

The global sporting arms race

Elements of successful national elite sport systems 2006-2011

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Dr. Hartmut Sandner
Head of Department Information Communication Sport
Institute for Applied Training Science Leipzig - Germany

Long-term comparison - sustainability

1992 Albertville

1992 Barcelona

1994 Lillehammer

1996 Atlanta

1998 Nagano

2000 Sydney

2002 Salt Lake City

2004 Athens

2006 Torino

2008 Beijing

2010 Vancouver

rank	country	Σ	G	S	B	4	5	6	7	8	Pt.	+/-
1	Canada	26	14	7	5	7	17	9	6	7	340	+18 %
	Torino 2006	24	7	10	7	13	8	4	4	4	289	
2	Germany	30	10	13	7	8	8	7	5	6	322	-4 %
	Torino 2006	29	11	12	6	8	8	10	10	7	337	
3	USA	37	9	15	13	8	5	8	5	7	356	+21 %
	Torino 2006	25	9	9	7	7	3	11	14	9	294	
4	Norway	23	9	8	6	6	5	5	4	8	245	+3 %
	Torino 2006	19	2	8	9	10	8	6	5	3	239	
5	Korea	14	6	6	2	3	4		2	3	140	+54 %
	Torino 2006	11	6	3	2	1	1			1	91	
6	Switzerland	9	6		3	6	3	4	3	2	128	-20 %
	Torino 2006	14	5	4	5	2	5	3	9	5	160	
7	Sweden	11	5	2	4	8	3	2	3	3	145	-3 %
	Torino 2006	14	7	2	5	3	4	4	1	4	149	
8	China	11	5	2	4	2	2	4	6	3	123	+15 %
	Torino 2006	11	2	4	5	2	3	2	2	1	107	
9	Austria	16	4	6	6	9	7	7	5	5	219	+1 %
	Torino 2006	23	9	7	7	5	3	2	3	4	216	
10	Netherlands	8	4	1	3	4	2	4	3	2	105	+8 %
	Torino 2006	9	3	2	4	3	2	3	1	1	97	
11	Russia	15	3	5	7	9		6	7	6	184	-23 %
	Torino 2006	22	8	6	8	6	6	6	4	4	238	

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Medal table for the 2010 Olympic Winter Games based on the 1992 Olympic programme

		1	2	3	4	5	6	7	8
1.	NOR	9	5	4	3	3	2	2	5
2.	GER	6	11	5	5	5	5	3	3
3.	USA	6	8	9	4	1	6	3	5
4.	CAN	5	4	4	4	11	6	4	4
5.	SUI	5		1	4	1	4	1	2
6.	KOR	4	4		1	1		1	2
7.	AUT	4	3	4	6	6	5	2	3
8.	SWE	3	1	4	4	3	1	1	3
9.	NED	3	1	2	4	2	3	3	1
10.	CHN	3	1	1	1	2	1	2	1
11.	FRA	2	1	1	3	3	6	4	
12.	CZE	2		4				7	1
13.	RUS	1	2	4	7		2	5	5
14.	POL	1	2	1		2	2	2	
15.	ITA	1	1	3	3	1	2	5	4

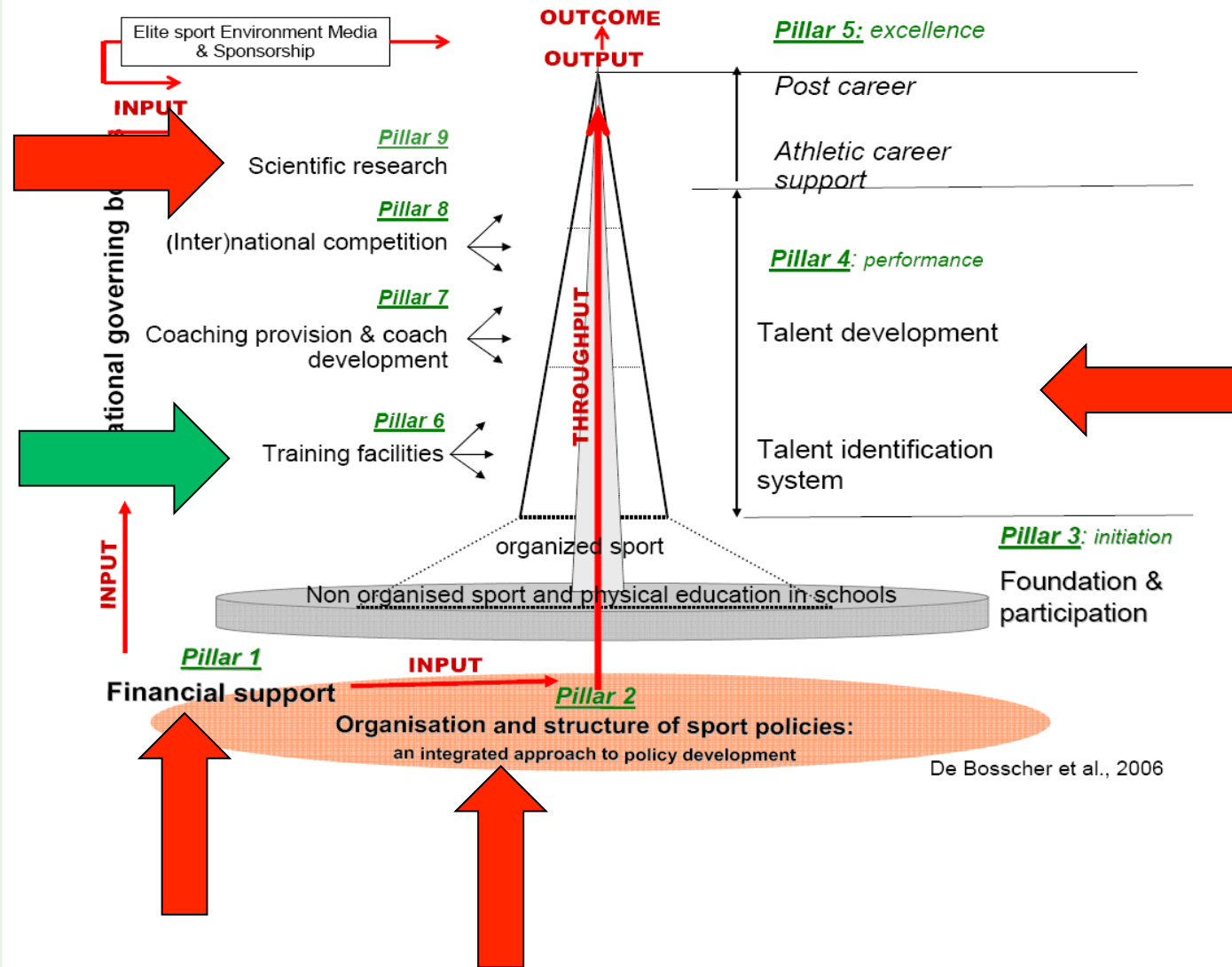
Performance analysis based on the maximum number of medals a national can win

Theoretical maximum of medals a nation can win compared to the medals *won* (absolute and %)

	2000 (max. 501)	2004 (max. 513)	2008 (max. 504)
USA	91 = 18.16	103 = 20.07	110 = 21.84
RUS	86 = 17.16	92 = 14.28	72 = 14.28
CHN	59 = 11.77	63 = 12.28	100 = 19.84
AUS	58 = 11.57	49 = 9.55	46 = 9.12
GER	56 = 11.10	49 = 9.55	41 = 8.13
GBR	28 = 5.64	30 = 5.84	47 = 9.32

Elements of national elite sport development

- clear, challenging targets
- Elements of national elite sport support
- Effective, often centralised structures
- Sports with extraordinary support
- Junior elite sport – talent scouting
- Concepts of long-term performance development
- Systematic sport scientific support
- Financial basis



Clear, challenging targets for the national elite sport – stretch goals

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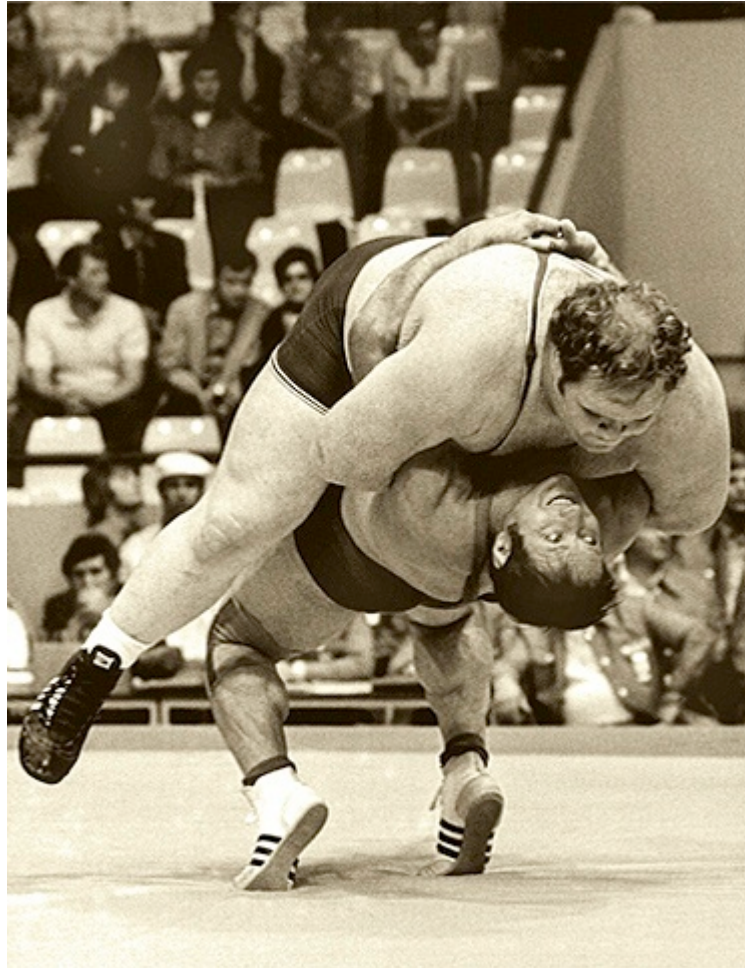


Photo: dpa-Picture Alliance

**You have to try
the impossible
to achieve the
possible.**

Hermann Hesse

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Norway „Continuity, quality, creativity“

Rank 1-3 in total medal ranking in Vancouver 2010

Rank 1-5 in total medal ranking in the Paralympics 2010

Winning 10 medals in the 2008 Olympic Games in Beijing

Winning 16 medals in the Paralympics 2008

Keeping the actual level of performance in the non-Olympic sports regarding the total number of medals won in international championships.

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Canada – Own the podium

Winter

Rank 1 resp. to the number of medals won (30-35) in Vancouver

Rank 1-3 in medal ranking in the Paralympics 2010

Summer

Rank among TOP12 in medal ranking in London 2012

Rank among TOP8 in medal ranking in the Paralympics 2012

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Australian sport minister Kemp (2006)

- A **major talent identification program** to ensure that those with great sporting talent are given the opportunity to compete at the highest level.
- As well as maintaining our **current mix of sports**, we need to **target particular sports** in which we have the greatest chance of success.
- We should **increase the number and quality of our specialist high performance coaches**.
- We need to **upgrade our sports science and technological capability**.
- We need to **reshaping our AIS programs** and delivery of athlete services so that we can provide even better programs and services to a larger pool of talented athletes.
- We should establish a **national network of athlete and coach servicing and support** so that these services can be delivered where athletes and coaches live and train.

Development of effective, often centralized and professionalized structures of elite sport support

Example Norway

Situation before restructuring:

„Respectable officials were in power, the daily elite sport was managed and controlled by more or less qualified board members, often without continuity and also often without elite sport competence.“



Situation after restructuring:

„...the logics of elite sport requested a stronger professionalisation, systematisation and more scientific support in high-performance sport, it was necessary to strengthen the basic conditions of the whole elite sport framework and to bring together competences.“

Source: Stensbol (2009)

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Development of effective, often centralized and professionalized structures of elite sport support

Example Norway – Olympiatoppen

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- **Development of sport performance is in the focus.**
- **Centralised, professional structures and decision making processes are designed and implemented.**
- **Olympiatoppen has a high degree of independence.**
- **Management processes and techniques are introduced into elite sport support.**
- **The central body is responsible for initiating and developing projects in elite sport support and elite sport research, it is the controlling body. It is challenging the national sport associations in their work.**

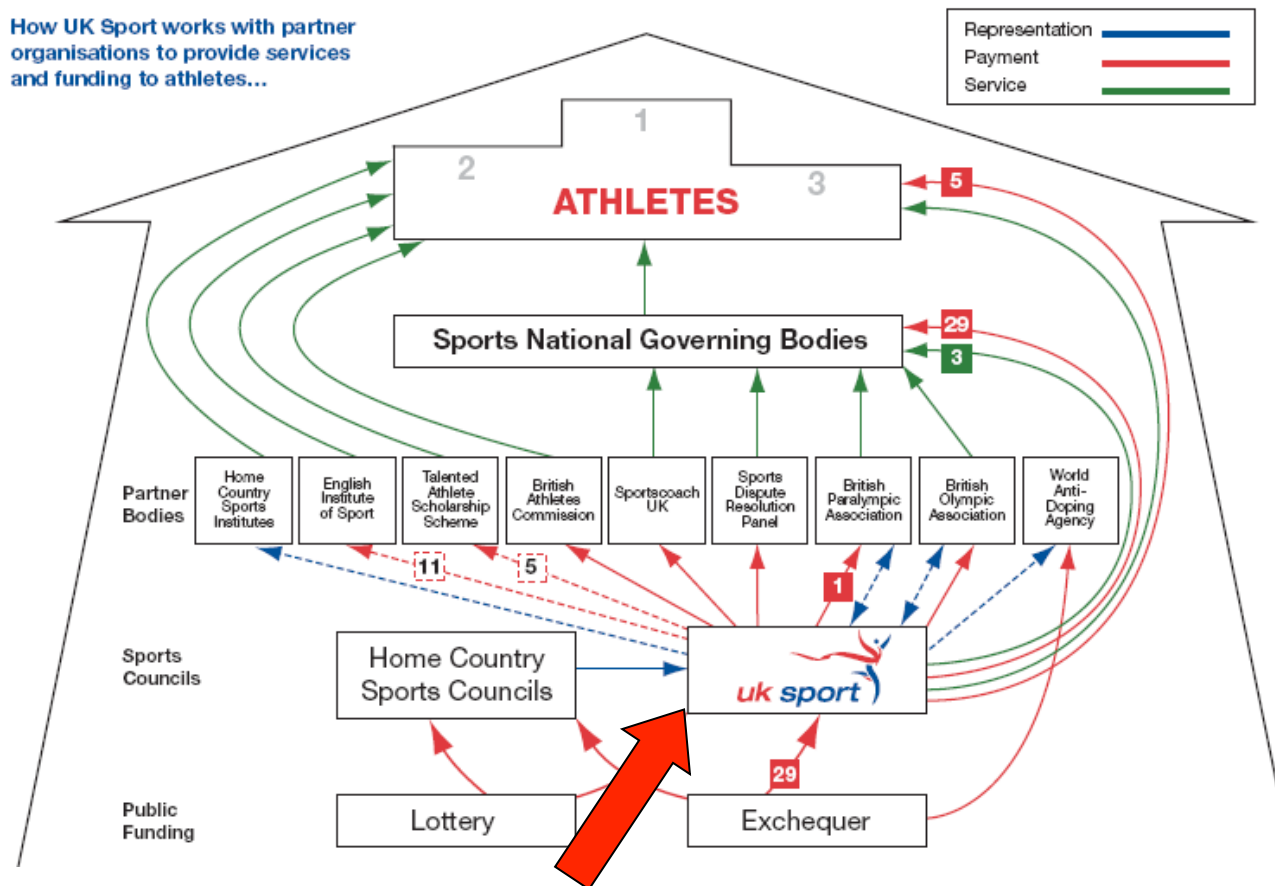


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Example Great Britain 2008

How UK Sport works with partner organisations to provide services and funding to athletes...



Determination of targeted sports

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**Swimming, T/F,
Gymnastics, Beach-
Volleyball, Basketball,
Rowing - Skating,
Freestyle, Ice Hockey,
Snowboard**



**T/F, Gymnastics, Rhythm.
Gymnastics, Synchronized
Sw., Wrestling, Boxing -
Biathlon, CC-Skiing,
Figure Skating,
Ice Hockey**



**Swimming,
Cycling, Rowing,
T/F, Sailing,
Canoe,
Basketball**

**Cycling, Rowing,
Swimming,
Sailing, T/F –
Skeleton, Short-
track**



**Skiing,
Biathlon,
Curling -
Rowing,
Handball**



**Rowing - Skating,
Ice Hockey,
Freestyle, Curling,
Snowboard**



**Gymnastics,
Diving, Table
Tennis,
Weightlifting,
Badminton,
Shooting –
Skating, Freestyle**



**Judo, Gymnastics,
Wrestling, Swimming
–
Skating**

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Australian sport minister: As well as maintaining our **current mix of sports**, we need to **target particular sports** in which we have the greatest chance of success.

Russian sport minister: „... we should not loose the **traditionally strong Russian sports** – biathlon, cross-country skiing, figure skating, ice hockey and speed skating – but we should regain a powerful position in these sports.“

Canada - Sport Excellence Strategy 2005: ...the **targeted support of sports with medal potential** with a remaining basic support for the other sports

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UK Sport-Elite sport funding 1996-2008

(British Pound)

Sport	OC 1996-2000	OC 2000-2004	OC 2004-2008
Athletics	10,600,000	11,400,000	26,513,000 ★
Badminton			8,759,000
Boxing			5,005,000
Canoeing	4,500,000	4,700,000	13,622,000
Cycling	5,400,000	8,600,000	22,151,000 ★
Diving	900,000	1,400,000	5,873,000
Equestrian	3,000,000	4,400,000	11,727,000
Fencing			3,074,000
Gymnastics	5,900,000	4,100,000	9,036,000
Hockey			9,882,000
Judo	3,900,000	4,100,000	6,947,000
Mod. Pentathlon	1,100,000	2,000,000	5,920,000
Rowing	9,600,000	10,600,000	26,042,000 ★
Sailing	5,100,000	7,600,000	22,292,000 ★
Shooting		1,400,000	5,056,000
Swimming	6,900,000	6,400,000	20,659,000 ★
Tabletennis			2,533,000
Taekwondo	600,000		2,667,000
Triathlon	1,400,000	2,600,000	5,113,000
Total	58,900,000		235,103,000

5 NGBs = almost 50 %

increase 399 %

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Determination of targeted sports

British medals in the Olympic Games 1996

	Gold	Silver	Bronze
Cycling	0	0	2
Rowing	1	0	1
Sailing	0	2	0
Athletics	0	4	2
Swimming	0	1	1
Total	1 = 1 of 1	8 = 7 of 8	6 = 6 of 6

British medals in the Olympic Games 2008

	Gold	Silver	Bronze
Cycling	8	4	2
Rowing	2	2	2
Sailing	4	1	1
Athletics	1	2	1
Swimming	2	2	2
Total	19 = 17 of 19	13 = 11 of 13	15 = 8 of 15

Junior elite sport – Talent scouting and -development

- clear, challenging targets
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Junior elite sport is considered a complex, long-term task with respect to training content and structure.

The basis is an attractive sport offer to children in general.

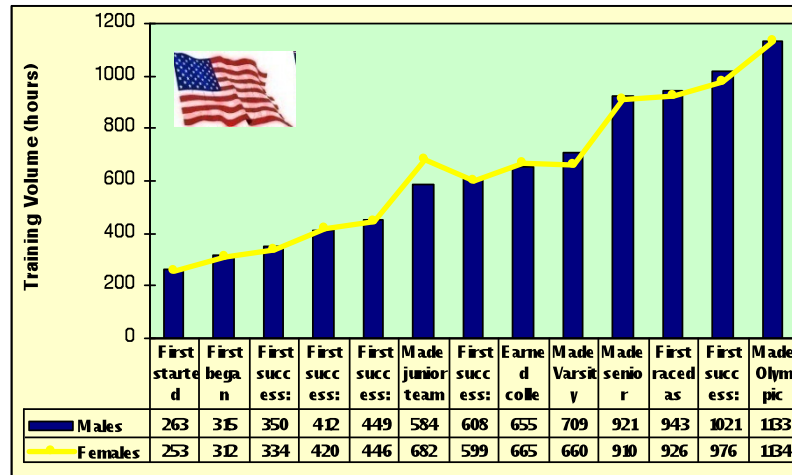
The ordinary school system has to be adapted to the needs of junior elite sport (often at specialized schools).

Talent scouting is a task with common concepts and actions of central sport organisations and institutions together with the national sport associations.

Long-term training concepts are developed which often are implemented in regional and/or national training centres.

Long-Term performance development

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„... 10-15 years and 10.000 hours of training are requested to reach the mental and physical qualities, to make use of the individual potential to a maximum which finally can lead up to an elite-sport career.“

Scientific research has concluded that it takes a minimum of 10 years and 10,000 hours of training for a talented athlete to reach elite levels. For athlete and coach, this translates into slightly more than 3 hours of training or competition daily for 10 years.



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Age of the Vancouver 2010 finalists



Age of medal winners and finalists for the top countries 2010

		total				women				men			
		Ø	Min	Max	n	Ø	Min	Max	n	Ø	Min	Max	n
total	1.-3.	27,3	17,9	46,2	450	26,7	17,9	46,2	199	27,8	18,2	43,5	251
total	4.-8.	27,1	16,1	45,2	767	25,6	16,1	45,0	337	28,2	17,4	45,2	430
CAN	1.-3.	28,3	18,9	46,2	87	28,5	18,9	46,2	42	28,1	20,2	43,5	45
CAN	4.-8.	27,5	18,2	39,4	44	27,3	18,2	37,4	17	27,8	19,1	39,4	27
GER	1.-3.	28,0	18,2	36,6	43	28,2	19,6	35,2	21	27,8	18,2	36,6	22
GER	4.-8.	29,9	17,1	45,0	53	29,1	17,1	4,05	20	30,5	21,2	42,7	33
USA	1.-3.	25,7	18,4	36,4	85	24,6	19,5	31,1	35	26,5	18,4	36,4	50
USA	4.-8.	27,2	16,8	37,2	37	25,7	16,8	33,7	17	28,6	19,6	37,2	20
NOR	1.-3.	28,7	21,5	40,2	28	28,8	21,6	33,8	6	28,6	21,5	40,2	22
NOR	4.-8.	25,9	19,9	36,0	24	25,0	19,9	30,9	11	26,7	20,2	36,0	13
KOR	1.-3.	20,5	17,9	23,6	11	19,2	17,9	21,0	4	21,3	19,2	23,6	7
KOR	4.-8.	21,5	17,0	25,0	15	20,6	17,0	24,9	7	22,2	18,7	25,0	8

Month of birth of the 2010 Vancouver finalists

Distribution of the months of birth of the 2010 Vancouver finalists

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	Quarter I 21,6 %				Quarter II 25,4 %			Quarter III 28,8 %			Quarter IV 24,6 %		
CAN	7,40	7,40	6,60	8,20	11,5	5,70	10,7	7,40	10,7	7,40	5,70	11,5	
GER	17,6	11,8	7,10	7,10	8,20	4,70	9,40	9,40	3,50	7,10	8,20	5,90	
	Quarter I 36,5 %				Quarter II 20,0 %			Quarter III 22,3 %			Quarter IV 21,2 %		
NOR	13,3	13,3	15,6	8,90	2,20	4,40	6,70	6,70	6,70	6,70	4,40	11,1	
	Quarter I 42,2 %				Quarter II 15,5 %			Quarter III 19,1 %			Quarter IV 22,2 %		
SUI	17,8	12,2	10,8	9,50	8,80	8,80	4,10	8,80	9,40	9,50	1,40	9,50	
SWE	11,2	7,50	11,2	7,50	8,80	5,00	10,0	5,00	10,0	8,80	11,2	3,80	
CHN	6,90	5,20	12,1	6,90	5,20	3,40	15,5	8,60	10,3	13,8	6,90	6,90	
AUT	16,2	8,10	5,40	16,2	5,40	8,10	10,8	8,10	16,2	2,70	2,70	0,00	
NED	4,50	4,50	27,3	13,6	4,50	22,7	9,10	9,10	4,50	0,00	0,00	0,00	
Summary for finalists of all countries													
	Quarter I 27,5 %				Quarter II 24,9 %			Quarter III 24,3 %			Quarter IV 23,4 %		

Systematic scientific support with the aim of performance enhancement

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Top Secret Programme by Own the Podium

2006/2007 a total of 37 projects, 2009/2010 a total of **55 projects**

Major focus on the selected topics

Air Friction (alpine skiing, speed skating, bob, luge, skeleton)

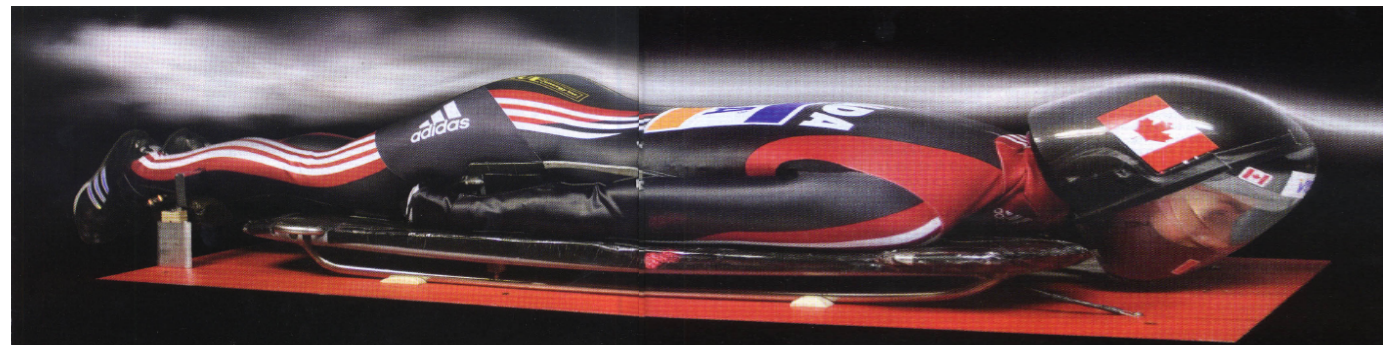
Snow Friction (all skiing events),

Ice Friction (all events on ice) and

Human Performance and

on complex, sport specific projects and research in material for sport apparatuses resp. technological developments, in addition general projects in training science and sport psychology.

Central management and control by Own the Podium, **development of networks** with at least 14 universities and research institutions, innovative businesses and sport associations.



Systematic scientific support with the aim of performance enhancement

Winsport Canada: the Canadian winter sport institute

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- Headquarter of the Calgary Sport Centre, of many sport associations, of the National Sport School as well as of Own the Podium
- Close to the University of Calgary (several Top-Secret-Projects 2010)
- Modern training facilities: 1988 Olympic venues have been reconstructed, technologically updated and extended
- Sport scientific, medical and physiotherapeutic counselling and treatment.
- New facility: Athletic and Ice Complex in the Canada Olympic Park with four ice rinks and a High Performance Centre
- Scope of financial investment: 299 Mio. Dollar, total area: 500.000 m²



Athletic & Ice Complex

Systematic scientific support with the aim of performance enhancement

To an increasing extend training scientific support is delivered until the real „starting shot“ of competition

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The facility

Features include:


- accommodation (with facilities for people with disabilities)
- athlete dining hall and kitchen
- strength and conditioning gym
- sports medicine and sports science areas
- internet connection for online services such as athlete career education support
- study rooms
- recreation facilities
- manager's apartment
- meeting rooms
- administration facilities.

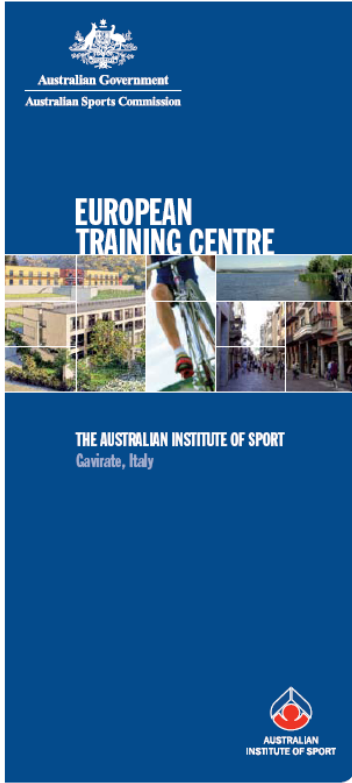
Australian athletes will also have access to an international rowing course, 50-metre outdoor and indoor swimming pools, 400-metre athletics track, basketball stadiums, soccer pitches and archery field.

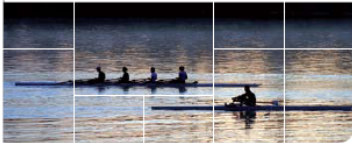

For more information
 Shayne Bannan
 AIS National Performance Director, Cycling
 Tel: (Aus) +61 8 8360 5802
 (Italy) +39 33 8542 6854
 Email: shaynebannan@ozisport.org.au
 ausport.gov.au
 ais.org.au

Warwick Forbes
 European Liaison Manager
 Tel: +39 3391 626 691
 Email: warwick.forbes@ausport.gov.au

Map of the Varese Province





With the target of performing well in London 2012 the Australian Sport Commission has developed the training centre for Olympic sports in the North-Italian city of Gavirate which also delivers scientific support with AIS standard

Funding on a high, necessary level for targeted elite sport development

Grants for elite sport funding for national sport associations by UK Sport

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It is not enough to look for an ever higher efficiency, an increased optimization and expertise. The international competition is getting harder and harder. We seem to be in a fatal circle of optimization, already today Norway is winning the cheapest medals.

Jarle Aambø (Head Olympiatoppen)

Top performances are no cheap low budget product. To climb the podium three tasks have to be solved. The responsible national organisations have to do their homework, coaching has to be on international top level and we need to have hungry, motivated athletes.

Sebastian Coe (Olympic Champion, LOCOC-President)

There is no escape from the necessity of significantly increased financial funds for elite sport, if Australia wants to keep its international competitiveness in international elite sport.

John Coates (AOC-president)

Factor for success

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Results



Pillar	ITA	UK	NED	CAN	NOR	FLA	WAL
1 Financial support: expenditures on sport and elite sport at national level	0	0	0	-	-	-	--
1B Financial support: national subsidisation towards NGBs	0	++	0	-	--	--	--
2 Policy structures and policy development	0	++	0	0	0	0	0
3 Sport participation	-	0	0	NA	0	0	-
4 Talent identification and development	--	-	0	-	0	0	-
5 Athletic career and post athletic career	0	++	++	0	0	-	-
6 Training facilities	0	0	0	0	0	0	NA
7 Coaching provision and coach development	0	++	0	NA	NA	-	NA
8 International competition	0	++	++	0	0	0	-
9 Scientific research	0	-	0	0	0	-	--

De Bosscher, 2006

Based on sufficient financial resources three factors can produce advantages in performance development:

- talent identification and development,
- well educated coaches and excellent coaching as well as
- sport scientific research for elite sport



less than 400 days



less than 900 days

Thank you for your attention!

Dr. Hartmut Sandner
Institute for Applied Training Science
Leipzig Germany