Introduction

In the second part of the 20th century, the Olympic Games and various sport-specific world championships were transformed into profitable professional competitions that demanded highly organised and sophisticated athlete preparation and management systems. Corporations increasingly budget large sponsorships to promote their brands through these international competitions. Governments also consistently increase resources to promote their nations through the Olympics and other global competitions, thereby considering athletes as part of national capital and identity building. Sport at this level also attracts considerable media attention. All of this makes elite high performance management (HPM) of sport attractive financially and ideologically.

Athletes, teams, and their support systems at the elite level of sport increasingly share the same structures, processes, and methods. These highly rationalised, scientifically focussed sport systems were first developed in different “socialist states”. These systems, documented by Riordan (1977, 1978), provided models for western countries with funded state sport structures (e.g., UK, Canada, Australia, Germany, amongst others) to follow. Much of this research was at the macro-structural level.

In “western” countries, however, the modelling of these highly developed sport systems followed much later and in a slower pattern. The growing global interrelations are producing a model of HPM that is valuable in different social, economic, and political conditions. The first objective of the current research was to conceptualise such a model by synthesizing research conducted on the topic and information about sport programs which achieved high performance effectively and efficiently. This paper contributes to the search for successful international HPM practices, starting at macro level, then moving to observe the meso and micro level practices (Green, 2005), that drive these HPM systems and are argued to be necessary in a model of elite global sport.

The current development of highly rationalised sport systems requires a new form of specialised management professional: that of high performance manager. The second objective of this study was to identify HPM knowledge, skills, and abilities (KSAs) demanded of management personnel in these increasingly elaborate systems of high performance sport.

Methods

To build a conceptual framework for HPM system and personnel development, the study identified key macro and meso HPM structures and processes, based on research by Digel (2005), Green and Oakley (2001), Green and Houlihan (2005), Zakus and Smolianov (2005). The components were modified after conducting seven semi-structured personal interviews with HP managers from Australia, the UK, the US and Russia, asking about HPM systems’ success factors and important HPM KSAs. Investigation of HPM KSAs also included exploration of national sport bodies and a content analysis of eight HPM job descriptions in Australia, New Zealand, the UK, and the US.
To identify further meso and micro HPM practices, literature was reviewed against the eight components of the constructed conceptual framework. To broaden the spectrum of data when examining this relatively new topic, the paper explored past, current, and forecasted effective HPM methods of Australia, Canada, China, Cuba, France, Germany, Italy, Japan, New Zealand, Russia, Spain, UK and USA. Data from 132 scientific, media and organisational sources have been analysed.

**Results**

The conceptual map shown in Figure 1, summarises the proposed HPM model components plotted against key areas of HPM knowledge, skills and abilities (KSAs).

<table>
<thead>
<tr>
<th>Knowledge</th>
<th>Skills</th>
<th>Abilities</th>
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<tbody>
<tr>
<td>Understanding needs and challenges of elite athlete high performance programs</td>
<td>Organisational skills</td>
<td>Competency in planning, evaluation, and reporting</td>
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<tr>
<td>Have knowledge of specific sport structures and systems</td>
<td>Management skills</td>
<td>Take personal responsibility for directing and monitoring HP programs operations</td>
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<tr>
<td>Have knowledge of specific sport technical aspects</td>
<td>Communication skills</td>
<td>Experience in elite sport team management</td>
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<tr>
<td>Have technical knowledge of sport science/medicine and their incorporation into training programs</td>
<td>Computer and Internet skills</td>
<td>Setting and directing technical components of HP programs</td>
</tr>
<tr>
<td>Coaching accreditation</td>
<td>Financial management skills</td>
<td>Overall management of HP programs and plans</td>
</tr>
<tr>
<td>Tertiary education</td>
<td>Policy development and management</td>
<td>Conduct annual reviews of all aspects of HP programs</td>
</tr>
<tr>
<td></td>
<td>Develop and manage HP programs</td>
<td>Direct and manage talent identification system</td>
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<tr>
<td></td>
<td></td>
<td>Have strong leadership skills</td>
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<td></td>
<td></td>
<td>Work in a team setting</td>
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<tr>
<td></td>
<td></td>
<td>Manage complex budgets</td>
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<td></td>
<td></td>
<td>Liaison with other sports and government</td>
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</table>

The numbered map components suggest the HP system development sequence: from the foundation of integrated mass and elite sport systems (1) to the ultimate structures of sport activity hubs such as Olympic training centres (8). The study identified specific micro level practices under each of the eight components, forty-five specific practices in total.
Figure 1: Conceptual Map of HPM Structures/Processes Based on Literature Review of Existing Models

- **Strategic Leader**
- **Sport Manager**
- **Hybrid HP Manager**
- **Operational Coordinator**

1. Centralised, simple and integrated structure of sport for all and elite sport
2. Philosophical, educational, and promotional support
3. Partnerships with supporting agencies
4. Funding for needs of each current and long-term potential and feeder athlete groups
5. Structured competition at all levels
6. Systematic training processes and generation management
7. Statistical identification, development and monitoring of athlete performance
8. Sport activity hubs with conditions and culture of excellence

Numbers suggest high performance system development sequence—from foundation (1) to the ultimate structures (8)
Discussion
This study points to the complex interrelations of elements required to develop a sound high performance sport system. The focus on macro, meso, and micro practices, structures, and systems points to the elements and management KSAs necessary for an emergent HPM model. While the study contributed to the conceptualisation of universal structures and processes necessary for successful Olympic and elite global athlete and team preparation, and a description of effective HPM practices, quite remarkable were the paradoxes thrown up as issues for HPM programs across the world. Of the forty five identified practices, three examples from macro, meso, and micro levels are discussed below.

At macro level, literature agreed with empirical evidence from interviews that one best HPM practice and common challenge is to establish optimal interrelationships between mass and elite sport. Some literature indicated that mass participation supports HP systems, while other published research concluded that development of mass sport does not result in successful high performance. It seems that further analysis should focus on how to integrate the two systems for mutually beneficial development and management.

At meso level, one critical HPM success factor but also an exigent predicament, according to the literature, is the use of philanthropy in HP program development, particularly partnerships between HP programs and corporations. However, current tax incentives do not directly promote achievement of specific results by sponsored programs. Effects of governmental strategies stimulating comprehensive long term corporate support of sport documented in the literature suggest a global option for developing a scheme where conditions for tax deduction include positive behavioural changes in sponsored employees and athletes, based on participation numbers and competition results.

At micro level, a globally sought practice but probably the most concerning paradox is that of control of artificial performance enhancement practices and substances. Literature indicated that despite substantial investments in testing, athletes use drugs on a mass scale, athletes’ natural body processes are manipulated, and genetic doping methods are theoretically undetectable. Interviewed HP managers suggested that the increasing cooperation between HP authorities and science bodies may allow better understanding and policing new technologies, concurring with the literature on the need to track and prevent uncontrollable development and self-replication of potentially dangerous molecular and atomic applications.

The study results may be useful in the development of national and international sport systems as well as the training of HP managers. While most of HPM structures and processes could be related to competencies currently taught in sport and business programs, a number of identified HPM challenges require new education programs around the identified KSAs. New abilities for tackling the highlighted issues and implementing strategic innovations should continue to expand the HPM paradigm from an operational to a leadership position.

Further research should determine relative importance of HPM KSAs as well as modules and methods for teaching HPM. The authors’ next steps in this endeavour will be to expert validate the developed model and KSAs for each HPM component, and conduct a representative survey of practitioners around the world to quantify the results.
References


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