

Abstract. *This paper aims to present how knowledge can be managed in a sport team, by using the example of the English national rugby team, which won the World Cup in 2003, under the management/coaching of Clive Woodward. The paper is based on the idea that knowledge management is a key driver of sporting success. The first part of the research presents a theoretical approach both on knowledge management in sport and on obtaining success in rugby. Then, there follows a presentation about how knowledge was created at the English rugby team, and how it helped in winning the World Cup.*

An important role is played by the manager, who is seen as the initiator of knowledge in the team. Few research has been done on knowledge management in sport, and in order to be as explicit as possible, the paper tries to combine the theory – built on ideas of experimented writers, such as Nonaka – with the practice observed at the English national rugby team between 1997 and 2003.

Keywords: knowledge management, rugby, sport, success, Woodward.

KNOWLEDGE MANAGEMENT IN THE RUGBY TEAM: A FACTOR OF ENGLAND'S 2003 RUGBY WORLD CUP SUCCESS

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*Management & Marketing
Challenges for Knowledge Society
(2010) Vol. 5, No. 3, pp. 135-148*

1. Introduction: knowledge and the way to success in rugby

Being a social phenomena that has the ability to attract masses of people, the game of football rugby has to adapt to the ever developing knowledge society. In particular, the rugby organizations, such as clubs or teams, have to assimilate a professionally structured knowledge management environment. Not only knowledge changes, but also the rugby environment does. For example, in the 1999 Rugby World Cup, the IRB (the International Rugby Board is the governing body of world rugby) modified a ruling about lineouts during the tournament, forcing the teams to change and to adapt when finding themselves into a crucial moment of the competition. Moreover, rugby laws are continuously experimented by the IRB, thus changing almost every two or three years. Without proper knowledge, a team would find it hard to adapt to so many modifications. This situation of rugby teams, which find themselves in a continuously changing environment, is described by Nonaka through the following words: „Any organization that dynamically deals with a changing environment ought not only to process information efficiently but also create information and knowledge” (Nonaka, 1994, p. 14).

Creating a knowledge management environment is a must-do for rugby organizations which seek sporting success. As Edwards and Kidd write, information generates knowledge, which leads to wisdom, better understanding and intelligence (Edwards and Kidd, 2003, p. 131). Through generating knowledge in the rugby team, the coach develops the wisdom and the intelligence of his players, who will better understand the situation of their team and the game of rugby, compared to their past, on the one hand side, and to their opponents and environment on the other. An improved perception of the own team's rugby is a way which leads to sporting success. In fact, let us just assume – for a better understanding of the ideas and of the case study of this paper – that the main goal of a rugby organization is to achieve sporting success. In other words, a rugby team has the goal to dominate its opponents on the pitch and to win matches. Many matches, followed by trophies and titles, because success, as Clive Woodward – the manager of England's Rugby Union Team between 1997 and 2003, the example of which will be analyzed in the following – says, doesn't happen in a straight line (Woodward, 2005), but just after experiencing frustration and loss.

Another aspect that needs to be clarified is that good management principles can be set in practice in each and every kind of organizations, be these sporting, business or cultural ones. Managing a rugby team does not mean management tools from the business world can't be used in sport. As there are people who work together to achieve a common goal – sporting success – the same management ideas can be used for them as in every other organizations.

So, why shouldn't the manager of a rugby team create knowledge? Why shouldn't he process and distribute knowledge, and innovate? By contrary, he has to do these activities if his goal is sporting success.

As Nonaka notices, „the one sure source of lasting competitive advantage is knowledge” (Nonaka, in Cefola et al. 1998, p. 175). Link this statement with what Woodward considers about success – that it doesn’t happen in a straight line and, if he wants to have it, a rugby manager has to develop a net of effective systems in the core parts of the organization and a strong elite team culture (Woodward, 2005, pp. 412-413) – and you may find out why knowledge management is so important for a rugby team and its strive of success.

Success isn’t just winning. Success in rugby is a sum of won matches, to which defeats and „deep frustration” are added, as the following equation shows:

$$\text{Success} = \Sigma \text{ wins} \pm (\text{defeats} \times \text{„deep frustration”}) .$$

The sum is an indicator of the long term. If a team wins a rugby match in a league, this does not mean it has success. We can talk about success if the team wins the league and, in order to do that, it has to play against all the other competitors participating. The team may win all the matches or lose some, but in the end, it has to have the best general results in the league (e.g. the most points, the best average) in order to win the champion’s title. So, success doesn’t come just after a single match, but after a series of matches. This implies, as read previously, the long term. For example, England won the Rugby World Cup (RWC) in 2003, but this success came after six years under the management of Clive Woodward. Six years in which the team and its manager won matches, lost matches and confronted moments of frustration. What counts is that, in the end, all the wins and losses, and the knowledge accumulated at the team – as in a field of forces – drove to the supreme achievement: sporting success. England were world champions, the number one rugby men in the world. A driver of that success were the six years in which Woodward generated and shared knowledge, with the aims of forming a learning organization and improving its culture through innovations.

2. The rugby manager and knowledge management

The manager/coach is responsible for managing knowledge in his rugby team, beginning from knowledge creation up to knowledge sharing. He is the „prime mover” in the process of knowledge production (Nonaka, 1994, p. 17). He has to manage knowledge in the rugby team, by generating data and information, and afterwards transforming them into knowledge. This knowledge must be continuously improved and multiplied, and new content must be created (Alavi, Leidner, 2001, p. 116) in order to permit the rugby team to build competitive advantage.

Woodward has managed to create a knowledge-friendly organization at the English national rugby squad because he possessed a series of personal and functional characteristics which gave him the power to transform the squad into a „English national rugby knowledge squad”. These characteristics were intention, authority and commitment.

In the following lines we will take a look on the three characteristics which helped Woodward create knowledge in the English rugby team. Before Woodward, although their position at the team conferred them decision authority, few coaches concentrated on producing knowledge and using it. They didn't have the intention, or probably they didn't even realize how important knowledge could be in obtaining sporting success. They were only interested in coaching rugby, nothing more than that. Being in charge of the team, among responsibilities, Woodward had the right to manage the team as he wanted. Contrary to his predecessors, he instantly realised that the shortest way to success was to generate and share extra knowledge as what was strictly required in rugby. Woodward took on the English rugby team in 1997 and had the vision to make it be world's number one. The vision became reality six years later, after the team was transformed into a knowledge-based organization, with Woodward willing to „manage its knowledge” and the „knowledge of the people in it” (Edwards and Kidd, 2003, p. 130). The manager's will is the first and most important driver of knowledge creation in a rugby team. He has to reengineer the management of the team (Verboncu, Manolescu, 2008), from simply sport to a combination of sport and knowledge. If the coach does not have the intention, nothing will change, and success will remain a distant goal, depending mostly on the luck the team has in the games. Even if he had had the intention, Woodward couldn't have had the power to transform his intention into practice without authority. Given by his function – manager of the team –, the authority guaranteed Woodward rights, like for example the right of making decisions. This right helped Woodward transform ideas into reality. And, finally, Woodward also had the commitment of generating knowledge. Knowledge generation at the English team was not just a once-in-a-lifetime-happening, but it was continuously refreshed and developed over the six years Woodward was in charge of the team, culminating with the achievement of team's mission: the success at the 2003 RWC.

What made Woodward be different from other managers the English national squad had, is that he really was a visionary. When he took up the coaching bench he knew what he wanted from the team – to be the best in the world. Finally, after the World.

Cup in 1999, the time standard was set: be world's number one in 2003. From that moment on, with this vision that he shared to his players and his colleagues, Woodward began generating and dissipating knowledge. Knowledge had the roles to professionalize the activity at the team, to improve the playing quality and to grow the chances of success.

Again, contrary to his predecessors, Woodward permanently had a bright mind, opened to assimilating knowledge from wherever it came. If other managers were concentrated just on rugby and on processing information coming strictly from this field of activity, Woodward was open to integrate in his rugby management informational factors coming from the world of business or from scientific research. For example, Woodward was influenced by the management principles Dr. Paddi Lund, an Australian dentist, presented in his book „Building the Happiness Centred Business”. The coach didn't throw the book away because it had a business topic, not

a rugby one – this shows his openness to knowledge accumulation –, but he even read it twice. Afterwards, he gave a copy to each rugby player in his team: „The players all looked a bit dubious. They’d never been given a business book by a coach before, let alone one by a self-confessed crazy Australian dentist”, Woodward presents the handover moment of the books in his autobiography (Woodward, 2005, p. 165).

3. The role of a team in knowledge management

A clarification of the term „team” is needed for a better understanding of this research. „Team” refers to the rugby team, consisting of the rugby players and their manager/coach, plus the managerial staff, made up by assistant coaches, physiotherapists, advisors, scouts, doctors and many other. The staff is an integral part of the team. Knowledge is created and used both at the level of a team, as well as the level of the staff. Woodward’s plan was to build around him a managerial staff which created valuable knowledge, that he and his assistants used in the decision-making process at the level of the rugby team. For example, game tactics decision were based on the knowledge generated by the managerial staff.

The team is important in rugby knowledge management because „although ideas are formed in the minds of individuals, interaction between individuals typically plays a critical role in developing these ideas. That is to say, „communities of interaction’ contribute to the amplification and development of new knowledge” (Nonaka, 1994, p. 15).

As read previously, the team manager is the one who has to coordinate the process of knowledge management. The rugby team manager has to manage knowledge creation, but then he also has to share the knowledge to his players. This sharing happens through externalization. Without externalizing it to the rugby men and trying to set it in practice on the rugby field during training sessions and official games, the accumulated knowledge would be useless: „While tacit knowledge held by individuals may lie at the heart of the knowledge creating process, realizing the practical benefits of that knowledge centers on its externalization and amplification” (Nonaka, 1994, p. 20).

Externalization occurs through a social field in which the rugby manager communicates his intentions and knowledge (Nonaka, 1994, p. 23). In sports, this field is the team. The coach doesn’t have to create it, the team already exists. The coach is appointed at the team with the objectives to train it and to improve it, finally to win with it. So, the coach already has the field in which knowledge is to be shared. He just has to have the intention to generate and manage knowledge, and to externalize it in that field. Externalization is a process specific to teams, and it occurs through „repeated, time-consuming dialogue among members” (Nonaka, 1994, p. 24).

The management STAFF

Interdisciplinarity played an important role in Woodward’s management, who wasn’t narrowminded on rugby, but open to other sports and other fields of

knowledge, like for example the business world. „Look at other professional sport such as the NFL and set up the most professional coaching team in ANY sport” was one of the principles Woodward subscribed to (Woodward, 2005, p. 160). Based on it, he built his own management staff, thanks to which he set in practice not just a sports management, but a knowledge management-based learning organization as well.

Next to the assistant coaches an each rugby manager has, Woodward created jobs in his team, in order to produce new ideas and knowledge, which he, his assistants and his players would afterwards use to bring sporting success closer to reality. The following staff was built:

- Tony Biscombe – Video Analyst: Biscombe, at his way, was in charge of a staff. His staff did video analysis, having the role to scrutinise the rugby team’s game, so that Woodward and the rest of his staff could measure and manage the performance on the playfield, but also to analyse the opponent’s game. At a World Cup level, if he wants a high quality rugby team with chances of success, it is vital for a coach to have information at his hand about the opponent’s game. Biscombe created information about how the opponent played, and distributed it to Woodward, who, based on it, elaborated the match-tactics. Biscombe produced information – which was later transformed into knowledge by Woodward – with the help of information technologies (IT), such as video recorders, video players, computers (hardware) or rugby-specific analysis-software. This kind of advanced information technologies were part of a whole knowledge management system (KMS), and were used to „systematize, enhance, and expedite [...] knowledge management” (Alavi, Leidner, 2001, p. 108). Alavi and Leidner further describe KMS as IT-based information systems „developed to support and enhance the organizational processes of knowledge creation [...]” (Alavi, Leidner, 2001, p. 108). What the authors described in theory was set in practice at the English rugby team, where Tony Byscombe used high-class IT-hardware and software, through which he didn’t only analyze the game of the own team and of the opponent on video, but also measured the players performance in official games and at practice sessions. The IT-devices provided Biscombe with Key Performance Indicators (KPI’s) for each rugby player. Resulting from the IT-software, these KPI’s were only information. Just after Biscombe communicated them to Woodward, were the KPI’s transformed into knowledge. The manager combined the KPI’s and created himself a global image of the team and of each individuals possibilities on the field, thus producing new knowledge. He later communicated this knowledge to the team by externalizing it in meetings where game tactics and training plans were discussed. Each rugby manager should know that investments in IT-equipment may be high, but they „complement and enhance the knowledge management activities of individuals and the collectivity” (Alavi and Leidner, 2001, p. 115). By doing so, IT-investments also lead to better sporting performances of the rugby players. In 2002, ProZone was used for the first time by Woodward and Biscombe. The coach describes the software in his autobiography: „*ProZone was one of the most advanced sporting analysis programmes in the world [...]. Pro Zone is a tool we’d been working on specifically with the designers for more than a year. It had*

taken a lot of hard work – and a significant investment by the RFU – to get it set up properly, but in my mind it was well worth it. We had to install twenty specialised cameras around Twickenham stadium for it to work. The great thing is, however, we get exactly the same level of information on our competitors as on ourselves. It really helps to plan for matches, and we can now send a game of data right to the players' O2 xda phones for their own personal preparation. When you look at the game through ProZone, it completely changes how you think about rugby [...]. ProZone also has a function to calculate work rates on a continual basis for each and every player. That means the computer knows when you're walking! We publish competition tables [...] to see who's working the hardest on the pitch" (Woodward, 2005, pp. 332-333). Although useful, as could be read in Woodward's presentation of ProZone, technological factors „take third place to human and organizational ones" (Edwards and Kidd, 2003, p. 131). Never forget that rugby is a game played by humans. The technology must be used in order to help humans improve, facilitate the player's decision-making on the pitch, but it will never take their places. A coach must never rely hundred percent on technology. Humans play rugby, and they are the ones who ultimately bring success to the team. IT just helps them achieve it.

- Steve Lander – Referee Advisor: Lander, a referee, was appointed as advisor during the 2003 season, which included the World Cup. A day before each game at the World Cup, the team coaches met the referees of the game and talked to them about particularities the match could have. Referees had their firm opinion, and Lander was the liant between them and the English team. As Woodward notes, Lander was important to the team because he could better understand the leanings and preferences of the referees (Woodward, 2005, p. 363). His vast field of knowledge in refereeing issues permitted Lander to give precious information to the English squad.

- Louise Ramsay – Team Manager: Appointed in 2001, Ramsay was in charge of event organization and logistics. For example, in away matches and on tours, weeks before the arrival of the rugby players, she had to inspect the hotels on the market. After gathering information and delivering it to the upper management, a decision was made, and Ramsay proceeded by booking the chosen facility.

- Richard Smith – Legal Advisor: Richard Smith was part of the management staff at the World Cup 2003, working as a legal advisor. His role was to solve juridical problems that may have appeared during the World Cup in Australia. By selecting a legal advisor in the staff, Woodward did nothing else than bringing valuable latent knowledge into the team. Smith's knowledge was latent because it didn't use at all in playing rugby on the pitch or in elaborating match tactics. It was not even known if there was a need of using Smith's knowledge, but Woodward cooptated him just in case. And it proved out he was inspired, because he and part of his staff were brought to court due to a misbehaviour of an English player during a match. It was now that Smith entered his role, and by using his juridical knowledge, he won the case for England in front of the court, saving the player from a ban.

- Sherylle Calder – Visual Awareness Coach: While researching for her PhD, Sheryll Calder specialized herself in vision management. She was brought in the team,

and how she generated knowledge is described by Clive Woodward in his autobiography: „Sheryll was also the first to point out that in rugby the biggest opportunities [...] come from the players simply seeing the space on the rugby pitch correctly. Sheryll discovered the problem was players simply weren't looking up to take in all information about the pitch. The tendency for most players was only to look up when they had the ball in their hands. [...] But a player needs information about the pitch *before* the ball reaches his hands” (Woodward, 2005, p. 327). Calder trained the eyes and attention of the players so that they could accumulate the most of information about the game situation by only looking onto the pitch. In Knowledge Management theory, Malcom Gladwell writes about the capacity of gaining precious knowledge in bits of a second. He stands by the idea that gaining knowledge just in the short-moment of an eye-blink isn't a gift, but an ability that can be trained by each of us (Gladwell, 2005). This was exactly the role of Sheryll Calder: she trained the players capacity of accumulating knowledge in the short moment of a blink, by permanently looking around the pitch during a game. That information was important because it helped players better understand what was going on the pitch and it increased their game-developing-capacity. It was easier for players to make decisions on the pitch, regarding their play.

All those people in the management staff were a precious source of information and valuable knowledge generators. What must be underlined is the variety of knowledge produced: there was not only knowledge specific to the game of rugby – like for example playing tactics –, but knowledge coming from a large category of sciences, like administrative or psychological ones. One may argue that such vast knowledge is useless in sport, and that all what counts is how the rugby men act on the pitch. The best example to challenge this opinion and to prove the utility of generating and managing interdisciplinary knowledge in a rugby team comes from the most important moment at the Rugby World Cup 2003, and maybe even the most important moment in English rugby history: the final shot of the final game. England and Australia were playing to win the World Cup title, with the game going into extra-time. With the score level at 17, with just one more minute to go, England were in possession of the ball. After a prolonged, well-constructed game-play, Jonny Wilkinson drop-goaled the ball, which ran through the sticks of the Australian goal, adding three points on the scoreboard for his team. England won the match 20-17, and among with it the World Cup „William Webb Ellis” Trophy, but it was the concentration of the players and their capacity to use the knowledge generated in countless hours of practice and meetings that brought the trophy to England. At the first touch of that final play, Steve Thompson took a lineout and threw the ball to flanker Lewis Moody. Woodward assesses the knowledge management in the team as follows: „*Sheryll Calder's dedication to Steve's vision skills was also evident as the ball was perfectly thrown to Lewis Moody. Under pressure, at the end of the match, exhausted, our training prevailed*” (Woodward, 2005, p. 390). Then, Matt Dawson dummies a pass to Jonny Wilkinson and passes through the opposing defence, winning precious yards. „*After countless hours analysing games with ProZone, Matt was clearly seeing the*

pitch as if from above. He saw the empty space on the pitch", Woodward tells (Woodward, 2005, p. 391). These were the two initial moves of the play at the end of which Wilkinson scored and England won the World Cup. What needs to be underlined is that they were accomplished thanks to the knowledge generated by the managerial staff, in this case Sheryll Calder and her vision training research and Tony Biscombe and his ProZone software. These two pieces were to be found in that last play, but all the knowledge generated at the England team was a factor of success, because it helped the team to reach that final against Australia, after six years of intense work.

4. Crystallization of knowledge

Next to forming his team, Clive Woodward also took other management decisions to acquire and share knowledge for and in England's national rugby team.

Woodward improved the communication between the players themselves and between them and the management by offering a laptop with internet connection to each rugbyman in the squad. Rugby players were used to spend more time on the training ground than in front of the computers. But the laptops were a good instrument to keep in touch and to exchange information. Each player also received a personal e-mail adress, and communication inside the team improved. Such an informational system was necessary because at a national squad, players are selected from all around the rugby clubs in the country, and this happens only when there is an action, like for example a match. The players of a national squad don't spend more than twelve weeks together a year, so, for the time each of them is at his club, the coach keeps in touch with them online.

The knowledge produced by players, manager and staff was externalized with the help of the team, an organization of rugby men which acted as a field. The externalization took place verbally, with Woodward communicating his knowledge to the players. Yet, there was one other method by which knowledge was shared in the English team, and it corresponded to the internalization stage, where explicit knowledge was transformed into tacit knowledge. Nonaka names this method „crystallization", arguing that „the knowledge created in an interactive field by members of a self-organizing team has to be crystallized into some concrete ‚form' such as a product or a system" (Nonaka, 1994, p. 25).

The form in which knowledge was crystallized at the England team was a book, where all players needed to know about the teamship rules was written. It was named „The Black Book", and Woodward describes it in the following way:

„We instantly began writing a book detailing everything a player would need to know about the England set-up. We also started canvassing players for their ideas and expectations about playing for England [...]. It would take eight months and several versions to come together in its final form, and it has been changed, enhanced

and added to ever since. It's known as our Black Book. It's a living document that constantly changes." (Woodward, 2005, p. 197)

„What we wanted was a book that would tell players all they needed to know in an administrative and code-of-conduct sense, so that when they arrived in the England camp they had nothing on their minds but contributing to team meetings and playing the best rugby they could produce on the pitch. [...] We created an elite culture. Now we needed a book that would inspire players about being part of the England squad.” (Woodward, 2005, pp. 215-216)

The fact that players, manager and staff, all took part in writing the book, is a characteristic of crystallization, which is a „social process which occurs at a collective level" (Nonaka, 1994, pag. 26). For it to take place, crystallization needs interaction between the members of a rugby team. In the England team, the Black Book was an efficient general management tool, which was derived from knowledge management. It contributed to the development of the organizational culture, to bringing players closer to the winner's mentality and to obtaining success.

5. Valuing individual tacit knowledge at the national rugby team

As stated earlier, players who are selected for the national team come from clubs all across the country. They don't spend much time together, but only the few weeks at the team. When they come to play for the national squad, they bring tacit knowledge with them. A question that often comes in mind is how can the tacit knowledge of the individual player be valued for the good of the team? There are two types of tacit knowledge a player can have: the basic knowledge accumulated at the youth levels and the elevated knowledge accumulated at the club team.

As shown in other studies concerning the issue of knowledge management in sport (Roşca, 2010), tacit knowledge is firstly gained by athletes at the bottom level of sport, at the grassroot levels. This means, rugby players can gain tacit knowledge in the following situations:

- When being just children, by simply playing the game, without any instructions from a coach, through learning by experiencing;
- When young, as the players are practicing rugby in the youth teams of the rugby clubs, instructed by professional rugby coaches.

Out of the two presented situations, the most important way of earning tacit knowledge for a rugby player is by practicing the game at the youth teams of the club, directed by a coach. The youth coach sets the basic knowledge needed by each and every rugby player. When advancing in his career and playing at a senior professional level, the player still carries with him the basic knowledge accumulated in his youth. This type of knowledge accumulated in the early years of practicing the sport becomes latent knowledge as the player advances in his career, but without having the latent knowledge, the player wouldn't be able to perform the game, because rugby requires

mastering the basic movements. Even when advancing into the career these movements become to be done mechanically, they still are tacit knowledge that the player needs in order to perform.

Most of the professional rugby players have the same basic knowledge, which, as seen before, is tacit, and which every player needs in order to play the game. The basic knowledge is mostly technical, giving information upon how to handle the ball or how to interpret the rules of the game. Next to the basic knowledge, the rugby players gain, at each one's club team, elevated – professional – information about how to play the game. This elevated information comes atop of the basic knowledge, and can be given by the following subjects or factors:

- The coach of the club team, through his experience and school: each rugby coach has an own coaching school, influenced by the culture he was grown in and in which he learned the game and the coaching. Next to this, a coach has complex knowledge over the game given by his own life and rugby experience. The more the coach was in the game and the more success he had, the richer his experience.
- The staff and other players of the team, also with their experience and school.
- The organizational culture of the club team.
- The competitors of the club team.

When getting in contact with the coach, the staff, the colleagues or the club, the rugby player accumulates knowledge from each of them. It is said that, the more coaches a player has worked with, the richer his knowledge is, because he learns a little from each of them.

So, when playing in a club team, a player accumulates knowledge specific to that team and transforms it into a personal experience. In the moment he is selected for the national team, the player brings his personal experience (knowledge) with him. The personal knowledge keeps to be tacit, unless it is externalized and amplified „through dynamic interactions” (Nonaka, 1994, p. 20). If a national squad coach wants to make use of the personal knowledge each of his player has and to transform it from tacit to explicit knowledge which could be used for the development of the team's game, then he has to find a way in which the players can manifest and communicate their tacit knowledge.

The 95% – 5% principle

The 95% – 5% principle is specific to the management of sport, stating that a rugby player has to be trained for a match at a 95% intensity, leaving him 5% for creativity. In the game, the rugbyman has to play according to the 95% of information communicated to him in the build-up of the game. But, if the opponent guesses the tactics of the team and blocks its game, then the player has to have the ability to innovate during the game, to come up with unexpected ideas which to set the opponent on the wrong foot and bring the game and the score in favour of his own team. The 5 percent represent the freedom of decision given to each player in a game.

When playing in a team, a player has to be in harmony with his colleagues. The team has to act in the same way, with the same goal. This is why, much of the

tacit knowledge brought by the individual from his club team is sacrificed. When coming to the national team, the player has to forget about much of what he knows from his club, and act and play according to the principles of the national team. Still, the national team coach must let the player keep the tacit knowledge from the club, because, if the game of the team doesn't work well, that tacit knowledge will represent the five percent thanks to which the player can innovate and turn the game in favour of his team.

The 95% – 5% principle was also used by Woodward at the English national team. The coach implemented a strong organizational culture of the team, reflected in the „Teamship Rules“. Once in the national team, the players had to act according to that organizational culture, so that the unity of the group was achieved. But, Woodward also knew how to manage the tacit knowledge of the individual. He organized team meetings at which the players had the opportunity to say what they liked and what they disliked in the way the team played and prepared. The players also had the chance to come up with ideas meant to improve the team and its game. When stating their ideas, the players didn't do anything else than using their tacit knowledge – that means the experience they brought with them from the club team to the national team – and transforming it into explicit knowledge. If the information gained from the personal experience of the individual player had value for the team, it was afterwards implemented into the English national squad.

6. Conclusions

Although many coaches or managers create knowledge in their rugby team, they do it unconscious. Knowledge is generated as a result of their daily routine. It isn't bad at all, but, if they want success, rugby managers have to consciously create knowledge. Knowledge must not be just an accident, but a selfstanding process, which must be constantly improved. In order to generate knowledge, sport managers have to communicate with their staff (Poczwadowski, 2002; Jowett, 2004), such as Woodward did, for example. This paper has tried to present how knowledge can be produced and used in a rugby team, combining the theoretical information of renowned authors such as Nonaka, Edwards and Alavi with the practical example of the 2003 World Cup winning English national squad.

First of all, if he wants to lead his sport team to success, the coach has to be open-minded, to accept information and not to refuse it. Second, he has to work with a staff. Although, mostly, he is the one who analyses information and transforms it into knowledge, the coach can't produce and manage the needed loads of information by himself. This is why he needs people to produce information for him, just as Woodward had Biscombe, Lander or Calder. Also important is never to forget that the players (athletes) are the ones who, lastly, derive advantage of the knowledge management organization. Knowledge is produced in order to be communicated to them, and they have to assimilate it and use it on the sporting field. Players are also part of the knowledge management in the team, not only the managerial staff. Sport

managers have to keep in mind that success doesn't happen instantly. It takes a long process to obtain it. Woodward, for example, needed six years. During this whole process, information has to be created. Nonaka said that lasting competitive advantage is acquired through knowledge, so the team's coach/manager has to continuously manage knowledge and innovate. A paradox is that the manager can innovate by using ideas already tested by other people or organizations. It is the field in which these ideas are implemented that makes the difference. Woodward used existing ideas from the business world and implemented them in rugby. Although the ideas existed in business, Woodward was the first to use them in rugby, so he had the chance to innovate.

Knowledge management leads to an improved quality of the athlete's evolution on the field. It is useful to support practice through theoretical research. As persons who have to seek knowledge and be opened to whatever sources of information, sport managers would be helped by university research. Unfortunately, at this moment there is a lack of scientific research in what concerns knowledge management in sport. Papers about knowledge management, in general, have been written, also about sport management, but less about the two combined. So, further research can be done on knowledge management in sport. It would be interesting to find out how and what type of knowledge is produced at the amateur level of sport and how and what type at the professional one. This paper slightly presented the externalization of knowledge under Woodward's management at the English team, but it would be interesting to find out how the other three modes of knowledge creation – socialization, internalization and combination - occur in a sport team.

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