

Is benchmarking appropriate for the management of elite sport systems?

1. Introduction

In recent times the concept of benchmarking has been advocated as a tool for improving management within the sport industry. For example, it is an underpinning principle of the UK Labour government's drive for efficiency and effectiveness (Audit Commission, 2000), leading to the emergence of the National Benchmarking Service promoted by Sport England, the lead body for sport in England. However, the sector of sport management in which benchmarking has been most utilized is that of the management of elite sport systems where benchmarking has been considered as a good method of identifying the factors that lead to international sporting success.

'Elite sport system' is the term used to describe the infrastructure and processes used by a sport to identify, develop and prepare athletes for international sporting success. This approach to sport is conceived as a system as it begins with the identification of raw talent that is transformed by a number of factors into athletes which can achieve success on the elite sport stage. In the past decade these sport systems have become the focus of much benchmarking investigation (de Bosscher, de Knop, van Bottenburg, and Shibli, 2006, 2008; Green, 2007a; Green and Oakley 2001) primarily as a consequence of two major events. The first was the sporting success achieved by the former German Democratic Republic (GDR) during the 1970s and 1980s, which showed that an organised approach towards the support of high performance sport could result in the systematic production of successful international athletes. The second, and perhaps more important event, was the success the Australian Institute of Sport (AIS) enjoyed in the build up to the 2000 Olympic Games. As the main elements of the AIS were based on the GDR system, this suggested that it was possible to achieve success by

benchmarking elite sport systems against the infrastructure and processes to be found in other successful sporting nations.

Benchmarking has been successfully used in many conventional management contexts to improve performance by investigating the practices of superiorly performing organisations (Brownlie, 1999; Camp 1989, 1995, 1998; Carpinetti and de Melo, 2002; Cuadrado, Frasset and Cervera, 2004). Underpinning the benchmarking approach is the concept of *learning from best practice* and this approach seeks to improve practice as a consequence of a detailed analysis of the practices used in successful organisations which are then introduced into an organisation wishing to improve success. Therefore benchmarking can be advocated as a means of allowing managers to improve management of their elite sport systems by understanding how other successful systems operate.

Benchmarking has a number of forms. In their review of benchmarking in the UK, Hinton, Francis and Holloway (2000, p. 53) set out the following typology developed by Camp (1995) as a means of classifying benchmarking activities:

- *Internal*. A comparison among similar operations within one's own organisation.
- *Competitive*. A comparison with the best of the direct competitors.
- *Functional*. A comparison of methods with those of companies with similar processes in the same function outside one's industry.
- *Generic process*. A comparison of work processes with others who have innovative, exemplar work processes. This is the form of benchmarking that was chosen for the research presented here.

It is apparent from research in this field (de Bosscher *et al.*, 2006; 2008; Houlihan and Green, 2008; Oakley and Green, 2001) that benchmarking has promoted a convergence of elite sport systems as many nations have sought to copy what has been perceived to contribute to the success of the GDR and AIS systems. Indeed it is possible to observe a “trend towards a homogenous model of elite sport systems” (Oakley and Green, 2001, p. 91) across different sports and different nations. However, despite this convergence, it is clear there are countries that perform consistently better in some sports than other countries do, such as Australian cricket and British cycling.

Thus, as most contemporary elite sport systems are made up of similar infrastructure and practices, it appears that the actual design of these systems can no longer explain differences in success. Therefore it is possible to argue that the management and delivery of an elite sport system is now a more important factor for success than the mere existence of such a system. Thus, if sports wish to improve success, managers of elite sport systems should focus on improving the way the system is delivered – the processes followed - in order to enhance the output of successful athletes.

Knowledge of how to do this is limited and therefore the research set out in this paper aimed to evaluate the applicability of the concept of process benchmarking as a tool for improving the management of elite sport systems. Process benchmarking requires a consideration of exemplar work processes and consequently, a number of the processes of the successful elite systems of the Swedish Athletics Association and the Norwegian Skiing Federation went through a benchmarking process. This paper sets out the findings of this research and begins by presenting an overview of elite sport systems. It then moves on to discuss the concept of benchmarking, followed by an outline of the method used in the study. The results of the

research are presented and the paper ends with a discussion of the usefulness of process benchmarking for the management of elite sport systems.

2. Elite sport systems

Elite sport systems are concerned with the systematic and strategic development of elite athlete performance (Houlihan and Green, 2008). Made up of a number of different components (see below) elite sport systems are considered to lead to international sporting excellence by applying an organised and consistent set of practices to the 'production' of elite athletes. Such systems have emerged as a consequence of the detailed insights into the sport system of the former GDR which became possible after the fall of the Iron Curtain. These showed that an environment that fully supported athletes across a number of areas led to a greatly increased likelihood of international sporting success.

Subsequently, nations wishing to compete on the international sporting stage have introduced many of the practices present in the former GDR and international, comparative research in this field has revealed a number of different elements and/or practices that have become common components of many successful elite sport systems. The research in this area has organised the factors that are considered important into three reasonably distinct areas (Table 1). First, are contextual factors such as a need for the general professionalisation and further development of the infrastructure of an elite sport system. Second, are factors which are not directly related to the actual support of individual athletes and coaches but which improve the provision of different elite sport systems. This cluster of support activities includes comprehensive planning for individual sports and a clear prioritisation of some sports in the allocation of resources (Deloitte and Touche, 2003; Green, 2007a). Finally, there are a number of *support services* which directly affect athletes and coaches in their daily training, such as the presence of a talent

identification scheme which leads promising youngsters onto an athlete development pathway, the provision of sport science support to improve athlete performance and a coach education structure to develop competent and technically sound coaches (de Bosscher *et al.*, 2003, 2008; Deloitte and Touche, 2003a; Green and Oakley, 2001; Houlihan and Green, 2008). These are set out and explained in Table 2.

Insert Table 1 about here

Insert Table 2 about here

Contemporary research suggests that without this systematic approach to elite sport there is little chance of consistent success. This is because it has been shown that the infrastructure, practices and services set out above are present in successful sporting nations, and are indeed considered by those involved to have contributed in some way to their success (Deloitte and Touche, 2003), although how much and in what way is difficult to determine. Consequently, nations wishing to emulate their success have attempted to copy these practices.

3. The concept of benchmarking

The concept of benchmarking as a managerial tool emerged in the management literature as a consequence of a series of successful organisation development projects conducted by the management of the US copier manufacturer Rank Xerox. A review of the literature in this field highlights a large number of definitions of the concept, although most only differ in terms of the terminology they use, or the amount of information they include. Camp (1989, 1995, 1998) one of the founding researchers in the field of benchmarking, defined benchmarking as “the search for industry best practices that leads to superior performance”

(Camp 1995, p.8). Bogan and English (1994, p.4) suggested a more extensive definition when they stated that

Benchmarking is the continuous process of measuring products, services and practices against the toughest competitors or those companies recognised as industry leaders.

Consequently, benchmarking can be considered as a structured process that leads to understanding of superior performance in the delivery of services and products (Camp, 1998; Lankford, 2002; Marwa and Zairi, 2008).

Nourayi (2006) has offered a number of reasons for the use of benchmarking in organisations. He suggests that organisations can use benchmarking to improve productivity, service design and to identify new opportunities. In addition, Fernandez, McCarthy and Rakotobe-Joel (2001) have highlighted the advantages of benchmarking in terms of its ability to contribute to strategic planning, process analysis and improvement and organisational change. Its ability to allow the analysis of processes is particularly important for the managers of elite sport systems who may be able to use process benchmarking to learn how to improve the way they deliver their direct support services.

3.1 Process benchmarking

Delpachitra and Beal (2002, p. 411) have described how process benchmarking "analyses the discrete work processes involved in a range of business systems" in an attempt to identify the most effective operating practices from organisations that perform similar work functions. In their research carried out with financial institutions they concluded that process benchmarking can greatly improve the ability to sustain competitive edge by providing

information on best practice which can then be introduced into the benchmarking organisation.

In line with this, Hinton *et al.* (2002, p. 54) have argued that an examination of processes is essential as “it is only through an understanding of how inputs are transformed into outputs that the attainment of superior results can be pursued effectively.” This highlights why benchmarking may be of value to managers of elite sport systems as an understanding of the transformation process may enable them to transform their inputs – athletes - into more effective outputs – medal winning athletes. More importantly, within the context of elite sport systems although it is generally agreed *what* services should be provided, little is known about *how* sport systems should deliver their elite and process benchmarking provides a useful approach to answering these *how* questions.

3.2. The benchmarking method

Several different models exist in the process benchmarking literature, which vary predominately in the way they structure a benchmarking project. Shetty (1993) distinguished between five main phases and Kinni (1994) identified seven distinct stages of a benchmarking project. Camp (1989) and Bemowski (1991) even described process models of twelve main steps. The differences in these process models are mainly of a semantic nature as they tend to include the same elements to be followed through in a logical order once a need for performance improvement has been identified. These elements can be categorised as *problem identification, identification of comparison partner(s), data collection, data analysis and comparison, change and evaluation and review.*

First, *problem identification* requires the processes that need improvement to be identified. These are the organisational structures that are to be the focus of the benchmarking project. For an elite sport system, this could be its lifestyle support scheme or its competition structure. Second, the *identification of a comparison partner* needs to be carried out and then approached. This is followed by *data collection* and the main aim of this phase is to create a detailed understanding of the process by which the comparison partner achieves its performance (Boxwell, 1994; Krell, 2003; Lankford, 2002). Following this is *data analysis and comparison* in order to develop recommendations for the improvement of the investigated processes. One crucial element in this stage is the evaluation of the technical transferability of the identified practices. For this evaluation, it is important to develop an understanding of the degree to which the observed best practices are linked to the organisational context of the comparison partner and how far this differs from the context of the benchmarking organisation. Finally, *change* need to be made within the initiating organisation in order to take advantage of the learning from the benchmarking process, which should subsequently be *evaluated and reviewed*.

By following through this process, it can be argued that benchmarking will reduce learning costs as it can provide detailed insight into the nature of successful organisational processes, how these are linked to and best integrated into an organisation, as well as why and how these affect the organisation's performance. Hence, even though the benchmarking organisation still has to draw its own conclusions from the gathered information before it can implement new practices, the approach can help to reduce the costs of developing new management practices by benefiting from the experiences the comparison partner has already had.

The careful selection of the comparison partner is fundamental. There is a need to find an organisation, as a comparison partner, which provides an appropriate trade-off between offering easy access, a high degree of innovativeness concerning the processes used, and a high

likelihood of being able to transfer these best practices to another organisational context. The quantity and quality of the data gathered and the processing and analysis of this data is also important. According to Smith (1997, p. 40) this is often forgotten or neglected as many benchmarking parties “spend 90 percent of their effort on the acquisition of knowledge (the fun part) and only 10 percent of their effort on applying it (the difficult part).”

3.3. Challenges to benchmarking

Benchmarking has been subject to much critical debate (Drucker, 2004; Jennings, 2001; Smith, 1997) and there are a number of issues which have emerged as *technical* and *strategic* challenges to the use of benchmarking as a tool for organisational learning.

Technical challenges are those problems and difficulties that occur while conducting a benchmarking project. One substantial hurdle in benchmarking is the need to convince a potential comparison partner to take part in the project. Besides committing the personal time and resources of key staff members, being a comparison partner requires an organisation to reveal its competitive advantage. In addition, the knowledge management literature suggests two other challenges that may face a benchmarking organisation (Desouza, 2003; Smith, 2001). First, although the senior management of a comparison partner may agree to cooperate in a benchmarking project, individual key members of staff may be unwilling to share their personal expertise. While such behaviour is problematic for the benchmarking project, it is understandable from the viewpoint of the individual as their knowledge and expertise is their individual competitive advantage. Secondly, Desouza (2003) and Smith (2001) highlight the phenomenon of *tacit knowledge* which may mean the actual nature of a specific practice can not be measured, verbalised, or documented. For example, in the field of elite sport services, this tacit knowledge might refer to the “eye” of a talent scout and if benchmarking a talent

identification scheme, it must be considered whether the success of this scheme is based on the scouting protocols that are in place, or if it is the result of the experience of specific individuals.

Strategic challenges are more fundamental. The first problem is that the comparison partner might not actually demonstrate best management practice in relation to the investigated benchmarking object (Pfeffer & Sutton, 2006). Superior performance may, for example, be due to the specific context affecting an organisation, rather than good practice in the chosen process. Associated with this, and more critical, is the challenge of transferability, or the comparison of ‘apples’ with ‘pears’. Benchmarking is based on the comparison of one organisation with that of another. As both organisations may have different corporate history, culture, or environment, there is a danger that benchmarking is not a comparison of ‘like with like’ and leads to the identification of non-transferable management practices (Fernandez *et al.*, 2001; McGonagle and Fleming, 1993). In their presentation of an evolutionary approach to benchmarking, Fernandez *et al.* (2001) doubt whether practices in their entirety can be successfully adopted by other organisations. They note that this is particularly an issue when trying to transfer practices across cultures as is normally the case in the benchmarking of elite sport systems. Furthermore, they go on to comment that although transferability is a tacit condition of benchmarking, it can not be guaranteed as processes can be culturally and socially embedded.

One solution to this is benchmarking based on the principle of *learning*, rather than the principle of *copying* (Papaioannou, 2007) as it offers the opportunity to suggest new approaches for solving problems. Approaching benchmarking as learning or lesson drawing (Green, 2007b) makes it possible for managers to learn from practices of organisations which are fundamentally different from theirs and reduces the danger of identifying non-transferable

practice (Krell, 2003; Lankford, 2002; Smith, 1997). However, this is not the way that benchmarking has been approached in the management of elite sport systems. The convergence of elite sport systems identified by de Bosscher *et al.*, (2006; 2008); Houlihan and Green, (2008); Oakley and Green, (2001) has come about because of copying in that policy makers and practitioners have identified services that are perceived to contribute to the success of successful elite sport systems and have attempted to transfer these, often in their entirety, into other nations and cultures. As a consequence, the elements set out in Table 1 and the services explained in Table 2 do not guarantee success (de Bosscher *et al.*, 2006, 2008; Houlihan and Green, 2008).

4 The research question underpinning this study

Researchers in this area such as de Bosscher *et al.* (2006) have argued explicitly for the use of benchmarking in this context:

Although an idea of the explaining variance of sport policy for international success will be very interesting, only a detailed benchmarking of countries will give the necessary information on efficiency. (de Bosscher *et al.* 2006, p.117)

However, the appropriateness of benchmarking to the field of elite sport systems has yet to be fully tested. Although elements that are common to successful elite sport systems have been identified through competitive and functional benchmarking, little evaluation of process benchmarking has been carried out. An evaluation of this type of benchmarking is necessary to explain why some sports and sport nations continue to be more successful than others despite the convergence of elite sport system structures. As the discussion above shows, this evaluation is also important as benchmarking is not without criticism. Whether process benchmarking can be carried out in the specific contextual conditions affecting an elite sport system has yet to be

investigated. Thus the research set out in this paper aspired to address the following research question:

Can process benchmarking inform managers of elite sport systems of how to improve the processes of the support services they deliver?

From this question the aim of the research emerged which is to evaluate the applicability of process benchmarking as a tool for learning about the management practices that lead to success in elite sport systems. This leads to the following two objectives:

- *To evaluate the extent to which it is possible to identify and describe the processes that lead to the success of elite sport systems:* In order for benchmarking to be of value within the context of elite sport systems, successful organisations must have management practices that can be identified, described and copied.
- *To establish whether these practices are transferable to other organisational contexts:* Criticism of transferability have been based on context-dependency and therefore it was important to establish to what extent the contextual nature of the processes followed is an obstacle in the context of elite sport systems.

Thus, this research analysed and compared how two successful elite sport systems delivered four key elite sport support services.

4.1 Problem identification: selection of the processes to be benchmarked

The starting point for the selection of the processes to be benchmarked was the work of researchers such as de Bosscher *et al.* (2006, 2008) and Green and Oakley (2001) who have provided an extensive overview of the services which are considered to be part of an elite sport

system. There is no evidence to suggest any priority among the support services identified in their research and the general assumption is that the system should contain all of the services, set out in Table 2 in some form. However, resource limitations meant it was not possible for this study to consider all support services of an elite sport system in appropriate width and depth and thus, following a discussion with an expert panel, the following four elite sport system services were selected:

- Athlete development pathways
- Coaching structures and coach education programmes
- Sport science support
- Athlete lifestyle support

These processes were selected on the basis of the following selection criteria:

- *Direct support services:* As the aim of the research was to evaluate the potential of process benchmarking in bringing about improvements in the management of an elite sport system, only support services were considered as these are within the direct control of the managers of these systems.
- *Fundamentality:* Certain elements of an elite sport system require investigation in order to understand the working of the system as a whole. For example, an understanding of the key stakeholders in the system was necessary in order to understand the extent of the system, leading to a detailed analysis of the athlete development pathway and associated coaching structure.
- *Structurally interdependency:* The choice of one service often directly leads to the choice of another one. For example, investigating coaching structures within an elite sport system leads to consideration of coach education schemes in order to explain how the structure works.

- *Topicality*: Certain questions dominate debates surrounding contemporary elite sport systems and were thus considered worth investigating. For example, the appropriate structure for an athlete development pathway is frequently discussed by policy makers leading to the selection of this service for study.

Although other services set out in Table 1 meet some of these criteria, the four selected services were felt, by the expert panel, to be most appropriate for this research as they are the focus of extensive research literature, perceived to be easy to identify and describe and often interdependent, facilitating data collection.

4.2 Identification of comparison partners

Once the services to be benchmarked have been chosen, the next stage of a benchmarking project is to identify potential comparison partners. The following criteria were used to identify elite sports systems that had the potential to be comparison partners:

- *A democratic political environment with a stable economy*: When considering the transferability of the services to be benchmarked, it appeared appropriate to consider only sport systems which are part of a democratic environment, with a stable, strong economy as these factors provide an element of contextual consistency. Although countries like Cuba and Kenya show extraordinary sporting success, their unique political and economic environments make it unlikely that their practices are transferable to other contexts.
- *Discipline specific success*: Different countries demonstrate success in different sports and no one country can claim to be successful across all sports (de Bosscher *et al.*, 2008). Therefore it was considered necessary to focus on success in specific sports, rather than across all sports. For example, the Norwegian sport system would not have been a potential

comparison partner if its position on the medal table of the Summer Olympics was taken into account, however, its success in cross-country skiing is outstanding.

- *Recent and continuous success:* A nation can be successful in a sport due to the emergence of one talented athlete or as a result of extensive investment as a consequence of being selected as a host city for a major event such as the Olympics. Such success is not the result of a system that systematically produces winning athletes and therefore potential comparison partners were required to not only show recent sporting success, but also a history of success.
- *Sporting success per capita:* Success was defined by the efficient use of human resources and hence by the number of won medals per capita, in a particular sport.

These selection criteria were applied to the medal tables of a number of major international sporting events held over the past decade, including Winter and Summer Olympics, World and European Championships. Based on the information gathered, the Swedish Athletics Association (SAA) and the Norwegian Skiing Federation (NSF) were selected as comparison partners for this research.

4.3 Data collection

Information about the selected services was primarily collected from stakeholders in the selected federations through semi-structured interviews. This was felt to be the most appropriate method of data collection because semi-structured interviews provide the necessary flexibility to establish details of best practice. The research included interviewees from the general management of the elite sport system; those who were working in the actual delivery of the different services (coach education officers and sport scientist) and those who were recipients of the services the elite sport systems provided (coaches and athletes). This made the

triangulation of interviewees possible and led to a more valid picture of the chosen services. Fifty individuals were interviewed (22 in Sweden and 28 in Norway) and over 65 hours of interviews were recorded, transcribed, and analysed.

4.4 Data processing and analysis

When processing the data it was necessary to develop a detailed understanding of the nature of the two sport systems and their practices. In order to do this, separate case studies were created for the two benchmarking subjects. All interviews were recorded and transcribed. The transcripts were imported into the software NUDIST which was then used to structure and manage the data. Based on the interview schedules, a system of categories was developed to code the transcriptions. After all interviews had been coded once, the results were coded a second time, according to a coding structure that emerged from the first coding process. This iterative process was necessary to cater for unexpected and additional information gathered during data collection which could not be anticipated from the literature used to develop the interview schedules. Based on the final coding results, a report was written for each of the two case studies which included a discussion of observed practises. These were sent back to interviewees in Norway and Sweden for respondent validation.

Attempts were made to increase the objectivity, reliability, and validity by introducing specific interventions, following defined protocols, and documenting the conducted steps. Specifically, in an attempt to improve the objectivity and reliability of the selection procedure, the criteria used for selecting both the services to be benchmarked and the comparison partners were based on an extensive review of the available literature and were confirmed following a debate by a panel of experts. The subsequent development of the interview guidelines was also based on the literature and helped to improve the objectivity of the study. In addition, as a result of the clustering concept of the different types of interviewees, the triangulation system, the extensive

data collection, and the iterative use of NUDIST, it was possible to develop a detailed, clear and relatively valid understanding of the nature of the processes conducted by the two comparison partners, as well as the origin of these practices. This was confirmed through respondent validation by interviewees who commented on different elements of the case studies reports.

5. Analysis and comparison: results of the research

As the purpose of this paper is to present an evaluation of process benchmarking in the context of elite sport systems, a full discussion of the findings from the two elite sport systems will not be provided. This is, however, set out in Böhlke (2006; 2007). What follows is a summary of practice in terms of the services that were benchmarked, followed by a discussion of the appropriateness of process benchmarking in this context.

The research suggested that, in terms of the findings of the research of Digel (2002a, b) de Bosscher *et al.* (2006, 2008), Green and Oakley (2001) and Houlihan and Green (2005, 2008), the two sport systems provided few of the services considered necessary for systematic success. Indeed, at first impression it appeared that some of the services were either not provided, or not used by Norwegian skiers and Swedish athletes and their coaches. However, as the following examples will show, these services were provided through indirect processes and structures, which were only identified during the course of the data collection and analysis.

First, neither of the two federations operated the expected athlete development pathway with a set of consecutive steps for developing an athlete. Furthermore, the research showed that the federations do not provide systematic and proactive support in terms of regular training camps and educational seminars to talented youngsters who are under the age of 18. The lack of an

organised and well supported athlete development pathway is in contrast to the arguments presented by Balyi (2001) and de Bosscher *et al.* (2006, 2008) who suggest that such pathways are crucial for the success of an elite sport system. However, it was apparent from the research that the extensive club infrastructure that exists in Norway and Sweden, alongside the mature national competition circuit, appear to be a sufficient substitute for the lack of a centrally organised athlete development pathway.

Second, Balyi (2001), Deloitte and Touche (2003) and de Bosscher *et al.* (2008) have also suggested that an extensive and compulsory education scheme for coaches is a crucial part of a successful elite sport system. However, neither comparison partner had formal education requirements at any coaching level. This does not mean, however, that the coaches in both systems were uneducated or that they avoided further development. Swedish coaches gained their education through continuous but informal exchanges with their colleagues in the coaching community, while Norwegian club coaches attended seminars organised by elite sport system managers.

Third, the two sports approached the integration of sport science support into the training of elite athletes conservatively and sport science support was not easily accessible except for the very elite. This is in contrast to the arguments of de Bosscher *et al.* (2008), Green and Oakley (2001) and SIRC (2002). However, many cases of close co-operation between individual athletes, coaches, performance diagnosticians, and sport scientists were identified in the course of the investigation. Wherever these co-operations developed they provided a clear substitute for a technically more sophisticated sport science support service.

Finally, neither of the two comparison partners appeared to offer a comprehensive lifestyle support programme as described by de Bosscher *et al.* (2008), Green (2007a) and Green and Oakley (2001). As only one individual in each of the comparison partners was responsible for the lifestyle support matters of approximately 250 athletes, the first impression of the provision of lifestyle support was, yet again, that this service was not highly developed in the two countries. However, both systems have tried to develop a network of universities which allow elite athletes to combine education and funding for education with training for their sport. Second, in both systems the athlete's coach was expected to help solve the problems that a lifestyle support manager would focus on in a more conventional elite sport support environment. Thus, it can be argued that the two elite sport systems provided the lifestyle support that is considered an important service of an elite sport system.

In terms of the benchmarked services which were selected for this research, after detailed investigation it was apparent that both comparison partners had mechanisms that support an athlete's development; cater for the education of coaches; provide sport science support and consider the sporting and non-sporting development of athletes. What was unexpected, however, was the process of service delivery. First, in some areas, such as the provision of sport science support, services appeared to be less extensive and technically unsophisticated compared to that of other sport systems. Even more importantly, for this research, is that many of the investigated services were difficult to identify and describe. This suggests that process benchmarking in the context of elite sport systems may be problematic as a clear description and understanding of the processes under review is essential to the benchmarking process in order for organisational learning to occur (Hinten *et al.*, 2000).

6. Discussion: benchmarking and elite sport systems

The aim of this research was to evaluate the applicability of benchmarking as a tool for learning about the management practices that lead to success in elite sport systems. In order to do this it was necessary to establish first, whether it is possible to identify and describe the processes that lead to the success of elite sport systems and second, whether the identified processes are transferable to other organisational contexts. The following discussion considers each of these points, leading to a conclusion in terms of the overall aim of the research.

6.1. Identification and description of management processes

The results showed that both comparison partners provided, in some form, the services chosen to be benchmarked. It was possible to identify and describe the processes which underpinned the delivery of the different services (see Böhlke, 2007) supporting the advantages of benchmarking set out by Nourayi (2006) and Hinton *et al.* (2000). Furthermore, those interviewed felt strongly that these services and the way these are delivered were important contributors to the sporting success of the Swedish and Norwegian sport systems. This suggests that the concerns of Pfeffer and Sutton (2006) are not supported by the study as it is apparent that success in these two sport systems is a result of the way the services that were benchmarked were delivered. However, it was not always immediately clear how these processes did contribute to the success of these organisations. Although the processes could be described, their actions and interactions within the elite sport system were not immediately apparent and in some cases their impact could not be completely explained. The existence of identifiable management practices that show clear relevance for success are necessary for the successful application of the benchmarking approach (Hinton *et al.*, 2000) and thus these findings suggest that process benchmarking may be problematic as a tool for improving the management of elite sport systems.

6.2. Transferability of the identified processes

In addition, one of the most fundamental criticisms of benchmarking is that successful management processes are not always transferable to other organisational contexts (Fernandez *et al.*, 2001; McGonagle and Fleming, 1993). This is an important challenge for the application of benchmarking in the context of elite sport systems as they demonstrate high levels of diversity due to substantial differences in funding amounts, funding sources, and government policy among different sports and different countries. Therefore the most important step in this evaluation of process benchmarking was to assess if identified practices can be transferred to other organisational contexts. In order to evaluate this, the research investigated how the practices emerged, developed and were delivered and the extent to which they depended on the specific conditions faced by the benchmarking subjects.

The research revealed five interdependent factors that helped to explain the emergence of the identified practices in Sweden and Norway and why they worked so well in their contexts. However, as the following discussion will show, it is possible to argue that a successful, direct transfer of these practices may not, in many cases, be possible, thus further challenging the application of process benchmarking in elite sport systems.

6.3.1. Socio-cultural context

Many of the practices and structures observed in Norway and Sweden reflected elements and characteristics of their general socio-cultural contexts as suggested by Fernandez *et al.* (2001). For example, the coach education programme to be found in Sweden reflected and was founded on the Swedish study circle tradition, a specific method of self-education and group learning that influences educational design in many areas of Swedish society. The highly contextual

nature of the coach education system provided by the SAA makes its replication difficult and it is likely that different sport systems will struggle to develop the self-dependent and self-responsible education ethos required by the Swedish system, which has contributed to its success.

6.3.2. Strong club competition infrastructure

Both sports have an extensive, voluntary club infrastructure with a strong club competition environment. The research showed that this infrastructure influenced practices in the two sport systems in a number of ways. For example, the club competition structure provided a training and development environment for young athletes which in other countries is provided by a centrally organised athlete development pathway. The research suggested that the use of local clubs to provide an athlete development pathway is a highly effective strategy for success, however, it will only be successful if an elite system has a similarly extensive club environment.

6.3.3. Working atmosphere in the sport environment

The research also found that the working atmosphere in the two sport systems had a significant and positive impact on their success. This refers to the general attitude of the coaches and athletes towards their sport, the atmosphere among the different coaches, the general nature of the coach-athlete relationship, and the way the athletes themselves interact with each other. The transition between club sport, national performance sport, and top athletes was, in both systems, very blurred and created a strong impression of one coherent sport “community”.

For example, the coach education mechanisms appear, in both systems, to depend to a high degree on informal as well as formal exchanges of knowledge and experience between coaches from different performance levels in the national system. Indeed, formal aspects of both coaching systems were limited and coach education primarily came about through less experienced coaches working with and sharing experiences with senior coaches. Both systems had a very open and co-operative working atmosphere, which means that a more formal system is unnecessary. Interviewees felt that this system had emerged as a reflection of the traditionally short hierarchical distance between the elite and the “average people” which can be found in many areas in the two Scandinavian societies. Once again, this highlights the impact of the socio-cultural context on the elite sport systems.

6.3.4. Personality and knowledge of key agents

The inherent or *tacit knowledge* (Desouza, 2003; Smith, 2001) and personality of key coaches and athletes were identified as key factors in the success of the different initiatives identified by the research. For example, the enthusiasm, openness, personality and background of key coaches was more important for the successful co-operation between the cross country national team and the Olympic Committee in Norway than contracts and formal agreements. Even though an attempt was made in the research to describe how key individuals interacted with their colleagues, as Desouza (2003) and Smith (2001) have argued, it remains difficult to fully understand all “tacit” elements which made their behaviour so successful. This contributes to the challenge of transferring the identified practices to other organisational contexts.

6.3.5. Conscious interventions

The discussion above suggests that the practices that have contributed to the success of Norway and Sweden are strongly context dependent and this may make the transfer of these practices

difficult. In particular, the working atmosphere of the two systems which is characterised by openness, sharing of expertise and a lack of bureaucracy may be particularly difficult to replicate. However, it was also apparent that, in recent times a number of interventions had been designed and introduced in order to change and improve the atmosphere in the two systems, and these interventions may have the potential for introduction into other elite sport systems. These interventions included the school programme of the Swedish Athletics Association and the holistic approach to coaching prevalent in Norway. However, although these interventions can be described in detail it remains difficult to evaluate to what extent the general cultural context in Norway and Sweden, the specific atmosphere of the two sport environments, and the personality and knowledge of key agents provided the essential foundation for the initiatives to work (Böhlke, 2007).

7. Conclusion

The findings of the research lead to the conclusion that there are barriers to the use of benchmarking in order to learn about the processes that may improve the management and delivery of elite sport systems. These barriers become particularly prominent if the approach to benchmarking is one of copying (Papaioannou, 2007) where it is used to try and identify a ready-made solution for a specific problem. Unfortunately, this is the approach that many sporting nations have taken to the development of their elite sport systems where the infrastructure and processes of the GDR and AIS have been widely replicated. Such an understanding of the concept will, in many cases, lead to failure as the research identified a number of practices that have limited, direct transferability due to high dependence on the cultural background, structural design, or staff of the Swedish and Norwegian elite sport systems.

Specifically, the coach education policy of the Swedish Athletics Association is based to such a high degree on the Swedish study circle tradition that it is unlikely to work with similar success in a different cultural context. In addition, relying on the national club infrastructure as a vehicle for athlete development will not work for a sport system which has a less developed club infrastructure. Finally, even though it was possible to describe the services delivered by the two elite sport systems, the extent to which the personality and tacit knowledge of staff influences successful service delivery remains difficult to evaluate. This research provides evidence to show that an understanding of the process of *how* services are delivered is not always possible. This supports the work of de Bosscher *et al.* (2006, 2008) and Houlihan and Green (2008) who have argued that the presence of an elite sport system does not necessarily guarantee sporting success.

It can therefore be concluded that the direct transfer of the way the services under investigation were delivered is problematic for two main reasons. First, the tacit knowledge that has led to much success in these two sports can not be replicated in other elite sport systems. Second, although it was possible to describe the processes associated with the four selected services in the two sports, they did not reflect those described in current research and operated in a manner that was highly context dependent. For these reasons, this research supports the challenges to benchmarking presented by Desouza (2003), Fernandez *et al.* (2001), McGonagle and Fleming (1993) and Smith (2001) if benchmarking is used in the context of elite sport systems. Therefore managers should be cautious about attempting to directly transfer, or copy the infrastructure and practices of sport systems that they perceive to be successful.

8. Areas for further research

As the research set out in this paper is the first comparative investigation of the management

practices in elite sport systems, two obvious areas of further research are to repeat this study with other benchmarking subjects and benchmarking objects. Perhaps more interesting, and indeed more challenging, would be to further evaluate the practical applicability of the elite sport system practices identified in this research to other elite sport systems. Further research could investigate whether the context-dependency of the services investigated in this research does, in reality, prevent the transfer of these services to other elite sport systems.

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Table 1: Factors contributing to elite success

Oakley and Green (2001)	Digel (2002a, b)	UK Sport (2006)	Green and Houlihan (2005)
An excellence culture	Support, especially financial, of the state	Financial support	Support for ‘full-time’ athletes
Appropriate funding	Economic success and business sponsorship	Participation in sport	A hierarchy of competition opportunities centred on preparation for international events
Clear understanding of the role of the different agencies	A media supported positive sports culture	Scientific research	Elite facility development
Simplicity of administration	Talent development through the education system	Talent identification and development system	
Effective system for monitoring athlete progress	Talent development through the armed forces	Athletic and post-career support	
Talent identification and targeting of resources	A sport science support service	Integrated approach to policy development	
Comprehensive planning system for each sport		Coaching provision and coach development	
Lifestyle support		International competition	
Well structured competition		Training facilities	

programmes			
Well developed specific facilities			

Source: Houlihan and Green (2008)

Table 2: The services of an elite sport system

Service	Description
Talent identification structures	These are the processes that allow the systematic identification of individuals with a talent for sport(s). For example, the 'scouting' system that is prevalent in baseball and basketball in the USA.
Athlete development pathways	Structures and support that allow athletes to develop their skills and abilities in their chosen sport. Using these structures athletes move along a carefully managed pathway that begins with talent identification and ends with retirement from the sport(s). For example, a squad system made up of junior, youth and senior squads allows an athlete to develop in line with their ability and age.
Sport science support	A co-ordinated approach to the inclusion of research and scientific information in training regimes. Support traditionally comes in the areas of psychology, physiology, biomechanics, nutrition and engineering, which is tailored to meet the needs of each athlete.
Coach education system	This service offers training and further

	<p>education to coaches in place within the elite sport system to ensure they are kept up to date with changes in training techniques and coaching styles. In many countries the coach education system is based on the need to achieve levels of qualification before being able to move up the coaching hierarchy.</p>
<p>Access to facilities and equipment</p>	<p>Well-developed and sport specific facilities and equipment with priority access for elite athletes, which allow athletes to train and improve in their chosen sport(s). This access is often via a centrally supported regional network of Institutes, such as the AIS.</p>
<p>Anti-drug frameworks</p>	<p>Processes that ensure that athletes are provided with anti-drug education and regularly tested for banned substances. These are usually managed by a central agency.</p>
<p>Athlete lifestyle support</p>	<p>These are the services which support the non-sporting life of an athlete from identification to retirement. These include access to funding, education opportunities and career planning.</p>

Competition structures	Access to appropriate levels of competition which regularly provide athletes with the opportunity to measure their performance against rivals need to be in place. For example, as an athlete develops they will move from competing at national level to international level.
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