injury occurrence in tournament appeared to be linked with the distance or intensity accumulated on the day prior. In addition, high training volume and low training intensity appeared to increase the chances of hamstring injuries. From a more general perspective as a Performance Manager, it was vital to ensure a data transition from ‘gather and display’ to ‘evaluate and intervene’ in the sense that only decisions have value, and the real impact of the data relates to interpretation as opposed to collection.
From feedback from the Head Coach regarding the design of some key building blocks, it is apparent that the modern day coach may now be viewed as more of a manager or director than a practitioner. If this equates to reality then the performance analyst may need to expand their job remit to cover part of the void that has been created by this role change.

Due to demographic challenges within the RUR, an online performance management system had even more context specific relevance to the performance environment. The aim was to utilise the high performance management system as a basis to create a bespoke web-based communication database system (figure 4.13) for the management of Russian rugby performance and development in the most cost effective and efficient way possible. The key implication was that Russia would define the nature of the data they need, how it would be input, displayed and analysed; assuming they knew what they were looking for. I emphasised the point that it was the RUR’s responsibility and not a commercial company who might sell a non-specific package.

I felt the system should combine feedback and feed forward and in essence, increase throughput of worthwhile performance data and minimise contention, therefore, enabling the largest possible workload to be processed. As a data controller, the RUR would need to adopt a best practice ethos and integrate some key principles from the Data Protection Act (1998) that apply within the United Kingdom. The system would potentially allow the national-club axis to make more accurate, informed and rapid decisions. In addition it could be developed to include filters to data mine into key performance and development questions and monitor key trends (e.g. injury rates) to improve overall performance standards.
Thus, through the process of identifying what performance data actually existed within the Russian environment, and equally importantly what data was absent, an original high performance management system (figure 4.14) was designed as a fit for purpose, multi-sport framework:
The long-term aim of this integrated performance management system was to facilitate individual long and short-term targets, with the individualised performance reports providing the basis for player learning. In addition, team threshold bands were established to review performance and to inform team selection. The threshold bands could also be used for the longitudinal monitoring of performance. With regard to the underpinning performance pathway in Russia, age-related thresholds could be generated for talent identification and development purposes.

The two immediate benefits from the coaching and playing perspective were shared data that reduced the redundancy of much of the pre-existing information, and in general terms generated fewer inconsistencies. Coach feedback indicated that the multi-disciplinary layers of information were being aligned better and as a result, players were receiving a more coherent inter-disciplinary message with regard to performance direction. An additional development here was the acceptance of the
system by the RUR. In short, the RUR understood that they needed a central customised database that allowed all key stakeholders to manage, monitor, plan and evaluate rugby performance. A further implication for the PM related to “the enduring acquisition, negotiation and alignment of internal and external stakeholder perceptions” (Cruickshank et al., 2015, p.49). Broad system outputs would generate automated performance alerts and analyse data that provided training direction and performance enhancement. Strategically, they appeared to understand that the database system must align closely to a detailed performance plan that optimises outputs and generates solution-based recommendations to deliver improved rugby performance and development standards. This High Performance System model supports the findings of Paladino (2011) who referred to the benefits of a performance system that translates strategy and results into high performance output. The model reflects and supports the fundamental components of successful high performance sport, encompassing athlete support services (De Bosscher et al., 2009) that deliver coaching, sports medicine and sports science and medicine (Sotiriadou & Shilbury, 2009) and a coherently designed competition plan (Tan & Green, 2008). The critical factor was appointing a Performance Manager who could convert the model into a performance process that maximised results and outputs (Fletcher & Arnold, 2011). The model also equated to a communication platform and feedback mechanism that promoted efficiency and a high learning pay off.

General management and player feedback indicated that the PMS alleviated gaps in communication, improved objectives that occasionally lacked clarity, and overlap between roles. The Russian management view of the PMS was positive as they considered that it protected the integrity of the group whilst promoting good performance without personalising issues. The perceived danger was that the PMS would address too many issues and thus lose impact and generate very few solutions. However, if the system identified its developmental and evaluative aspects, then a far greater focus could be applied to the performance issues at hand. The system was primarily evaluative which I feel is the requirement in elite rugby union. The implication was that the organisational alignment in Russian rugby needed to translate the strategic goals into departmental and then individual goals. Practically, the PMS must link to the longer term strategy for Russian rugby, and if it promoted the interactive aspects, then it could become truly developmental. A common criticism of
a PMS is the discrepancy between the strategic design and the actual practical application (Furnham, 2004). In the present research, the PMS impacted upon the prioritisation of competing objectives, whilst helping individuals define personal performance plans to enhance their existing knowledge and skills. Coach feedback suggested that the PMS was a basis for formative and summative feedback that impacted positively on the performance learning environment. Moreover, the feedback created review and evaluation within the context of well defined and integrated core values.

In general terms, the change interventions employed helped to deal with some initial jurisdictional ambiguity (Reid et al., 2004) where the previous staff and current players were suspicious of current professional thinking that conflicted with historical practice. At the outset of the case study, the three main barriers to change within this environment were a basic lack of desire to implement change, faulty implementation strategies in previous regimes and historically non, or poor management of the change process. Such factors linked to some initial dysfunctional behaviours within the group that revolved around fear of conflict, absence of trust and low performance expectations and standards.

4.3.4 Reflections on the IRB Rugby World Cup 2011.

As I had found with my role of National Fitness Director during the IRB 2007 world cup, preparation of an international team for a world tournament is an absolute privilege. That said, in a results driven tournament, Russia recorded four defeats from four games (appendix P). However, following a first game where there was a clear opportunity to win, the performance actually fell short due to an almost political level of pressure being placed on the environment. In many ways, too much expectation was placed on winning the first game against the USA whose IRB world ranking placed them as weaker opposition than the three other sides in the pool. The overall standards of the side gradually improved to a point where the second half performance of the final pool game against the strongest opposition was the high point for the squad.

Post tournament, comparative analysis with the IRB rugby world cup from 1995
highlighted a number of key performance trends (IRB, 2011),

- Ball in play had increased by 33%;
- Average number of passes made during a game had risen by almost 50% (x of 179 to 263);
- Total number of rucks and mauls had virtually doubled rising from 62 per game to an average of 162;
- Kicks had decreased from 75 per match to 41; and,
- A decrease in scrums (27 to 17) and lineouts (37 to 24).

These five key trends defined the main performance changes within the sport that had impacted upon all sides in the tournament. Summary performance analysis data highlighted the shortcomings in the Russian performance but also provided a clear direction to raise standards. With an average points score per game of 14 for, and 49 against, the defence was clearly the main deficiency. In contrast, the ability to attack was reflected in eight tries being scored (all by backs) within the tournament which ranked Russia 13th out of twenty teams in terms of this variable. Whilst positive, these data did not explain how effective Russia was in scoring tries in relation to the possession attained. Russia may have obtained very limited possession but in relative terms scored a significant number of tries; a value obtained by the sum of the possession across the tournament divided by the number of tries scored. Russia’s value of 7 minutes 24 seconds placed them 11th out of the twenty teams in the tournament. Russia was most effective in scoring from two origins of possession, in relation to lineouts and turnovers. Territorially, Russia scored 75% of their tries from the opposition 10 metre line in to the try line. On a positive note, Russia were able to generate an average of 69 rucks and mauls per game which placed them 17th out of twenty sides. In terms of effectiveness with regard to the number of rucks and mauls placed in a context of total possession, Russia’s status improved moving to the 15th best side in the tournament. With regard to ball retention at ruck and maul Russia were also the 15th best side in the world cup.

A different exercise examined the rate at which teams conceded tries; calculated by the aggregate of the opposition time in possession divided by the tries scored.
Basically, Russia was ranked as the 18th team out of twenty on this variable, which again underlined the weakness in defence. Tries were conceded most frequently (38% of all tries) from opposition lineouts as the forwards were unable to stop driving lineouts. 69% of tries conceded were either from longer distance (the opposition half) or close in from the 22m line to the try line, and the vast majority given away in the first half (19 out of 29).

Lineout performance was the worst in the tournament with a success rate of 61%, with scrum marginally better with Russia ranked the 17th best side in the pool stages (84% success rate on their own ball, and 16% on the opposition feed). A goalkicking success rate of 46% proved to be a further limitation to performance. However, Russian resilience was best exemplified in the final pool game against a strong Australian side, where time in possession for the former (16 minutes 41 seconds) exceeded the latter (13 minutes 59 seconds). That said, lack of possession in general terms hampered the sides ability to attack and display continuity via the rate of passing. At the pool stages the average number of passes per side placed Russia 19th out of twenty with 92 passes per game. The real limitation was the forwards’ (in particular the locks and back row) inability to pass that was the worst in the competition (a rate of 1 pass every 5.2 possessions).

The overriding finding from the tournament was that Russia should build on a pre-existing strength of backline attacking play, whilst rectifying the main tactical deficiency of defence and set piece. The performance at this rugby world cup translated into a Russia-specific change model,
Figure 4.15: Model for Russian Change Management.

(Strategic Context)
1) Capability Development – ‘right people with the right skills’
2) Leadership
3) GDP
4) World Class – Physical and Human Resources
5) Player Welfare
6) Professional Development
7) Commitment to professional learning

Components of Change

Power
Amount of power to make the changes you need to.
Time
18 months
Scope
Realignment or Transformation? Whole organisation?
Preservation
Extent to which we maintain certain ways of working and certain aspects of culture; preserve specific organisational competencies.

Design Choices
Path
Extent & speed of change
Start Point
Top down? Bottom up?
Style
Top down – collaborative and participative?
Targets
Who leads?
Roles
Levers

Readiness
Staff awareness & commitment to change.
Capacity
Relates to available resources: Money; Time; Number of people.
Capability
Three levels: Individual ability to cope; managerial ability to help their staff; organisational resources with the knowledge and ability to manage change.
Diversity
Among the staff groups

(Balogun & Hope Hailey, 2004)
5. Conclusion.

The purpose of case study research with the current intervention was to use empirical evidence from real people in authentic, real world situations to underpin an original contribution to knowledge. The present study highlights that the development of performance management and performance analysis is a prerequisite for performance success in elite rugby union and can be used to initiate change. Criticisms and concerns regarding the efficacy of performance management systems have been prevalent (Winstanley & Stuart-Smith, 1996) but a bespoke system has the potential to provide positive impact. In order to maximise impact, a Performance Management System has to be embedded within an organisation’s overall culture, performance philosophy and strategic planning to assist in meeting the defined objectives, and converting theory into practice. In performance environments there can be a variety of research-based solutions applied to the completion of a task, and the application of theory can be a legitimate process in changing professional practice (Hayes & Allinson, 2010). Most importantly, a PMS reflects the best way of providing interdisciplinary feedback on multi-disciplinary data sets, and in doing so supports a strategic attention to detail in elite sport which is a critical factor in achieving high performance outputs (Houlihan & Green, 2009; De Bosscher et al., 2008).

Performance management and performance analysis have a number of conceptual similarities that include a reductive approach to identify impact metrics (measures with direct relevance to performance) that provide the basis for context-specific feedback. Both areas provide a structure and agency to a performance learning environment by connecting the multidisciplinary components, and improving the performance empathy of managers, coaches and athletes often in an intuitive and instinctive manner. The critical similarity and function, however, relates to outputs in both domains that save time for those most directly involved with performance decision making. In interpreting data, a Performance Manager must make the transition from ‘collect and show’ to ‘analyse and intervene.’ If this can be attained then the development of performance management and performance analysis becomes a prerequisite for performance success due to its ability to accelerate the decision making process.
In terms of what we are trying to achieve as a performance team, then the target in elite rugby union must be a high performance level. The findings of this project indicate that for an environment to achieve this, it must have complete clarity on its purpose (identified with by all, and aligned) process (strategy to achieve the purpose) and choice of people (an aligned team to action the process). These three pillars are critical success factors that promote performance management and analysis as the central cog within a learning environment that creates high performance outputs. The latter can be measured through success markers that develop teams and individuals. In future, the primary role of the Performance Manager in elite rugby union will be to create a successful high performance environment that is sustainable due to the manner in which it continuously improves people. A constantly evolving high performance environment can provide further evidence of a team consistently open to learning. The predictive learning outputs from data analytics help the performance manager to focus on the how, as opposed to the what, which highlights the ongoing dilemma of whether to look at different things, or look at things differently.

In high performance rugby union environments, money is unlikely to be the critical issue, but an inability to spend a budget appropriately could be.

From a performance analysis perspective, the role of the analyst remains a provider of reductive levels of feedback to enable the coach to make more objective decisions and the players to perform better. Whilst a strong relationship must exist between the analyst and the coach, the latter still acts as an input gatekeeper between the athlete and the performance analysis feedback (Bampouras et al., 2012). Findings in the present study highlight the need to fade out feedback in order to develop self-sufficient and self-aware athletes. With regard to types of data being generated, the findings highlighted a coaching need for more qualitative analysis that deals with specific performance concepts such as transition, momentum, decision making and vulnerability.

From a NGB perspective, the critical question revolves around how does a tier two nation gain tier one status? The simple answer lies in a competition track record that warrants promotion, however, the fundamental limitation for all tier two countries revolves around the third environmental pillar to an elite rugby union environment of
the actual quality of the competition structure. Tournaments such as the Churchill Cup and the Pacific Nations Cup are by definition developmental. They do not offer a solution beyond the short term to countries such as Japan, USA or Canada as they do not fulfil a competitive route to on field success. Tournaments of appropriate standards alone are not the answer beyond the short term. Accordingly countries like Russia need to look forward in their planning to seek to establish an international rugby tournament with other similar aspiring High Performance countries with strong economies who by combining are able to generate a financially successful tournament.

However, the key conclusion is performance management capability underpinned by strong analytical skills must translate into leadership.

5.1 Reflection on Personal Development of Research Skills.

At the outset, my personal identity resembled that of an applied academic, performance coach and manager, and performance analyst. Whilst differences exist, the links between the roles are very much skill based in nature, with applied problem solving being the key transferable link to all of them.

In essence, evaluating the thesis aim and objectives allowed me to examine the implications of whether each method actually addressed the same or different research questions. There was a clear need for reflexive (evaluative) consideration of the interview process and how knowledge was generated through social relationships. The evaluation dealt with the assumption that the respondent made as much sense of the process as the interviewer, and that their voice was clear and acknowledged (Holstein & Gubrium, 2003) throughout the process.

The concept of evaluation is central to all stages of the Sport D programme development. Summative and formative are terms that are used to describe the purpose of the evaluation, and they represent a continuum rather than isolated and unconnected entities. Evaluation within qualitative research indicates that there are at least two concepts that may undermine the trustworthiness of interpretations; specifically, poorly defined analytical constructs and premises (LeCompte & Preissle,
1993), and premature closure (Guba & Lincoln, 1995). Thus, qualitative researchers should evaluate their data, interests and motivations by illustrating how they have influenced interpretations. It is also vital to evaluate the clarity of the message and the research process via an explicit rationale for respondent selection, key changes in research direction and general analytical protocols. The key is not to over emphasise results to the detriment of strategies for maintaining rigour.

In conclusion, qualitative and quantitative methods can be assessed, but not by the same criteria. The broad principles of evaluation link the philosophical issues of qualitative research, and the practice and application of qualitative methods. For example, one should ultimately evaluate the claimed strength of participant observation as a practical and inclusive strategy that enables the “research to be an iterative and participative process - rather than an enforced set of top-down management or researcher-led decisions” (Neyland, 2008, p.2). Ostensibly, to evaluate via reflexivity moves the research justification away from some form of a badge of merit (Barbour, 2001) toward a process that potentially supports a meaningful and applied end product. It is important to evaluate the idea that informal interviews undertaken within the change management case study may embody the notion that informal interviews may generate new data that has yet to emerge from other elements of the case study.

Whilst there may be an inherent challenge regarding control and coherency of framework within an essentially unstructured interview potential weaknesses require evaluation, specifically,

- The data is more difficult to analyse and to compare across cases.
- It is time consuming.
- It can produce a high volume of data that is not used for the agenda or focus of the researcher (that is, the ‘dross rate’).
- It is difficult for an inexperienced researcher to conduct. (Sparkes & Smith, 2014, p.85)

When interviewing someone in a foreign language it is possible that meaning may be lost through the translation process, whilst cultural interpretation of questions may require further evaluative consideration. Further evaluation needs to be applied to interviewing a knowledge expert within a given domain, as it is possible for the
interviewee to become “dominant and lead the interview in unwanted directions” (Jones, 2015, p.180).

A number of tensions require evaluation within a case study method. It has been argued that a case study is primarily an exploratory approach, but this needs evaluating as it may an approach utilised across all elements of the research process through to theory development (Veal & Darcy, 2014).

An inherent feature of a coherent “qualitative methodology is its variability, rather than its standardisation. In other words, there should be some evidence of adaption and redesign in the writing up of research” (Popay et al., 1998, p.346). This allowed me to better balance the potential tension “when engaging in critical reflection as a student whilst also inhabiting a practitioner world” (Fenge, 2010, p.651).

5.2 Limitations and Future Research.

It is fair to say that despite the contributions of the research there are some limitations that need to be acknowledged. These limitations did help to identify directions for future research as well as enhancing my own research skills. The research indicated that it is extremely challenging to empirically explore performance management and performance analysis of an elite rugby union environment without understanding the wider context of the organisation under scrutiny.

The research is limited to the context of the empirical research. The target of empirical case studies indicates that by adding additional cases one might develop better analytic generalisability of the findings by applying a degree of replication logic (Yin, 2013). However, whilst case studies provide more detailed insight into change management interventions, the findings may not be indicative of other performance environments within rugby union. In addition, whilst case study research can inundate the environment with data, which may raise the issue of what data warrant presentation, this can be a strength in the context of facilitating a depth of analysis. Clearly case study data can be time-consuming to collate, and even more time-consuming to analyse, in the sense that it may be difficult to present complexity in simple terms. For example, in developing one issue it is important that you do not
conceal another (Stake, 2006). In the present study, the researcher needed to be conscious of the limitations (Welman & Kruger, 2001) of being a functional member of the management team, and as such it proved vital to maintain observation notes, and avoid producing overly simplified summary data. Other limitations that influenced the outcome of this research included the varied time of year in which data was collected; although, on the other hand, data collection at only one point of the year may not have been representative. Although a large and detailed amount of data was gathered, arguably the limited number of teams included in the current research restricted the breadth of views. The historical criticisms of purposive sampling encompasses the clarity of the guiding principles (the need to avoid method slurring; Baker et al., 1992), the nature of the protocols and analytical frameworks, and adherence to methodological frameworks (Hennink et al., 2011). Therefore, future research could complement and improve on these results by eliciting deeper perceptions from coaches, managers and players whilst also gathering more evidence from a range of other professional sports.

However, I would argue strongly for the continuing place of case study research, in examining performance management and change management in elite rugby union. Ultimately, it can be down to the audience to find parallels and principles within a case study that resemble their own environments.

In many respects this research has created a starting point for future research in elite rugby union with regard to performance management, performance analysis, and change management. The research has offered a degree of understanding and more detailed insight into the methods used to design a conceptual model, and this section identifies further research directions that have emerged from the project. Elite sport constitutes a meaningful perspective on change management (McGaughey & Liesch, 2002) that needs far greater research at both the high performance and underpinning elite pathway levels. In addition, more applied research needs to be undertaken into High Performance database and communication systems, knowledge management and sharing, and athlete tracking technology in order to better understand how to optimise overall performance standards (Sotiriadou, 2013). Priorities for future research would include improving the research design by making the study more longitudinal, including more than one case. Finally, future research could focus on the application
of performance management and performance analysis across other sports performance environments.

5.3 Recommendations.

The following recommendations are relevant for rugby union sports bodies who utilise performance management and performance analysis, the Rugby Union of Russia and those individuals committed to advancing the professional practice of managing high performance sport. The greatest performance management challenge remains how to balance the needs of the individual with team performance or more specifically, as Fletcher and Arnold (2011, p.235) suggested “developing, inspiring, and challenging others to look beyond their own personal goals to the delivery of the team’s vision.” Performance analysis feedback is a robust mechanism to overcome the limitations of using subjective observation alone and potentially generates data that can impact directly upon performance (O’Donoghue, 2010). High frequency feedback may create a dependency in the athlete that needs to be managed in order to balance learning payoff and efficiency. The aim for the Performance Manager must be efficient feedback that delivers a high learning payoff by impacting directly upon the performance environment.

The following seven issues equate to a set of recommendations for high performance rugby union environments, or those who aspire to attain that level:

Performance management has the potential to make a significant contribution to the change management of individual and organisational performance in elite rugby union. The present study identified change as an emergent, continuous and dynamic process, as opposed to the traditionalist perspective of a planning and control mechanism (Haines, & St-Onge, 2012). In addition, “change management is both an applicable and highly pertinent construct for the optimisation of elite sports team performance” (Cruickshank & Collins, 2012, p.225).

Performance management defines a currency of feed forward not feedback. It deals with future performance directions for the learning environment that underpins preparation and competition.
The deliverables and value within performance management should always be traced back to the underpinning strategy and performance philosophy. The present research indicated that the communication of the strategy was a critical factor in the strategic change process.

Context-specific performance management allows for a *cut-edit-paste* strategy as opposed to the blind imitation of cut and paste.

Integrated (qualitative and quantitative) performance analysis provides impact and saves time for both the performance manager and the concomitant learning environment by translating key trends from a reductive analysis of large data, into critical decisions. Performance analysis technology should be an accelerator not a centre piece for a learning environment. As Collins *et al.* (2015, p.1097) stressed “technology carries great potential to enhance coach decision-making and practice, while also helping players to become more focused, empowered and independent in knowing how to achieve their personal and collective goals.”

An empathetic performance manager must exhibit strong leadership traits, should respect and understand the antecedents of the performance learning environment, and most importantly know how to initiate change in order to raise overall performance standards.

The original outputs from the thesis in terms of the contextual model of Performance Management in Sport, the Integrated Model of Performance Management and Analysis, and the High Performance Management System for Sport, can be applied to elite rugby union environments to initiate meaningful change interventions. With regard to potential for inclusion as an impact case study, the findings of this Sport D were utilised to re-design the WRU Level 4 Elite Coach award (appendix Q). The reach and significance of the work was included most notably in the first two elements relating to the Player Learning Environment (appendix R) and Performance Management and Analysis (appendix S). As a blended learning format, this content was translated into a series of level seven short course formats. Ultimately, performance management should promote a culture of (challenge). In other words, challenge yourself as a performance manager, others and convention.
6. References


Hafford-Letchfield, T. & Bourn, D. (2011) ‘How am I doing?’: Advancing management skills through the use of a multi-source feedback tool to enhance work-


Nuance Communications (2013) Dragon Dictation Software.


Appendices.

Appendix A. Review of Personal Management Skills

Please note: - the numbers shown next to the competence titles on all the radars, indicate which page numbers in the Full Summary the competence breakdown is shown.

Scale Rating Key Used When Completing This Questionnaire

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<th>Rating</th>
<th>Description</th>
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<tr>
<td>1</td>
<td>Not Competent</td>
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<tr>
<td>2</td>
<td>Some Competence</td>
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<tr>
<td>3</td>
<td>Fairly Competent</td>
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<tr>
<td>4</td>
<td>Very Competent</td>
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<tr>
<td>5</td>
<td>Extremely Competent</td>
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### Appendix B: Professional Development Portfolio.

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Section 1: Aim of the Professional Development Portfolio (PDP)

An individual’s ability to negotiate and manage meaning (Eden, 1992) provides a framework of sense-making (Fenge 2010) that can be applied to enhance self awareness. My own identity encompasses a coach, manager, applied academic and performance analyst. This prompts three initial fundamental questions: Are the identities distinct? Do they merge? What are the transferable skills that may bridge all of the roles? Maitlis (2005, p.21) considered the social process of sensemaking whereby individuals create their own theories, assumptions and experiences in order to “construct accounts that allow them to comprehend the world and act.” Williams and Jordan (2009, P.125) indicated that a PDP provides “a format for self reflection on practice and goal planning” which can further support the process of sensemaking.

The findings of Findson and Formosa (2011) suggested that older learners value their own learning and take pride in their own achievements, whilst it can be argued that portfolios collate reflective work that equate to a type of “thinking place” (Moon, 2005, p.30) for the appraisal of the quality of personal and professional activities. The initial focus of my Professional Development Portfolio was to analyse and reflect upon my professional and personal status with a view to defining an initial research question. In addition, this had the potential to increase my self-knowledge and self awareness within the multiple roles of a lecturer, coach and manager.

Having re-entered higher education (HE) in 2010 after a six year gap in professional sport, I felt that my research skills in an academic sense were somewhat under-cooked (immature and under-developed) and would benefit from the challenge of completing a level 8 qualification. At this stage the lines were blurred with regard to the choice of research question, which to an extent, linked to my career pathway that had embraced academia and professional sport simultaneously, and in isolation. This exercise prompted me to examine my personal philosophy of a variety of areas and my overall values.

1.1 Why a Sport D?
The rationale for undertaking the professional doctorate stemmed from the inherent desire to link personal and professional knowledge. A Professional Doctorate (Sport D) course had a distinct focus on practice development and change as opposed to outright research (Lester, 2004) which, I felt, better suited my experiential learning and interests. A Sport D encompassed an integrated level of holistic learning that would potentially help me to draw coherent links between my academic, professional and personal identity.

The end product of a Sport D revolves around a change intervention, and having returned to higher education and re-structured an undergraduate scheme and undertaken the role of a programme coordinator, the desire to explore this type of level eight work was clear. I considered the inherent challenge of a Sport D would expose me to learning through experience; the process of reflection in and on experience has been identified as central to experience-based learning theories (Trudel & Gilbert, 2006). From a higher education perspective, I felt a Sport D would provide me with a more coherent link between the curriculum, the teaching/learning activities and the assessment process, by getting me to consider in far more detail: presage (consideration of the student’s prior knowledge and ability, together with programme design; assessment banks) process (e.g. ‘learning-focused activities’ which the student will undertake; a spectrum that entails open/closed book examinations through to independent study assessment tasks) and product (Biggs 2003). The latter hints at need to assess cognitive, practical and key transferable skills (e.g. general assessments that synthesise learning from several core modules) as well as knowledge transfer and application (e.g. problem solving critique of coaching scenarios and seminar presentations). The Sport D constituted a turn key solution to evaluating my own effectiveness as a performance manager and lecturer, and allowed me to develop a personal theory of practice.

An ability to ask the right question is central to an effective performance learning environment that promotes a strong element of flexible learning. A Sport D could provide me with choices regarding where, when, and how learning occurs. In attempting to better gain self-knowledge linked to my professional practice I felt this course of study could develop greater self analysis skills with regard to personality, experiential learning, behaviours, teaching and learning strategies, enterprise,
research, expectations of peers and self expectation. What are my fundamental flaws and weaknesses? Is it possible to be truly critical and creative in a work environment? What are the barriers to my current progression and do they create scope for uncertainty and ambiguity?

I considered that the Sport D would greatly assist with improving my analytical capacity when selecting key information from copious amounts of data. This in turn could develop my knowledge of how best to apply concepts such as data visualisation techniques condensing information to one screen that support what Few (2006) referred to as a simultaneity of vision; viewing all data together facilitates comparative analysis and possible recognition of key cues. Data analysis and dashboard generation would certainly develop my analysis skills in compressing unwieldy data sets. Refining my Performance Analysis skills would enable me to engage in learning by using technology (Cranton, 2006) that supported presentation, interaction, dialogue and generative activity (Kirkwood, 2009). Interactivity between a technology-based environment and myself would certainly encourage additional critical reflections of the software application (Nevgi et al., 2006).

In a wider sense, I considered that a Professional Doctorate would allow me to constructively evaluate and define the sources of knowledge from which I would like to learn, specifically whether the research was helping my development or merely focussing on currently available learning contexts, only. I felt this would also get me to address the question of what were my actual, as opposed to preferred, sources of knowledge?

As a researcher introducing a performance management intervention, the Sport D could expose me to three complementary types of learning situations (Werthner & Trudel 2006): mediated (mentor) unmediated (learner differentiating what is salient) and internal (no presentation of new information but a ‘reconsideration of existing ideas,’ as in reflection). To date, much of my learning as a coach had occurred via two different mechanisms: acquisition and participation (Sfard, 1998). I felt that the Sport D would promote far greater opportunities for the latter, where learning occurs through active engagement in the coaching context, in both individual experiential learning and more social means, such as mentoring and communities of practice.
Developmentally, the Sport D would place considerable demands on the development of my performance management skills by requiring that I planned more proactively, led more often and displayed greater sensitivity to individual differences in establishing positive relationships. Through the process of measuring performance and aiming to add value to a high performance sports environment, I needed to use non-standard and innovative techniques (assuming the role of the ‘positive deviant’; Lee et al., 2009).

Enhancing my own transferable skills supported my role as a HE practitioner; application of change management, and reflective practice could strengthen a student-centred approach (Biggs, 2003) that nurtured self-sufficient and self-aware students with strong problem solving skills. The Sport D would certainly encourage me to design performance management and analysis materials that were authentic (context-specific) vocationally relevant, integrated and requiring students to engage with higher order cognitive processes (Biggs, 2003). A course of level 8 study could facilitate my grasp of student-centredness as a strong pedagogical principle and a threshold concept where teaching strategies developed the person beyond an academic threshold and defined a level of individual development (Blackie et al., 2010). Such an approach moves aims into means (each aim is as important as the other) by disseminating knowledge, nurturing the students’ ability to use, test and generate ideas and evidence, promoting students’ personal development, raising students’ capacity to plan and manage their own learning (Bourner & Flowers, 1997). All techniques can be applied more effectively via a Sport D experience to promote ‘functioning knowledge’; where students actually see the learning experience as important. As a student researcher myself, the Sport D had huge potential to contribute to professional learning in the manner in which it balanced my work-based learning and ‘academic’ learning within my overall professional development.

The specific performance management intervention within my thesis could help me better differentiate between cooperative learning and team-based learning (Michaelsen et al., 2003). The latter demands more from the group itself to monitor performance and potentially increases student engagement by stimulating learning through collaboration and teamwork. In turn the Sport D will facilitate better design
of appropriate performance environments; the focus has to be very much on what the students, players, coaches and managers do, not what I do, and there must be a strong awareness of applied to transferable knowledge based performance objectives. Enhancing the designable elements of an effective learning environment should provide both a clear, contextual framework for professional practice whilst fully engaging all participants (Zitter et al., 2011). Two key underpinning criteria for me are: aiming for the intended performance outcomes; and, the level of authenticity in terms of whether an intervention has a direct impact upon performance. In terms of these criteria, I needed to develop my problem solving skills with regard to encouraging coaches and managers to view performance as a multidisciplinary concept (a performance outcome is never a result of a single cause and effect) that needs to be translated into formative and summative feedback for players in an interdisciplinary manner.

This background sets the context for my habitus (or place in a social structure; Fenge 2010) which relates to my professional values or behaviours which are firmly rooted in professional sports contexts; honesty, integrity, resilience, family, and enjoyment.

**Section 2: Personal Reflective Statement**

My educational career initially involved teaching at secondary and primary level in the UK for a period of four years. My career as a lecturer in higher education in sports science and coaching spanned two distinct periods that total nineteen years (fourteen years from 1991-2005 and 2010 – to date). My immediate skill sets have, therefore, been developed around teaching and coaching process skills. In order to work in high performance sport and to enhance my management skills I spent five years working for a National governing body as a high performance manager (2005-10). This experience improved existing, and developed new, management skills prior to a planned return to the HE sector. I undertook two External Examiner roles at the University of Strathclyde and Reading, respectively; both tenures equated to a seven year period. I have also worked within professional sport over twenty years as a coach at international, regional and club levels in rugby union. In addition, I have fulfilled the roles of a Performance Director and latterly, a Performance Manager. My personal and professional development has been aligned closely with these academic and
sporting roles incorporating three broad types of professional training (short courses, workshops & conferences promoting practical information & skills) professional education (long courses and secondments that highlight theory and research-based knowledge) and professional support (activities that aim to develop ‘on-the-job’ experience and performance). In essence, my CPD has gradually moved from academic postgraduate study, to highly applied coaching process skills and management development, and back to postgraduate study of performance management. My knowledge base and interest has moved from one aspect of a multi-disciplinary support system (physical preparation) with regard to coaching and strategic management, to an inter-disciplinary focus as a performance manager. This forms the basis for my research question. In relation to my personal and professional development to date, I feel that elements of my CPD have exposed the ineffectiveness of formal settings which often lack the requisite levels of interaction and, the ongoing challenge of synthesising a complex concept into a brief course. That said, some formal courses have improved my efficacy; helping me understand how to develop athletes as people; and delivered stress management techniques that have helped me avoid burnout in an intense performance management role.

Educated at a grammar school in Eastern Gwent valley where my father was Headteacher for twenty six years, my school years were enjoyable and filled with numerous mistakes; selecting Latin and Classics instead of music and economics, being caned for a sending off in a school rugby match, achieving county status in four sports, but international level in only one; this experience taught me that the fundamental nature of sport requires only one thing – the ability to deal with loss of form, non-selection and injury. However, my most significant mistake was selecting a degree in law at Nottingham instead of pursuing my passion of sport.

In September 2010, I re-entered higher education after a period of six years working in high performance sport. My initial stint in HE involved thirteen years where I had achieved a masters qualification but not extended this into doctoral work; I tended to find comfort in the idea that a PhD would not actually help me do the ‘day job’ any better, which in essence was a substantial cop out. I decided to enroll on the professional doctorate programme following a conversation with a senior colleague regarding a range of level eight qualification routes. Professional and experiential
learning from both academia and high performance sport crystallised an idea that would allow me to explore and link both worlds that I continued to inhabit to a greater or lesser extent. The intended research focus reflected a professional role that I had undertaken in elite rugby union that warranted considerable exploration and development. I decided to place the research experience in an environment that was outside of the higher education environment I inhabited; this demarcation related to the shadow of university mergers, staff redundancies and substantial school restructuring. Is it our inherited genetic predisposition (‘nature’) or what we learn as we grow up (‘nurture’) that predominantly shapes us and our differences as individuals? My view is that people matter and can be hugely influential. Personal influences on my career encompassed family, educators and professional coaches (figure 2.1: Personal Career Influences),

Figure 2.1: Personal Career Influences.
With regard to my actual change intervention study, the initial task was to complete a personal statement of my coaching philosophy for the Head Coach. The only restriction imposed on the process was to make the end product as concise as possible. I felt it vitally important to qualify what I understood to be a coaching philosophy. A coaching philosophy is a personal statement that is based on the values and beliefs that directed my coaching. A coaching philosophy needed to be flexible and functional. General reflections on my coaching philosophy highlighted:

Differences between publically and privately stated values can be deliberate; some coaches (including me) may have to support values that match the expectations of others;

If there is conflict then agreement can be negotiated through good practice;

Lack of self-analysis may lead to differences between a coach’s actions and actual values – believe in one thing but do another; and,

Conflict can occur between organisational values and coaching values.

3. Learning Journey

3.1 Skills Audit

What is the true nature of my experiential knowledge? A current skills and experience audit would suggest possible strengths in planning, hands on coaching and teaching, formative feedback techniques, strategic management and conflict management. The latter was a skill that came to the fore (on a daily basis) as a performance manager where I doubted that I possessed the necessary skill to execute. The reality was that the skill was dormant in the sense that it is rarely if ever used in higher education as opposed to professional sport.

Within my role within a National governing body I was exposed to an external business expert who undertook an analysis of my management capability in a 360°
approach (appendix a). The results of the process indicated that I scored myself lower than my peers but higher than my line manager in most facets suggesting that I lack a balanced level of self knowledge. The feedback highlighted relative capability in relation to knowledge sharing, communication, decision making, social responsibility, leadership, self management, process management, information management and managing for results. I would perceive all elements as transferable skills that have impacted to a greater or lesser extent, upon all of my professional practice, irrespective of role or job description. However, this personal audit exposed a number of gaps in my skills set that will be critical to the successful completion of a Sport D.

When I analyse the skills common to my professional roles in academia and performance sport, four categories emerged that underpinned my passion to performance manage: educational, coaching, reflective practice, and performance analysis. Within these categories I felt certain skills carried more importance in the sense that communication and observational skills were a strength but still in need of development, whilst my areas of accelerated development had embraced reflection, analysis, prediction and problem solving skills. I recognised that the higher order learning skill of problem solving would continue to be a work in progress throughout my Sport D, whilst my ability to use data for predictive purposes would be arguably the most significant challenge.

Figure 3.1: Personal Skills common to Academia and Performance Sport.
Further reflection upon my personal skills identified a priority order of critical aspects that would provide a framework for my ability to manage performance. Observational skills were the start point that heavily influenced the how and why of data capture. Did the process start by asking the right question? Did the data capture reflect an accurate picture of performance? The latter point impacted upon the extent to which meaningful analysis could take place, which in turn dictated the value of the concomitant problem solving.

![Diagram of Observation, Data Capture, Analysis, Problem Solving]

Figure 3.2: Critical Personal Skills common to Academia and Performance Sport.

### 3.2 Qualifications (HEA Fellowship; ISPAS Accreditation)

Whilst studying for the Sport D, I was interested in exploring professional accreditations and the potential impact and value they possessed in developing my professional practice. To assure and improve the quality of my professional practice, using a set of standards developed by peers, was appealing. Whilst accreditation is both a process and a status, it can be a reliable indication of the value and quality of a practice standard, person and organisation. The Sport D impacted positively on the process that underpinned my award of a Fellowship of the HE Academy and becoming ISPAS accredited (appendix b). With both applications, I had to reflect
upon my process skills and professional practice to highlight an evidence base that would point toward a standard.

4. Academic Development.

4.1 Learning and Teaching
As a student my first involvement with the Sport D was the module on Contextualising Professional Change. This module opened my eyes with regard to the reach and significance that change can have in all aspects of professional practice. It has also allowed me to analyse the effectiveness of my own change interventions and use the findings to feedback into the development of my teaching (Elliot, 1991). A key implication from this module has been that change can potentially result from simply listing the things that students, athletes, coaches and managers need to know and understand; highlighting key process skills and competencies has also promoted more accurate and informed decision making.

My current remit of Associate Dean of Enterprise reflects a balance of teaching and learning, research and enterprise commitments. A current additional role involves membership of the School Management and Planning team. Due to the reflective practice skills developed during the Sport D there were distinct improvements in my design of teaching and learning materials. Specifically, they became more interactive, authentic, real-world and relevant. Consequently, materials were more constructive, sequential and interlinked, and required students to use and engage with progressively higher order cognitive processes. The end product provided greater challenge, interest and motivation to learn (Biggs 2003).

I applied these principles when managing a periodic review of undergraduate programmes. My over-riding consideration throughout this process was to achieve constructive alignment within all sessions, modules and pathways of the degree course; specifically, learning that takes place through the active behaviour of the student (Biggs & Tang, 2007). A key target was preserving common core modules and offering greater flexibility through route core and optional modules. The net result was a process that allowed students to develop more specialised knowledge and competencies, offered greater flexibility of choice and embraced course-specific learning outcomes that could consistently evolve to reflect the changing vocational
Reflection upon the review process, allowed me to apply pedagogical principles to define and promote good practice, from the standpoint of ‘aims for’ or ‘reasons behind’ and ‘maxims for action’ (Edelenbos et al 2006). Real world learning strategies were employed to produce a twelve week scheme of work for communication (level 2 resource pack) using the BBC web site Raise Your Game.

I see student-centredness as a strong pedagogical principle and a threshold concept where teaching strategies develop the person beyond an academic threshold and define a level of individual development (Blackie et al., 2010). Full-time and part-time undergraduate and postgraduate sports science student cohorts constitute diverse and challenging groups that require varied teaching and learning stimuli. I have felt it critical to understand the learning aims of HE, and in doing so work strategically; by moving the aims into means (each aim is as important as the other). In raising students’ capacity to plan and manage their own learning, I have encouraged individual and group projects, action learning, reflective logs and diaries, independent study, work placement and dissertations (Bourner & Flowers, 1997). All techniques can be applied to promote ‘functioning knowledge’; where students actually see the learning experience as important. I wrote a social blog to articulate my thoughts in this area (appendix c).

The perennial challenge for my teaching has involved balancing the ‘advancement of knowledge’ and ‘vocationalisation’; core purposes of HE (Edmond, 2010). In my view HE has huge potential to contribute to professional learning in the manner in which it balances work-based learning and ‘academic’ learning within overall professional development. I have focused at final year undergraduate level on differentiating between cooperative learning and team-based learning in an attempt to develop authentic team-based learning activities. I have best implemented cooperative learning by attributing defined roles within group work, monitoring both content and group cohesion, and finally, “spending time after the small-group exercise to process the small-group activity” (Michaelsen et al., 2003). Team-based learning differs from cooperative learning in that it demands more from the group itself to monitor performance; this approach increases student engagement by stimulating learning through collaboration and teamwork.
With advancements in technological support to academia, I have found that variance exists between the possible and deliverable impact of e-learning upon student engagement and learning. It has been argued that the use of ICT does not, in itself, result in improved educational outcomes. For students, a crucial driver of their learning behaviours relates to what they need to do for assessment purposes. The significance of e-learning is that it tends to expose teaching and learning processes to scrutiny and to make visible any contradictions between the aims and goals of learning in HE and the actual teaching, learning and assessment practices. A learning environment must successfully answer the question, how can we effectively integrate and use feedback? Within Performance Analysis, my students may find it easier to engage in learning by using technology (Cranton, 2006) that enables their skills in presentation, interaction, dialogue and generative activity (Kirkwood, 2009). Interactivity between technology-based environment and students has encouraged critical reflections of the software application (Nevgi et al, 2006). My general conclusion is that all aspects of effective teaching are potentially mutually supportive (Biggs, 2003).

An ongoing professional target for me has been striving to design the appropriate learning environment; the focus has to be very much on what students do, not what I do, and there must be a strong awareness of applied to transferable knowledge based learning outcomes. Designable elements of an effective learning environment should provide both a clear, contextual framework for professional practice whilst fully engaging all learners (Zitter et al., 2011). Development of an effective environment should embrace flexible learning; i.e. providing learners with choices regarding where, when, and how learning occurs. With the correct balance, there is the potential for ICT (particularly with my work within the performance analysis discipline) to extend or even transform what can be achieved in HE (Garrison & Anderson, 2003).

4.2 Research

The first significant reflective step I took was changing my research proposal from change management analysis within higher education (due to a situation where merger and redundancy were looming within the environment in question) to an analysis of feedback using a secondary data presentation technique (data from an elite
performance review process that I undertook in 2007). Products of some qualitative synthesis reviews may be complex and conceptual and require further interpretation by practitioners. To avoid this I adopted a simple, forthright evaluative approach that aligned to key elements of qualitative research. At the outset, answering the evaluative question, where and with whom do I start, provided the basis to evolve the research question in a flexible manner. Extending the point of flexibility, Popay et al. (1998, p.346) argued that, “the hallmark of good qualitative methodology is its variability, rather than its standardisation. In other words, there should be some evidence of adaption and redesign in the writing up of research.” This prompted further evaluation of my own research question that indicated it would be more conceptually coherent if I undertook a change management case study intervention in elite rugby, based on the twin pillars of performance management and performance analysis. As a consequence, my final DProf focus better balanced the potential tension “when engaging in critical reflection as a student whilst also inhabiting a practitioner world” (Fenge, 2010, p.651). Basically, this first evaluative stage allowed me to fully develop my research question.

As my study progressed, realist evaluation had particular strengths when assessing interventions delivered in this type of context. In particular, the area of my research needed to be more focussed, and I needed to give more thought to my outcomes to ensure that they were achievable. A qualitative approach was identified as the method most consistent with my research intent, as there was a need to gain a more fine-grained understanding of performance management and analysis in elite sport. This involved evaluating attitudes, feelings and emotions, due to key concepts being too complex to translate or reduce into numbers. With regard to broad strengths of effective qualitative research it can embrace authentic common sense, knowledge and experience, it can be an effective means of compressing and analysing large volumes of complex wordy information, and it is invariably cost effective. Such techniques also embody the potential to be innovative and creative, and can address issues that are not conducive to description via variables (Denzin & Lincoln, 2005). Broad limitations, on the other hand, might encompass limited memory recall, attentional focus, personal bias, emotion and personal interpretation. Some qualitative work can generate outcomes where the justification of conclusions from data is often less clear, whilst the whole area can make some physical scientists uncomfortable. It has been
argued that some approaches are soft, unscientific and atheoretical. However, these issues are more linked to poor research technique rather than qualitative approaches, *per se* (Hennink *et al.*, 2011). Evaluating the credibility of analyses of social relations may be initiated by applying three ‘preventative’ techniques (Guba & Lincoln, 1995) with regard to prolonged engagement, persistent observation and triangulation. Constructive evaluation of these principles can define the level of rapport and the nature of the culture, whilst exposing possible misinformation. From my own research perspective, I needed to offset the distinct danger of concentrating overly on building rapport and trustworthy interview relations (Kvale, 2006) and to the detriment of introducing probing questions that challenge critical agendas. However, prolonged engagement needed to be evaluated for the potential danger of the researcher going native and contaminating the data; as a Performance Manager with clear functional capacity, I needed to concentrate on fulfilling a performance role whilst recognising political and cultural influences within the environment.

The use of reflective practice is evident within higher education courses that encourage students to become a reflective practitioner, increase their self-awareness and work towards their overall achievement. Past studies have looked at encouraging reflective practice (Neil *et al.* 2013), measuring emotions of participants within a problem-based learning environment (Keville *et al.*, 2009) and the challenge of writing as a reflective practitioner (Newnes, 2006). Huntley *et al.* (2014) identify that experiences helps us to understand new concepts, and whether it is practical or theoretical experience, the aim is to keep a record of this new understanding and develop tacit knowledge. Reflective practice can help to keep a record of these events and build self-awareness that demonstrates a learning style of practice to theory as they are recalling the events and what they learned from a practical setting to a theoretical understanding. Applied to my own research, reflective practice had a broad impact and was used to promote individual (personal understanding of what I knew regarding performance management and analysis) contextual (what I needed to know in order to advance my understanding, and making sense of new information and feedback) relational (new data in the context of my own experience) and developmental (guided choices for further learning regarding my case study intervention). Reflective practice is "a set of abilities and skills, to indicate the taking of a critical stance, an orientation to problem solving or state of mind" (Moon, 1999,
This would apply to all aspects of my data collection, but particularly the change management interventions in the sense that “reflective practice involves the critical analysis of everyday working practices to improve competence and promote professional development” (Clouder, 2000, p. 211). It therefore, has the capacity to transform existing knowledge into new knowledge and beliefs regarding performance management in elite rugby union that was central to my research project. However, I needed to ensure that the research didn’t lapse into self affirmation but actually attained a transformative level. The case study process would involve reflection linked specifically to action that stresses an evaluative approach that develops unconscious reflection. In essence, reflective practice was central to my research method as it was problem-oriented, based on action research, was data-driven, involved cognitive processes (analysis, synthesis, and evaluation) and helped to identify and implement change. Reflection within my study would ultimately allow me to reflect both in action, and on action, whilst developing a personal theory of practice.

4.3 Enterprise

Development as a Performance Manager led me to apply for the role of Associate Dean: Enterprise. Having reflected upon my role as PM at the WRU dealing with significant sponsors and external stakeholders such as Welsh Government, BBC, Welsh Universities, Reebok, Under Armour, Maxi Muscle, Powerade and Adidas, I felt I had the inter-personal skills to create links with collaborative stakeholders. Presenting to my colleagues in HE is without doubt the most challenging audience and process. Prior to interview I presented three broad aims to: lead by enterprise income generation; enable enterprise partners, stakeholders and the Cardiff School of Sport; and, develop internal and external links. The process would entail re-engaging staff, building on pre-existing strengths and creating strong circular and reciprocal relationships. Obtaining parity of esteem for enterprise in relation to the other core missions of the university appeared to be topical, but also potentially negative issue in terms of developing negative energy. In other words, you cannot undertake enterprise without offering an academic end product, and as a consequence, research will always precede enterprise. For me this whole area revolved around supporting enterprising
academics or like-minded people to generate applied, sustainable research and knowledge transfer. Upon reflection, this gave rise to four objectives:

- Developing partnerships for competitive advantage
- Improving the quality and impact of research
- Supporting economic regeneration
  - Knowledge transfer centres and partnerships
- Extending international activity to generate income

However, in a climate of economic austerity, the major challenge remains increasing turnover and lowering costs by being more collegiate.

5. Leadership

With all of the roles that I undertake, I have attempted to identify the starting needs for the respective organisations. Three common priorities emerged:

- Create a Team that gels.
- A vision that everyone can believe in.
- A common sense of Purpose throughout ‘the Team.’

A team requires a degree of leadership, and I tend to encourage people to lead by promoting the characteristics of high performing teams (Blanchard, 2006):

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<tr>
<td>E</td>
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Within HE and professional sport, leadership can be critical to organisational effectiveness, whilst there is an essential link between coaching and leadership. I have found that in a sport context, you cannot assume leadership based on success of individuals and teams. The basis of leadership is personality, position and actions; the latter hints at the issue that a title may not equate to actual leadership characteristics. In addition, leadership influence can extend beyond performance to personal development. A Multidimensional Model of Leadership possesses relevance to education and sport; the performance of the team and the satisfaction of the players are tied to three facets of leader (i.e., coach) behaviour:

- the actual leader behaviour,
- the leader behaviour preferred by subordinates (i.e., athletes), and
- the leader behaviour that is required by the situation.

The theory predicts that when all three facets of leader behaviour are in harmony, performance and satisfaction will be enhanced (Chelladurai, 1984). Thus, leadership can promote and facilitate the development of people.

Leadership may be viewed as the behavioral process of influencing individuals and groups toward set goals or standards. Common leadership standards from sport and education include:

- Creating strategic direction.
- Leading through performance.
- Developing and working with others.
- Managing the environment.
- Securing accountability.
• Strengthening the individual performance focus.

Encouraging more people to lead can help teams to better deal with adversity and improve overall team dynamics. The intended outcome should deliver collective leadership that creates a dual managed environment that nurtures self sufficient and self aware people.

6. Performance Management: Culture and Values.

The core purpose of PM in my opinion is to improve people, not bemoan their limitations. However, key initial questions for an organisation encompass:

• Is the environment fit for purpose?
• Purpose: what is our core business?
• Process: do we have the right strategies to achieve the purpose?
• People: structures rely on the right people to make them work; do we have the right capability?

In addressing these questions, it is vital to consider the strategic approach that will be applied to any change process. The word strategy is often over-used and little understood. However, my personal definition encompasses establishing appropriate structures and systems supported by strong staff with relevant skills. Any strategic objective should then be assessed with regard to cultural fit.

Figure 6.1: Definition of a Strategy.
Culture can be both shared by members and learned through membership, and influences the attitudes and behaviors of group members. It is cumulative in nature to the extent that it can become a lens through which the world is viewed. As a framework to the environment, it highlights integrated congruent behaviours that enable effective working and decision making. Culture can highlight competencies and definitely creates expectation; although, how people act, does not explain why?

In exploring culture with groups in sport and education, I have tended to pose three fundamental questions: How would you describe your own cultural background to a stranger so they could better understand how you think and work? Give an example of when you have experienced a different culture. What was it like? How do you obtain shared values within an organisation? (and critically, what happens when people do not behave as you expect?). Cultural understanding can give team members a degree of purpose (why am I here?) self identity (who am I) social support (where do I belong) and basic guidelines as to what the group stands for (what should I do, or not do?). However, this structure needs to be placed within a framework for cultural change,

Figure 6.2: Components of Cultural Change.
Line management within HE is a really meaningful strand to my identity, and the key purpose of this process is helping people utilise their strengths by clarifying purpose and expectations. This translates to helping individuals to either identify or confirm a career pathway. On reflection, the process has allowed me to see the parameters of performance clearly, recognise individual performance (and the variability within it) and get staff to focus on their own future actions and not those of their colleagues. The overall process of line management and performance reviewing has been well designed, and is inclusive, and evolving. It also has emphasised that performance management is far more than a measurement exercise, as the department has recognised that this process should not be designed to channel performance information to the top of the department for centralised decision making. Consequently, the amount of executive decision making within the school has been greatly reduced due to the enhanced management structures and systems. This has translated into programme managers having a stronger decision making role. In more tangible terms, the process has allowed me to better engage staff and evidence improved standards of performance. Additional feedback from my colleagues suggests that staff like the predictability of the process.

In order to deliver the strategic objectives of the department, I have aimed to manage eight concurrent, supporting lines of development:

- Training
- Equipment
- Personnel
- Information
- Organisation
- Infrastructure
- Logistics
- Values

Figure 6.3: Eight Supporting Lines of Management.
The final component of values (or the behaviours that a group stand for) is a critical base for effective management, as a lack of shared values seriously undermines performance (Cameron & Green, 2009). Management by Values is a strategic leadership approach that has three key objectives to simplify, guide, and secure commitment (Dolan & Richley, 2006). Fundamentally, leadership can be viewed as a dialogue about values that raises two critical questions: Do some values transcend others? Can one value be balanced against another? In undertaking a values session with the Russian National Squad it was apparent that whilst the vision of the management and players was different (although aligned) there were five common connecting values that clarified the group’s identity,

Figure 6.4: Russian National Squad Values.

This contrasts with the gold standard benchmark of the All Blacks who concentrated on two values only,

Figure 6.5: All Blacks Values
In undertaking the same exercise with two teams of undergraduate managers ( coordinators and programme directors) whilst ten different values were identified across the groups, three common values unified them (figure 6.6); leadership, integrity and people focus.

Figure 6.6: Undergraduate Management Values.

Shared values and beliefs provide a strong mechanism to understand human behavior and cultural change. Managing values means managing the culture of the organisation to strengthen the group and balance the needs of the individual within it.

7. Conclusions

A useful barometer for the quality of any course revolves around whether you would recommend it to someone else. In simple terms, I would promote the benefits of the Sport D, unreservedly. For new doctoral level researchers, Hammersley (2002) suggested that meaning is not ‘out there’ in a format to be ‘scooped up’ but rather is constructed through interpretative thinking. This reinforced the point that what you see is proportional to what you target in the first instance. The key take home message from this PDP relates to the fact that if you allow research to change you it can
become transformative as ‘reflecting’ extends thinking into critical analysis. Thus the creation of the doctorate journals can equate to a central part of the learning process.

It can be argued that if you ‘own’ your failures, then you can be defined by your success; the point being that positive outcomes can emerge from negative situations. In that context, across sport and education, I observed aspects of cultural change failing due to primarily planning errors, group resistance, lack of shared values, and poor management. I identified four main reasons why people fail when trying to initiate change: unable to move from planning to delivery; a marked lack of emotional intelligence; inability to manage upwards; and, a clear absence of fundamental process skills.

Following a significant job offer, and as part of the self-reflection process, I undertook a ratings exercise with an independent executive life coach. The purpose was to use my values, beliefs and experiential learning to highlight my ideal job. The process allowed me to identify the three most important components that I look for in a job role: managing people in groups, organising them to perform and seeing them achieve; variety in the role; and, planning to achieve long term goals. Additional issues that influenced job choice included the need to: respect the person I report to and their values; work within a clear framework; and, a remit that fitted with my values and ethics. My aspirational goals were to become a really good change manager who is a people focused, and ultimately, a change leader known for delivery.

Leadership has been analysed from a range of perspectives including political leadership, financial leadership, business leadership, corporate leadership, even leadership biographies. However, the key issue remains, how do we develop it in an applied meaningful manner? The essence of strong leadership is taking responsibility for decisions and turning decisions into actions. In performance terms, winning is about making quality decisions quickly and responding to opportunities faster than the opposition. The latter highlights the role that data analytics (figure 7.1) can play in assisting the performance manager, as it integrates quantitative and qualitative analyses toward a predictive output.
Clarity of communication is key as a practitioner in higher education and professional sport, and the analysis focus should ensure nothing is lost in translation by promoting two objectives (figure 7.2),

**Ensuring nothing is Lost in Translation.**

- Что у нас получалось? Почему?
- What we did well? Why?
- Что нам нужно было сделать по-другому? Почему?
- Why we needed to do better? Why?
- С чего началось – Что происходило – Чем закончилось в итоге

- Origin – Process - Outcome

Figure 7.2: The Core Targets of Performance Analysis.

Early in my career as a Fitness Coach, one international coach emphasised that we have one mouth, two eyes and two ears for a reason. Watching and listening should
occur in that ratio to talking. This individual became a mentor with a track record and real experience, who outlined that you should never be seduced by fads but instead adopt the stance of an informed sceptic. He also told me to remember that I coached people, not a sport, and what mattered most, was how I related to, and communicated with, the players as people. This ethos heavily influences my approach to performance management. The people who influenced me most across my journey have all been creative thinkers with very strong personalities (figure 7.3).

As a group they emphasised to me the importance of training balance and balanced training, as well as being philosophical and realistic about the two reasons for rejecting ideas in elite rugby union, ‘It's been done before’ or ‘It's never been done before.’ Additional life lessons from this group included:

- Be clear about the four or five things your group stands for.
- Constantly change and show a willingness to change.
- Make sure you hear what you don’t want to hear.
People must be open and willing to share ideas and information.

Common Sense does not equate to Common Practice.

Ultimate success is about developing PEOPLE and teams on and off the field.

Ostensibly, to evaluate via reflexivity moves the research justification away from some form of a badge of merit (Barbour, 2001) toward a process that potentially supports a meaningful end product, which in relation to my thesis generated five key outputs (figure 7.4),

![Diagram of Five Key Innovative Outputs](image)

**Five Key Innovative Outputs.**

1. Appointment of Performance Manager
2. Integrated Model of PM & PA
3. HP Management System
4. HP PA Computerised Workflow
5. Online PM Communication System and Database

Figure 7.4: Sport D Thesis Outputs influencing Professional Practice.

Reflection on the final Sport D thesis highlighted a number of key issues:

Data are worthless only decisions have value, and as such performance analysis technology should be an accelerator not a centre piece for a learning environment.

Elite Performance is about defining ‘success markers’ or process goals.
A performance environment is integrated in nature and as a consequence, should be managed and analysed in an integrated manner.

Good decision making appears to be a balance of data and intuition.

The thesis outputs have been utilised to inform international presentation for the Hong Kong Olympic Association (appendix d) and also used to design a level six module descriptor on Managing High Performance Sport (appendix e).

Final skills audit underpinning my learning journey (appendix f):

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<thead>
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<th>September 2015</th>
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<td>Process management.</td>
<td>Academic writing skills.</td>
<td>Leadership.</td>
</tr>
<tr>
<td>Information management.</td>
<td>Interview skills.</td>
<td>Self management.</td>
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<td>Managing for results</td>
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Research Profile to date:


8. References.


9. Appendices.

Appendix: a.
<table>
<thead>
<tr>
<th>COMPETENCY</th>
<th>DESCRIPTION</th>
</tr>
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<tbody>
<tr>
<td>Decision Making</td>
<td>Identifies and gathers information to make timely and realistic decisions</td>
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<tr>
<td>Communication</td>
<td>Implements a communication plan that is clear and responsive to the needs of</td>
</tr>
<tr>
<td></td>
<td>the organisation and its individuals</td>
</tr>
<tr>
<td>Managing for Results</td>
<td>Agrees SMART objectives monitoring progress against plans and budgets</td>
</tr>
<tr>
<td>Self Management</td>
<td>Identifies and meets own learning and development needs. Actively builds</td>
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<td></td>
<td>relationships with others. Displays personal strength and maturity.</td>
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<tr>
<td></td>
<td>Team player</td>
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<tr>
<td>Values &amp; Mission</td>
<td>Establishes strategies and plans to guide the progress of a team to</td>
</tr>
<tr>
<td></td>
<td>achieve values and goals</td>
</tr>
<tr>
<td>Social Responsibility</td>
<td>Creates a culture that is productive and socially responsible</td>
</tr>
<tr>
<td>Planning and Staffing</td>
<td>Plans resource requirements to accommodate long and short term objectives</td>
</tr>
<tr>
<td>Diversity</td>
<td>Creates an environment that encourages and values diversity</td>
</tr>
<tr>
<td>Player Development</td>
<td>Develops others to their full potential providing timely, constructive</td>
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<tr>
<td></td>
<td>feedback on performance, setting challenging objectives and monitoring</td>
</tr>
<tr>
<td></td>
<td>progress</td>
</tr>
<tr>
<td>Recognition</td>
<td>Recognises team and individual efforts formally and informally</td>
</tr>
<tr>
<td>The Operating Environment</td>
<td>Establishes and agrees boundaries for the achievement of team and</td>
</tr>
<tr>
<td></td>
<td>individual objectives</td>
</tr>
<tr>
<td>External Relationships</td>
<td>Actively manages relationships with external customers</td>
</tr>
<tr>
<td>Information Management</td>
<td>Makes available meaningful and accurate information to enable timely fact</td>
</tr>
<tr>
<td></td>
<td>based decisions and process improvement</td>
</tr>
<tr>
<td>Knowledge Sharing</td>
<td>Utilises world class benchmarks and best practices to achieve goals</td>
</tr>
<tr>
<td>Process Management</td>
<td>Identifies, develops and uses key processes to manage own areas of</td>
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<td>responsibility</td>
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Accreditation Certificate

The International Society of Performance Analysis of Sport hereby presents

Huw Wiltshire

As a Scientific Level 4 Accredited Performance Analyst
Valid from 12 January 2015 until 31 December 2016

Treasurer
Professor Derek Peters

Chair
Professor Nic James

Secretary
Dr. Hyongjun Choi

Award details can be verified at ispas.org/join.html
Appendix c. Social Blog. Posted on 30 May 2012 by Huw Wiltshire

http://www.visualperformanceanalysis.com/sports-blogs/diametrically-opposed-inextricably-linked-achieve-students-learn/

Diametrically Opposed but Inextricably Linked: What are we trying to Achieve?

What are students trying to learn?

As Programme Director for the MSC Performance Analysis at Cardiff Met, I have seen a buck to a recent trend. With any new intake of postgraduate students, it has become very apparent that a pattern has emerged where some students experience accelerated learning in terms of applied process skills and receive employment opportunities far earlier than expected. This translates into a situation where taught modules are completed but dissertations are put on hold. The last twelve months has seen this type of student return to academia in order to complete the remaining elements of the course. The answer may lie in the desire to obtain a vocationally relevant knowledge base that may not naturally exist in their work place.

Even with an economic downturn, the recruitment numbers in 2012 are higher than ever and this reflects the currency with which Performance Analysis is held in the sporting world and the inherent interest that it holds for students. Whilst the core purposes have remained constant for higher education, the balance of power has slightly shifted. Knowledge transfer in Performance Analysis will have a central importance, but more students are demanding a vocational relevance to what is being taught and fully appreciate the work-based learning elements to the degree. Within my own course, computerised performance analysis and technique analysis deliver core process skills and competencies for a performance analyst, whilst research issues and statistics and modeling develop the students’ capability to interrogate the data and compress unwieldy information into key indicators. However, it is the work experience module that provides an opportunity to apply all four of these modules, and in doing so promote a self-sufficient and self-aware student with strong problem solving skills. It has become apparent that balanced work experience takes a student beyond an academic threshold and into a new level of individual development through ‘functioning knowledge’; where students actually see the learning experience as important.

The closer the academic content and vocational application work together the better the quality of academic provision and student employability. The combined effect is a
process that allows students to develop more specialised knowledge and competencies. The simple reason is down to real world learning. I judge anything of quality in terms of the sustainability of a track record that has seen Cardiff Met students exist in all walks of high performance sport.

The MSc Performance Analysis at Cardiff Met delivers by contributing to professional learning in the manner in which it balances work-based learning and ‘academic’ learning within overall professional development. I experienced a great example of this yesterday when I observed a postgraduate peer discussion between a team of basketball analysts. Their reflections translated cooperative learning into team-based learning; they recognised the importance of demanding more from the group itself to monitor performance, the need to learn and a situation where they could actually take ownership of their learning.

We ultimately need students who understand both Performance Analysis, and performance itself.

*Huw Wiltshire*

*Programme Director: MSc Performance Analysis (Cardiff Metropolitan University)*
Appendix d. International Presentation – An Integrated Approach to Athlete Care

“An Integrated Approach to Athlete Care”

This seminar organized by the Hong Kong Rugby Football Union will focus on an integrated approach to athlete care. International and Local speakers will share their expertise and experience on the ‘how’s and why’s’ behind the transition from a multi-disciplinary to an inter-disciplinary system in order to facilitate athlete performance.

SPEAKERS:

Dr. Rohit Kulkarni: Orthopaedic Shoulder & Elbow Surgical Specialist
Newport Gwent Dragons Team Doctor.
Developer of ‘DataDragon’ player database system.

Dr. Ella Yeung: Associate Professor, Department of Rehabilitation Sciences,
Hong Kong Polytechnic University. Sports Physiotherapist.

Mr. Huw Wiltshire: BA(Hons) PGCES, M ED. Currently undertaking PhD.
Programme Director: M.Sc. Performance Analysis, Welsh Rugby Union National Performance Manager.

Date: 22nd March 2011 (Tuesday)
Time: 6.30pm-9.30pm (light refreshments will be served at 6:00pm)
Venue: HCI Lecture Theatre, 2/F, Olympic House, 1 Stadium Path, So Kon Po
Capacity: 200 (first-come-first-served)
Suitable for: Healthcare Professionals, Coaches, Athletes
Course Fee: Free of charge
Deadline for application: 19th March 2011
Enquiries & Application: Mr. Gorman Ngai (gorman_hk@hotmail.com)

Organized by: Hong Kong Rugby Football Union
## Appendix e. Level 6 Module Descriptor.

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<td>C690</td>
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<tr>
<th>Level (3 to 8)</th>
<th>Credits</th>
<th>ECTS Credit</th>
<th>Module Value</th>
<th>% Taught in Welsh</th>
<th>Module Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>20</td>
<td>10</td>
<td>1</td>
<td>0</td>
<td>Standard taught module</td>
</tr>
</tbody>
</table>

### Teaching Period

<table>
<thead>
<tr>
<th>Pre-requisites</th>
<th>All Year</th>
<th>None</th>
</tr>
</thead>
</table>

### Module Leader

<table>
<thead>
<tr>
<th>School(s)</th>
<th>Cardiff School of Sport</th>
</tr>
</thead>
<tbody>
<tr>
<td>Campus</td>
<td>Cyncoed</td>
</tr>
</tbody>
</table>

### Assessment Methods

<table>
<thead>
<tr>
<th>Assessment Type</th>
<th>Duration/Length of Assessment Type</th>
<th>Weighting of Assessment</th>
<th>Approximate Date of Submission</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRES1 - Seminar contribution.</td>
<td>Ongoing throughout the year (equivelant to 1000 words)</td>
<td>20%</td>
<td>Week 23 Summative.</td>
</tr>
<tr>
<td>PRES2 - Presentation on a current issue in</td>
<td>5 minute</td>
<td>20%</td>
<td>Week 18 Formative.</td>
</tr>
</tbody>
</table>
### Aim(s)

The aim of this module is to challenge students to use analytical, problem-solving and research gathering techniques to deal with complex and multi-disciplinary high performance sports management issues. Students will be presented with opportunities to critically examine the management of high performance athletes and teams, their coaches and the relationships with related stakeholders.

In doing so, students will integrate theoretical learning into an understanding of the operations and management of a high performance sporting environment. Students will apply knowledge of high performance sport into a “real world” environment and thereby increase their understanding of the practicalities of creating, managing and sustaining a high performance sports programme.

Ultimately, the module facilitates students evaluation of programme logic and gap analysis to problem solve.

---

### Rationale for Assessment and Opportunity for Feedback

The module has been designed so that students apply theory to practice within a high performance context. In meeting the learning outcomes of the module, the assessment has been designed to explore the students’ conceptual understanding and critical awareness of issues in high performance sport. The first assessment point will be a problem-based learning task that requires students to utilise design technology and scientific skills in creating an analysis system. Formative feedback will be provided within the seminars following a theoretical lead lecture.

The contribution aspect of the assessment will be measured through self, peer, and tutor assessment of performance in the module. Specific criteria will be used to examine student behavior and engagement in groups (or communities of practice). Finally, a presentation on a personally negotiated current issue will allow students to apply and demonstrate knowledge with understanding through a variety of applied and theoretical lenses studied within the module.


Seminars based on set exercises.

Feedback tutorials: one to one allowing in-depth discussion on the nature of the assessment.
Learning Outcomes

After studying this module you should be able to:

Differentiate between the concepts of peak performance and high performance in sport;
Justify the multidisciplinary components of high performance sport;
Critically analyse those factors affecting the design, enhancement and management of a high performance sports environment;
Define and appraise a leadership and management strategy that promotes short term and long term performance of a high performance sports programme;
Apply a systematic review process to assess a high performance sports environment;
Critically appraise the concepts of leadership and performance lifestyle in relation to high performance planning;
Articulate a clear conceptual understanding of UK and international high performance sports environments;
Critique national governing body high performance sport policy.

Learning and Teaching Methods: Range of learning methods (including directed study) and expected scheduled contact time on each: List methods and insert a rationale for each method and expected total hours for each - please read appendix 1 of guidance document.

<table>
<thead>
<tr>
<th>Learning Method</th>
<th>Rationale</th>
<th>Type of contact (scheduled/non contact)</th>
<th>Total hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead Lecture</td>
<td>To provide content related knowledge and a starting point from which students are motivated to explore further.</td>
<td>Scheduled</td>
<td>24</td>
</tr>
<tr>
<td>Seminar</td>
<td>To provide an opportunity to actively contribute to/engage in learning within a small group setting, via discussions with both peers and the seminar tutor(s) in a community of practice (CoP). These sessions are student-led and facilitated by the tutor.</td>
<td>Scheduled</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------------</td>
<td>----------------------------------------------------------------</td>
<td>------------------</td>
<td>------------------</td>
</tr>
<tr>
<td>Tutorials</td>
<td>Each block, students will be allocated one tutorial with their seminar leader, where they can present their ideas and gain feedback on and, where necessary, guidance / direction about how they might usefully address given problems. This will also be an opportunity to discuss the group functioning and address an issues that occur through the learning process.</td>
<td>Scheduled</td>
<td>6</td>
</tr>
<tr>
<td>Problem-based learning</td>
<td>To promote higher order learning by developing the students’ problem solving capability via the application of scientific and design technology skills.</td>
<td>Scheduled</td>
<td>20</td>
</tr>
<tr>
<td>Guided Independent study</td>
<td>To develop skills of inquiry to enhance the knowledge and understanding developed during lectures and to facilitate the process of becoming an independent/autonomous learner.</td>
<td>Non-contact</td>
<td>126</td>
</tr>
</tbody>
</table>

**Indicative Content**

The content of the module is updated and revised each year but students can expect to cover topics such as:

- Models of high performance.
- Building a high performance environment: creating and managing a high performance programme.
- Characteristics of high performing teams.
- Assessing high performance environments and managing change.
- High Performance management systems: Information management capability
- The role of the High Performance manager.
- Leadership and high performance management.
- Integrating performance management and performance analysis.
- International Sport: case studies of systems, structures, events; management issues and Strategic Planning.
- Talent management: creating and managing an athlete/coach/staff recruitment, development and
retention system.
Managing inter-disciplinary feedback.
Facilities, equipment and resources in high performance sports.
Managing relationships and competing demands in professional sporting environments: high performance business, marketing and governance.
High Performance Management issues: case studies.
The Future of High Performance Sport – changing the industry.

**Recommended Reading & Required Reading**

**Required Reading:**


**Recommended Reading:**


**Journals:**
Coaching and Sport Science Review.
European Journal for Sport Management
European Sport Management Quarterly
International Journal of Performance Analysis in Sport-e (eIJPAS).
Journal of Sport Management

**Access to Specialist Requirements**
None
Appendix f. Learning Journey.
Appendix C: Ethical Clearance

All Principal Investigators (PI) undertaking a research project which involves human participants should complete and sign this application form.

The document *Guidelines for obtaining ethics approval* gives full details of how to complete this form and is available via the research pages of the UWIC website. You should refer to this document in order to avoid unnecessary delays with your application.

As a PI, you are responsible for exercising appropriate professional judgement in this review and for operating within UEC (and any School and professional) guidelines in the conduct of the study.

Participant recruitment or data collection must not commence until ethics clearance has been obtained.

<table>
<thead>
<tr>
<th>Principal Investigator:</th>
<th>Huw D. Wiltshire</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supervisor (if student project):</td>
<td>Prof Scott Fleming, Dr Peter O’Donoghue</td>
</tr>
<tr>
<td>School:</td>
<td>Cardiff School of Sport</td>
</tr>
<tr>
<td>Type of researcher:</td>
<td>Postgraduate Student (no teaching)</td>
</tr>
<tr>
<td>Programme enrolled on:</td>
<td>Click here to enter text.</td>
</tr>
<tr>
<td>Project Title:</td>
<td>Performance Management and Analysis within Elite Rugby Union.</td>
</tr>
</tbody>
</table>

**PART ONE – ETHICS REVIEW CHECKLIST**

<table>
<thead>
<tr>
<th>ERCI: Will the study involve NHS patients or staff?</th>
<th>Choose an item.</th>
</tr>
</thead>
</table>

If YES, you do not need to complete Part Two of this form. Instead, an application for ethics approval must be submitted to the appropriate external NHS Research Ethics Committee. Complete Declaration A overleaf and forward a copy of your NHS application plus Part One of this form to your School Ethics Committee for information.

<table>
<thead>
<tr>
<th>ERC2: Does your research fall entirely within one of the following three categories:</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Paper-based, involving only documents in the public domain</td>
<td></td>
</tr>
<tr>
<td>• Laboratory based, not involving human participants or human tissue samples (eg electronics, chemical analysis)</td>
<td></td>
</tr>
<tr>
<td>• Practice-based, not involving human participants (eg exhibitions, curatorial, reflective analysis, practice audit)</td>
<td></td>
</tr>
</tbody>
</table>

If YES, you do not need to complete Part Two of this form. Instead, complete Declaration B overleaf and send the completed form to your School Ethics Committee for information.

If NO, you must complete Part Two of this form and submit your application (Part One and Part Two) to your School Ethics Committee for consideration.
DECLARATION A
I confirm that the information contained in this form is correct

My research involves human participants and ERC1 indicates I must obtain ethics clearance from the appropriate external health authority ethics committee.

Signature of Principal Investigator: 

Date: 27/09/2010

DECLARATION B
I confirm that the information contained in this form is correct

My research falls entirely within the categories described in ERC2 and I do not need to take further action to obtain ethics clearance.

Signature of Principal Investigator: 

Date: Click here to enter a date.

Brief synopsis of project:
Aim: To implement and evaluate a performance management and analysis system in an international rugby union environment that generates a clear applied conceptual best practice framework that directly impacts upon performance. Objectives: (1) To evaluate the process underpinning performance management and analysis in elite rugby union. (2) To analyse (via a case study approach) the four main areas of performance leadership and management in elite sport. (3) To establish a theoretical framework for performance management and analysis within elite rugby union. (4) To conceptualise and interrogate performance management in elite rugby union. (5) To define and evolve a concept of performance analysis in general, and specifically within an elite rugby union environment. (6) To produce a strategic plan for high performance rugby that promotes a sustainable approach to performance management and analysis. (7) To define a coherent, aligned performance management system for elite rugby union that underpins and actually impacts upon performance.

FOR STUDENT PROJECTS ONLY
I confirm that I have read and agreed the information contained in this form

Name of Supervisor: Click here to enter text. 

Date: Click here to enter a date.

Signature of Supervisor: 

School Research Ethics Committee use only
☑ Considered and supported    □ Considered and not supported
Name: Peter O’Donoghue 

Date: 27/09/2010
PART TWO – APPLICATION FOR ETHICS APPROVAL

<table>
<thead>
<tr>
<th>Expected Start Date:</th>
<th>01/10/2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approximate Duration:</td>
<td>5 years</td>
</tr>
<tr>
<td>Funding Body (if applicable):</td>
<td>None</td>
</tr>
</tbody>
</table>
| Other researcher(s) working on the project | Director of Studies: Professor Scott Fleming  
Supervisor: Dr Peter O'Donoghue |
| Does your project require ethical approval from an NREC or other body? | No |
| If yes, please name the NREC or other body | Click here to enter text. |
| Does your project use Human Tissue? | No |
| Has CRB clearance been given? | No |
| If yes, which organisation holds details of the check¹? | Click here to enter text. |

DECLARATION

I confirm that the information contained in this form is correct  
Signature of Principal Investigator:  
Date: 27/09/2010

FOR STUDENT PROJECTS ONLY

I confirm that I have read and agreed the information contained in this form  
Name of Supervisor: Click here to enter text.  
Date: Click here to enter a date.  
Signature of Supervisor:

Research Ethics Committee use only

<table>
<thead>
<tr>
<th>Decision reached:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project approved</td>
</tr>
<tr>
<td>Project approved in principle</td>
</tr>
<tr>
<td>Decision deferred</td>
</tr>
<tr>
<td>Project not approved</td>
</tr>
<tr>
<td>Project rejected</td>
</tr>
</tbody>
</table>

Project reference number: 10/10/01R  
Name: Peter O'Donoghue  
Date: 27/09/2010

Signature:

¹ In cases where a CRB check has been sought by an external organisation, confirmation from that organisation that a satisfactory check has been received is required by UWIC at application stage.
A – PROJECT DETAILS

A1 In order to give members of the ethics committee some idea of the nature of your research, please answer the following questions with regard to this project:

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Will you take blood or tissue samples from participants?</td>
<td>No</td>
</tr>
<tr>
<td>Will the study involve prolonged or repetitive testing OTHER THAN repetitive training exercises of a type which form part of the participants normal activities (such as athletics or music training)?</td>
<td>No</td>
</tr>
<tr>
<td>Are drugs, placebos or other substances (eg vitamins) to be administered to participants?</td>
<td>No</td>
</tr>
<tr>
<td>Could the study induce physiological or psychological stress or anxiety significantly greater than the participants are likely to experience in their daily lives?</td>
<td>No</td>
</tr>
<tr>
<td>Does the study involve participants who are unable to give informed consent?</td>
<td>No</td>
</tr>
<tr>
<td>Will the study involve children? (NB: Projects in professional practice involving groups of children in a public place in school, with the permission of the school, are exempted)</td>
<td>No</td>
</tr>
<tr>
<td>Is pain or more than mild discomfort likely to result from the study?</td>
<td>No</td>
</tr>
<tr>
<td>Will financial inducements, other than reasonable expenses and compensation for time, be offered to participants?</td>
<td>No</td>
</tr>
<tr>
<td>Will deception of participants to necessary during the study?</td>
<td>No</td>
</tr>
</tbody>
</table>

A2 Briefly describe the rationale behind your project

The background for the study initially differentiates between the concepts of high performance (a standard consistently higher than that of the majority of peer organisations in the same sector, and over a prolonged time period) and peak performance (where the standard exceeds organisational best) in international rugby union. With high performance sport constantly striving for innovations in achieving a winning edge, the need for coherent management and analysis of that performance has never been greater. In reality performance management systems are often under-utilised and potentially misused. Haines and St-Onge (2011) refer to levels of widespread dissatisfaction with the actual functioning of performance management systems due to: shortfall in expectations and not improving organizational performance; and, underlying misalignment of scholarly knowledge and actual performance management practices. On the other hand some research has indicated that performance management systems if well designed and implemented, lead to positive individual and organizational outcomes (Paladino 2011). This research base whilst presenting clear conflict also highlights the need to examine performance management strategies in sport-specific contexts. In essence, successful sports performance is multi-disciplinary in nature, and never a result of single cause and effect. Therefore, this study will address performance management in elite rugby union with specific reference to how performance is analysed.

A3 What are the aims of the research?

To implement and evaluate a performance management and analysis system in an international rugby union environment that generates a clear applied conceptual best practice framework that directly impacts upon performance.

A4 Will you be using an approved protocol in your project? | No
A5 If yes, please state the name and code of the approved protocol to be used:\(^2\)
Click here to enter text.

If your project does involve the use of an approved protocol, please indicate when answering the following questions, which areas of your study are covered by the protocol.

A6 What methods of data collection and analysis will you adopt?
An interview study that informs the concept of performance management in elite rugby. Categories of interviewee include: International and National High Performance Managers, a National Team Manager, National Head Coaches, an Assistant National Coach and a Head of Elite Coach Development. An interview study that explores the nature of performance analysis in elite rugby. Categories of interviewee include current and former international Performance Analysts in rugby union. A performance management and analysis case study intervention that reflects aspects of change management action research. The sample group is an IRB tier two high performance senior national squad.

A7 What remuneration (if any) will be offered to participants?
None

A8 From which group(s) will participants be recruited and what sampling method and criteria will be used?
Elite rugby union squads, coaches and support staff as well as national governing body personnel.

A9 How many participants will be involved?
Eight interviewees and one international rugby squad for the intervention study.

A10 Where and how will the participants be recruited and what method of initial contact will you use?
The rugby union squad being studied are a squad that the principal investigator has already been working with and so the study will be explained to them while asking permission for using the squad as a case. The interview participants will be recruited by email and telephone contact, explaining the purpose of the initial survey and advising of their rights if they wish to participate.

A11 What previous experience of research involving human participants relevant to this project do you have?
Click here to enter text.

A12 Student projects only
What previous experience of research involving human participants relevant to this project does your supervisor have?
Click here to enter text.

B – POTENTIAL RISKS

B1 What potential discomfort or inconvenience to the participants do you foresee?
(1) participants (the likely interventions are non-invasive and geared toward performance improvements); (2) researcher (working individually, in a distant geographic location with no link to my academic work place); (3) project (the intervention itself is based on current, accepted high performance management and analysis practice which would not undermine the National Team environment in any way; in addition the study would be completed prior

\(^2\) An Approved Protocol is one which has been approved by UWIC to be used under supervision of designated members of staff; a list of approved protocols can be found at [INSERT LINK]
to the potential for a new head coach to arrive); and (4) One minor category of risk would involve findings that potentially define areas of weakness within the RUR that certain individuals would not want highlighted.

B2 How do you propose to deal with the potential risks?

Normalising risk has incorporated a discussion with the RUR, and no commercially sensitive data will be included, which lowers the potential for exposure to risk and potential harm. Data within the study will be anonymised as far as is reasonably possible although the use of the specific squad is acknowledged within the case study. This is with the agreement of the RUR.

B3 Do you intend to use a questionnaire to ascertain an individual’s level of physical fitness or health before accepting them as a participant? If yes, please give details.

No

B4 What potential risks to the interests of the researchers do you foresee?

None. Where the RUR do not wish certain areas to be researched or publicised, the researcher will honour their wishes.

B5 How will you deal with these potential risks?

All data presented will be with the agreement of the participants.

C – CONSENT

| C1 Will informed consent be sought from participants? | Yes |
| C2 IF NO, explain why informed consent will not be sought |  |
| Click here to enter text. |  |
| C3 IF YES, describe how informed consent will be obtained and attach copies of relevant documents |  |
| The RUR have provided written permission for the study to be done. |  |
| C4 If you are using an approved protocol, has the approved wording for participants been included in your Participant Information Sheet? | Choose an item. |
| C5 IF NO, why not? |  |
| Click here to enter text. |  |
| C6 If there are doubts about participants’ abilities to give informed consent, what steps have you taken to ensure that they are willing to participate? |  |
| Click here to enter text. |  |
| C7 IF participants are aged under 18, describe how you will seek informed consent |  |
| Click here to enter text. |  |
| C8 How will consent be recorded? |  |
| Click here to enter text. |  |

D – OTHER DETAILS

| D1 Will participants be informed of their right to withdraw without penalty? | Yes |
| D2 How will you ensure participants’ confidentiality and anonymity? |  |
| It will be known that the study used RUR as a case investigation. Interview participants will be represented by pseudonyms within the thesis and other research output material. |  |
| D3 How will issues of data storage be addressed? |  |
| Data will be stored on disks that will only be within the principal investigator’s possession. |  |
| D4 Are there any further points you wish to make with regard to the proposed research? |  |
| Click here to enter text. |  |
NB: When submitting your application, in addition to this form your School Ethics Committee will expect to see copies of the documentation you will use during your project. Depending on what your project entails, this may include:

- Participant information sheet (See Section C)
- Participant consent form (See Section C)
- Parents information sheet (See Section C)
- Parents consent form (See Section C)
- Participant questionnaire (See A6)
- Health questionnaire (See B3)
- Letter to the organisation at which research will take place

Refer to the document *Guidelines for obtaining ethics approval* for further details on which documents you should provide and exemplar forms for your reference when compiling this information.
Appendix D: Thematic Maps.
Appendix E: ‘100 Day’ World Cup Periodised Plan.

<table>
<thead>
<tr>
<th>May 30th Pre Churchill Cup Camp Moscow</th>
<th>Week June 6th Russia v Canada &amp; Italy A Week</th>
<th>Week June 13th Finals Day</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Monday</strong></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Tuesday</strong></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td><strong>Wednesday</strong></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Thursday</strong></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Friday</strong></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Saturday</strong></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Sunday</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Weekly Training Schedule**

<table>
<thead>
<tr>
<th>DATE:</th>
<th>May/June 2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>CYCLE:</td>
<td>National Team Testing and Churchill Cup Prep</td>
</tr>
<tr>
<td>WEEK 1:</td>
<td>(4) COMMENCING MONDAY 30/5/2011</td>
</tr>
<tr>
<td>WEEK FOCUS:</td>
<td>Tech and Physical</td>
</tr>
<tr>
<td>NOTES:</td>
<td></td>
</tr>
<tr>
<td>POSITION:</td>
<td>BACKS</td>
</tr>
<tr>
<td>07:00</td>
<td>Breakfast</td>
</tr>
<tr>
<td>09:00</td>
<td>Fitness Testing - see separate sheet for Groups (8:30-12.30)</td>
</tr>
<tr>
<td>10:00</td>
<td>Team Walk Through BLUE</td>
</tr>
<tr>
<td>11:00</td>
<td>Squad Assemble (12:00)</td>
</tr>
<tr>
<td>13:00</td>
<td>Lunch (12:00)</td>
</tr>
<tr>
<td>14:00</td>
<td>Lunch (12:00)</td>
</tr>
<tr>
<td>15:00</td>
<td>(14:00) Presentation followed by Rugby walk through drills/sets moves</td>
</tr>
<tr>
<td>16:00</td>
<td>Spm Fitness Test x 5</td>
</tr>
<tr>
<td>17:00</td>
<td>(16.30pm) Pool recovery</td>
</tr>
<tr>
<td>18:00</td>
<td>(18.30pm) Pool recovery</td>
</tr>
<tr>
<td>19:00</td>
<td>Dinner (19:00)</td>
</tr>
<tr>
<td>20:00</td>
<td></td>
</tr>
<tr>
<td>21:00</td>
<td></td>
</tr>
</tbody>
</table>
## WEEKLY TRAINING SCHEDULE

### CYCLE:
**WEEK 2** (21-27/06/2011)  
**WEEK FOCUS:** Churchill Cup

### Date:
- **MONDAY (13/6/11)**
- **TUESDAY (14/6/11)**
- **WEDNESDAY (15/6/11)**
- **THURSDAY (16/6/11)**
- **FRIDAY (17/6/11)**
- **SATURDAY (18/6/11)**
- **SUNDAY (19/6/11)**

### Notes:
- Must Do: weigh in (before breakfast)
- Must Do: weigh in and S/C (9:30)
- Must Do: weigh in and Captains Run (9:30)
- Must Do: weigh in (before breakfast)
- Must Do: weigh in (before breakfast)
- Must Do: weigh in (before breakfast)

### Weekly Training Schedule

<table>
<thead>
<tr>
<th>Time</th>
<th>Backs</th>
<th>Forwards</th>
<th>Backs</th>
<th>Forwards</th>
<th>Backs</th>
<th>Forwards</th>
<th>Backs</th>
<th>Forwards</th>
<th>Backs</th>
<th>Forwards</th>
<th>Backs</th>
<th>Forwards</th>
</tr>
</thead>
<tbody>
<tr>
<td>07:00</td>
<td>Breakfast (9:00)</td>
<td>Breakfast (9:00)</td>
<td>Breakfast (9:00)</td>
<td>Breakfast (9:00)</td>
<td>Breakfast (9:00)</td>
<td>Breakfast (9:00)</td>
<td>Breakfast (9:00)</td>
<td>Breakfast (9:00)</td>
<td>Breakfast (9:00)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>09:00</td>
<td>(9.30) Video Review</td>
<td>Team Meeting - Preview</td>
<td>Team Meeting - Preview</td>
<td>Team Meeting - Preview</td>
<td>Team Meeting - Preview</td>
<td>Team Meeting - Preview</td>
<td>Team Meeting - Preview</td>
<td>Team Meeting - Preview</td>
<td>Team Meeting - Preview</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10:00</td>
<td>Post-recovery and massage (10.00)</td>
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### WEEKLY TRAINING SCHEDULE

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<tr>
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<td>0930</td>
<td>Match 22 breakfast</td>
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<tr>
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Rugby World Cup Periodised Plan

### Weekly Focus

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<tr>
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### Weekly Training Schedule

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### Periodised Plan

- **Monday (AM):** Breakfast
- **Monday (PM):** Breakfast
- **Tuesday:** Transfer to training ground
- **Wednesday (AM):** Transfer to training ground
- **Wednesday (PM):** Transfer to training ground
- **Thursday:** Transfer to training ground
- **Friday (AM):** Transfer to training ground
- **Friday (PM):** Transfer to training ground
- **Saturday:** Transfer to training ground
- **Sunday (AM):** Transfer to training ground
- **Sunday (PM):** Transfer to training ground

### Snack Bar Items

- 21:00: Freelance dinner
- 22:00: Snack bar items
- 23:00: Snack bar items
- 00:00: Snack bar items
- 01:00: Snack bar items
- 02:00: Snack bar items
- 03:00: Snack bar items
- 04:00: Snack bar items
- 05:00: Snack bar items
- 06:00: Snack bar items
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- 17:00: Snack bar items
- 18:00: Snack bar items
- 19:00: Snack bar items
- 20:00: Snack bar items
- 21:00: Snack bar items
- 22:00: Snack bar items
- 23:00: Snack bar items
- 00:00: Snack bar items
### Rugby World Cup 2011 - Schedule

#### Rugby World Cup 2011 - Saturday 11 September

**RUSSIA**

**Japan**

**Match:** Russia vs Japan

**Time:** 15:00 local time

**Venue:** Rugby World Cup 2011, Stadium

**Notes:**
- All kick-off times are local time.
- Russia vs Japan match is played on Saturday, 11 September.
- For more information, visit the Rugby World Cup 2011 official website.

---

**RUSSIA**

**Australia**

**Match:** Russia vs Australia

**Time:** 15:00 local time

**Venue:** Rugby World Cup 2011, Stadium

**Notes:**
- All kick-off times are local time.
- Russia vs Australia match is played on Saturday, 11 September.
- For more information, visit the Rugby World Cup 2011 official website.

---

**RUSSIA**

**New Zealand**

**Match:** Russia vs New Zealand

**Time:** 15:00 local time

**Venue:** Rugby World Cup 2011, Stadium

**Notes:**
- All kick-off times are local time.
- Russia vs New Zealand match is played on Saturday, 11 September.
- For more information, visit the Rugby World Cup 2011 official website.

---

**RUSSIA**

**South Africa**

**Match:** Russia vs South Africa

**Time:** 15:00 local time

**Venue:** Rugby World Cup 2011, Stadium

**Notes:**
- All kick-off times are local time.
- Russia vs South Africa match is played on Saturday, 11 September.
- For more information, visit the Rugby World Cup 2011 official website.

---

**RUSSIA**

**France**

**Match:** Russia vs France

**Time:** 15:00 local time

**Venue:** Rugby World Cup 2011, Stadium

**Notes:**
- All kick-off times are local time.
- Russia vs France match is played on Saturday, 11 September.
- For more information, visit the Rugby World Cup 2011 official website.

---

**RUSSIA**

**England**

**Match:** Russia vs England

**Time:** 15:00 local time

**Venue:** Rugby World Cup 2011, Stadium

**Notes:**
- All kick-off times are local time.
- Russia vs England match is played on Saturday, 11 September.
- For more information, visit the Rugby World Cup 2011 official website.

---

**RUSSIA**

**Ireland**

**Match:** Russia vs Ireland

**Time:** 15:00 local time

**Venue:** Rugby World Cup 2011, Stadium

**Notes:**
- All kick-off times are local time.
- Russia vs Ireland match is played on Saturday, 11 September.
- For more information, visit the Rugby World Cup 2011 official website.

---

**RUSSIA**

**Italy**

**Match:** Russia vs Italy

**Time:** 15:00 local time

**Venue:** Rugby World Cup 2011, Stadium

**Notes:**
- All kick-off times are local time.
- Russia vs Italy match is played on Saturday, 11 September.
- For more information, visit the Rugby World Cup 2011 official website.

---

**RUSSIA**

**Scotland**

**Match:** Russia vs Scotland

**Time:** 15:00 local time

**Venue:** Rugby World Cup 2011, Stadium

**Notes:**
- All kick-off times are local time.
- Russia vs Scotland match is played on Saturday, 11 September.
- For more information, visit the Rugby World Cup 2011 official website.

---

**RUSSIA**

**Wales**

**Match:** Russia vs Wales

**Time:** 15:00 local time

**Venue:** Rugby World Cup 2011, Stadium

**Notes:**
- All kick-off times are local time.
- Russia vs Wales match is played on Saturday, 11 September.
- For more information, visit the Rugby World Cup 2011 official website.

---

**RUSSIA**

**New Zealand**

**Match:** Russia vs New Zealand

**Time:** 15:00 local time

**Venue:** Rugby World Cup 2011, Stadium

**Notes:**
- All kick-off times are local time.
- Russia vs New Zealand match is played on Saturday, 11 September.
- For more information, visit the Rugby World Cup 2011 official website.

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**RUSSIA**

**England**

**Match:** Russia vs England

**Time:** 15:00 local time

**Venue:** Rugby World Cup 2011, Stadium

**Notes:**
- All kick-off times are local time.
- Russia vs England match is played on Saturday, 11 September.
- For more information, visit the Rugby World Cup 2011 official website.

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**RUSSIA**

**Ireland**

**Match:** Russia vs Ireland

**Time:** 15:00 local time

**Venue:** Rugby World Cup 2011, Stadium

**Notes:**
- All kick-off times are local time.
- Russia vs Ireland match is played on Saturday, 11 September.
- For more information, visit the Rugby World Cup 2011 official website.

---

**RUSSIA**

**Italy**

**Match:** Russia vs Italy

**Time:** 15:00 local time

**Venue:** Rugby World Cup 2011, Stadium

**Notes:**
- All kick-off times are local time.
- Russia vs Italy match is played on Saturday, 11 September.
- For more information, visit the Rugby World Cup 2011 official website.

---

**RUSSIA**

**Scotland**

**Match:** Russia vs Scotland

**Time:** 15:00 local time

**Venue:** Rugby World Cup 2011, Stadium

**Notes:**
- All kick-off times are local time.
- Russia vs Scotland match is played on Saturday, 11 September.
- For more information, visit the Rugby World Cup 2011 official website.

---

**RUSSIA**

**Wales**

**Match:** Russia vs Wales

**Time:** 15:00 local time

**Venue:** Rugby World Cup 2011, Stadium

**Notes:**
- All kick-off times are local time.
- Russia vs Wales match is played on Saturday, 11 September.
- For more information, visit the Rugby World Cup 2011 official website.
## Appendix F: Physical Performance Standards

### COUNTER MOVEMENT JUMP

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<td>71</td>
<td>29.8</td>
<td>76</td>
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### SPRINT

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### AGILITY

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Appendix G: Rugby Philosophy. РЕГБИЙНАЯ ФИЛОСОФИЯ

PRIORITY. The first form of attack and defence is set piece. Never forget the importance of the restart.

ПРИОРИТЕТ. Первая стадия атаки или защиты - это построение. Никогда не забывайте о важности возобновления игры.

Go forward before you go wide. Create opportunities, mismatches, one v ones etc. for the back three. Don’t just move the ball to them and expect them to beat people.

Идите вперёд перед тем, как идти широко. Создавайте шансы, преимущество, количественное превосходство и т.д. для игроков задней линии. Не надо просто отдавать им мяч и ждать, что они всех обыгрывают.

In the strike zone try and score within 3 phases.

В чужих 22-х стараться занести попытку в 3 фазы.

Set good targets attempting to create 2 second rucks. Look to move the ball in contact and after of the contact ONCE WE ARE OVER THE GAIN LINE.

Пытайтесь вывести мяч из рака за две секунды. Старайтесь принимать и отдавать мяч так, чтобы ПРОХОДИТЬ ЛИНИЮ ПРЕИМУЩЕСТВА

Use the kicking game well, to regain possession, relieve pressure and/or for territory.

Используйте удары ногой, чтобы вернуть владение мячом, выйти из-под прессинга и/или чтобы отыграть территорию.

Try and control the tempo. Up the tempo from quick line out, tap penalty/free kicks and turnovers.

Контролируйте темп игры. Взвинчивайте скорость с помощью быстрого вброса из аута, быстрого розыгрыша штрафных и свободных и после перехватов.

Know your players and play to the strengths of your team and the units and individuals within it.

Знайте своих игроков, работайте над усилением командной игры и индивидуальных качеств внутри команды.

Never beat yourselves by over complicating things, game plan etc, forcing 50/50 passes and trying the impossible.

Никогда не мучайте сами себя сверхсложными задачами, ненужными пасами и т.д. Не пытайтесь делать невозможное.

Know your opposition. Have the ability to adapt to all types of conditions and opposition strengths and weaknesses.

Знайте своего соперника. Умейте адаптироваться к любым условиям, к любому соотношению силы и слабости.
Selection and recruitment of players is a huge part of being successful. 
Правильный подбор игроков – важнейшая составляющая успеха.

Minimum player requirements. Winners who are mentally and physically tough with desire and DISCIPLINE. 
Минимальные требования к игрокам:

Team player (Not selfish, plays for the team) who does his own job well with good core skill set, and makes very few errors. 
Это командные игроки (не индивидуалисты, а играющие на команду), которые, действуя на своей позиции, демонстрируют хорошие навыки, подготовку и делают мало ошибок.

Always select the best balanced team (not necessarily the best 15 players). Players who enjoy defending as much as carrying the ball. 
Всегда отбирайте самую сбалансированную команду (не обязательно 15 лучших игроков) - игроков, которым нравится играть в защите не меньше, чем владеть мячом.

Good balance between Leaders and followers. 
Хороший баланс между лидерами и остальными.

Leaders that execute the agreed game plan and are calm under pressure. 
Units that compliment each other and are best suited to execute the match day game plan.

Лидеры, которые выполняют игровой план и спокойно себя ведут под прессингом. Связки, в которых игроки дополняют друг друга и которые способны наилучшим образом следовать игровому плану.

A strong scrummaging tight head and a Quality goal kicker is always a must. 
В команде обязаны быть сильный правый столб и квалифицированный бьющий.
Appendix H: Performance Manager: Philosophy.

A coaching philosophy is a personal statement that is based on the values and beliefs that direct your coaching. A coaching philosophy must be flexible and functional. My coaching behavior reflects a set of values about coaching, sport and human relationships. This set of values comprises my coaching philosophy; it should be remembered that coaching practice may not always correspond to the coaching philosophy. Values are the means through which I evaluate my experience, and regard some things as more important than others. They can change over time, but are more or less stable. They are more important than opinions or beliefs. My values are individual but also in some cases shared; depending on the management group. Observations on coaching philosophy:

Differences between publically and privately stated values can be deliberate; coaches may have to support values that match the expectations of others;

If there is conflict then agreement can be negotiated through good practice;

Lack of self-analysis may lead to differences between a coach’s actions and actual values – believe in one thing but do another; and,

Conflict can occur between organizational values and coaching values.

MY PHILOSOPHY:

General: Assume nothing; Blame nobody; and, Do something.

- Need to develop self-sufficient and self-aware athletes.
- Coach must lead by example – integrity, honesty, and punctuality.
- Absolute accountability for decisions lie with the coach.
- Are they ‘my’ athletes or am I ‘their’ coach? My athletes when they need to be protected (praise publically and chew out privately) and their coach when they need development.
- Work ethic – do the simple things brilliantly & the hard things well.
- Professionalism – sustained excellence.
- Define performance strategies that allow all rugby players to perform the:
  Basics
  Done well
  At speed
  Under pressure
  Within the game

- Ensure physical development is one step ahead of technical development.
- Work from a fitness base that allows the player to ‘earn the physical right’ to progress with the training.
- When the pressure comes on: Speak softly & carry a big stick.
Appendix I: Selection Criteria.

Key performance markers.

The accuracy of this information will not only determine selection in current teams, but may be used as a basis for selection into all international pathway teams. There is room for comment about a player and remember that “gut feel” is a critical part of the selection and must be taken into account when viewing players.

The information collected from these protocols, when combined with the position specific sheets, should give a clear picture of a player’s current skill level and should allow, with some degree of accuracy a comprehensive selection process.

**Rating Scale:**

Each descriptor will have a scale attached that is specific area of performance: Examples given are category five.

- 5- High Performance
- 4- Very Good
- 3- Satisfactory
- 2- Marginal
- 1- Poor

**Key Performance Areas:**

1. Catch/Pass Vision Awareness
2. Tackle Technique and Effectiveness
3. Work Ethic/Motivation/Discipline/Leadership
4. Strength/ Power/Speed
5. Physiological Fitness
6. Decision Making
7. Aggressiveness and Intensity
8. Dealing with Pressure
9. Character/Mental Toughness/Resilience
10. Genetics/other Sports
11. Communication – on & off field
BENCHMARKING SUMMARIES

1. Catch Pass/Vision Awareness:
High Performance - Outstanding peripheral vision, depth perception and skills on both sides, executing with speed and accuracy in tight situations. Consistently selects the right option when putting the receiver into space.

2. Tackle Technique and Effectiveness:
High Performance - Strong and effective tackler on both shoulders. Correct tackle technique for the appropriate situation, on most occasions.

3. Work Ethic:
High Performance - Fiercely competitive and likes to win, who handles pressure and setbacks well. Is a role model at school/club/region with proven leadership qualities and experience?

4. Strength/Power/Speed:
High Performance - Outstanding reaction to play with great speed and lateral movement ability. Additionally has great ability to take the opposition on.

5. Physiological Fitness
High Performance - Meets and/or exceeds - NATIONAL TEAM benchmarks for the position.

6. Decision Making:
High Performance - Good decision maker both in attack and defence with a strong game awareness. Strong understanding of a range of defensive systems.

7. Aggressiveness and Intensity:
High Performance - Doesn’t shy from physical contact. Runs and tackles aggressively. Fearless in attack and defense and maintains great composure, concentration and focus throughout the game.

8. Dealing with Pressure:
High Performance - Maintains concentration and task focus. Stays composed under great pressure in tight situations, quality decision maker.

9. Character/Mental Toughness/Resilience:
High Performance - Very coachable and operates at his best under pressure. Strong positive reaction to challenges and has a great desire to improve. Develops effective relationships both on and off the field and is very reliable. Player constantly challenges his performance areas and is able to handle setbacks in a mature fashion.

10. Communication
High Performance - Outstanding team member who is able to clearly identify opportunities/threats and communicate them accurately to team members under game pressure.
Appendix J: Positional Role Remits.

**Prop:**
- Effective Set Piece- Scrum and lineout lifting
- Move Bodies
- Front Foot defender

**Hooker:**
- Effective Set Piece- throwing skills
- Evasive Ball Carry/Passing skills
- Front foot defender

**Lock:**
- Effective set piece/Aerial Skills
- Move Bodies
- Front foot defender
- Strong leg drive/ball carry

**Back Row:**
- Anaerobic Fitness
- Strong on/over ball
- Aggressive Defender
- Effective support play- optimistic lines
- Win the collision

**Half Back:**
- Ball Clearance
- Variable Kicking Game- Both feet
- Speed to the breakdown-optimistic lines
- Accurate Defender

**Fly - Half**
- Game control
- Comfortable with space/time pressure
- Variable kicking game-both feet
- Speed

**Centre:**
- Front Foot defender
- Comfortable with space/time pressure
- Creates space for others
- Accurate distributor
- Kicking game- both feet

**Back 3:**
- High Ball reception
- Kicking game- both feet
- Speed Agility & Try Scorer
- Comfortable operating in open space
- Accurate Defender
Appendix K: Coaches Player Appraisal Chart

**Player Appraisal Chart**

**Definitions Categories:**
- **Senior international players:** Players who have proved themselves at the highest level and continue to perform and seek to improve.
- **Core squad players:** Experienced players who are regular first team squad. Young players that may have not played test rugby but are destined to.
- **Next generation:** Has proven he can perform at club level but at an age where they are still learning and developing.
- **Development players:** Have potential to make core squad but need to experience more senior football and undergo continual development.

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Appendix L: Russian Performance Manager Job Description.

**Job Title: Performance Manager**

**Purpose:**

To lead the High Performance Team by providing innovative, leading edge high performance initiatives for Players, Coaches and Team support, through the delivery of world-class high performance programmes that integrate sports science research and development and international benchmarking.

To develop and manage the High Performance Support Coach Succession Plan; with an emphasis on growing the capability of Russian Rugby’s high performance coaches through the identification of their needs and facilitating development opportunities.

**Key summary outcomes:**

High Performance Program Leadership.

Strategic direction for long term athlete support services.

Implement and oversee performance analysis and management systems.

Management of the systems underpinning the Daily Training Environment.

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<td></td>
<td>2. Ensure the National Team provide an integrated lead in the RUR Professional Rugby model.</td>
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<tr>
<td></td>
<td>3. Ensure High Performance principles are integrated across the entire RUR Rugby business, including players, coaches and support staff.</td>
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<td>4. Lead own area of responsibility and provide expert advice on matters impacting own area to RUR VP and National Head Coach.</td>
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<td>5. Manage the High Performance Team in the development and maintenance of an infrastructure that supports the professional players, coaches and support staff to become a High Performance IRB nation.</td>
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<tr>
<td></td>
<td>6. Lead the High Performance Team in the delivery of the agreed High Performance business plan.</td>
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| **Strategic Relationships** | 7. Assist the RUR VP to manage the IRB Grant process, coordinating and contributing to the operational plans and budgets.  
8. Develop and maintain effective systems and processes to manage and monitor all operational rugby performance management requirements.  
9. Ensure business priorities are met and standards are consistent.  
10. To work closely with the management team to ensure that the High Performance Team provides timely guidance and support to all stakeholders.  
11. Monitor and evaluate the performance of all athlete support staff that form part of the High Performance succession plan (includes Performance Reviews, setting of KPIs).  
12. In conjunction with the National Academy, provide leadership of an integrated support team to ensure the High Performance programme is serviced by high quality medical support, sport science, strength and conditioning, nutrition, performance analysis and athlete welfare support mechanisms.  
13. Nurture strong relationships with the IRB, the professional clubs, and other key stakeholders.  
14. Establish and maintain effective working relationships with staff (includes Players, Coaches and Support staff), external parties and other business networks as required  
15. Maintain a high level of awareness of world leading high performance practices within other sporting codes through the establishment of relationships, attendance at forums/congresses and international benchmarking  
16. Assist in supporting the relationship with Russian Ministry of Sport |
| **Coach Pathways and Development** | 17. Develop and maintain a high performance support team coach and player talent identification process.  
18. Develop, implement and periodically review the RUR High Performance Strategy and Framework with a link to community coach development.  
| **Player Development Programme** | 19. To manage the Professional Development Programme through working closely with the IRB, professional clubs and National Academy to ensure that the non-rugby development of high performance players is well balanced and coordinated.  
20. In conjunction with the National Academy, to lead the development of an elite academy players’ curriculum to be delivered through the Professional Development Programme.  
| **Sporting Excellence** | 21. Identify the critical elements of success through research of world leading performance trends.  
22. Design and develop an integrated athlete development |
model for all levels across Russian rugby.
23. Evaluate through international benchmarking the success of Russian Rugby’s performance programmes to ensure world-leading practices are delivered.
24. Ensure all key stakeholders are aware of the role they play in ensuring Russian Rugby has an integrated development model.

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<td>25. Implementation of a system that will track individual talented athletes as they progress through the player development model.</td>
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<td>26. Design a support strategy to ensure proven performers who reside overseas are monitored by Russian Rugby.</td>
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<tr>
<td>27. Develop a culture to ensure that nationally appointed coaches share their knowledge and expertise with coaches identified as having the potential to achieve similar appointments in the future.</td>
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<tr>
<td>28. Establish a succession pathway for all national coaching and Team Support positions.</td>
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<td>29. Develop and maintain an infrastructure of skilled support people who work with talented athletes at each stage of their development.</td>
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<td>30. Direct and support coaches who have the necessary skills and experience in the delivery of high performance programmes.</td>
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<tr>
<td>31. Evaluate delivery outcomes through the results/improvement in athlete performance.</td>
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<tr>
<td>32. Implementation of a leadership programme for future elite players.</td>
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<td>33. Ensure that applied sport sciences are integrated into the planning of the high performance programme at the national level.</td>
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<tr>
<td>34. Maintain a high level of awareness of the latest technology aimed at improving the effectiveness of coaching and refereeing.</td>
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<td>35. Ensure key coaches are aware of latest research which has performance impact potential.</td>
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<tr>
<td>36. Evaluate the latest technology and make accessible to key coaches and referees including key stakeholders.</td>
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<td>37. Ensure results from athlete usage of identified science and technology is made available to national coaches to be part of their ongoing performance planning.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Leadership &amp; Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>38. Display outstanding leadership qualities in managing and promoting Russian Rugby.</td>
</tr>
<tr>
<td>39. Promote and foster a team culture where values such as: organisation before self; diligence; service to stakeholders; honesty; integrity and achievement with humility are to the fore.</td>
</tr>
<tr>
<td>40. Contribute in achieving the overall RUR business priorities in a manner consistent with values.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Organisational</th>
</tr>
</thead>
<tbody>
<tr>
<td>41. Display sound business judgment and decision making</td>
</tr>
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</table>
| Capability | capability. Provide clear and supportive leadership to all employees to enable them to contribute to the direction of RUR to their full potential.  
42. Contribute to the development of a culture of innovation, achievement and commitment to business outcomes. |
| --- | --- |
| Staff Performance | 43. Provide support and direction for staff to enable them to achieve agreed KPIs.  
44. Ensure training and development initiatives are introduced which are relevant in improving performance and efficiency.  
45. Oversee the planning, execution and supervision of projects undertaken by the team. |
| Business Planning & Budgeting | 46. Assist the National Team Manager to oversee the team plans and budgets.  
47. In conjunction with the National Team Manager monitor results on a monthly basis, comparing actual against budget and forecasts, noting major variances, supplying explanations and recommending corrective action. |
| Other | 48. Undertake any other duties as directed to meet team or organisational objectives. |

### Reporting Relationships.

<table>
<thead>
<tr>
<th>The job’s immediate manager reports to:</th>
<th>RUR President</th>
</tr>
</thead>
<tbody>
<tr>
<td>This job reports to:</td>
<td>RUR Vice-president, Strategy, Rugby and Business Development.</td>
</tr>
</tbody>
</table>
| Other areas/people that report to this job’s immediate manager: | ?  
?  
? |
| The job’s direct reports are: | ? |

### Authorities / Scope of the Job:

Recruits, promotes and disciplines staff (including athlete support staff and coaches and National Academy support staff) within the Rugby team, in conjunction with the National Head Coach and National Academy Manager.  
Has strategic input into RUR Rugby Performance plan and budget setting.  
Controls an expenditure budget as approved.

### Key relationships

<table>
<thead>
<tr>
<th>External</th>
<th>Internal</th>
</tr>
</thead>
</table>
| Professional Clubs.  
IRB.  
Other International Unions.  
International Sporting Bodies. | RUR Executive Team.  
National Head Coach.  
National Management Team.  
International squad management staff. |

<table>
<thead>
<tr>
<th>Person Profile:</th>
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<tbody>
<tr>
<td>Competencies and Attributes:</td>
<td></td>
</tr>
<tr>
<td>A demonstrated knowledge of world leading high performance sports systems.</td>
<td></td>
</tr>
<tr>
<td>Proven expertise and experience in Coach Development.</td>
<td></td>
</tr>
<tr>
<td>Proven Management skills.</td>
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<tr>
<td>Rugby empathy</td>
<td></td>
</tr>
<tr>
<td>Ability to develop a positive culture, that promotes a team environment.</td>
<td></td>
</tr>
<tr>
<td>Ability to work with diverse stakeholders and build successful working relationships.</td>
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</tr>
<tr>
<td>Demonstrates personal commitment to the pursuit of excellence.</td>
<td></td>
</tr>
<tr>
<td>Willingness to take ownership and be held accountable.</td>
<td></td>
</tr>
<tr>
<td>A willingness to challenge and be challenged, able to listen.</td>
<td></td>
</tr>
<tr>
<td>Sound business judgment and decision making capability.</td>
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</tr>
<tr>
<td>Ability to deal with a high level of public scrutiny.</td>
<td></td>
</tr>
<tr>
<td>Keeps abreast of sport science research and development and leading edge technology.</td>
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<thead>
<tr>
<th>Preferred Qualifications and Experience:</th>
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<tbody>
<tr>
<td>Qualifications and Experience:</td>
<td>A qualification in a management discipline and/or performance management.</td>
</tr>
<tr>
<td>Proven experience and success at management level with 10 years experience.</td>
<td></td>
</tr>
<tr>
<td>Involvement in high level sports management of 10 years. Proven experience in a high performance sport environment. Background in the professional rugby environment as a coach would be advantageous.</td>
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Appendix M: Pre-existing Russian Hand Notation Outputs.

Team:

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<tr>
<th>Team Stats</th>
<th>Expected</th>
<th>Russia</th>
<th>Lions</th>
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<td><strong>DEFENSIVE</strong></td>
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<td>11%</td>
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<td>Def Turnovers</td>
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<tr>
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<td>Game line 1</td>
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<tr>
<td>All Turnovers</td>
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<td>14/12</td>
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<td><strong>SET PIECE</strong></td>
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Individuals:

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<th>Music</th>
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<tr>
<th>Line</th>
<th>Pass</th>
<th>Carry</th>
<th>HIGCA</th>
<th>tackles</th>
<th>Drop kick</th>
<th>Rucks</th>
<th>Music</th>
<th>Penalty</th>
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<td>Backs</td>
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</tbody>
</table>

272

Цель – Purpose
Укрепить наше понимание игры - Reinforce our game understanding.

Обратите внимание - Focus
Что у нас получалось? Почему? - What we did well? Why?

Что нам нужно было сделать по-другому? Почему? - Why we needed to do better? Why?

С чего началось – Что происходило – Чем закончилось в итоге - Origin – Process - Outcome

- Нападающие
  - Вся игра
    - Forwards
      - Whole game

- Защитники
  - Вся игра
    - Backs
      - Whole game

- Игроки не в заявке
  - Только второй тайм
    - Non-22 – Second half only

- Лидер группы
  - Group leader

- Координатор, помощник
  - Facilitator

- Записывающий
  - Scribe

- 30 минут = Просмотр и анализ игры
  - 30 mins = Analyse Game.

- 10 минут = Изложение ключевых моментов на доске
  - 10 mins = Highlight key points on flip chart

- 10 минут = ПЕРЕРЫВ
  - 10 mins = BREAK

- 15 минут – Отчет перед тренерами
  - 15 mins – Feedback to Coaches
Sample of Player Review (translated)

LINE OUT
Do they play off top of lineout or drive?
They will do both, but the landed delivery to the scrumhalf is used most.
Do they shift drive?
No, they look to drive on the catcher, but can shear off if the catcher is removed.
Do they peel?
Yes they can peel, they have a short lineout on their own line where the hooker will peel and feed the strike runner.
When, where why? Do they use short lineout mostly short?
Middle of the park 22--22
Line out near their try line and ours? How do they defend the drive?
They look to sack the lineout, more often it’s the opposing jumper that will try to bring the lineout down.
Do they sack, blitz?
Sack
Do they contest heavily in the air? 2pods, 3pods?
Looks like 2.5 pods, but they find it hard to get the man up on the move, but they can get it right sometimes.
Can we drive?
Shift drive yes, will need to get the ball away from the jumper ASAP
Do they swing, mirror? Do they close the gap?
They tend to mirror
When Where Why?
Anywhere outside there own 10 meter

DEFENCE
How do they defend?
They push up strong and look to jam in from the outside in, after several phases they move the second rows into midfield and look to hold the ball up for a turnover.
Are back row corner flagging or in line?
The are in the line
Who defends @ 10 from lineout?
10
Is there a blindside wing, flanker?
winger steps in to fill the space
Where is the space?
On the outsides. The defensive line gets very narrow if you play wide wide

KICKING AND COUNTER ATTACK
How many players are deep when we kick out of our 22 from set pieces, 22s & restart?
3-4
Who has left foot in backs?
Yes, Rob Kearney

RUSSIA v ITALY REVIEW. TOURNAMENT : RWC 2011

RATING : 1 - POOR  2 - ACCEPTABLE  3 - GOOD  4 - VERY GOOD

PRIORITY :
1 - URGENTLY NEEDS IMMEDIATE WORK AND IMPROVEMENT.
2 - IMPORTANT - NEEDS WORK TO PLAY AT THIS LEVEL
3 - SHOULD WORK AT IMPROVING OVER TIME

<table>
<thead>
<tr>
<th></th>
<th>RATING</th>
<th>PRIORITY</th>
<th>COMMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SET PLAY</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SCRUM</td>
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<td></td>
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</tr>
<tr>
<td>1. KNOWLEDGE OF ROLES</td>
<td>1</td>
<td>1</td>
<td>Knowledge of roles was good but execution needs to improve</td>
</tr>
<tr>
<td>2. EXECUTION</td>
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<td>LINEOUT</td>
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<td>Knowledge of roles was good but execution needs to improve</td>
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</tr>
<tr>
<td>2. EXECUTION</td>
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</tbody>
</table>

| **GENERAL PLAY** | **ATTACK** |        |          | |
| KNOWLEDGE OF CALLS / ROLES | 1 | 1 | Forwards look lost after 3rd phase play - call must be early and clear from 9,10,12, forwards need direction |
| PHASE PLAY OPTION EXECUTION | 1 | 1 | We were a bit too slow into position, need to react quicker to the call and lots of communication |
| RUNNING OF BALL | 2 | 2 | A bit too flat sometimes especially after 3rd phase play, keep the depth and hit the ball at pace, timing is the key |
| RUNNING INTO SPACE | 2 | 2 | It was too much body contact, get into position early, scan the defence before running to the ball, use footwork |
| CATCH N PASS |        |          |         |
| BALL CARRY - LEG DRIVE IN CONTACT | 1 | 2 | Some players went to ground too early, use footwork and leg drive to stay on feet and go forward |
| AGILITY CLOSE TO CONTACT | 1 | 2 | It was poor but we can practice that, everyone need good footwork |
| BALL SECURITY AT CONTACT | 1 | 1 | Body position wasn't good, too high, some of our ball should be a quick ball but it stuck, need low body position and a long ball placement |
| CLEAN OUT / RUCK SUPPORT / BALL DELIVERY | 1 | 1 | We send too many players to ruck, need a very good technique from supporter players |
| LINE BREAK SUPPORT | 2 | 2 | |
Coach Preview.

Key points v Australia – final RWC Game.

SCRUM.

СХВАТКА

- Parity at scrum a minimum target.
- Быть в схватке не хуже – наша минимальная задача
- Our ball, target to get 3 second scrum, Good channels, ball in on engagement, No8 No9 ball away from base. No10 be ready.
- Наша схватка – стараемся вывести мяч за 3 секунды. Хороший коридор для ввода мяча, №8 или №9 поднимают мяч. №10 всегда готов
- Opposition ball. Keep small gap, close their space. Set Low. They are quick across, don’t lose engagement. Hit and chase, work with hooker. No 3 hit and keep weight on, keep weight on.
- Их схватка – держим маленькое расстояние. Встаем низко. Они резко входят, не проигрываем вход. Входим и даем, работаем с хукером. №3 входит и продолжает давить вперед, держать вес
- Australia will walk around us. No3 must scrum on his man. All 8 forwards work as one. Three second minimum rule flankers.
- Австралия будет подворачивать. №3 должен давить в своего игрока. Все 8 человек работают, как один. Минимум 3 секунда третья линия работает вместе во всем
- Line out.
- Коридоры
- Our ball. Give time to the hooker, good gap, no triggers, good jumps, lifts with good call and timing. BE CONFIDENT & TRUST SACHAS CALL. See line out sheet.
- Наш коридор – дайте время хукеру, хорошее расстояние, не дергайтесь раньше времени, хорошо прыгайте, делайте все вовремя и с четкими командами. БУДЬТЕ УВЕРЕННЫ, ДОВЕРЯЙТЕ САШИНЫМ КОМАНДАМ. Смотрите наш лист коридоров
- Aussie ball. Use Set 1 and sack the middle their half way to 22 mtr line. Their 22 set 2 make them throw long. Our 22 set 4. Our try line EBASH. 5 man defence Get set on middle and then swing if movement. Its essential we call the right calls in the right area and everyone follows the call. DO SOMETHING. If lost in the air we must sack immediately.
- Их коридор – используйте построение 1 и заваливайте в центре на их половине до 22м. В их 22 построение 2, пусть брасывают далеко. В наших 22 построение 4. У нашей зачетки – ЕБАШЬ. 5 человек - в защите выстраиваемся по центру и перемещаемся если они двигаются. необходимы правильные команды в правильной зоне, которым должны следовать все. ДЕЛАЙТЕ ЧТО-НИБУДЬ. Если проиграли – немедленно стараемся разрушить их построение
DEFENCE.

Australia will try and attack our marker blocker with 9 running. Cooper will try and pull you out of the line (KEEP THE LINE STAND OFF HIM AND LET HIM RUN, NO LINE LEAVERS)

set= MARKER< BLOCKER< BOWL. Don’t set wide spaces against this team, invite them to go wide & DON’T GET TAKEN OUT BY THE BLOCK RUNNERS, Work harder to set the line and we will be able to go forward.

Австралия будет стараться атаковать наших маркер-блокер. 9 будет бежать сам. Купер будет стараться, чтобы мы выбегали из линии (СОХРАНЯЙТЕ ЛИНИЮ, ОКАЗЫВАЙТЕСЬ ПЕРЕД НИМ, ПУСТЬ БЕЖИТ САМ, НИКАКИХ ВЫСТРЕЛИВАНИЙ ИЗ ЛИНИИ).

Построение МАРКЕР-БЛОКЕР-БОЛ, Не оставляйте дыры между игроками, пусть они идут шире. НЕ БЕГИТЕ ПО ИХ ЛОЖНЫМ БЕГУЩИМ! Работайте над построением линии и мы сможем продвигаться вперед

PHASE PLAY

Игра в несколько фаз

• Romp & Direct runners off 9 at the advantage line – at blocker / bol defenders
• Ромб и бегущие прямо от 9 на линию преимущества – на блокер/бол-защитников

• Romp & Direct /close - runners off 10 , runners at the advantage line – rearrdim pass
• Ромб и прямо/рядом – бегущие от 10, бегущие на линию преимущества – пас рядом

• 9 Runs when their M/B/B are slow
• 9 бежит сам, когда их маркер-блокер-бол медленные

• Runners inside 10 11/14/15 at their M/B/Bol defenders
• Бегущие внутри 10 11/14/15 по их маркер-блокер-бол-защитникам

GENERAL:

• PLAY FOR THE TEAM AS ONE TOGETHER
• БУДЬТЕ ОДНОЙ КОМАНДОЙ!

• REMEMBER HOW LUCKY WE ARE TO BE REPRESENTING A NATION, YOUR NATION, RUSSIA.
• ПОМНИТЕ, ЧТО МЫ СЧАСТЛИВЫ ПРЕДСТАВЛЯТЬ ЗДЕСЬ НАШУ СТРАНУ, РОССИЮ! ПОЛЬЗУЙТЕСЬ ШАНСОМ, НАСЛАЖДАЙТЕСЬ КАЖДОЙ МИНУТОЙ!

• TAKE THE OPPORTUNITY AND ENJOY EVERY MINUTE.
• ПОЛУЧИТЕ ШАНС И НАСЛАЖДАЙТЕСЬ КАЖДОЙ МИНУТОЙ!

• PLAY FOR THE TEAM AS ONE TOGETHER
• БУДЬТЕ ОДНОЙ КОМАНДОЙ!

• Finish strong. MAXIMAL!

• RESPECT FROM THE RUGBY WORLD.
Appendix P: IRB RWC 2011 Russia Results.

### POOL C

<table>
<thead>
<tr>
<th>Team</th>
<th>P</th>
<th>W</th>
<th>D</th>
<th>L</th>
<th>PF</th>
<th>PA</th>
<th>TF</th>
<th>TA</th>
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<td>34</td>
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<td>48</td>
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<td>4</td>
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<td>0</td>
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<td>11</td>
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<tr>
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<td>4</td>
<td>57</td>
<td>196</td>
<td>8</td>
<td>29</td>
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- Australia  vs. Ireland: 32 - 6
- Ireland vs. Russia: 22 - 10
- Russia vs. Australia: 6 - 13
- Australia vs. Italy: 6 - 15
- Italy vs. Ireland: 53 - 17
- Australia vs. USA: 67 - 5
- Ireland vs. Russia: 62 - 12
- Italy vs. USA: 27 - 10
- Australia vs. Russia: 68 - 22
- Ireland vs. Italy: 36 - 6
Appendix Q: WRU Level 4 Coach award course.

Player Learning Environment = 10 credits

Performance Management and Analysis = 10 credits

Player Centred Coaching = 10 credits

Selection & Game Management = 10 credits

Physical Performance = 10 credits

Psychological Performance = 10 credits

RPL (10) & W-BL (30) = 40 credits

Plus 20 optional credits

WRU LEVEL 4 COACH AWARD COURSE
Appendix R: WRU Level 4 Player Learning Environment.

<table>
<thead>
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<th>Module Title</th>
<th>Module Number</th>
<th>JACS Subject Code(s) and % of each subject</th>
<th>ASC Category(ies)</th>
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<th>Module Value</th>
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Teaching Period: 100 hours

Module Leader: Sport
Campus: Cyncoed

Assessment Methods

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<th>Duration/Length of Assessment Type</th>
<th>Weighting of Assessment</th>
<th>Approximate Date of Submission</th>
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<tbody>
<tr>
<td>Portfolio: Reflective Practice</td>
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Aim(s)

This module aims to:

To critically evaluate coaching through exposure to an extensive body of knowledge related to coaching philosophy and practice.

Interrogate systems for reflecting on major aspects of the coaching process.

Understand existing coach education and development structures.

To develop an ability in students to employ a flexible and holistic approach to coaching.
Learning Outcomes

By the end of this module students should be able to:

- Develop and / or enhance a personal coaching philosophy to evaluate their own coaching.
- Critically evaluate the role of ethics in your coaching.
- Evaluate the principles of skill acquisition to design and implement coaching interventions that enhance the development of high performers.
- Apply theoretical knowledge of pedagogy, role theory, learning theory, information processing, etc., in a practical context.
- Develop a clear understanding of reflective practice and apply this to critically evaluate your coaching behaviour and improve performance.
- Analyse and challenge current thinking on the technical and tactical aspects of a specialist area.
- Critically evaluate and justify the technical and tactical priorities in the coaching practice of each area of specialism.
- Critically appraise different coaching styles and how they can be best used in different contexts to empower athletes and coaches to be successful.

Learning and Teaching Delivery Methods

Seminars and workshops. With regard to the formal problem-solving activities, students are organized into a number of small groups, each of which must address a variety of problems and sub-problems. Students are thus responsible for organizing the required tasks within their own groups to arrive at appropriate preferred solutions; these are then presented to the class and ultimately written up.

Indicative Content

Current Issues in coaching: Framing the Level 4 Experience.
Orchestration.
Coaching Philosophy.
Developing a learning environment and effective learners; using TARGET structures.
Creating a Learning Culture.
Empowerment and the Player Voice.
Coaching Challenge: Practical Problem Solving.
Scaffolding player learning; social constructivist learning.
Coaching Games for Understanding; Developing Game Sense.
Tactical decision making.

Recommended Reading & Required Reading

Required Reading:

**Recommended reading**


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<th>Access to Specialist Requirements</th>
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Appendix S: WRU Level 4 Performance Management and Analysis.

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<th>Module Title</th>
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Teaching Period

Pre-requisites

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Assessment Methods

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Aim(s)

This module aims to:

Develop an applied understanding of how to lead, analyse and manage performance with specific reference to multi-disciplinary outputs.

Learning Outcomes

By the end of this module students should be able to:

- Analyse a variety of performance analysis profiling techniques.
- Critically reflect upon the contribution of a variety of discipline areas to the development of elite performance and the preparation of elite performers.
- Apply and evaluate an inter-disciplinary approach to supporting the development of high performers.
- Appraise the factors affecting the design of a high performing culture and environment to support the development of teams, units and individuals.
- Develop a critical knowledge and understanding of different leadership theories.
and apply to the management of high performance.

- Critically evaluate and understand their own and other leadership styles and influences.
- Manage inter-personal relationships including conflict resolution.
- Identify, implement and evaluate change processes and procedures designed to achieve individual and organisational goals.

### Learning and Teaching Delivery Methods

Seminars and workshops. Practical problem-based learning.

### Indicative Content

- Dimensions of performance: peak, and high performance.
- The role of the High Performance manager.
- Managing change in high performance sport.
- Information management capability.
- Performance Managing a Multi-Disciplinary team.
- Multi-dimensional Leadership; developing standards.
- Creating and managing a high performance program.
- Talent management:
  - Planning the Programme: Tactical-Technical Periodisation.
  - Integrating performance management and performance analysis
- The nature of Performance Analysis:
  - Coach-Analyst relationship.
  - Technique analysis.
  - Analysing Coaching Behaviours.
- Current Issues in Performance Analysis: Data Visualisation; Data analytics; Time-Motion.

### Recommended Reading & Required Reading

**Required Reading:**


**Recommended reading:**


**Journals:**
Coaching and Sport Science Review.
European Journal for Sport Management
European Sport Management Quarterly
International Journal of Performance Analysis in Sport-e (eIJPAS).
Journal of Sport Management

**Access to Specialist Requirements**